

BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

IN THE MATTER OF CARBON/EMERY)
TELCOM'S AMENDED APPLICATION FOR)
INCREASE IN UTAH UNIVERSAL)
SERVICE FUND SUPPORT)

Docket No. 15-2302-01

Applicant)

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**THE FOLLOWING CONTAINS INFORMATION WHICH IS CONFIDENTIAL
SUBJECT TO PROTECTIVE ORDER IN DOCKET NO. 15-2302-01**

BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

IN THE MATTER OF
CARBON/EMERY TELCOM, INC.'S
APPLICATION FOR AN INCREASE
IN UTAH UNVERSAL SERVICE
FUND SUPPORT

AMENDED APPLICATION FOR
INCREASE IN UTAH UNIVERSAL
SERVICE FUND SUPPORT

DOCKET NO. 15-2302-01

Carbon/Emery Telcom, Inc. ("Carbon/Emery") hereby files this Amended Application for an Increase in Utah Universal Service Fund ("UUSF") Support with the Public Service Commission of Utah (the "Commission") pursuant to Utah Code Annotated Sections 54-8b-15 and Utah Administrative Code R746-360. This Amended Application amends the filing that was made on March 27, 2015, and represents the following:

1. The Commission is vested with jurisdiction over this matter by Utah Code Anno. Sections 54-4-1, 54-8b-15, and Utah Administrative Code R746-360.
2. Pursuant to R746-360-6.A.1 of the Commission Rules, "to qualify to receive USF support funds, a telecommunications corporation shall be designated an 'eligible telecommunications carrier,' pursuant to 47 U.S.C. Section 214(e), and shall be in compliance



with Commission orders and rules. Each telecommunications corporation receiving support shall use that support only to provide basic telecommunications service and any other services or purposes approved by the Commission.”

3. R746-360-6.A.2(b) provides that “Rate-of-return Incumbent telephone corporations shall complete a Commission review of their revenue requirement and public telecommunications services’ rate structure prior to any change in their USF distribution which differs from prior USF distribution, beginning with the USF distribution for December, 1999.”

4. R746-360-6.B provides that “to be eligible, a telecommunications corporation may not charge retail rates in excess of the Commission determined Affordable Base Rates for basic telecommunications service or vary from the terms and conditions determined by the Commission for other telecommunications services for which it receives Universal Service Fund support.”

5. Carbon/Emery is a telephone corporation qualified to transact business within the State of Utah. Carbon/Emery operates as a local exchange carrier providing telecommunications services within the State of Utah under authority issued to Carbon/Emery by the Commission. Carbon/Emery has been designated an “eligible telecommunications carrier” pursuant to 47 U.S.C. Section 214(e), and is in compliance with Commission Orders and rules.

6. This Application seeks an increase in UUSF support for Carbon/Emery, and is accompanied by supporting information and schedules in accordance with Utah Code Anno. Section 54-8b-15 and R746-360 of the Commission’s Rules of Practice and Procedure to support Carbon/Emery’s Application for an Increase in UUSF Support. Attachment 1 to this Application

lists the supporting information which can be found in the pre-filed written *amended* direct testimony and exhibits of the following witnesses:

- **Brock Johansen**, Chief Executive Officer of Carbon/Emery Telcom, Inc. will provide an overview of the operations of Carbon/Emery including discussion of the current revenue requirement and shortfall of Carbon/Emery.
- **Darren Woolsey**, Chief Financial Officer of Carbon/Emery Telephone will present Carbon/Emery's overall revenue requirement based on the operations during the test year, adjusted for known and measurable changes. Mr. Woolsey will describe in detail the sources of data and will present certain normalizing adjustments and known and measurable changes related to revenue, operations expense, depreciation and amortization, rate base, and taxes.

7. Calendar year 2014 constitutes a reasonable test year for the purpose of determining the appropriate amount of additional support from Utah's Universal Service Fund. Carbon/Emery's revenue requirement calculation includes known and measurable test year adjustments.

8. Carbon/Emery's present tariff charges, adjusted for known and measurable changes, do not provide sufficient revenues to cover Carbon/Emery's 2014 test year costs adjusted for known and measurable changes thereto. At December 31, 2014, Carbon/Emery is experiencing an annual revenue requirement deficiency of \$816,909 (see Exhibit Carbon/Emery DW1) against Carbon/Emery's adjusted 2014 test year costs when considering plant construction, known and measurable changes thereto, and including an overall rate of return of 10.50% based on a theoretical capital structure of 65% equity and 35% debt (calculated on a

basis of a state return on equity of 12.13% and a return on debt of 5.636%) (see Amended Testimony of Darren Woolsey, Confidential Exhibits Carbon/Emery-DW 1- 14).

9. Carbon/Emery's current rate for basic residential service (R-1) is \$16.50 per month and for basic business service (B-1) is \$26.00 per month. These are the current Commission approved base affordable rates.

10. By this Application, Carbon/Emery seeks to have its revenue shortfall made up by additional UUSF support in the annual amount of \$816,909. This additional UUSF distribution is essential to permit Carbon/Emery to continue to provide telecommunications services at just and reasonable rates and to recover its reasonable costs of service and a reasonable rate of return on the value of its property devoted to public use.

11. Carbon/Emery also seeks a one-time lump-sum distribution to Carbon/Emery from the UUSF in the amount of the reasonable costs incurred by Carbon/Emery associated with this Application.

12. Carbon/Emery requests that the Commission, in accordance with Utah Code Anno. Section 54-8b-15 and R746-360 of the Commission's Rules of Practice and Procedure, approve an additional annual UUSF distribution of \$816,909 plus a one-time lump-sum payment from the UUSF to Carbon/Emery to cover its costs associated with this Application, as being just and reasonable, and in the public interest.

WHEREFORE, Carbon/Emery respectfully submits this Amended Application for Increase in Utah Universal Service Fund Support. Carbon/Emery requests that the Scheduling Conference set in this matter for April 28, 2015 remain unchanged.

DATED this 2nd day of April, 2015.

BLACKBURN & STOLL, L.C.

By _____
Kira M. Slawson
Attorney for Carbon/Emery Telecom, Inc.

CERTIFICATE OF MAILING

I hereby certify that a true and correct copy of the Carbon/Emery Telcom, Inc. Amended Application for an Increase in Universal Service Fund Support, Docket No. 15-2302-01 was sent to the following individuals by mailing a copy thereof via first-class mail, postage prepaid, this 2nd day of April, 2015:

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ATTACHMENT 1
CARBON/EMERY TELCOM, INC. APPLICATION FOR INCREASE IN UUSF SUPPORT
Index

Testimony of Brock Johansen

Confidential Exhibit Carbon/Emery BJ1 Collection Policy and Bad Debt Write Off Policy
Confidential Exhibit Carbon/Emery BJ2 Penalties and Fines

Testimony of Darren Woolsey

Confidential Exhibit Carbon/Emery DW 1 USF Calculation Worksheet
Confidential Exhibit Carbon/Emery DW 2 Rate Base Calculation
Confidential Exhibit Carbon/Emery DW 3 Cost of Capital / Rate of Return Calculations
Confidential Exhibit Carbon/Emery DW 4 Trial Balances - 2013 and 2014 (6 pages)
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2013
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Confidential Exhibit Carbon/Emery DW 9 Cost Allocation Manual - Accounting and General
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Dispatch
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Confidential Exhibit Carbon/Emery DW 9g Cost Allocation Manual - HR Allocation
Confidential Exhibit Carbon/Emery DW 9h Cost Allocation Manual - Regulated Allocator
Confidential Exhibit Carbon/Emery DW 9i Cost Allocation Manual - CSR Allocator
Confidential Exhibit Carbon/Emery DW10 2013 Audited Financial Statements (34 pages)
Confidential Exhibit Carbon/Emery DW10a 2013 Audit Journal Entries
Confidential Exhibit Carbon/Emery DW10b Year 2013 Audit Exit Memo (7 pages)
Confidential Exhibit Carbon/Emery DW 11 Personnel Chart / Line of Authority
Confidential Exhibit Carbon/Emery DW 12 Corporate Structure
Confidential Exhibit Carbon/Emery DW 13 Bad Debt Expense and Subsequent Collections
Confidential Exhibit Carbon/Emery DW 14 Tax Adjustment

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SERVICE FUND SUPPORT)
)
Applicant)

AMENDED DIRECT TESTIMONY

OF

BROCK JOHANSEN

ON BEHALF OF CARBON/EMERY TELCOM, INC.

April 2, 2015



1 **AMENDED DIRECT TESTIMONY OF BROCK JOHANSEN**

2 **Q. Please state your name, occupation and business address.**

3 A. Brock Johansen. I am the Chief Executive Officer of Carbon/Emery Telcom, Inc.
4 (“Carbon/Emery”). Carbon/Emery’s business address is 455 East Highway 29,
5 Orangeville, Utah 84537.

6
7 **Q. Please state your educational background and professional background.**

8 A. I have a Bachelor of Science degree in Business and a Juris Doctorate from Brigham
9 Young University. I practiced law in Provo, Utah prior to joining Carbon/Emery
10 Telephone in 2005.

11
12 **Q. Are you authorized to provide testimony in this case on behalf of Carbon/Emery?**

13 A. Yes.

14
15 **Q. Please describe Carbon/Emery.**

16 A. Carbon/Emery is a telephone corporation qualified to transact business and operate as a
17 local exchange carrier providing telecommunications services within the State of Utah
18 under authority issued to Carbon/Emery by the Utah Public Service Commission
19 (“Commission”). Carbon/Emery is an eligible telecommunications carrier pursuant to 47
20 U.S.C. Section 214(e) and is in compliance with Commission orders and rules.

21
22 **Q. What is the purpose of your testimony in this matter?**

23 A. I have been the CEO of Carbon/Emery since 2005. In that capacity I am very familiar
24 with the operations of Carbon/Emery. Carbon/Emery conducted a thorough review of its
25 operational expenses and revenues for test year 2014, adjusted for known and measurable
26 changes, and determined that Carbon/Emery has a revenue deficiency, which, pursuant to
27 Utah Code Annotated Sections 54-8b-15, and Utah Administrative Code R746-360,
28 Carbon/Emery is entitled to receive from additional disbursements from the Utah
29 Universal Service Fund ("UUSF"). The purpose of my testimony is to address the
30 current revenue requirement of Carbon/Emery and to offer support for the information
31 contained in the Company's Amended Application for an increase in UUSF distribution.

32
33 **Q. Have others been authorized to testify on behalf of Carbon/Emery in this**
34 **proceeding?**

35 A. Yes. Darren Woolsey, Carbon/Emery's Chief Financial Officer, will file direct testimony
36 on behalf of the Company. Douglas Meredith of John Staurulakis, Inc. ("JSI") may
37 provide testimony in this proceeding, as needed. Their testimony will provide the support
38 and rationale for the proposed increase in UUSF distributions.

39
40 **Q. Are you familiar with Carbon/Emery's Amended Application for UUSF**
41 **Distributions in this Docket?**

42 A. Yes. As indicated above, Carbon/Emery's Amended Application is based on a 2014 test
43 year plus known and measurable changes. These changes are identified in the Amended

44 Testimony of Darren Woolsey and Confidential Exhibits Carbon/Emery DW 1-14 filed
45 with the Amended Application.

46

47 **Q. Can you summarize Carbon/Emery's Amended Application?**

48 A. Yes. On March 27, 2015, Carbon/Emery filed an Application for Increase in UUSF, and
49 Darren Woolsey and I filed Direct Testimony in support thereof. Since the March 27,
50 2015 filing, Darren Woolsey determined that the original Application incorrectly included
51 tax preference items (deferred taxes) related to non-rate base assets (acquisition
52 adjustment – intangibles). The improper inclusion resulted in an incorrect rate base
53 reduction. This improper inclusion required adjustment and a subsequent amendment to
54 the original filing which is being filed herewith as the Amended Application.

55 Q. Can you briefly summarize the changes found in the Amended Application?

56 A. The Amended Application includes in an increase in the Rate Base, change in the Rate of
57 Return (due to mix of Intra vs Interstate assets), and an increase in required UUSF
58 including associated taxes. As set forth in detail below, based on the Amended
59 Application, Carbon/Emery is currently experiencing a revenue deficiency of \$816,909.
60 Carbon/Emery is proposing that the revenue deficiency be recovered through additional
61 UUSF support. This will enable Carbon/Emery to continue providing affordable service
62 to its customers, and to engage in construction of capital projects, while earning a
63 reasonable rate of return as permitted by Utah Code.

64

65 **Q. What are Carbon/Emery's current rates for basic residential (R1) and basic**
66 **business (B1) service?**

67 A. Carbon/Emery's current rate for basic residential service (R-1) is \$16.50 per month and
68 for basic business service (B-1) is \$26.00 per month, which is the current affordable base
69 rate as determined by the Commission.

70
71 **Q. Is Carbon/Emery seeking a rate increase in this proceeding?**

72 A. No. Carbon/Emery's rates are at the affordable base rate set by the Commission.

73
74 **Q. What test period is Carbon/Emery proposing in its Amended Application?**

75 A. As indicated above, Carbon/Emery is proposing an historical test period of 2014, adjusted
76 for known and measurable changes. Darren Woolsey discusses the Amended Application
77 and adjustments in detail in his testimony and confidential exhibits.

78
79 **Q. Have you reviewed the Amended Direct Testimony of Darren Woolsey?**

80 A. Yes. I have reviewed the Amended Direct Testimony of Darren Woolsey and the
81 Confidential Exhibits attached to his testimony.

82
83 **Q. Do the Confidential Exhibits accurately represent the financial and operational**
84 **situation at Carbon/Emery?**

85 A. Yes. The Amended Direct Testimony of Darren Woolsey and the Confidential Exhibits
86 presented with his testimony accurately reflect the financial and operational situation at

87 Carbon/Emery, and support the additional UUSF distribution sought by Carbon/Emery in
88 its Amended Application.

89

90 **Q. Has Carbon/Emery implemented any significant changes in accounting policies or**
91 **procedures for the 12 month period prior to the test period?**

92 A. No. Carbon/Emery has not implemented any significant changes in accounting policies
93 or procedures that would be referenced or noted in the financial statements or auditors'
94 notes.

95

96 **Q. Has Carbon/Emery included audited financial statements for 2014 with its Amended**
97 **Application?**

98 A. No. Emery's audited financial statements for 2014 are not yet available. We anticipate
99 having the audited financial statements shortly and will supplement the testimony of
100 Darren Woolsey with the 2014 Audited Financial Statements and management letters. We
101 have attached audited financial statements and management letters for 2013, which are
102 attached to the Testimony of Darren Woolsey at Confidential Exhibits Carbon/Emery DW
103 10, 10a, and 10b.

104

105 **Q. Has Carbon/Emery conducted any internal audits during 2014 or 2015?**

106 A. No.

107

108 **Q. Has Carbon/Emery had any corporate restructuring or changes in its affiliate**
109 **relationships since its previous general rate case?**

110 A. No. Carbon/Emery has not had any corporate restructurings or changes in existing
111 affiliate relationships since the prior general rate case in 2009. A copy of the
112 Carbon/Emery Telephone Personnel Chart/Line of Authority is attached to the Testimony
113 of Darren Woolsey at Confidential Exhibit Carbon/Emery DW 11, and a copy of the
114 Corporate Structure Chart is attached to the Testimony of Darren Woolsey at Confidential
115 Exhibit Carbon/Emery DW 12.

116
117 **Q. Can you describe Carbon/Emery's collection policies and write off policies for bad**
118 **debt.**

119 A. Carbon/Emery uses the direct write off method to account for uncollectible receivables.
120 This process is described in Confidential Exhibit Carbon/Emery BJ 1.

121
122 **Q. Has Carbon/Emery had any penalties or fines assessed to the company during the**
123 **test period and 2 years prior to the test year?**

124 A. There were two immaterial penalties in the 2014 test period, and two immaterial penalties
125 assessed in the two years prior to the test period. They are identified in Confidential
126 Exhibit Emery BJ 2.

127
128 **Q. Did you calculate any test period tax adjustments in Carbon/Emery's Amended**
129 **Application?**

130 A. Yes. The test period tax adjustments are discussed in detail in the Amended Direct
131 Testimony of Darren Woolsey and Confidential Exhibit Carbon/Emery DW 14.

132

133 **Q. Has Carbon/Emery received any ruling requests, IRS responses, and any**
134 **correspondence with the IRS since the last general rate case?**

135 A. No. Carbon/Emery has made no ruling requests or received responses from the IRS since
136 the last general rate case in 2009. Correspondence with the IRS has been limited to the
137 periodic filing of payroll and non-profit informational tax forms, with associated
138 extensions and communications as operationally necessary.

139

140 **Q. Do you believe that an increase in the annual UUSF support in the amount of**
141 **\$816,909 to Carbon/Emery is just and reasonable and in the public interest?**

142 A. Yes. The increase in the distribution from the UUSF is essential to permit Carbon/Emery
143 to continue to provide telecommunications services at just and reasonable rates and to
144 recover its reasonable costs of service and a reasonable rate of return on the value of its
145 property devoted to public use.

146

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

148 A. Yes.

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TELCOM, INC.'S AMENDED APPLICATION)
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SERVICE FUND SUPPORT)

Docket No. 15-2302-01

Applicant)

AMENDED DIRECT TESTIMONY

OF

DARREN WOOLSEY

ON BEHALF OF CARBON/EMERY TELCOM, INC.

April 2, 2015



AMENDED DIRECT TESTIMONY OF DARREN WOOLSEY

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Q. What is your name?

A. My name is Darren Woolsey.

Q. By whom are you employed and in what capacity?

A. I am employed by Carbon/Emery Telcom, Inc. as its Chief Financial Officer.

Q. Briefly describe your educational background and work experience.

A. I received a Master of Accountancy Degree from Southern Utah University in 1992, and subsequently earned the following certifications: Certified Public Accountant (CPA), Certified Financial Manager (CFM) and Certified Managerial Accountant (CMA). I worked in Public Accounting as an auditor for KPMG for four years beginning in 1992 and in private industry as an Accounting/Finance manager since that time until the present. I have been employed as the CFO of Carbon/Emery Telcom, Inc. since 2006 where I am responsible for the management of the accounting, finance, and compliance functions and employees.

Q. On whose behalf are you presenting testimony?

A. I am presenting testimony on behalf of Carbon/Emery Telcom, Inc. ("Carbon/Emery" or "Company") in support of its Amended Application for Increased Support from the UUSF.

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

24 A. The purpose of my testimony is to provide detailed explanations for selected financial
25 and statistical information supporting Carbon/Emery's Amended Application for an
26 Increase in UUSF Support. Specifically, I will provide testimony that will support
27 Confidential Exhibits Carbon/Emery DW 1-14 which are attached to this Amended
28 Testimony as Confidential Exhibits.

29

30 **Q. Why did Carbon/Emery file an Amended Application?**

31 A. The original filing made on March 27, 2015 incorrectly included tax preference items
32 (deferred taxes) related to non-rate base assets (acquisition adjustment – intangibles).

33 The improper inclusion resulted in an incorrect rate base reduction. This improper
34 inclusion required adjustment and a subsequent amendment to the original filing which is
35 being filed herewith.

36

37 **Q. Can you briefly summarize the changes found in the Amended Application and
38 your Amended Direct Testimony?**

39 A. The Amended Application includes an increase in the Rate Base, a minor change in the
40 Rate of Return (due to mix of Intrastate vs. Interstate assets), and an increase in required
41 UUSF including associated "gross-up" taxes. The total UUSF increase related to the
42 Amended Application is \$253,647, for a requested increase in UUSF of \$816,909.

43

Q. Please identify the Exhibits to your testimony.

45 A. The individual Carbon/Emery Confidential Exhibits include:

46 Exhibit Carbon/Emery DW 1 - UUSF Calculation Worksheet
47 Exhibit Carbon/Emery DW 2 - Rate Base Calculation
48 Exhibit Carbon/Emery DW 3 - Cost of Capital / Rate of Return Calculations
49 Exhibit Carbon/Emery DW 4 - Trial Balances - 2013 and 2014 (6 pages)
50 Exhibit Carbon/Emery DW 5 - Cash Working Capital Calculation
51 Exhibit Carbon/Emery DW 6 - Summary of Apportionment Ratios by Account -
52 2013
53 Exhibit Carbon/Emery DW 7 - Known and Measurable Adjustment Summary
54 Exhibit Carbon/Emery DW 7a- Landline Loss
55 Exhibit Carbon/Emery DW 7b- Local Service Rate Imputation to Base Affordable
56 Rate
57 Exhibit Carbon/Emery DW 7d- Shared Asset Allocation
58 Exhibit Carbon/Emery DW 8- 2013 Carbon/Emery Telecom Cost Study-Part 36 (28
59 pages)
60 Exhibit Carbon/Emery DW 8a- 2013 Cost Study - Combined Regulated Entities (57
61 pages)
62 Exhibit Carbon/Emery DW 9 - Cost Allocation Manual – Accounting and General
63 Exhibit Carbon/Emery DW 9a- Cost Allocation Manual - CABS Allocator
64 Exhibit Carbon/Emery DW 9b- Cost Allocation Manual - Business Solutions
65 Exhibit Carbon/Emery DW 9c- Cost Allocation Manual - Outside Plant and
66 Dispatch
67 Exhibit Carbon/Emery DW 9d- Cost Allocation Manual - Inside Plant
68 Exhibit Carbon/Emery DW 9e- Cost Allocation Manual - Engineering
69 Exhibit Carbon/Emery DW 9f- Cost Allocation Manual - Billing and Collection
70 Exhibit Carbon/Emery DW 9g- Cost Allocation Manual - HR Allocation 2014
71 Exhibit Carbon/Emery DW 9h- Cost Allocation Manual - Regulated Allocator
72 Exhibit Carbon/Emery DW 9i- Cost Allocation Manual - CSR Allocator
73 Exhibit Carbon/Emery DW10- 2013 Audited Financial Statements (34 pages)
74 Exhibit Carbon/Emery DW10a- 2013 Audit Journal Entries
75 Exhibit Carbon/Emery DW10b- Year 2013 Audit Exit Memo (7 pages)
76 Exhibit Carbon/Emery DW 11- Personnel Chart / Line of Authority
77 Exhibit Carbon/Emery DW 12- Corporate Structure
78 Exhibit Carbon/Emery DW 13- Bad Debt Expense and Subsequent Collections
79 Exhibit Carbon/Emery DW 14- Income Tax Gross up Calculation
80

81 Q. Were the Exhibits referred to above and the supporting workpapers prepared by
82 you or prepared under your supervision?

83 A. Yes, I prepared, or participated in the preparation of the Confidential Exhibits identified
84 above.

85

86 **Q. Why have you identified the Exhibits as confidential?**

87 A. The Exhibits, as prepared, contain proprietary financial information related to the
88 Company and its operations, which constitute trade secrets or are otherwise of such a
89 highly sensitive or proprietary nature that public disclosure would be inappropriate and
90 detrimental to the Company.

91

92 **Q. What is the proposed test period specified in the Amended Application and how was
93 it derived?**

94 A. Carbon/Emery proposes to use calendar year 2014 as the test period for the purpose of
95 determining the appropriate amount of UUSF support. Accordingly, the Application and
96 Confidential Exhibits are based upon financial information for the 12 months ending
97 December 31, 2014. This test period selection is consistent with the Commission's
98 historic treatment of rural local exchange carriers in Utah.

99

100 This historical "test period" was then adjusted for "known and measurable" changes in
101 operations, which more accurately reflect Carbon/Emery's ongoing cost of providing
102 telecommunications services. These pro forma adjustments are contained in Confidential
103 Exhibits Carbon/Emery DW 7, 7a, and 7b.

105 Q. **Have you calculated Carbon/Emery's Revenue Deficiency?**

106 A. Yes. Confidential Exhibit Carbon/Emery DW 1 reflects a revenue deficiency of
107 \$816,909.
108

109 Q. **How was Carbon/Emery's revenue deficiency determined?**

110 Carbon/Emery is a rate-of-return regulated local exchange carrier in both federal and
111 state jurisdictions. Accordingly, Carbon/Emery maintains its accounting records in
112 accordance with the Federal Communications Commission's (FCC) Part 32 Uniform
113 System of Accounts ("USOA"), as required by Commission Rules.¹ As a result, the
114 Company's Amended Application complies with FCC rules guiding the measurement,
115 gathering, and allocation of the costs necessary to provide regulated telecommunications
116 services, including the FCC rules contained in Part 32 and Part 64 (Subpart I, Allocation
117 of Costs).

118
119 To determine Carbon/Emery's revenue deficiency, first the Company's rate base was
120 multiplied by a reasonable rate-of- return to determine the allowable return, which is
121 reflected in Cell F32 of Confidential Exhibit Carbon/Emery DW 1. Next, because the
122 Company's allowable return is an after- tax amount, it must be "grossed-up" to a level
123 that will sustain the required return after Carbon/Emery recognizes the associated federal
124 and state income taxes. The calculation of the Net to Gross Multiplier is identified in
125 Confidential Exhibit Carbon/Emery DW14. The net operating income is then deducted

¹ PSC R746-340-2

126 from the grossed up allowable return, which results in a revenue deficiency of \$816,909
127 is identified in Cell E2 of Confidential Exhibit Carbon/Emery DW 1.

128

129 **Q. Is Carbon/Emery charging its customers the Commission approved affordable base**
130 **rate?**

131 A. Yes. Carbon/Emery's rates are \$16.50 for basic residential (R1) service and \$26.00 for
132 basic business (B1) service per line per month.

133

134 **Q. Is Carbon/Emery proposing to recover the revenue deficiency of \$479,983 from the**
135 **UUSF?**

136 5 A. Yes. Carbon/Emery proposes that it recover an additional \$816,909 annually through
137 UUSF disbursements, in addition to the \$1,038,714 that Carbon/Emery is currently
138 receiving from the UUSF. This will enable Carbon/Emery to continue providing service
139 to its customers at an affordable rate, and to initiate capital projects that may have been
140 delayed by the Company's current insufficient earnings.

141

142 **Q. Have you calculated Carbon/Emery's Rate Base for purpose of this proceeding?**

143 A. Yes. Confidential Exhibit Carbon/Emery DW 2, attached hereto, provides a calculation
144 of the Company's total rate base. The Confidential Exhibit Carbon/Emery DW 2 begins
145 with historical Plant Balances for the beginning of 2014 and Plant Balances at the end of
146 2014, and calculates the 2014 Plant Balance Average. Known and measurable changes to

147 Rate Base are added to the Average Plant Balance to determine the Carbon/Emery's
148 Adjusted Rate Base.

149

150 **Q. When describing Confidential Exhibit Carbon/Emery DW 2 above, you indicate**
151 **that it contains adjustments for known and measurable changes to regulated rate**
152 **base. Please describe those adjustments.**

153 A. There is one adjustment to Rate Base contained in Exhibit Carbon/Emery DW 2: an
154 addition for Plant in Service. The increase to Plant in Service reflects an allocation of
155 shared vehicles, work equipment and computer to Carbon/Emery from Emery
156 Telecommunications & Video Inc. The shared assets benefit Carbon/Emery through
157 better utilization and cost sharing thus reducing the operating expense and capital needed
158 to sustain the regulated operations.

159

160 **Q. What cost of capital has Carbon/Emery used in this Amended Application?**

161 A. Carbon/Emery is using a composite rate of 10.50%.

162

163 **Q. Please explain how you arrived at Carbon/Emery's Cost of Capital.**

164 A. In accordance with UUSF policy, Carbon/Emery has calculated a blended cost of capital,
165 which represents the weighted average of an interstate rate of return of 11.45% and a
166 state rate of return of 9.86%. Carbon/Emery's intrastate cost of capital was derived using
167 the DPU's suggested imputed capital structure of 65% equity and 35% debt. For the
168 individual components of its capital structure, Carbon/Emery has used a cost of debt of

169 5.636% and a cost of equity of 12.13%, which results in a composite intrastate rate-of-
170 return of 9.86%².

171

172 The consolidated Company does not carry any long term debt; therefore the Company's
173 cost of debt was derived from debt that existed with CoBank during the 2013 base year.
174 The debt with CoBank carried a stated rate of 5.636% and was paid off in January 2014.

175

176 The interstate return of 11.45% is derived from NECA's Form 492 filing with the FCC
177 on September 30, 2014 for calendar year 2013 pool participants.

178

179 **Q. Please explain how the Company's blended Cost of Capital was derived.**

180 A. The Commission's Total Company Rule requires a "blending" of the authorized cost of
181 capital costs in the state and interstate jurisdictions. This weighting of the jurisdictional
182 capital costs was based upon the jurisdictional separation of Carbon/Emery's rate base in
183 accordance with the FCC's Part 36 rules. Carbon/Emery's Part 36 Jurisdictional
184 Separations are contained in Confidential Exhibit Carbon/Emery DW 8, attached hereto.
185 The Company's jurisdictional percentages (intrastate and interstate) are contained in
186 Confidential Exhibit Carbon/Emery DW 3, and are applied to the intrastate and interstate
187 costs of capital to determine the Weighted Cost of 10.50% as contained in Confidential
188 Exhibit Carbon/Emery DW 3.

189

² Carbon/Emery's requested cost of equity mirrors the cost of equity used and approved by the Commission in other

190 **Q. Can you describe Confidential Exhibit Carbon/Emery DW 4?**

191 A. Yes. Confidential Exhibit Carbon/Emery DW 4 contains the Trial Balances for 2013 and
192 2014, provided to assist the Division with its review of Carbon/Emery's revenue
193 deficiency.

194

195 **Q. Can you describe Confidential Exhibit Carbon/Emery DW 5?**

196 A. Confidential Exhibit Carbon/Emery DW 5 contains the Cash Working Capital
197 Calculation that supports the Cash Working Capital figure that is contained in the Rate
198 Base Calculation in Confidential Exhibit Carbon/Emery DW 2.

199

200 **Q. Please describe Confidential Exhibit Carbon/Emery DW 6?**

201 A. Confidential Exhibit Carbon/Emery DW 6 contains the Summary of Apportionment
202 Ratios by Account for 2013, which supports the jurisdictional separations contained in
203 Confidential Exhibit Carbon/Emery DW 8, and used in the calculation of the Rate of
204 Return and Cost of Capital in Confidential Exhibit Carbon/Emery DW 3. The 2013
205 apportionment ratios are summarized from the most recently available cost study
206 performed by Moss Adams for Carbon/Emery. This most recent cost study is included in
207 Confidential Exhibits Carbon/Emery DW 8 and 8a.

208

209 **Q. Please describe Confidential Exhibit Carbon/Emery DW 7.**

210 A. Confidential Exhibit Carbon/Emery DW 7 summarizes the known and measurable
211 changes that Carbon/Emery has included in its Amended Application which are included
212 in Confidential Exhibits Carbon/Emery DW 7, 7a, and 7b.

213

214 Confidential Exhibit Carbon/Emery DW 7a identifies a known and measurable change
215 for landline loss and projected revenue decrease.

216

217 Confidential Exhibit Carbon/Emery DW 7b details the shared asset allocation identified
218 as a known and measurable change to Rate Base in Confidential Exhibit Carbon/Emery
219 DW 2.

220

221 **Q. Please describe Confidential Exhibit Carbon/Emery DW 8.**

222 A. As previously indicated above, this Exhibit contains Carbon/Emery's Part 36
223 Jurisdictional Separations from the 2013 Cost Study performed by Moss Adams for
224 Carbon/Emery. Confidential Exhibit Carbon/Emery DW 8 represents the Carbon/Emery
225 portion of the separations; Confidential Exhibit Carbon/Emery DW 8a represents the
226 combined cost study area separations (Emery Telephone, Carbon/Emery Telcom, and
227 Hanksville Telecom).

228

229 **Q. Please describe Confidential Exhibit Carbon/Emery DW 8a.**

230 A. Confidential Exhibit Carbon/Emery DW 8a contains the Part 36 and Part 69 section of
231 Carbon/Emery's 2013 Cost Study for Combined Regulated Entities (Emery Telephone,
232 Carbon/Emery Telcom, and Hanksville Telcom).

233

234 **Q. Can you describe Confidential Exhibits Carbon/Emery DW 9a through 9i?**

235 A. Yes. Briefly, these Exhibits are separate portions of Carbon/Emery Cost Allocation
236 Manual which identify the various methods by which Carbon/Emery allocates various
237 costs amongst its separate companies:

238	Exhibit Carbon/Emery DW 9	Cost Allocation Manual - Accounting and General
239	Exhibit Carbon/Emery DW 9a	Cost Allocation Manual - CABS Allocator
240	Exhibit Carbon/Emery DW 9b	Cost Allocation Manual - Business Solutions
241	Exhibit Carbon/Emery DW 9c	Cost Allocation Manual - Outside Plant and 242 Dispatch
243	Exhibit Carbon/Emery DW 9d	Cost Allocation Manual - Inside Plant
244	Exhibit Carbon/Emery DW 9e	Cost Allocation Manual - Engineering
245	Exhibit Carbon/Emery DW 9f	Cost Allocation Manual - Billing and Collection
246	Exhibit Carbon/Emery DW 9g	Cost Allocation Manual - HR Allocation 2013
247	Exhibit Carbon/Emery DW 9h	Cost Allocation Manual - Regulated Allocator
248	Exhibit Carbon/Emery DW 9i	Cost Allocation Manual - CSR Allocator
249		

250 **Q. Have you provided Audited Financial Statements for 2014 with your Amended**
251 **Application?**

252 A. No. The 2014 Audited Financial Statements are not yet complete. I will supplement my
253 testimony with the 2014 Audited Financial Statements, 2014 Journal entries, and 2014
254 Audit Memorandum when we have received them.

255

256 **Q. Have you provided Audited Financial Statements with your Amended Application?**

257 A. Yes. Attached to this Amended Testimony as Confidential Exhibits 10, 10a, and 10b are
258 the 2013 Audited Financial Statements, 2013 Audit Journal Entries; and Year 2013 Audit
259 Exit Memo.

260

261 **Q. Can you describe Confidential Exhibits Carbon/Emery DW 11 and 12?**

262 A. Exhibit 11 contains a personnel chart and line of authority for Carbon/Emery, and Exhibit
263 12 illustrates Carbon/Emery's corporate structure.

264

265 **Q. Can you describe Confidential Exhibit Carbon/Emery DW13?**

266 A. Yes. Confidential Exhibit Carbon/Emery DW 13 describes Carbon/Emery's bad debt
267 expense net of collections during the 2014 base year. This data is presented in
268 conjunction with end-user sales revenue and as a percentage of this associated revenue.
269 Similar data for related parties is also presented for comparison.

270

271 **Q. Can you describe Confidential Exhibit Carbon/Emery DW 14?**

272 A. Yes. Confidential Exhibit Carbon/Emery DW 14 calculates the Utah "net to gross
273 multiplier" using both state and federal statutory tax rates. The long-established
274 regulatory principle of "grossing up" required return simply calculates the additional
275 income tax expense that Carbon/Emery – or any other rural LEC in the state - will incur
276 as a result of the increased revenue from the UUSF. By grossing up the required return,
277 Carbon/Emery sustains the required return after calculation of actual taxes.

279 Q. Do you believe that an increase in annual UUSF support in the amount of \$816,909
280 to Carbon/Emery is just and reasonable and in the public interest?

281 A. Yes.

282

283 Q. Does that conclude your direct testimony?

284 A. Yes it does.

BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

IN THE MATTER OF CARBON/EMERY)
TELCOM, INC.'S AMENDED APPLICATION)
FOR AN INCREASE IN UTAH UNIVERSAL)
SERVICE FUND SUPPORT)
)
)
Applicant)

Docket No. 15-2302-01

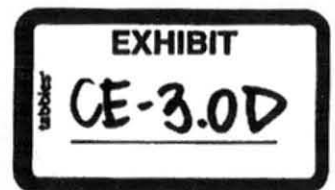
AMENDED DIRECT TESTIMONY

OF

DARREN WOOLSEY

ON BEHALF OF CARBON/EMERY TELCOM, INC.

April 2, 2015



1 AMENDED DIRECT TESTIMONY OF DARREN WOOLSEY

2 **Q. What is your name?**

3 A. My name is Darren Woolsey.

4
5 **Q. By whom are you employed and in what capacity?**

6 A. I am employed by Carbon/Emery Telcom, Inc. as its Chief Financial Officer.

7
8 **Q. Briefly describe your educational background and work experience.**

9 A. I received a Master of Accountancy Degree from Southern Utah University in 1992, and
10 subsequently earned the following certifications: Certified Public Accountant (CPA),
11 Certified Financial Manager (CFM) and Certified Managerial Accountant (CMA). I
12 worked in Public Accounting as an auditor for KPMG for four years beginning in 1992
13 and in private industry as an Accounting/Finance manager since that time until the
14 present. I have been employed as the CFO of Carbon/Emery Telcom, Inc. since 2006
15 where I am responsible for the management of the accounting, finance, and compliance
16 functions and employees.

17
18 **Q. On whose behalf are you presenting testimony?**

19 A. I am presenting testimony on behalf of Carbon/Emery Telcom, Inc. ("Carbon/Emery" or
20 "Company") in support of its Amended Application for Increased Support from the
21 UUSF.

22

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

24 A. The purpose of my testimony is to provide detailed explanations for selected financial
25 and statistical information supporting Carbon/Emery's Amended Application for an
26 Increase in UUSF Support. Specifically, I will provide testimony that will support
27 Confidential Exhibits Carbon/Emery DW 1-14 which are attached to this Amended
28 Testimony as Confidential Exhibits.

29
30 **Q. Why did Carbon/Emery file an Amended Application?**

31 A. The original filing made on March 27, 2015 incorrectly included tax preference items
32 (deferred taxes) related to non-rate base assets (acquisition adjustment – intangibles).

33 The improper inclusion resulted in an incorrect rate base reduction. This improper
34 inclusion required adjustment and a subsequent amendment to the original filing which is
35 being filed herewith.

36
37 **Q. Can you briefly summarize the changes found in the Amended Application and
38 your Amended Direct Testimony?**

39 A. The Amended Application includes an increase in the Rate Base, a minor change in the
40 Rate of Return (due to mix of Intrastate vs. Interstate assets), and an increase in required
41 UUSF including associated "gross-up" taxes. The total UUSF increase related to the
42 Amended Application is \$253,647, for a requested increase in UUSF of \$816,909.

43
44 **Q. Please identify the Exhibits to your testimony.**

- 45 A. The individual Carbon/Emery Confidential Exhibits include:
- 46 Exhibit Carbon/Emery DW 1 - UUSF Calculation Worksheet
47 Exhibit Carbon/Emery DW 2 - Rate Base Calculation
48 Exhibit Carbon/Emery DW 3 - Cost of Capital / Rate of Return Calculations
49 Exhibit Carbon/Emery DW 4 - Trial Balances - 2013 and 2014 (6 pages)
50 Exhibit Carbon/Emery DW 5 - Cash Working Capital Calculation
51 Exhibit Carbon/Emery DW 6 - Summary of Apportionment Ratios by Account -
52 2013
53 Exhibit Carbon/Emery DW 7 - Known and Measurable Adjustment Summary
54 Exhibit Carbon/Emery DW 7a- Landline Loss
55 Exhibit Carbon/Emery DW 7b- Local Service Rate Imputation to Base Affordable
56 Rate
57 Exhibit Carbon/Emery DW 7d- Shared Asset Allocation
58 Exhibit Carbon/Emery DW 8- 2013 Carbon/Emery Telcom Cost Study-Part 36 (28
59 pages)
60 Exhibit Carbon/Emery DW 8a- 2013 Cost Study - Combined Regulated Entities (57
61 pages)
62 Exhibit Carbon/Emery DW 9 - Cost Allocation Manual – Accounting and General
63 Exhibit Carbon/Emery DW 9a- Cost Allocation Manual - CABS Allocator
64 Exhibit Carbon/Emery DW 9b- Cost Allocation Manual - Business Solutions
65 Exhibit Carbon/Emery DW 9c- Cost Allocation Manual - Outside Plant and
66 Dispatch
67 Exhibit Carbon/Emery DW 9d- Cost Allocation Manual - Inside Plant
68 Exhibit Carbon/Emery DW 9e- Cost Allocation Manual - Engineering
69 Exhibit Carbon/Emery DW 9f- Cost Allocation Manual - Billing and Collection
70 Exhibit Carbon/Emery DW 9g- Cost Allocation Manual - HR Allocation 2014
71 Exhibit Carbon/Emery DW 9h- Cost Allocation Manual - Regulated Allocator
72 Exhibit Carbon/Emery DW 9i- Cost Allocation Manual - CSR Allocator
73 Exhibit Carbon/Emery DW10- 2013 Audited Financial Statements (34 pages)
74 Exhibit Carbon/Emery DW10a- 2013 Audit Journal Entries
75 Exhibit Carbon/Emery DW10b- Year 2013 Audit Exit Memo (7 pages)
76 Exhibit Carbon/Emery DW 11- Personnel Chart / Line of Authority
77 Exhibit Carbon/Emery DW 12- Corporate Structure
78 Exhibit Carbon/Emery DW 13- Bad Debt Expense and Subsequent Collections
79 Exhibit Carbon/Emery DW 14- Income Tax Gross up Calculation
80

- 81 Q. Were the Exhibits referred to above and the supporting workpapers prepared by
82 you or prepared under your supervision?

83 A. Yes, I prepared, or participated in the preparation of the Confidential Exhibits identified
84 above.

85

86 **Q. Why have you identified the Exhibits as confidential?**

87 A. The Exhibits, as prepared, contain proprietary financial information related to the
88 Company and its operations, which constitute trade secrets or are otherwise of such a
89 highly sensitive or proprietary nature that public disclosure would be inappropriate and
90 detrimental to the Company.

91

92 **Q. What is the proposed test period specified in the Amended Application and how was
93 it derived?**

94 A. Carbon/Emery proposes to use calendar year 2014 as the test period for the purpose of
95 determining the appropriate amount of UUSF support. Accordingly, the Application and
96 Confidential Exhibits are based upon financial information for the 12 months ending
97 December 31, 2014. This test period selection is consistent with the Commission's
98 historic treatment of rural local exchange carriers in Utah.

99

100 This historical "test period" was then adjusted for "known and measurable" changes in
101 operations, which more accurately reflect Carbon/Emery's ongoing cost of providing
102 telecommunications services. These pro forma adjustments are contained in Confidential
103 Exhibits Carbon/Emery DW 7, 7a, and 7b.

104

105 **Q. Have you calculated Carbon/Emery's Revenue Deficiency?**

106 A. Yes. Confidential Exhibit Carbon/Emery DW 1 reflects a revenue deficiency of
107 \$816,909.
108

109 **Q. How was Carbon/Emery's revenue deficiency determined?**

110 Carbon/Emery is a rate-of-return regulated local exchange carrier in both federal and
111 state jurisdictions. Accordingly, Carbon/Emery maintains its accounting records in
112 accordance with the Federal Communications Commission's (FCC) Part 32 Uniform
113 System of Accounts ("USOA"), as required by Commission Rules.¹ As a result, the
114 Company's Amended Application complies with FCC rules guiding the measurement,
115 gathering, and allocation of the costs necessary to provide regulated telecommunications
116 services, including the FCC rules contained in Part 32 and Part 64 (Subpart I, Allocation
117 of Costs).
118

119 To determine Carbon/Emery's revenue deficiency, first the Company's rate base was
120 multiplied by a reasonable rate-of- return to determine the allowable return, which is
121 reflected in Cell F32 of Confidential Exhibit Carbon/Emery DW 1. Next, because the
122 Company's allowable return is an after- tax amount, it must be "grossed-up" to a level
123 that will sustain the required return after Carbon/Emery recognizes the associated federal
124 and state income taxes. The calculation of the Net to Gross Multiplier is identified in
125 Confidential Exhibit Carbon/Emery DW14. The net operating income is then deducted

¹ PSC R746-340-2

126 from the grossed up allowable return, which results in a revenue deficiency of \$816,909
127 is identified in Cell E2 of Confidential Exhibit Carbon/Emery DW 1.

128

129 **Q. Is Carbon/Emery charging its customers the Commission approved affordable base**
130 **rate?**

131 A. Yes. Carbon/Emery's rates are \$16.50 for basic residential (R1) service and \$26.00 for
132 basic business (B1) service per line per month.

133

134 **Q. Is Carbon/Emery proposing to recover the revenue deficiency of \$479,983 from the**
135 **UUSF?**

136 A. Yes. Carbon/Emery proposes that it recover an additional \$816,909 annually through
137 UUSF disbursements, in addition to the \$1,038,714 that Carbon/Emery is currently
138 receiving from the UUSF. This will enable Carbon/Emery to continue providing service
139 to its customers at an affordable rate, and to initiate capital projects that may have been
140 delayed by the Company's current insufficient earnings.

141

142 **Q. Have you calculated Carbon/Emery's Rate Base for purpose of this proceeding?**

143 A. Yes. Confidential Exhibit Carbon/Emery DW 2, attached hereto, provides a calculation
144 of the Company's total rate base. The Confidential Exhibit Carbon/Emery DW 2 begins
145 with historical Plant Balances for the beginning of 2014 and Plant Balances at the end of
146 2014, and calculates the 2014 Plant Balance Average. Known and measurable changes to

147 Rate Base are added to the Average Plant Balance to determine the Carbon/Emery's
148 Adjusted Rate Base.

149

150 **Q. When describing Confidential Exhibit Carbon/Emery DW 2 above, you indicate**
151 **that it contains adjustments for known and measurable changes to regulated rate**
152 **base. Please describe those adjustments.**

153 A. There is one adjustment to Rate Base contained in Exhibit Carbon/Emery DW 2: an
154 addition for Plant in Service. The increase to Plant in Service reflects an allocation of
155 shared vehicles, work equipment and computer to Carbon/Emery from Emery
156 Telecommunications & Video Inc. The shared assets benefit Carbon/Emery through
157 better utilization and cost sharing thus reducing the operating expense and capital needed
158 to sustain the regulated operations.

159

160 **Q. What cost of capital has Carbon/Emery used in this Amended Application?**

161 A. Carbon/Emery is using a composite rate of 10.50%.

162

163 **Q. Please explain how you arrived at Carbon/Emery's Cost of Capital.**

164 A. In accordance with UUSF policy, Carbon/Emery has calculated a blended cost of capital,
165 which represents the weighted average of an interstate rate of return of 11.45% and a
166 state rate of return of 9.86%. Carbon/Emery's intrastate cost of capital was derived using
167 the DPU's suggested imputed capital structure of 65% equity and 35% debt. For the
168 individual components of its capital structure, Carbon/Emery has used a cost of debt of

169 5.636% and a cost of equity of 12.13%, which results in a composite intrastate rate-of-
170 return of 9.86%².

171

172 The consolidated Company does not carry any long term debt; therefore the Company's
173 cost of debt was derived from debt that existed with CoBank during the 2013 base year.
174 The debt with CoBank carried a stated rate of 5.636% and was paid off in January 2014.

175

176 The interstate return of 11.45% is derived from NECA's Form 492 filing with the FCC
177 on September 30, 2014 for calendar year 2013 pool participants.

178

179 **Q. Please explain how the Company's blended Cost of Capital was derived.**

180 A. The Commission's Total Company Rule requires a "blending" of the authorized cost of
181 capital costs in the state and interstate jurisdictions. This weighting of the jurisdictional
182 capital costs was based upon the jurisdictional separation of Carbon/Emery's rate base in
183 accordance with the FCC's Part 36 rules. Carbon/Emery's Part 36 Jurisdictional
184 Separations are contained in Confidential Exhibit Carbon/Emery DW 8, attached hereto.
185 The Company's jurisdictional percentages (intrastate and interstate) are contained in
186 Confidential Exhibit Carbon/Emery DW 3, and are applied to the intrastate and interstate
187 costs of capital to determine the Weighted Cost of 10.50% as contained in Confidential
188 Exhibit Carbon/Emery DW 3.

189

² Carbon/Emery's requested cost of equity mirrors the cost of equity used and approved by the Commission in other

190 **Q. Can you describe Confidential Exhibit Carbon/Emery DW 4?**

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192 2014, provided to assist the Division with its review of Carbon/Emery's revenue
193 deficiency.

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197 Calculation that supports the Cash Working Capital figure that is contained in the Rate
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206 performed by Moss Adams for Carbon/Emery. This most recent cost study is included in
207 Confidential Exhibits Carbon/Emery DW 8 and 8a.

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225 portion of the separations; Confidential Exhibit Carbon/Emery DW 8a represents the
226 combined cost study area separations (Emery Telephone, Carbon/Emery Telecom, and
227 Hanksville Telecom).

228

229 **Q. Please describe Confidential Exhibit Carbon/Emery DW 8a.**

230 A. Confidential Exhibit Carbon/Emery DW 8a contains the Part 36 and Part 69 section of
231 Carbon/Emery's 2013 Cost Study for Combined Regulated Entities (Emery Telephone,
232 Carbon/Emery Telcom, and Hanksville Telcom).

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234 **Q. Can you describe Confidential Exhibits Carbon/Emery DW 9a through 9i?**

235 A. Yes. Briefly, these Exhibits are separate portions of Carbon/Emery Cost Allocation
236 Manual which identify the various methods by which Carbon/Emery allocates various
237 costs amongst its separate companies:

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249		

250 **Q. Have you provided Audited Financial Statements for 2014 with your Amended**
251 **Application?**

252 A. No. The 2014 Audited Financial Statements are not yet complete. I will supplement my
253 testimony with the 2014 Audited Financial Statements, 2014 Journal entries, and 2014
254 Audit Memorandum when we have received them.

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256 **Q. Have you provided Audited Financial Statements with your Amended Application?**

257 A. Yes. Attached to this Amended Testimony as Confidential Exhibits 10, 10a, and 10b are
258 the 2013 Audited Financial Statements, 2013 Audit Journal Entries; and Year 2013 Audit
259 Exit Memo.

260

261 **Q. Can you describe Confidential Exhibits Carbon/Emery DW 11 and 12?**

262 A. Exhibit 11 contains a personnel chart and line of authority for Carbon/Emery, and Exhibit
263 12 illustrates Carbon/Emery's corporate structure.

264

265 **Q. Can you describe Confidential Exhibit Carbon/Emery DW13?**

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267 expense net of collections during the 2014 base year. This data is presented in
268 conjunction with end-user sales revenue and as a percentage of this associated revenue.
269 Similar data for related parties is also presented for comparison.

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273 multiplier" using both state and federal statutory tax rates. The long-established
274 regulatory principle of "grossing up" required return simply calculates the additional
275 income tax expense that Carbon/Emery – or any other rural LEC in the state - will incur
276 as a result of the increased revenue from the UUSF. By grossing up the required return,
277 Carbon/Emery sustains the required return after calculation of actual taxes.

278

279 Q. Do you believe that an increase in annual UUSF support in the amount of \$816,909
280 to Carbon/Emery is just and reasonable and in the public interest?

281 A. Yes.

282

283 Q. Does that conclude your direct testimony?

284 A. Yes it does.

BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

IN THE MATTER OF CARBON/EMERY)
TELCOM, INC.'S AMENDED APPLICATION)
FOR AN INCREASE IN UTAH UNIVERSAL)
SERVICE FUND SUPPORT)
)
)
Applicant)

Docket No. 15-2302-01

REDACTED NON-CONFIDENTIAL SUPPLEMENTAL DIRECT TESTIMONY

OF

DARREN WOOLSEY

ON BEHALF OF CARBON/EMERY TELCOM, INC.
(DOES NOT CONTAIN CONFIDENTIAL EXHIBITS)

April 24, 2015



1 SUPPLEMENTAL DIRECT TESTIMONY OF DARREN WOOLSEY

2 **Q. What is your name?**

3 A. My name is Darren Woolsey.

4
5 **Q. By whom are you employed and in what capacity?**

6 A. I am employed by Carbon/Emery Telcom, Inc. as its Chief Financial Officer.

7
8 **Q. Have you previously provided Direct Testimony in this matter?**

9 A. Yes. With the filing of Carbon/Emery Telcom, Inc.'s Amended Application for Increase
10 in UUSF on April 2, 2015 ("Amended Application"), I filed direct testimony in support
11 of the Amended Application. My testimony included Confidential Exhibits 1-14 (with
12 subparts).

13
14 **Q. What is the purpose of this Supplemental Direct Testimony?**

15 A. Included in my Direct Testimony were Exhibits 10, 10a, and 10b, which are the 2013
16 Audited Financial Statements, the 2013 Audit Journal Entries, and the Year 2013 Audit
17 Exit Memo. I indicated in my Direct Testimony, on lines 252-254 I indicated I would
18 supplement my testimony with the 2014 Audited Financial Statements, 2014 Journal
19 Entries, and 2014 Audit Memorandum when they were received from the auditors. The
20 purpose of my supplemental direct testimony is to provide, as Confidential Exhibit 15 to
21 the Supplemental Direct Testimony, the 2014 Audited Financial Statements, 2014 Journal
22 Entries, and 2014 Audit Memorandum for Carbon/Emery Telcom, Inc.

23

24 **Q. Is there anything contained in Confidential Exhibit 15 that would change the**
25 **amount of the UUSF requested?**

26 A. No.

27

28 **Q. Does that conclude your supplemental direct testimony?**

29 A. Yes it does.

BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

IN THE MATTER OF CARBON/EMERY)
TELCOM, INC.'S AMENDED APPLICATION)
FOR AN INCREASE IN UTAH UNIVERSAL)
SERVICE FUND SUPPORT)
)
)
Applicant)

Docket No. 15-2302-01

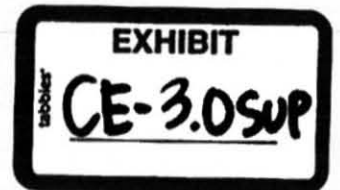
CONFIDENTIAL SUPPLEMENTAL DIRECT TESTIMONY

OF

DARREN WOOLSEY

**ON BEHALF OF CARBON/EMERY TELCOM, INC.
(CONTAINS CONFIDENTIAL EXHIBITS)**

April 24, 2015



1 SUPPLEMENTAL DIRECT TESTIMONY OF DARREN WOOLSEY

2 **Q. What is your name?**

3 A. My name is Darren Woolsey.

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11 of the Amended Application. My testimony included Confidential Exhibits 1-14 (with
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18 supplement my testimony with the 2014 Audited Financial Statements, 2014 Journal
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20 purpose of my supplemental direct testimony is to provide, as Confidential Exhibit 15 to
21 the Supplemental Direct Testimony, the 2014 Audited Financial Statements, 2014 Journal
22 Entries, and 2014 Audit Memorandum for Carbon/Emery Telcom, Inc.

23

24 **Q. Is there anything contained in Confidential Exhibit 15 that would change the**
25 **amount of the UUSF requested?**

26 A. No.

27

28 **Q. Does that conclude your supplemental direct testimony?**

29 A. Yes it does.

BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

IN THE MATTER OF CARBON/EMERY)
TELCOM, INC.'S APPLICATION FOR)
AN INCREASE IN UTAH UNIVERSAL)
SERVICE FUND SUPPORT)
)
Applicant)

Docket No. 15-2302-01

REVISED REDACTED REBUTTAL TESTIMONY

OF

DARREN WOOLSEY

ON BEHALF OF CARBON/EMERY TELCOM, INC.

September 4, 2015

(Revised Per Commission Order October 26, 2015)

BLACKBURN & STOLL, LC
Kira M. Slawson
Attorneys for Carbon/Emery Telcom, Inc.
257 East 200 South, Suite 800
Salt Lake City, UT 84111
Tel: 801-578-3578
kslawson@blackburn-stoll.com

ERRATA



23 2014 Audited Financial Statements, 2014 Journal Entries, and 2014 Audit
24 Memorandum when Carbon/Emery Telcom, Inc. received them from the auditors.

25

26 **Q. What is the purpose of your reply testimony?**

27 A. The purpose of my rebuttal testimony is to respond to the various testimonies
28 filed in this proceeding by the Division of Public Utilities (the "Division") and the
29 Office of Consumer Services ("Office"). In their testimonies, these parties
30 propose modifications to Carbon/Emery's Application for Increase in UUSF. In
31 this testimony, I recommend that the Commission modify or reject many of these
32 proposed modifications. Specifically, I will address the testimony of:

33

- William Duncan, Division of Public Utilities;
- Joseph Hellewell, Division of Public Utilities;
- Bion C. Ostrander, Office of Consumer Services; and
- David Brevitz, Office of Consumer Services.

34

35

36

37 **Q. Have you reviewed the testimony of the individuals you have identified**
38 **above?**

39 A. Yes.

40

41 **Q. Please identify the exhibits to your testimony.**

42 A. I am attaching the following Confidential Exhibits:

- Carbon/Emery Rebuttal Testimony of Woolsey - Cable Internet Migration -
43 Exhibit 1
44

- 45 • Carbon/Emery Rebuttal Testimony of Woolsey - A&G Allocator Analysis -
- 46 Exhibit 2
- 47 • Carbon/Emery Rebuttal Testimony of Woolsey - CSR Allocation - Exhibit 3
- 48 • Carbon/Emery Rebuttal Testimony of Woolsey - Depreciation - Exhibit 4
- 49

50 **Q. Could you please summarize your reply testimony?**

51 A. My testimony will focus on the particular adjustments that the Division of Public
52 Utilities and the Office of Consumer Services are recommending in the
53 testimonies filed on their behalf. Specifically, I will address:

- 54 ▪ Adjustment BCO-2: Allocate Corporate Overhead Expenses from Carbon to
55 ETV/Nonregulated Affiliates
- 56
- 57 ▪ Adjustment BCO-3: Remove Prepayments from Rate Base
- 58
- 59 ▪ Adjustment BCO-4: Deduct Long-Term Liabilities from Rate Base
- 60
- 61 ▪ Adjustment BCO-5: Remove 50% of telephone plant under construction
62 (TPUC) from Rate Base
- 63
- 64 ▪ Adjustment BCO-6: Remove 50% of materials & supplies ("M&S") from Rate
65 Base
- 66 ▪ Adjustment BCO-7: Reverse Carbon's Projected Access Line Reduction
- 67 ▪ Adjustment BCO-8: Remove Depreciation on Fully Depreciated Assets
- 68 ▪ Division of Public Utilities' adjustment on Depreciation
- 69 ▪ Adjustment BCO-9: Adjust Income Tax Expense and Reflect Interest
70 Synchronization
- 71

72 Q. **What else will you address in this rebuttal testimony?**

73 A. Carbon/Emery Telcom is proposing four adjustments to the UUSF request
74 contained in the initial filing which I will discuss in detail below. However, by way
75 of summary, the four adjustments are:

76 • A decrease in the three year land line loss projection to reflect actual land
77 line losses experienced through August 1, 2015. This adjustment reduces
78 Carbon's UUSF request by [REDACTED].

79 • An increase in revenue resulting from anticipated additional fiber to the
80 home (FTTH) customers. This adjustment is [REDACTED] increase in
81 revenue. This adjustment reduces Carbon's UUSF request by
82 [REDACTED].

83 • An adjustment to the amount of revenue requirement recognized by
84 Carbon/Emery Telcom (Carbon) for interstate special access services
85 referred to as "DSL revenue requirement". This adjustment accounts for
86 DSL revenue requirement reflecting the 2014 Interstate Cost Study filed in
87 July 2015, which was not available at the time of the initial filing. Carbon's
88 portion of this adjustment resulted in an increase of revenue in the amount
89 of [REDACTED] resulting in a decrease in the UUSF request.

90 • An adjustment related to long term liabilities in the amount of [REDACTED]
91 with a corresponding UUSF impact of [REDACTED] (10.5001% Carbon filed
92 rate of return).

93 As indicated, I discuss these adjustments in detail below, the combination of the
94 four proposed adjustments would result in a decrease of [REDACTED] from
95 Carbon's initial Application filing (-\$[REDACTED] - \$[REDACTED] + [REDACTED] - [REDACTED] =
96 -\$[REDACTED] plus the tax reduction effect on these adjustments of -\$[REDACTED].

97

98 **Q. Do you agree with Mr. Ostrander that UUSF proceedings warrant rigorous**
99 **analysis and oversight?**

100 **A.** Carbon/Emery Telcom consistently files annual reports with the Division of
101 Telecommunications and receives review and oversight. Furthermore, Carbon
102 has not filed for increased rates but has filed for an increase in distribution out of
103 the UUSF. Also, the Division and Office reviewed Emery Telcom and
104 Carbon/Emery Telcom in a similar proceeding in 2014. Mr. Ostrander's
105 testimony discredits the purpose of Universal Service by stating that no direct or
106 measurable benefit accrues to citizens in areas not receiving UUSF funding. The
107 very concept of Universal Service inherently recognizes the value of providing
108 affordable service to higher cost rural areas and connecting urban Americans to
109 their rural counterparts. Citizens in urban areas pay into the UUSF for the ability
110 to call citizens who live in high cost rural areas. Universal service benefits both
111 urban and rural customers and the Office of Consumer Services represents both
112 urban and rural consumers and is mandated to assess the impact of regulatory
113 action on all residential consumers and small businesses (both urban and rural).
114 All telephone customers pay into the UUSF. The desire to minimize the

115 payments into the UUSF should not outweigh the proper use of the funds to
116 further the public interest of providing service (including advanced services) to
117 rural end user phone customers and special access (small commercial)
118 customers. Additionally, it is critical to remember that carriers who receive UUSF
119 funding also have carrier of last resort and E911 obligations. Ubiquitous service
120 in Carbon's area would not be possible without federal and state universal
121 service support.

122

123 **Q. Are you familiar with the Office's adjustment BCO-2 which purports to**
124 **allocate corporate overhead expenses from Carbon to non-regulated**
125 **affiliates?**

126 **A.** Yes. Mr. Ostrander proposes a modification of Carbon's A&G Allocation factor.
127 In Carbon's Application, Carbon applied an A&G Allocation factor of [REDACTED]¹ to
128 regulated operations and [REDACTED]% to non-regulated operations. The A&G allocator
129 is used for several departments including CEO, Board of Directors and Public
130 Relations/Marketing (PR/MK). Mr. Ostrander proposes a change of the A&G
131 Allocation Factor to [REDACTED]/[REDACTED]% for CEO and Board of Directors and [REDACTED] reg
132 [REDACTED] non-reg for PR/MK.

133

¹ In Table BCO-2 in Mr. Ostrander's testimony he correctly identifies the A&G Allocation Factor as [REDACTED]/[REDACTED]% regulated to non-regulated. However, in Table BCO-4, and on line 711 of Mr. Ostrander's testimony, Mr. Ostrander incorrectly identifies the A&G Allocation Factors as [REDACTED]/[REDACTED]% regulated/non-regulated.

134 Q. **Do you agree with this proposed adjustment?**

135 A. No. As I detail below, Carbon's allocation factors are accurate and no adjustment
136 is needed. Mr. Ostrander's analysis is cursory and flawed. Mr. Ostrander states
137 that Carbon has inappropriately used allocators to overstate regulated allocated
138 expenses and understate non-regulated allocated expenses. However, much of
139 the analysis performed by Mr. Ostrander and included in his testimony in lines
140 738 to 779 was based on unconfirmed and inaccurate assumptions, and the data
141 used to perform many of the calculations was incorrect. This erroneous data was
142 then used to justify a proposal to change the CEO and Board allocations to 50%
143 reg 50% non-reg.

144
145 Q. **Please explain.**

146 A. It is Mr. Ostrander's opinion that costs have been shifted from non-regulated
147 entities to the regulated entities. To support this opinion, Mr. Ostrander
148 examined the Consolidated Financial Statements and "other information" which is
149 not identified in Mr. Ostrander's testimony. The Office found that "certain financial
150 data, allocations, and changes in amounts from year to year appear unusual or
151 appear to favor the non-regulated affiliates," and concluded without explanation
152 that "this type of information lends support for my adjustment to reallocate some
153 expenses from regulated to non-regulated operations."

154

155 Q Do you know what financial data, allocations, and changes in amounts
156 from year to year appeared unusual to Mr. Ostrander?

157 A. The Office referred to the net income for the regulated companies, and found that
158 the net income for the regulated companies decreased from [REDACTED] to [REDACTED] from
159 2013 to 2014. However, these numbers are incorrect. Review of the
160 Consolidated Financial Statements shows that the correct numbers regarding the
161 regulated companies' net income are [REDACTED] and [REDACTED] for 2013 and 2014
162 respectively, evidencing a reduction of regulated net income of [REDACTED] not
163 [REDACTED] as stated by Mr. Ostrander.

164

165 Q. Were you able to determine where Mr. Ostrander's regulated net income
166 numbers came from?

167 A. No, I was not, but I can explain the reduction in regulated net income, and clarify
168 why Carbon needs additional UUSF support. The decrease in regulated net
169 income was almost entirely recorded on the books of Emery Telcom (not Carbon)
170 as demonstrated below:

171

172 [CONFIDENTIAL TABLE REDACTED]

173 Source: 2013-14 audited financial statements as provided to the Office and DPU

174

175 As shown in the table above, the net income of Emery declined by [REDACTED].

176 The decrease is not the result of shifting costs, as inferred by Mr. Ostrander, but

177 primarily the result of lost revenue of [REDACTED] and to a lesser extent the investment
178 in FTTH resulting in increased depreciation of [REDACTED]. The largest revenue
179 decrease was due to a federally dictated loss of reciprocal compensation
180 revenue associated with CAF-ICC reform [REDACTED]. Other state access revenues
181 declined by [REDACTED], primarily as a result of this same CAF-ICC reform. Local
182 service revenues declined by [REDACTED] due to declining local service customers.
183 Billing and collection revenue declined by [REDACTED] as described in Emery's
184 response to DPU 4 2.2. Other revenue declines amounted to [REDACTED]. Emery
185 Telcom did experience some expense increases. Depreciation increased by
186 [REDACTED] as a result of increased investment. All other expenses however only
187 increased by [REDACTED]. This accounts for the change in net income of [REDACTED]
188 on Emery Telcom. The [REDACTED] increase in all expenses excluding depreciation
189 does not support the offices premise that costs were shifted from the non-
190 regulated entities to the regulated entities.

191 The majority of the regulated decline in revenue highlighted by Mr. Ostrander
192 was due to revenue decreases on Emery. Carbon did evidence a smaller
193 reduction in net income of [REDACTED] from 2013 to 2014 demonstrated in the chart
194 below:

195

196 [CONFIDENTIAL TABLE REDACTED]

197

198 Source: 2013-14 audited financial statements as provided to the Office and DPU.

199

200 This chart illustrates that Carbon actually had some revenue gain (special access
201 less a partial offset from land line loss), and that the loss in net income was
202 largely due to additional depreciation associated with recent and ongoing plant
203 additions.

204

205 **Q. So did expenses shift from the non-regulated companies to the regulated**
206 **companies?**

207 A. No. Expenses did not shift from non-regulated companies as suggested by Mr.
208 Ostrander. In fact, as shown, Carbon's "other expenses" only increased
209 [REDACTED] from [REDACTED] to [REDACTED].

210

211 **Q. What conclusions do you draw from a review of the net income numbers?**

212 A. The conclusions to be drawn from a top level financial analysis are as follows:

213

- 214
- there is no shift in allocated costs from the non-regulated entities
 - actual non-depreciation expenses did not change significantly in Carbon
215 or Emery
 - the decline in the net income of Carbon/Emery Telcom was not the result
216 of inappropriately allocating expenses in 2014, but rather it illustrates
217 consistency between the two years.
- 218
219

220

221 **Q. Did Mr. Ostrander's use of inaccurate numbers for regulated net income**
222 **affect his analysis?**

223 A. While I find it difficult to follow Mr. Ostrander's analysis, if his conclusion is that
224 "changes from year to year appear unusual", the "unusual" appearance could be
225 a result of his use of inaccurate numbers. In my opinion, the inaccurate numbers
226 and shallow analysis used by Mr. Ostrander make the analysis meaningless and
227 the conclusions reached unsupportable.

228

229 **Q. Why?**

230 A. The analysis is meaningless because Mr. Ostrander starts with inaccurate
231 numbers on regulated net income and these incorrect numbers flow through the
232 analysis causing Mr. Ostrander to incorrectly calculate the regulated companies'
233 profit margin. He then compares the inaccurate profit margin of the regulated
234 companies to his calculated profit margin on the non-regulated affiliates, which
235 Mr. Ostrander uses (in some unascertainable way) to support his adjustment to
236 reallocate "some expenses" between regulated and non-regulated operations. A
237 slightly deeper analysis than that performed by Mr. Ostrander, as discussed
238 above, evidences the reasons for the noted changes and shows why this course
239 is not supportable.

240

241 Q. Are the regulated companies net income and profit margins the only
242 numbers Mr. Ostrander has stated incorrectly in his analysis?

243 A. No. Mr. Ostrander identifies the ETV net income change from 2013 to 2014 as
244 [REDACTED]. The actual decrease in net income was [REDACTED]. Additionally, while
245 Mr. Ostrander correctly states the ETV net income in 2014 as [REDACTED], he
246 misstates ETV's percentage of total consolidated profit of [REDACTED]%. Mr.
247 Ostrander then discusses expenses where he highlights an increase in RLEC
248 expense of [REDACTED] (the operating expense increase is actually only [REDACTED])
249 and implies that this increase in regulated expenses corresponds to a similar
250 decrease in ETV expenses of the same amount of [REDACTED] (Operating expense
251 decrease was actually [REDACTED]). The implication in Mr. Ostrander's testimony is
252 that somehow this is related to a shift of costs from non-regulated to regulated
253 operations. This is misleading due to the errors in the numbers. However, the
254 increase in cost was a result of increased amortization and depreciation, which
255 are the result of company specific plant investments. The remaining actual costs
256 evidence only a slight increase in regulated costs of [REDACTED] and a slight
257 decrease in non-regulated costs of [REDACTED]. Accounting for the change in DSL
258 wholesale handling (discussed below), non-regulated operating expense actually
259 went up by [REDACTED] which does not support Mr. Ostrander's conclusion.

260

261 Q. What actually caused the decreases in ETV expenses and revenue?

262 A. The decline in both revenue and expenses in ETV related to a change in
263 accounting for the DSL wholesale revenue charged by the regulated company to
264 the non-regulated company which occurred when our new billing system was
265 implemented in the fall of 2013. The new billing method avoids showing the
266 revenue and matching expense in separate accounts on ETV and just moves the
267 revenue to the regulated companies where it ultimately ends up under the old or
268 new method. This change resulted in a [REDACTED] decrease in ETV revenue and
269 corresponding expense in 2014. The remaining decrease in ETV revenue is
270 related to a decrease of DSL subscribers (ETV) as they moved to higher speed
271 Cable Internet (ETV LLC) between 2013 and 2014. This revenue shift can easily
272 be viewed in the trial balances of the two non-regulated companies.

273

274 **Q. Did the Office have the trial balances of the two companies?**

275 A. Yes. The Office had the trial balances of the two companies, the General Ledger
276 of all companies and the consolidated financial statements with consolidating
277 information from 2012 to 2014. However, in the testimony of Mr. Ostrander, he
278 states "it is possible that the decrease in ETV's expense of [REDACTED] and the
279 corresponding increase in regulated RLEC expenses of [REDACTED] was the result of a
280 favorable shift of allocated expense from non-regulated operations to regulated
281 operations, but that cannot be confirmed." The reality, however, is that the GL
282 detail and allocation detail for both years were provided to the Office, and the
283 Office could have confirmed that the decreases in non-regulated expenses did

284 NOT result from a favorable shift of allocated expenses to regulated operations.
285 But Mr. Ostrander either did not perform this analysis or did not like the results.
286 Rather, he relied on supposition and unsupported assumptions to justify a
287 reduction in the allocation factor from █████% regulated to █████% regulated.

288
289 **Q. Was there anything else in Mr. Ostrander's testimony related to his**
290 **assertion that Carbon overstates its regulated allocated expenses and**
291 **understates its non-regulated allocated expenses that troubled you?**

292 **A.** Yes. Mr. Ostrander suggests that because ETV has profit, it can readily absorb
293 his allocation adjustments. This seems to imply that ability to pay is a proper cost
294 allocation factor. This position is not reasonable; it is not supported by analysis;
295 and it should be rejected by the Commission. It is unreasonable to have
296 profitability drive allocations or adjustments.

297
298 **Q. Do you find it unusual that the company does not have any allocation**
299 **factors that allocate 50% or more of expenses to nonregulated operations?**

300 **A.** No. Because the company direct codes many costs, not all of the costs are
301 subject to an allocation factor. Additionally, I am very familiar with the drivers
302 that were used to develop the allocators. With a proper understanding and
303 examination of the cost drivers, and analysis of the company's direct coding to
304 ensure the non-regulated companies are not favored, the allocators are very
reasonable. However neither my subjective opinion, nor anyone else's, should

306 be considered support for a cost allocation. Rather, any cost allocation factor or
307 method should be supported by data, which Mr. Ostrander failed to provide.
308 Carbon has provided that data in response to various data requests to support its
309 allocation factors.

310

311 **Q. Mr. Ostrander suggests that total revenue and expenses can be used to**
312 **determine the appropriate allocation factors. Do you believe the total**
313 **revenue and expenses are rational drivers of costs?**

314 **A.** No. Revenue could be an appropriate standard to use to allocate costs if a
315 company had homogenous products. For example, if the consolidated entity of
316 Carbon/Emery Telcom consisted solely of Emery Telcom, Carbon Emery
317 Telcom, and Hanksville Telcom offering similar products at similar prices, then
318 revenue could be used without significant distortion (see possible exception
319 noted below). However when a consolidated entity offers non-homogenous
320 services, such as cable television, broadband internet, long haul transport, and
321 newsprint, as in the case of the consolidated entities of Carbon/Emery Telcom,
322 revenue is an illogical basis to use when developing cost allocations.

323

324 **Q. Please explain why revenues are not a rational driver of costs.**

325 **A.** As an example, consider this UUSF proceeding. Carbon/Emery Telcom is
326 requesting an additional [REDACTED] in UUSF funding. If Carbon is successful and
327 receives this additional revenue, a cost allocation based on revenue would result

328 in increased expenses going to Carbon Emery Telcom. At first this may seem
329 rational because a large amount of expenses were incurred to go through this
330 process (although those costs are not likely to continue). However, let's now
331 assume that Carbon incurs these same expenses and Carbon/Emery Telcom's
332 current USF of [REDACTED] is reduced to 0, as is being proposed by Mr. Ostrander.
333 A cost allocation based on revenue would then result in a reduction of cost to
334 Carbon/Emery Telcom. It is inappropriate to assume that the dollar result of a
335 UUSF proceeding should determine cost allocations. The fact that a UUSF case
336 is undertaken could be considered a reason for direct coding or maybe even a
337 temporary driver, but the result of the UUSF case should not be.

338
339 A second example is special access transport revenue earned from a route
340 provided significantly across ETV leased fibers from Grand Junction CO to Salt
341 Lake City, Utah. This route generates revenue with only a handful of customers
342 and related billing and compliance issues. The lease also provides for
343 maintenance, thus ETV is not allowed to work or manage work on the fibers
344 under such lease. As a result, this fiber generates revenue with no significant
345 management attention, billing complexity, compliance, or customer service. If
346 overhead costs were allocated on revenue ETV would receive an inappropriately
347 high level of costs unsupported by actual management time based on the
348 revenue from this route.

350 Similarly, but to a lesser extent, internet revenue generated by internet
351 customers on ETV and ETV LLC are much easier to manage as a one or two line
352 item billing compared to a phone customer with franchise fees, excise tax, sales
353 tax, E911, subscriber line charges, ARC charges, poison control, EAS, local
354 service, call features, universal service fees, and the associated billing and
355 compliance associated with all of these billing line items. These examples
356 highlight the inappropriateness of revenue as a cost driver. This example also
357 begins to show why the billing records are reflective of associated management
358 time in managing the complexity of regulated operations including compliance,
359 regulatory changes, proceedings, and oversight of CSR and administrative
360 employees.

361

362 **Q. Do you believe expenses are a rational driver of costs?**

363 A. No. Expenses are not a rational driver of costs.

364

365 **Q. Why not?**

366 A. There are significant direct coded expenses that have no relationship to the
367 amount of time spent by the CEO, Board, Marketing/PR, or CSR's. One of the
368 best examples that illustrates the problem with using expense as a substitute for
369 a substantive cost driver can be seen with the expenses of Emery Telcom Video
370 LLC (ETV LLC). The single largest expense category on the non-regulated
371 entities is Cable TV programming costs in ETV LLC. These costs totaled

372 [REDACTED] for 2014 (activity 73 in account 7962.61 in previously provided GL
373 detail). This cost alone is similar to [REDACTED], yet programming and
374 negotiation is handled through ETV LLC's association with the National Cable
375 Television Cooperative (NCTC) leaving very little management time related to
376 cable TV programming. If expenses were used as an allocation basis, significant
377 costs would be inappropriately allocated to ETV LLC. It simply is not logical that
378 a random programming cost increase would result in additional CEO cost
379 allocation. There is no reasonable correlation.

380

381 **Q. Do the "billing record" inputs to the company's A&G allocation factor have**
382 **a "direct" or "cost-causative" relationship to the expenses in the**
383 **department cost pool that they are used to allocate?**

384 **A.** Yes. Billing records are representative because they are representative of the -
385 types of services, number of customers, complexity of regulatory compliance,
386 and issues that the CEO/Board, and Marketing represent. Forward looking plans
387 are extensions of or improvements to the existing services and have focused
388 primarily of regulated issues since 2011 when CAF/ICC reform was implemented
389 and continues today with ACAM model based support proposals being
390 considered by the FCC. Billing records also reflect forward looking CEO plans
391 board decisions, and marketing efforts as these efforts can be measured in
392 resulting customer growth in new and existing areas. Extension of plant to new

393 customers and areas is also reflected in the billing records on a slight lag. This
394 allocator is updated frequently.

395

396 **Q. What is your assessment of the revised A&G allocator calculation**
397 **performed by Mr. Ostrander?**

398 A. Carbon/Emery Telcom is not opposed to the idea of considering other cost
399 causative drivers in addition to billing records to maintain the accounting and
400 general allocator. As was pointed out by Mr. Ostrander, drivers in addition to
401 billing records have been used by Carbon/Emery Telcom in the past. However, I
402 do not agree with all of the Offices proposed drivers, or its methodology in
403 considering those drivers.

404

405 **Q Which of the proposed drivers suggested by Mr. Ostrander to you reject?**

406 A. I reject the use of "Revenue" and "Expenses" as cost allocators. For the reasons
407 I discussed above "Revenue" and "Expenses" are not at all appropriate to use to
408 develop allocations.

409

410 **Q. Do you agree that Plant can be used as an input for developing cost**
411 **allocators?**

412 A. Yes. Carbon/Emery Telcom could consider Plant as a possible cost driver to
413 determine the accounting and general allocator. If "plant" were to be used,
414 "Gross Plant" would be a better indicator than "Net Plant" because the regulated

415 entities use group asset depreciation per FCC part 32 whereas the non-regulated
416 entities use single asset straight line depreciation. Because group asset
417 depreciation has had an accelerated effect on the regulated entities, use of net
418 plant as an indicator for cost allocation would result in an artificially low allocation
419 to the regulated entities to the extent of the accelerated depreciation.

420
421 Also, when using Plant as a proposed driver, shared assets need to properly
422 accounted for and shown on the books of the correct entity based upon allocation
423 of that asset, not ownership. As indicated in Carbon's Application, to reduce
424 duplication of equipment and costs, the Carbon/Emery Telcom entities share
425 certain equipment, vehicles, and computers. This shared equipment is recorded
426 on the books of ETV. This cost of this shared equipment is then allocated to the
427 various related party entities based upon usage or other allocators. The shared
428 equipment is presented and discussed in the initial filing as Exhibit 7b – Shared
429 Assets and this exhibit was used as the basis for a rate base adjustment to
430 include the appropriate portion of shared equipment in the rate base of Carbon.
431 Therefore, an allocator based upon plant would need to reflect the portion
432 allocated to each entity to prevent the overstatement of assets on ETV and
433 related understatement on each of the other Carbon/Emery related entities. Mr.
434 Ostrander's analysis of plant as a driver does not take these issues into
435 consideration.

437 Q. Are there other inputs that Carbon agrees are appropriate?

438 A. Yes. Carbon believes that records and payroll can also be valuable inputs in
439 determining the appropriate A&G Allocation factor.

440

441 Q. Has the Office employed the proper methodology for considering these
442 allocation inputs?

443 A. No. The calculation performed by Mr. Ostrander in "Confid. 15-2302-01 - Ostr.
444 WP 1.3 - Adj. BCO-2 (OCS DR 2-40 CAM Alloc.).xlsx" uses an equal weighting
445 of the various dollar types and records. This method skews the allocation to the
446 highest dollars (revenue and net plant totaling [REDACTED]) and essentially gives
447 no weight to billing records ([REDACTED]). A more reasonable approach is to
448 assume that each of the drivers, if representative, should be given equal
449 weighting. This can be easily accomplished by taking the average of the
450 resulting allocation percentages of each appropriately identified driver.

451

452 Q. Have you recalculated the Accounting and General Allocator using
453 additional inputs as suggested by Mr. Ostrander?

454 A. Yes. Carbon recalculated the A&G Allocator using Gross Plant (properly adjusted
455 for shared assets), Monthly Records, and Payroll, and then weighted each
456 associated allocation percent equally. This produced essentially the same
457 allocation as was used by Carbon in the initial application [REDACTED]% Emery (ET),
458 [REDACTED]% Carbon/Emery (CT) and [REDACTED]% Hanksville (HT) (74.42% total to regulated

459 entities) as opposed to █████% ET, █████% CT, and █████% HT (█████% total to
460 regulated entities). This calculation can be viewed in Carbon/Emery Rebuttal
461 Testimony of Woolsey – A&G Allocator Analysis - Exhibit 2.xlsx.

462
463 Although the revised allocation would result in slightly greater expenses being
464 allocated to the regulated entities (█████%), because of the insignificance of the
465 increase, I am of the opinion that the base year is representative and no
466 adjustment is necessary.

467
468 **Q. The Office proposed a different basis for Public Relations/Marketing**
469 **allocations. Do you agree with the proposed adjustment?**

470 **A.** No. Mr. Ostrander's proposed PR/MK adjustment premise is that because there
471 are three services and the one regulated service should be then allocated 33% of
472 the cost; he then randomly decides 25%. Neither the 33% or the 25% is backed
473 by substantive support. The three services considered by Mr. Ostrander were
474 IPTV, Internet, and Phone. The affiliated companies of Emery do not offer IPTV
475 but do offer Cable TV.

476 When considering how to allocate costs for marketing, if certain services are not
477 advertised at all they should get little or no allocation of costs, conversely if a
478 particular service appears more frequently it should receive an increased
479 allocation. With this in mind, only considering the number of services offered, is
480 over simplistic as it does not consider the focus or frequency of marketing efforts

481 of these services. If services are specifically non-regulated and do not contain
482 phone advertising they are direct coded as is the case with Moab advertising
483 which is all direct coded to non-regulated entities and reduces the actual amount
484 of PR/MK subject to the allocator. In the regulated operating areas, phone
485 receives a primary focus either directly or through bundles. Due to decreased
486 interest in land lines, the advertising of bundles is critical to the success and
487 survival of Carbon. Bundles in the regulated operating areas are designed to be
488 Phone and "something else" either LD, cable, internet provided over regulated
489 plant, or internet provided over non-regulated plant. Whenever a bundle is
490 advertised and sold the regulated entity benefits. This benefit is enhanced by the
491 sale of long-distance or DSL which are tied to the regulated entity due to the
492 requirement to have a land line or to allocate additional loop cost (DSL revenue
493 requirement) for standalone DSL. Thus, the actual sales (and advertising) of LD,
494 DSL, and Bundles in general, benefit the regulated entity and cost should reflect
495 this.

496
497 As of December 31, 2015, nearly [REDACTED] of the customers in the Carbon serving
498 area are phone customers ([REDACTED] phone vs [REDACTED] (internet and cable). Of the
499 internet customers [REDACTED] were DSL making them also regulated customers (ETV
500 purchases wholesale DSL special access service from Carbon). The number of
501 Carbon serving area customers being serviced by regulated plant is [REDACTED] or
502 [REDACTED] %.

503

504 In the absence of a more appropriate allocation basis, the current use of the A&G
505 allocator by Carbon for PR/MK is reflective of the results of marketing efforts and
506 is comparable to the customers being served by regulated vs non-regulated
507 plant.

508

509 **Q. In addition to the A&G Allocation change and PR/MK Adjustment, the Office**
510 **is proposing an adjustment to the CSR Allocator. Do you agree with the**
511 **proposed adjustment?**

512 **A. No. Mr. Ostrander's proposed CSR adjustment contains a variety of errors.**

513

514 **Q. What errors are contained in the CSR adjustment being proposed by the**
515 **Office?**

516 **A. Mr. Ostrander states that the CSR allocator should be adjusted from [REDACTED]%**
517 **regulated and [REDACTED]% non-regulated to [REDACTED]% regulated and [REDACTED]% non-**
518 **regulated. However, Mr. Ostrander has not provided any data or evidence to**
519 **support this conclusion. There is no evidence that Mr. Ostrander's opinion of**
520 **how CSR costs should be allocated is more accurate than the time study**
521 **performed by Carbon in 2010. In fact, it would appear that Mr. Ostrander did not**
522 **verify any of his findings related to CSR's in the Office data requests, and as a**
523 **result, Mr. Ostrander made several errors in his testimony related to the CSR**
524 **Allocation factor.**

525

526 **Q. Please identify the errors you are referring to.**

527 A. In Mr. Ostrander's calculation of CSR costs he uses [REDACTED] total CSR dollars
528 as a basis for allocating 2014 CSR costs, the correct amount of total CSR costs
529 is [REDACTED] which results in a 35% misstatement upfront and makes any
530 resulting proposed adjustment wrong. This data is a subset of total allocations
531 given to the Office in DR 2-40. Carbon has utilized an Excel pivot table to
532 summarize the data and demonstrate the error, see Carbon Emery Rebuttal
533 Testimony of Woolsey – CSR Allocation - Exhibit 3.xlsx. The error was limited to
534 this one data point. From the pivot table you can see that total expenses subject
535 to allocation tie to Mr. Ostrander's analysis showing [REDACTED] in total allocated
536 expenses. The highlighted green numbers on Carbon Emery Rebuttal Testimony
537 of Woolsey – CSR Allocation - Exhibit 3.xlsx also tie to amounts shown for
538 Board, CEO, Marketing/PR, and Human Resources. The CSR allocation amount
539 does not tie and should have been [REDACTED].

540

541 Mr. Ostrander states that there are [REDACTED] CSR's per DPU 1-4(b), then goes on to
542 state that "It is not clear why [REDACTED]%, or a substantial majority of these CSR costs
543 would be allocated to regulated operations". DPU 1-4(b) does not indicate that
544 [REDACTED]% of CSR costs were allocated to the regulated entities. It does however
545 clearly demonstrate that there were [REDACTED] different CSR's between January 31,
546 2012 and April 1, 2015. Mr. Ostrander failed however to notice that there were

547 also [REDACTED] additional "CSR/Advanced Trouble Shooting" employees making [REDACTED]
548 total CSR's that worked in any given month over the 40 month period presented.
549 His count does not consider turnover, part-time, or temporary employment. Mr.
550 Ostrander also failed to notice that there was a table at the bottom of this data
551 request that clearly demonstrates the number of employed employees in any
552 given month. The summary is presented below with highlights for the base year
553 and a summary at the bottom of the sheet:

554

555

556 [CONFIDENTIAL TABLE REDACTED]

557

558

559 Source: DPU DR 1-4b Emery & Carbon - Employee List.xlsx (highlights and summary of
560 CSR counts below data added)

561

562 **Q. Please explain this data.**

563 A. Though there were a total of [REDACTED] total different employees employed during the
564 40 month period the number employed in any given month was never more than
565 [REDACTED]. The average number of CSR's during the base period was [REDACTED] From this
566 [REDACTED] an adjustment needs to be made for part-time employees to arrive at full
567 time equivalents. There are [REDACTED] part-time employees, so a reduction of [REDACTED]
568 employees brings the FTE employee count average to [REDACTED]

569

570 Q. Do all of the [REDACTED] FTE CSR employees use the CSR allocator for their
571 primary coding?

572 A. No. Out of the [REDACTED] FTE employees there are [REDACTED] dispatch CSR's that primarily
573 use the dispatch allocator which more closely follows plant labor. There are also
574 [REDACTED] CSRs included in the advanced trouble shooting CSR group and [REDACTED] Moab
575 CSR who's coding is all to non-regulated entities (ETV and ETV LLC). This
576 essentially lowers the actual number of CSR's using the CSR allocator for their
577 primary coding to [REDACTED]

578

579 Q. What other changes have you made with respect to CSRs?

580 A. In conjunction with the establishment of the troubleshooting group, additional
581 plant troubleshooting software tools were given to the CSR group to diagnose
582 initial trouble calls. If a CSR determined that the trouble is not isolated to the
583 outside plant, the call is passed to the advanced trouble shooting group. This
584 greatly reduces the amount of time the CSR's spend with non-regulated
585 customers. These changes were made as DSL and Cable internet customers
586 increased, and despite the increased number of customers, the additional tools
587 and cooperation between advanced troubleshooting has allowed customers to be
588 served without requiring a significant increase in CSRs. The CSRs' actual time
589 can be reviewed with a Pivot table on DPU DR1-4a Emery & Carbon- Labor
590 Reports – testimony analysis.xlsx the pivot reveals the following:

591

592

593

594 [CONFIDENTIAL TABLE REDACTED]

595

596

597 Source: Carbon Response to DPU DR 1-4a Emery & Carbon-Labor Reports –

598 testimony analysis.xlsx

599

600 **Q. What does the Pivot table show?**

601 A. The Pivot table reflects the final disposition of all CSR Labor and shows use of
602 CSR, Dispatch, Directory, and Moab CSR distributions as well as direct coding.

603 The results indicate that more CSR time is actually coded to the non-regulated
604 entities than the regulated entities (████% non-reg vs █████% regulated). As the

605 current actual coding is highly non-regulated and combines the proper use of

606 direct coding and representative allocators based on real cost drivers, the

607 hypothetical allocator proposed by Mr. Ostrander is not appropriate and is wholly

608 without basis.

609

610 **Q. The Office is proposing several adjustments to your rate base accounts.**

611 **How did you determine the rate base accounts used in Carbon's**

612 **Application?**

613 A. Carbon/Emery Telcom relied on pages 17 and 18 of the Incumbent Local
614 Exchange Carrier Annual Report to the Public Service Commission of Utah
615 (Annual Report) for guidance in determining appropriate rate base accounts.
616 Carbon's Annual Report for the period January 1, 2014 to December 31, 2014
617 was submitted to the PSC and has been provided to the Office and DPU. Page
618 17 of the Annual Report lists the net telecommunications plant in service by
619 account. Page 18 is entitled "Other Rate Base Accounts" and includes a listing
620 of accounts typically considered as part of the rate base. A snap shot of
621 Carbon's 2014 report is shown below as an example of the included accounts:

622 [CONFIDENTIAL EXCEPRT FROM ANNUAL REPORT REDACTED]

623
624

625 Generally the asset accounts listed in the Annual Report are added to the rate
626 base and certain liability accounts are deducted from the rate base. Carbon
627 included these accounts in the Rate Base in its Application as has been the
628 practice in the previous proceedings before the PSC. Carbon has not departed
629 from the accounts prescribed by the Utah PSC in their Annual Report nor
630 changed the common practice with respect to rate case or UUSF filings.

631
632

633 **Q. Mr. Ostrander has identified 4 adjustments to rate base including**
634 **Prepayments (BCO-3), Long-Term Liabilities (BCO-4), Telephone Plant**

635 **Under Construction (BCO-5), and Materials and Supplies (BCO-6). Do you**
636 **agree with any of these adjustments?**

637 A. Yes, one. I believe that deducting the Long-Term Liabilities from Rate Base
638 (BCO-4) is appropriate. Carbon originally did not consider the deduction of a
639 post retirement benefit obligation because it was not specifically identified as a
640 liability account on the PSC report. Upon examination of the nature of this
641 account as well as the handling for interstate purposes as noted by Mr.
642 Ostrander, I agree that a reduction from rate base should be made. I do not,
643 however, agree with Mr. Ostrander's Part 36 value used for this adjustment. The
644 Long-Term liability represents post-retirement health care related obligations and
645 is appropriately removed from rate base because the company has already
646 recovered the expense that created the liability in prior years. However, the total
647 liability needs to be reduced by:

- 648 • the portion created through non-income statement adjustments (other
649 comprehensive income); and
- 650 • the portion that was allocated to other non-regulated entities.

651 Considering these adjustments, [REDACTED] is the amount that should remain on
652 Emery, Carbon, Hanksville. Only Carbon's portion, in the amount of [REDACTED],
653 should be deducted from Carbon's rate base. This amount differs slightly from
654 the Part 36 amount identified by Mr. Ostrander due to the adjustments for other
655 comprehensive income mentioned above.

657 Q. Do you agree with BCO-3 related to prepayments?

658 A. No. I reject the appropriateness BCO-3. The inclusion of prepaid expenses is
659 straight forward and allowed by practice. This policy should not be changed.

660

661 Q. Do you agree that telephone plant under construction (TPUC) should be
662 excluded from rate base (BCO-5)?

663 A. No. With respect to the adjustment BCO-5, Mr. Ostrander seeks to remove 50%
664 of TPUC in the amount of [REDACTED] and provides two reasons for its exclusion.
665 The first is his opinion that a normalized basis of TPUC would result in a lower
666 and more appropriate TPUC value. Though normalization conveniently reduces
667 TPUC, it does not recognize that these are actual capital expenditures, that
668 TPUC is directly tied to plant investment, and that a lower TPUC just means the
669 assets have moved to another rate base account (plant in service) or have not
670 occurred yet. Carbon is not proposing known and measurable plant additions in
671 TPUC. Rather, Carbon is only including actual plant expenditures which
672 currently reside in TPUC. This is not an account that should be normalized to
673 find an "appropriate" operating level. This account by its very nature accurately
674 reflects actual plant expenditures.

675

676 Q. What is the second reason that Mr. Ostrander gives for removing 50% of
677 TPUC?

678 A. Mr. Ostrander also suggests that we should consider the "matching principle"
679 which is a GAAP principle not a "regulatory" principle. Matching attempts to align
680 the financial impact of actual events to the periods in which they occur. As
681 examples:

- 682 • a retail sale should match corresponding reductions in inventory and
683 recognition of cost of goods sold in the same period;
- 684 • expensing of a prepaid should be ratably over the periods of benefit;
- 685 • in the case of assets, they are not depreciated until they are placed in
686 service;
- 687 • likewise existing assets that new assets are to replace are not reduced on
688 the books until they incur an impairment or are actually taken out of
689 service.

690 Mr. Ostrander's strange interpretation of mismatching does not provide adequate
691 basis for adjustment; by suggesting that Carbon should somehow project an
692 offset to the inclusion of TPUC of events that have not occurred. With respect to
693 capital expenditures I have never heard of projecting future revenues, affiliate
694 transactions, or disposals related to an asset addition that have not yet occurred
695 under the theory of matching. This would in fact be a violation of both the
696 matching principle which requires a transaction to be recorded in a correct period
697 and also a violation of a second GAAP principle which prevents the recognition of
698 contingent gains. Mr. Ostrander's arguments on removing 50% of TPUC should
699 be rejected.

700

701 **Q. Do you agree with the Offices' proposed adjustment for Materials and**
702 **Supplies contained in BCO-6?**

703 A. No. In BCO-6, Mr. Ostrander has proposed a reduction in materials and supplies
704 to a "normalized" lower level arguing that the current level is artificially high.
705 While the current level of materials and supplies on site is higher than historical
706 levels, the higher level is real, on site, and necessary due to several factors:

- 707 • Carbon is experiencing increased construction activity associated
708 with the FTTH curb and business district in Price;
- 709 • Carbon's lead time on fiber and fiber related products has
710 increased. Carbon is currently experiencing delivery delays of three
711 to six months.
- 712 • As a result of the increase lead times with vendors, Carbon is
713 required to keep more inventory on hand to prevent shortages, and
714 work stoppages that will result if required fiber and fiber facilities
715 are not on site.

716 The increased level of inventory is anticipated for at least the next five years and
717 is properly reflected in the rate base at full value.

718

719 **Q. The Office is proposing a depreciation adjustment on assets that the Office**
720 **believes are either fully depreciated or will be fully depreciated in about 2**
721 **years (BCO-8). Do you agree with this depreciation adjustment?**

722 A. No. Mr. Ostrander refers to his adjustment of BCO-8 as "remove depreciation
723 expense on fully depreciated assets". Carbon has not depreciated any asset in
724 excess of the book value of the asset. We assume that what Mr. Ostrander is
725 attempting to describe is the effect of group asset depreciation. As indicated in
726 the testimony of Douglas Meredith, group asset depreciation is an FCC
727 prescribed method of depreciation which can have an accelerating effect on
728 depreciation in cases where there are older assets included in the group subject
729 to a depreciation calculation. However, group asset depreciation only
730 accelerates depreciation; it does not result in over-depreciation (depreciation in
731 excess of the book value) of any asset.

733 **Q. What errors has Mr. Ostrander made in his depreciation adjustment**
734 **contained in BCO-8?**

735 A. Mr. Ostrander's BCO-8 claims to reduce "depreciation expense by [REDACTED]
736 (and corresponding increase in accumulated depreciation in rate base of
737 [REDACTED] on assets that are either fully depreciated or [sic] will be fully
738 depreciated within about [REDACTED] years." Mr. Ostrander provides no rationale for his
739 recommendation to exclude depreciation expense in the amounts [REDACTED] for
740 Other Work Equipment and [REDACTED] for Interexchange Circuit Equipment. He
741 states that these accounts became fully depreciated in 2014 so he just excludes
742 the entire amount. This position assumes no continuing investment which would
7 result in the continuation of depreciation. Continued investment is anticipated

744 since the company is a going concern, and I assert that the depreciation levels
745 projected in the base year are representative of expected levels for at least the
746 next five years based upon this investment.

747

748 **Q. Are there other accounts that Mr. Ostrander adjusted besides "Other Work**
749 **Equipment" and "Interexchange Circuit Equipment"?**

750 A. Yes. Mr. Ostrander concludes that the deprecation in accounts for Subscriber
751 Circuit Equipment and Aerial Cable is currently overstated and that it will largely
752 disappear in four years [REDACTED] years for the accounts subject to his
753 adjustment). This position again erroneously assumes no continued investment
754 and no disposals. Additionally, there is no determination whether the current
755 depreciation level of the chosen account groups is materially accelerated or is a
756 representative amount. A summary of data for the two targeted adjustment
757 accounts is as follows:

758 [CONFIDENTIAL TABLE REDACTED]

759

760 Source: From Confid. - 15-2302-01 Ostr. WP 1.8 - Adj. BCO-8 - DPU 1-11 Deprec.
761 Exp.xlsx – tab Dep Calc. and FCC 481 filing.

762

763 **Q. What does the above table show with regard to Subscriber Circuit**
764 **Equipment?**

765 A. The first targeted account, Subscriber Circuit Equipment [REDACTED], with a GBV
766 and NBV of [REDACTED] and [REDACTED] respectively and a depreciation life of [REDACTED]
767 years is completely appropriate at its current depreciation level. The Subscriber
768 Circuit Equipment Account consists largely of legacy DSLAM type equipment
769 which will be replaced by FTTH network interface device equipment beginning in
770 earnest in 2017. Taking the Gross Book Value (GBV) of [REDACTED] and dividing it
771 by the asset life of [REDACTED] years results in [REDACTED] of depreciation expense per
772 year, which evidences little acceleration from the current year actual depreciation
773 at [REDACTED]. Because the legacy equipment is being disposed and replaced in
774 the same year the old equipment will be fully depreciated the current level of
775 depreciation is appropriate. This also shows that depreciation will remain very
776 similar to current levels in the short run, but will actually increase after five years
777 based upon the projected five year investment. The adjustment proposed by Mr.
778 Ostrander is entirely inappropriate.

779
780 [CONFIDENTIAL TABLE REDACTED]

781 Source: FCC 481

782

783 **Q. What does the above table show with regard to the Aerial Cable Account?**

784 A. With respect to the Aerial Cable, Carbon anticipates fixed asset additions to this
785 category of [REDACTED] over the next two years which will more than outpace the
786 depreciation expense levels currently projected by Mr. Ostrander in the five year

787 period. Though depreciation will not drop as projected by Mr. Ostrander, the
788 acceleration effect is present in the Aerial Cable account and can be maintained
789 near current levels if disposals of the older assets at levels similar to additions
790 are made. Carbon's current use of group asset depreciation does not result in an
791 inappropriate base level of depreciation, and (based upon anticipated additions
792 and disposals) future depreciation levels will not differ significantly from the
793 current 2014 base year levels. A more appropriate and encompassing
794 discussion of depreciation methodology, potential acceleration, and both the
795 expense and rate base implications of changing the methodology is included in
796 the Rebuttal Testimony of D Meredith filed in this Docket.

797

798 **Q. Describe how Carbon calculates depreciation expense.**

799 A. Carbon calculates depreciation expense using a straight line calculation in
800 conformity with a group plan of accounting as prescribed by Federal
801 Communications Commission (FCC) in the Code of Federal Regulations, Title
802 47, Chapter I, Subchapter B, Part 32. FCC part 32.2000 which states "(iii)
803 Charges for currently accruing depreciation shall be made monthly to the
804 appropriate depreciation accounts, and corresponding credits shall be made to
805 the appropriate depreciation reserve accounts. Current monthly charges shall
806 normally be computed by the application of one-twelfth of the annual depreciation
807 rate to the monthly average balance of the associated category of plant."

808

809 "Group plan" is defined as follows in FCC Part 32.9000; "Group plan, as applied
810 to depreciation accounting, means the plan under which depreciation charges
811 are accrued upon the basis of the original cost of all property included in each
812 depreciable plant account, using the average service life thereof properly
813 weighted, and upon the retirement of any depreciable property its cost is charged
814 to the depreciation reserve whether or not the particular item has attained the
815 average service life."

816
817 **Q. Does a group asset plan calculation of depreciation expense result in**
818 **higher depreciation?**

819 **A. No. Using a group asset method to Calculate depreciation expense will always**
820 **result in the same total depreciation expense as calculated under any other**
821 **accepted method. Group asset depreciation is an accelerated depreciation**
822 **method. This means that group asset depreciation tends to produce a higher**
823 **depreciation expense in earlier years, and a lower depreciation expense in later**
824 **years. Conversely the rate base (NBV of associated assets subject to**
825 **depreciation) will be reduced more quickly resulting in a lower total disbursement**
826 **of UUSF based upon applying a rate of return on a lower NBV and over a shorter**
827 **(accelerated) asset life.**

828

829 **Q. Is group asset an acceptable method of depreciation?**

830 A. Yes. Group asset depreciation is an acceptable method of depreciation that is
831 used for, and approved by the FCC. Carbon/Emery Telcom is using an accepted
832 methodology in the calculation of depreciation in accordance with the guidance
833 provided by the FCC, consistent with Carbon's historical practice, and consistent
834 with the method of depreciation used by many other rural ILEC's in the State of
835 Utah.

836
837 In the absence of rulemaking at the state level dictating the method of
838 depreciation to be employed by rural telecommunication providers in the State of
839 Utah, group asset depreciation should continue to be allowed by the
840 Commission. Carbon's base year depreciation calculated using the group asset
841 method is not abnormally high and is consistent with anticipated investment
842 levels and should not be modified.

843
844 **Q. Mr. Hellewell from the Division of Public Utilities proposed an adjustment**
845 **of [REDACTED] to reduce depreciation expense. Can you speak to the**
846 **appropriateness of this proposed adjustment?**

847 A. The calculation is essentially a "worst of both worlds" approach to applying what
848 otherwise would be an acceptable depreciation methodology if consistently and
849 historically implemented.

850

851 Depreciation effects rate of return calculations in two ways: first by the
852 depreciation expense recorded in any given period; and second by the allowed
853 rate of return applied to the NBV of these associated assets. In addition to these
854 two components there are two sources of potential return – State and Federal.
855 These two jurisdictions as well as the methodology have to be closely examined
856 when any change is considered to ensure proper jurisdictional return (no loss of
857 recovery or double recovery).

858

859 **Q. How did the DPU calculate its depreciation adjustment?**

860 A. The DPU's proposed depreciation adjustment was calculated by applying single
861 asset straight line depreciation to individual asset detail provided in DPU DR1-11
862 Emery & Carbon – Assets and CY 2014 Depreciation.xlsx. Carbon recalculated
863 the DPU's single asset adjustment to within reasonable rounding differences of
864 [REDACTED], and has supplied our calculation in Carbon Emery Rebuttal Testimony of
865 Woolsey–Depreciation-Exhibit 4.xlsx. This exhibit also contains additional
866 calculations which will be discussed latter.

867

868 **Q. Are there issues with the DPU's proposed adjustment?**

869 A. Yes. The DPU proposed adjustment provides single asset straight line
870 depreciation as if had occurred from the in-service date through 2014, then
871 compared the 2014 recalculated expense to the expense recorded by Carbon to
872 arrive at a difference of [REDACTED]. The DPU methodology which resulted in

873 lower depreciation expense was applied to all depreciable assets (not just
874 intrastate assets). This ignores the fact that Carbon in fact used a higher
875 depreciation expense amount in its interstate filings upon which rate of return will
876 be established for interstate recovery mechanisms. On the associated rate base
877 side of the depreciation transaction, the DPU used the NBV which reflects the
878 accelerated group asset methodology (lower) then added back only the current
879 year depreciation difference of [REDACTED] as a proposed adjustment to NBV.
880 Thus the "worst of both worlds" occurred where the lowest possible NBV was
881 used for rate base and the lowest possible depreciation calculation (single asset
882 straight line) was used for expense.

883

884 **Q. Couldn't you just adjust the NBV to reflect historical application of the**
885 **single asset straight line depreciation proposed by the state to arrive at the**
886 **correct amount of return on rate base associated with their proposed**
887 **adjustment?**

888 **A.** No. Because recovery of both depreciation expense and return on rate base has
889 already been received on the interstate portion of these assets in prior years.
890 Any calculation by the state would have to consider this effect.

891

892 **Q. How would you address the DPU's concern regarding depreciation**
893 **methodology?**

894 A. The preferred course of action, which results in an overall lower total UUSF
895 distribution (as discussed in testimony provided by Douglas Meredith), would be
896 to allow companies to continue to use group asset depreciation as an acceptable
897 methodology as prescribed by the FCC. This would not preclude other
898 companies from using a different methodology it would just be one of the
899 acceptable methods of calculation.

900

901 As an alternative, if the State feels strongly about a particular methodology for
902 calculating depreciation and wishes to establish rules regarding this, the best
903 approach would be to avoid the complications and recovery concerns of
904 retroactive application and apply the new methodology going forward on new
905 asset investments. If a company chooses to not follow the State methodology at
906 that point then they would be subject to reconciling and adjusting their books for
907 state rate making purposes as necessary.

908

909 **Q. If single asset straight line methodology was prescribed by the State and**
910 **adopted by Carbon on a go-forward basis, how would depreciation**
911 **expense compare to the base year?**

912 A. I performed an analysis of the effects of making a prospective change to single
913 asset straight line depreciation as of January 1, 2014. In this analysis, Carbon
914 assumed that group asset depreciation would continue on historical assets as of
12/31/13, and single asset straight line methodology would apply to all 2014

916 additions and projected additions through 2019. For purposes of this analysis
917 Carbon used the projected capital improvements filed July 1, 2015 on FCC Form
918 481. From these assumptions, the analysis provided the following results:

- 919 • 2014 depreciation expense would have reduced by [REDACTED] from [REDACTED]
920 to [REDACTED] in the 2014 base year.
- 921 • The six year average depreciation expense is projected at [REDACTED] which is
922 [REDACTED] (4.3%) lower than the base year.
- 923 • The base year is materially representative of anticipated depreciation
924 expense levels as projected in this change scenario.

925 See Carbon Emery Rebuttal Testimony of Woolsey - Dep Est Single Asset 2014
926 to 2019 - Exhibit 5.xlsx

927

928 **Q. Is there another solution?**

929 A. The last solution would be an attempt to apply the DPU methodology in a way
930 that considers all aspects of the proposed change including depreciation
931 expense, rate base (NBV), and jurisdiction. Carbon has performed this
932 calculation which is included in Carbon Emery Rebuttal Testimony of Woolsey –
933 Depreciation -Exhibit 4.xlsx. In this Exhibit Carbon starts by recalculating
934 individual asset depreciation using the single asset straight line method through
935 12/31/2013. This allows the NBV at the beginning of the rate base period to be
936 presented. 2014 depreciation expense is then calculated in the same manner,
937 and a resulting NBV for 12/31/2014 is calculated. These numbers are then

938 totaled to see the current 2014 depreciation effect and cumulative NBV effect of
939 the proposed depreciation change. (See summary in rows 2531 to 2541 on the
940 Carbon tab of the spreadsheet). The depreciation change is calculated at
941 [REDACTED] essentially the same as the DPU calculation of [REDACTED]. In this
942 section you can also see the effect of adding back the cumulative NBV difference
943 on rate base, which would result in a UUSF impact of [REDACTED] (using
944 10.50001% Carbon rate of return). Carbon has already described the fault of
945 using this calculation as a NBV/rate base adjustment because it does not
946 consider interstate return previously received on these asset differences. The
947 next step in the calculation is contained in rows 2543 to 2553 in which the two
948 methodologies are applied to the asset mix with the group methodology applied
949 to interstate assets and the single asset methodology applied to the intrastate
950 assets. This results in a 2014 depreciation reduction adjustment of
951 [REDACTED] and a corresponding rate base/NBV increase adjustment of [REDACTED]
952 with an estimated corresponding UUSF impact of [REDACTED]. The net decrease
953 in the UUSF request resulting from this theoretically correct analysis would be
954 \$ [REDACTED] (\$-[REDACTED] + [REDACTED]).

955

956 **Q. Are there any downsides to the mixed calculation performed above?**

957 A. Yes. The intrastate/interstate mix of assets can and does change over time
958 making this calculation slightly inaccurate at any given point in time. Also, any
959 change from existing methodology (unless the books could be restated) will

960 cause differences in federal and state reporting that would not be easily tracked
961 and would result in less transparency from a reporting standpoint.

962

963

964 *Again the best course of action is the choice of an acceptable methodology that*
965 *is then applied consistently over a single asset or group asset life for both*
966 *interstate and intrastate rate of return recovery. In the absence of agreement on*
967 *methodology by all parties in this proceeding, the focus should be on whether the*
968 *amount presented in the initial filing is a representative base year amount. I*
969 *assert that the base year amount is materially representative whether Carbon*
970 *continues to use the group method, or if a change to single asset straight line*
971 *methodology were made as of the beginning of the 2014 base year.*

972

973

974 **Q. Mr. Hellewell describes six reasons why group asset depreciation is not**
975 **recommended. What is your response?**

976 A: I will address each of the six reasons:

- 977 • Depreciation by computer: The ease of calculation was not a determining
978 factor in the original choice of Carbon to use group asset depreciation. In
979 fact until our recent system upgrade, Carbon's accounting system would
980 not handle the group calculation.

- 981 • Asset Tracking: This argument is not really an issue for Carbon because
982 individual assets are tracked. Only our oldest assets are an issue (think
983 Qwest acquisition). Either method could be deployed with adequate
984 tracking.
- 985 • Disposal: With appropriate individual tracking the methodology has no
986 impact on disposals.
- 987 • Group Characteristics: The problem of classification exists in either
988 method of depreciation. Vehicles are not necessarily a problem as they
989 are easily identified and generally disposed at or near their depreciable life
990 thus reducing any possible group depreciation effect.
- 991 • Standardization: I do not disagree with Mr. Hellewell's general statement
992 here but would argue that we are among a majority of companies that use
993 group asset depreciation.
- 994 • Volatility: I agree that volatility risk is increased under a group
995 methodology. However this risk is mitigated through proper and timely
996 disposals and balanced continued investment as needed for aging assets.

997

998 **Q. Previously you indicated that Carbon is proposing a revenue adjustment to**
999 **account for the impacts of converting non-regulated cable customers to**
1000 **regulated fiber internet customer. Can you tell us what the financial**
1001 **statement impacts of this conversion are?**

1002 A. This type of migration has two major financial statement impacts. First, there
1003 would be a shift in the various components of interstate revenue requirement,
1004 and second there would be an increase in rate base from the additional plant
1005 required to make the conversion. We contacted Moss Adams, LLP, the CPA firm
1006 contracted to produce our annual Cost Study, to do a sensitivity analysis of what
1007 would have happened to our 2014 cost study assuming that all of our December
1008 31, 2014 cable internet customers in the Carbon ILEC service area had been
1009 converted to fiber internet as of year-end. The following chart summarizes the
1010 results of the Moss Adams Sensitivity Analysis which was performed at our
1011 company's cost study area level (includes Emery, Carbon/Emery, and Hanksville
1012 which operates in the boundary of SAC 502278):

1013

1014 [CONFIDENTIAL TABLE REDACTED]

1015 Source: Carbon Emery Rebuttal Testimony of Woolsey - Cable Internet Migration
1016 - Exhibit 1.xlsx

1017

1018 This analysis shows that the combined effects of the migration of cable internet
1019 customers to fiber internet would have a per customer UUSF impact of
1020 (\$████████) per month. In order to make an adjustment to this UUSF
1021 proceeding, Carbon used a three year anticipated conversion average (similar to
1022 land line loss) in which the ██████████ remaining cable internet customers in
1023 Carbon are converted to fiber, as projected in 2015 through 2017, with a resulting

1024 projected base year adjustment impact of [REDACTED]. Carbon presented this
1025 adjustment along with an updated calculation of the USF impact of landline loss
1026 covering the same period. The summary above and adjustments below are
1027 included in Carbon Emery Rebuttal Testimony of Woolsey - Cable Internet
1028 Migration - Exhibit 1.xlsx

1029

1030 [CONFIDENTIAL TABLE REDACTED]

1031 Source: Carbon Emery Rebuttal Testimony of Woolsey - Cable Internet Migration
1032 - Exhibit 1.xlsx

1033

1034 **Q. You also previously referred to a land line loss adjustment. Please explain.**

1035 A. The land line loss projection utilizes the same methodology used in the initial
1036 filing which incorporated a three projection of loss for business and residential
1037 customers and the application of current service rates for basic service. The
1038 initial filing for Carbon utilized 2013 and 2014 actual historical loss to project the
1039 loss forward to create a three year average. The Office rejected this adjustment,
1040 and in BCO-7 suggests that the land line loss projection should not be included
1041 as a decrease in revenue.

1042

1043 **Q. Do you agree with the Office's adjustment for land line loss in BCO-7?**

1044 A. No. It is not appropriate to completely eliminate the land line loss projection.
1045 However, actual land line losses through 8/1/2015 were less than the projection

1046 in the initial filing resulting in an increase in revenue in the amount of [REDACTED],
1047 with a corresponding decrease in the UUSF request of [REDACTED]. Carbon's
1048 proposed adjustment accurately reflects the positive effects of lower than
1049 anticipated land line loss, and is a more appropriate adjustment than the Office's
1050 BCO-7 adjustment.

1051

1052 **Q. Is the adjustment made by Mr. Ostrander to adjust income taxes as a**
1053 **reflection of interest synchronization appropriate?**

1054 **A.** It is not appropriate.

1055

1056 **Q. Why isn't it appropriate?**

1057 **A.** With respect to the appropriateness of interest synchronization, I reject the
1058 assertion that this methodology is "common" or appropriate in cases of
1059 hypothetical capital structure. I am not aware of such an adjustment being
1060 adopted in current or historical Utah telecommunications proceedings or any
1061 FCC proceeding. I am also unaware of any such adjustment proposed or in
1062 practice in the traditional FCC rate making/cost study separation processes. The
1063 use of a hypothetical rate structure already penalizes Carbon to the extent the
1064 cost of debt is less than the cost of equity applied to any hypothetical capital
1065 structure of debt percent greater than its actual 0% debt. Effectively Carbon has
1066 been forced from actual capital structure to a lower rate of return hypothetical
1067 capital structure then, begrudging the already lower rate of return on debt, Mr.

1068 Ostrander proposes to take the return "hypothetically" lower again by adjusting
1069 for tax deductions that do not exist. The adjustment is not based upon Carbon's
1070 actual capital structure or tax deductibility. It has no precedence or place in this
1071 proceeding. If we are fully considering a hypothetical debt scenario, the very real
1072 result of hypothetical debt should be considered. In the case of Carbon debt
1073 would not be used to reduce equity, but rather the only reason Carbon would
1074 incur additional debt is to accelerate capital projects thus increasing rate base
1075 assets. Carbon has not projected hypothetical assets or even been aggressive
1076 in projecting "known and measurable" asset additions that have occurred to date
1077 in 2015. If all hypothetical consequences of a debt imputation are honestly
1078 considered then the positive effects of the scenario should be among them.

1079

1080 **Q. If you assume that interest synchronization is appropriate, has Mr.**
1081 **Ostrander calculated it correctly?**

1082 A. No. It was incorrectly calculated by Mr. Ostrander.

1083

1084 **Q. In what ways?**

1085 A. Mr. Ostrander applied a theoretical imputation of interest related to rate base
1086 assets, and then calculated a tax impact of this interest amount of [REDACTED]. In
1087 this calculation he used an incorrect state rate of [REDACTED] (Exh.1D,A-11 Ostr. Tab
1088 from Master – OCS Exhibit 2D – 15-2032-01 Ostrander Rev.Req.xlsx) vs the
1089 correct Utah rate of 5%. Mr. Ostrander also uses a slightly incorrect tax gross

1090 up calculation. The correct gross up can be accurately represented by the
1091 unrounded formula [REDACTED] or rounded to [REDACTED].

1092

1093

1094 **Q. Have you calculated what the correct interest synchronization would be?**

1095 A. I am reluctant to provide the calculation because I don't think it is an
1096 appropriate adjustment. However, the correct numerical adjustment is not
1097 difficult to calculate. The correct UUSF/Tax amount, if we agreed with the
1098 adjustment in theory, would be [REDACTED] not the [REDACTED] calculated by Mr.
1099 Ostrander. I also disagree with the [REDACTED] debt to equity hypothetical capital
1100 structure that is factored into Mr. Ostrander calculation. If Carbon's actual capital
1101 structure were used this adjustment disappears, and if [REDACTED] debt is used the
1102 resulting calculation would only be [REDACTED]

1103

1104 **Q. In the Division of Public Utilities Calculation of Rate of Return, what is the
1105 appropriate input for the interstate rate?**

1106 A. As Mr. Coleman accurately states "The question of which rate to use is really a
1107 matter of whether Carbon participates in the Common Line Pool, or the smaller
1108 subset of companies that participate in both NECA's Common Line and Traffic
1109 Sensitive pools." Mr. Coleman states that he confirmed with Mr. Brandon
1110 Gardner, NECA Western Region Manager, that Carbon is not a Common Line
1111 Pool participant.

1112

1113 **Q. Is Carbon a Common Line Pool participant?**

1114 A. Yes.

1115

1116 **Q. Do you know how Mr. Coleman got this inaccurate information from Mr.**

1117 **Brandon Gardner of NECA?**

1118 A. Carbon/Emery Telcom is one of three ILECS reporting under Cost Study Area

1119 Code "502278 – Emery Consolidated" (together with Emery Telephone and

1120 Hanksville Telcom, Inc.). It is more typical for one ILEC to have multiple study

1121 areas than it is for one study area to have multiple ILEC's. On September 4,

1122 2015 I spoke with Mr. Brandon Gardner, who indicated that he had a follow-up

1123 call with Casey Coleman and that he had clarified the inclusion of Carbon in the

1124 Emery consolidated filing and the participation of Carbon in NECA's Common

1125 Line Pool. With this clarified understanding, it is appropriate to use 11.45% per

1126 the September 30, 2014 FCC Form 492 filed by NECA as the interstate input

1127 when calculating allowed rate of return. Mr. Douglas Meredith will discuss this in

1128 more detail in his testimony.

1129

1130 **Q. Did you review the Testimony and curriculum vitae of Bion C. Ostrander?**

1131 A. Yes. Mr. Ostrander in his testimony and his curriculum vitae indicates he has

1132 maintained an uninterrupted permit to practice as a Certified Public Accountant

1133 ("CPA") in the State of Kansas since 1990. However, Mr. Ostrander footnotes

1134 this statement indicating that his permit to practice is pending renewal subject to
1135 meeting professional education hour requirements in Kansas. I reviewed the
1136 Kansas Board of Accountancy's website and database and determined that Mr.
1137 Ostrander has not held a permit to practice as a CPA in Kansas since June 30,
1138 2014.

1139

1140 **Q. Does this lapse in Mr. Ostrander's permit to practice concern you?**

1141 A. Yes. As a CPA myself, I am familiar with the rules regarding the profession.

1142 Kansas is a two-tiered state for CPA's. This means before practicing as a CPA
1143 or holding oneself out as a CPA, the individual must have a certificate of public
1144 accountancy and a permit to practice. Without meeting both requirements, an
1145 individual is not permitted to practice as a CPA in Kansas, or hold oneself out as
1146 a CPA.

1147

1148 **Q. Do you know if Mr. Ostrander is required to be a CPA to provide testimony
1149 in this case?**

1150 A. To my knowledge, Mr. Ostrander is not required to be a CPA to provide
1151 testimony in this case, but the fact that he held himself out as a CPA "for
1152 credential" purposes when he does not hold this credential is troubling to me as a
1153 certified public accountant. I believe this is unprofessional conduct and speaks
1154 to Mr. Ostrander's credibility as an expert witness.

1155

1156 Q. **To summarize, what is Carbon's current UUSF request?**

1157 A. \$570,643. This amount reflects the effect of the five adjustments (and
1158 associated tax effect) discussed herein. This amount accurately represents the
1159 amount that Carbon is entitled to under Utah law.

1160

1161 Q. **Finally, are there any other adjustments that you have for your filing?**

1162 A: Yes. As is customary, legal and consulting fees are disbursed from the state
1163 USF on a lump sum basis after the proceeding is resolved. I won't know this
1164 amount until after the proceeding but wanted to include these items as a
1165 placeholder for resolution by the Commission.

1166

1167 Q. **Does this conclude your testimony?**

1168 A. Yes.

BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

IN THE MATTER OF CARBON/EMERY
TELCOM, INC.'S APPLICATION FOR
AN INCREASE IN UTAH UNIVERSAL
SERVICE FUND SUPPORT

Applicant

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Docket No. 15-2302-01

REVISED CONFIDENTIAL REBUTTAL TESTIMONY

OF

DARREN WOOLSEY

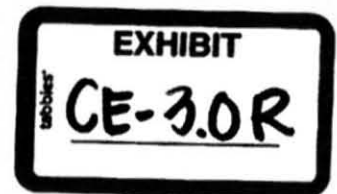
ON BEHALF OF CARBON/EMERY TELCOM, INC.

September 4, 2015

(Revised Per Commission Order October 26, 2015)

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REBUTTAL TESTIMONY OF DARREN WOOLSEY

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Q. What is your name?

A. My name is Darren Woolsey.

Q. By whom are you employed and in what capacity?

A. I am employed by Carbon/Emery Telcom, Inc. as its Chief Financial Officer.

Q. There are numerous references to various affiliated entities in the testimony, can you please identify the affiliated entities and the abbreviations you will use in this testimony to refer to each?

A. Yes. The affiliated entities and the abbreviations I will use to refer to each are:

- Emery Telecommunications & Video, Inc. (ETV) provides internet, circuits, fiber transport, VOIP voice, customer premise equipment, and retail computer sales and service.
- Emery Telcom Video, LLC (ETV LLC) provides cable tv, cable internet, and local advertising.

Q. Have you previously provided Direct Testimony in this matter?

A. Yes. With the filing of Carbon/Emery Telcom's Application for Increase in UUSF on April 2, 2015 ("Application"), I filed direct testimony in support of the Application. My testimony included Confidential Exhibits 1-14 (with subparts). I also provided Supplemental Direct Testimony on April 24, 2015 to include the

23 2014 Audited Financial Statements, 2014 Journal Entries, and 2014 Audit
24 Memorandum when Carbon/Emery Telcom, Inc. received them from the auditors.

25

26 **Q. What is the purpose of your reply testimony?**

27 A. The purpose of my rebuttal testimony is to respond to the various testimonies
28 filed in this proceeding by the Division of Public Utilities (the "Division") and the
29 Office of Consumer Services ("Office"). In their testimonies, these parties
30 propose modifications to Carbon/Emery's Application for Increase in UUSF. In
31 this testimony, I recommend that the Commission modify or reject many of these
32 proposed modifications. Specifically, I will address the testimony of:

33

- William Duncan, Division of Public Utilities;
- Joseph Hellewell, Division of Public Utilities;
- Bion C. Ostrander, Office of Consumer Services; and
- David Brevitz, Office of Consumer Services.

34

35

36

37 **Q. Have you reviewed the testimony of the individuals you have identified**
38 **above?**

39 A. Yes.

40

41 **Q. Please identify the exhibits to your testimony.**

42 A. I am attaching the following Confidential Exhibits:

43

- Carbon/Emery Rebuttal Testimony of Woolsey - Cable Internet Migration -
Exhibit 1

44

- 45 • Carbon/Emery Rebuttal Testimony of Woolsey - A&G Allocator Analysis -
46 Exhibit 2
- 47 • Carbon/Emery Rebuttal Testimony of Woolsey - CSR Allocation - Exhibit 3
- 48 • Carbon/Emery Rebuttal Testimony of Woolsey - Depreciation - Exhibit 4

49

50 **Q. Could you please summarize your reply testimony?**

51 **A.** My testimony will focus on the particular adjustments that the Division of Public
52 Utilities and the Office of Consumer Services are recommending in the
53 testimonies filed on their behalf. Specifically, I will address:

- 54 ▪ Adjustment BCO-2: Allocate Corporate Overhead Expenses from Carbon to
55 ETV/Nonregulated Affiliates
- 56
- 57 ▪ Adjustment BCO-3: Remove Prepayments from Rate Base
- 58
- 59 ▪ Adjustment BCO-4: Deduct Long-Term Liabilities from Rate Base
- 60
- 61 ▪ Adjustment BCO-5: Remove 50% of telephone plant under construction
62 (TPUC) from Rate Base
- 63
- 64 ▪ Adjustment BCO-6: Remove 50% of materials & supplies ("M&S") from Rate
65 Base
- 66 ▪ Adjustment BCO-7: Reverse Carbon's Projected Access Line Reduction
- 67 ▪ Adjustment BCO-8: Remove Depreciation on Fully Depreciated Assets
- 68 ▪ Division of Public Utilities' adjustment on Depreciation
- 69 ▪ Adjustment BCO-9: Adjust Income Tax Expense and Reflect Interest
70 Synchronization

71

72 **Q. What else will you address in this rebuttal testimony?**

73 A. Carbon/Emery Telcom is proposing four adjustments to the UUSF request
74 contained in the initial filing which I will discuss in detail below. However, by way
75 of summary, the four adjustments are:

76 • A decrease in the three year land line loss projection to reflect actual land
77 line losses experienced through August 1, 2015. This adjustment reduces
78 Carbon's UUSF request by \$37,875.

79 • An increase in revenue resulting from anticipated additional fiber to the
80 home (FTTH) customers. This adjustment is \$13,714 increase in revenue.
81 This adjustment reduces Carbon's UUSF request by \$13,714.

82 • An adjustment to the amount of revenue requirement recognized by
83 Carbon/Emery Telcom (Carbon) for interstate special access services
84 referred to as "DSL revenue requirement". This adjustment accounts for
85 DSL revenue requirement reflecting the 2014 Interstate Cost Study filed in
86 July 2015, which was not available at the time of the initial filing. Carbon's
87 portion of this adjustment resulted in an increase of revenue in the amount
88 of \$94,120 resulting in a decrease in the UUSF request.

89 • An adjustment related to long term liabilities in the amount of \$600,465
90 with a corresponding UUSF impact of \$63,049 (10.5001% Carbon filed
91 rate of return).

92 As indicated, I discuss these adjustments in detail below, the combination of the
four proposed adjustments would result in a decrease of \$246,266 from Carbon's

94 initial Application filing ($-\$37,875 - \$13,714 + \$94,120 - \$63,049 = -\$208,758$ plus
95 the tax reduction effect on these adjustments of $-\$37,508$.

96

97 **Q. Do you agree with Mr. Ostrander that UUSF proceedings warrant rigorous**
98 **analysis and oversight?**

99 A. Carbon/Emery Telcom consistently files annual reports with the Division of
100 Telecommunications and receives review and oversight. Furthermore, Carbon
101 has not filed for increased rates but has filed for an increase in distribution out of
102 the UUSF. Also, the Division and Office reviewed Emery Telcom and
103 Carbon/Emery Telcom in a similar proceeding in 2014. Mr. Ostrander's
104 testimony discredits the purpose of Universal Service by stating that no direct or
105 measurable benefit accrues to citizens in areas not receiving UUSF funding. The
106 very concept of Universal Service inherently recognizes the value of providing
107 affordable service to higher cost rural areas and connecting urban Americans to
108 their rural counterparts. Citizens in urban areas pay into the UUSF for the ability
109 to call citizens who live in high cost rural areas. Universal service benefits both
110 urban and rural customers and the Office of Consumer Services represents both
111 urban and rural consumers and is mandated to assess the impact of regulatory
112 action on all residential consumers and small businesses (both urban and rural).
113 All telephone customers pay into the UUSF. The desire to minimize the
114 payments into the UUSF should not outweigh the proper use of the funds to
115 further the public interest of providing service (including advanced services) to

116 rural end user phone customers and special access (small commercial)
117 customers. Additionally, it is critical to remember that carriers who receive UUSF
118 funding also have carrier of last resort and E911 obligations. Ubiquitous service
119 in Carbon's area would not be possible without federal and state universal
120 service support.

121

122 **Q. Are you familiar with the Office's adjustment BCO-2 which purports to**
123 **allocate corporate overhead expenses from Carbon to non-regulated**
124 **affiliates?**

125 **A.** Yes. Mr. Ostrander proposes a modification of Carbon's A&G Allocation factor.
126 In Carbon's Application, Carbon applied an A&G Allocation factor of 74%¹ to
127 regulated operations and 26% to non-regulated operations. The A&G allocator is
128 used for several departments including CEO, Board of Directors and Public
129 Relations/Marketing (PR/MK). Mr. Ostrander proposes a change of the A&G
130 Allocation Factor to 50%/50% for CEO and Board of Directors and 25% reg 75%
131 non-reg for PR/MK.

132

133 **Q. Do you agree with this proposed adjustment?**

¹ In Table BCO-2 in Mr. Ostrander's testimony he correctly identifies the A&G Allocation Factor as 74%/26% regulated to non-regulated. However, in Table BCO-4, and on line 711 of Mr. Ostrander's testimony, Mr. Ostrander incorrectly identifies the A&G Allocation Factors as 71%/29% regulated/non-regulated.

134 A. No. As I detail below, Carbon's allocation factors are accurate and no adjustment
135 is needed. Mr. Ostrander's analysis is cursory and flawed. Mr. Ostrander states
136 that Carbon has inappropriately used allocators to overstate regulated allocated
137 expenses and understate non-regulated allocated expenses. However, much of
138 the analysis performed by Mr. Ostrander and included in his testimony in lines
139 738 to 779 was based on unconfirmed and inaccurate assumptions, and the data
140 used to perform many of the calculations was incorrect. This erroneous data was
141 then used to justify a proposal to change the CEO and Board allocations to 50%
142 reg 50% non-reg.

143

144 **Q. Please explain.**

145 A. It is Mr. Ostrander's opinion that costs have been shifted from non-regulated
146 entities to the regulated entities. To support this opinion, Mr. Ostrander
147 examined the Consolidated Financial Statements and "other information" which is
148 *not identified in Mr. Ostrander's testimony*. The Office found that "certain financial
149 data, allocations, and changes in amounts from year to year appear unusual or
150 appear to favor the non-regulated affiliates," and concluded without explanation
151 that "this type of information lends support for my *adjustment to reallocate some*
152 *expenses from regulated to non-regulated operations.*"

153

154 **Q Do you know what financial data, allocations, and changes in amounts**
155 **from year to year appeared unusual to Mr. Ostrander?**

156 A. The Office referred to the net income for the regulated companies, and found that
157 the net income for the regulated companies decreased from \$1.7M to \$.4M from
158 2013 to 2014. However, these numbers are incorrect. Review of the
159 Consolidated Financial Statements shows that the correct numbers regarding the
160 regulated companies' net income are \$352,032 and (\$399,635) for 2013 and
161 2014 respectively, evidencing a reduction of regulated net income of \$751,667
162 not \$1.3 million as stated by Mr. Ostrander.

163

164 Q. **Were you able to determine where Mr. Ostrander's regulated net income**
165 **numbers came from?**

166 A. No, I was not, but I can explain the reduction in regulated net income, and clarify
167 why Carbon needs additional UUSF support. The decrease in regulated net
168 income was almost entirely recorded on the books of Emery Telcom (not Carbon)
169 as demonstrated below:

170

Emery Telcom	<u>2013</u>	<u>2014</u>	Difference		
Net Income	115,223	(622,506)	737,729		
Explanations					
Depreciation & Amortization	1,279,796	1,375,117	95,321		
Taxes	3,784	-	(3,784)		
Increase in all other expenses	2,986,144	2,991,069	4,925	96,462	Expenses
Local Service Rev	1,155,579	1,092,033	63,546		
Recip Comp - Verizon Rev	143,904	(76,384)	220,289		
Other State Access Rev - CAF/ICC Reform	606,393	517,333	89,059		
Billing and Coll Rev	161,188	-	161,188		
All other Revenue	2,317,883	2,210,698	107,185	<u>641,267</u>	Revenue
				737,729	

171

172

Source: 2013-14 audited financial statements as provided to the Office and DPU

173

174

As shown in the table above, the net income of Emery declined by \$738K. The

175

decrease is not the result of shifting costs, as inferred by Mr. Ostrander, but

176

primarily the result of lost revenue of \$641K and to a lesser extent the investment

177

in FTTH resulting in increased depreciation of \$95k. The largest revenue

178

decrease was due to a federally dictated loss of reciprocal compensation

179

revenue associated with CAF-ICC reform \$220,289. Other state access revenues

180

declined by \$89,059, primarily as a result of this same CAF-ICC reform. Local

181

service revenues declined by \$63,546 due to declining local service customers.

182

Billing and collection revenue declined by \$161,188 as described in Emery's

183

response to DPU 4 2.2. Other revenue declines amounted to \$107,185. Emery

184

Telcom did experience some expense increases. Depreciation increased by

185

\$95,321 as a result of increased investment. All other expenses however only

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186 increased by \$4,925. This accounts for the change in net income of \$737,729 on
 187 Emery Telecom. The \$4,925 increase in all expenses excluding depreciation does
 188 not support the offices premise that costs were shifted from the non-regulated
 189 entities to the regulated entities.

190 The majority of the regulated decline in revenue highlighted by Mr. Ostrander
 191 was due to revenue decreases on Emery. Carbon did evidence a smaller
 192 reduction in net income of \$64,088 from 2013 to 2014 demonstrated in the chart
 193 below:

Carbon/Emery Telecom	<u>2013</u>	<u>2014</u>	<u>Difference</u>
Net Income	276,186	212,098	64,088
Explanations			
Depreciation & Amortization	2,680,731	2,878,630	197,900
Taxes	162,946	116,274	(46,672)
Other Income/Expense	50,220	(17,277)	(67,497)
All Other Expenses	4,370,460	4,398,693	28,232
Total Revenue	7,540,543	7,588,418	(47,875)
			64,088

194
 195 Source: 2013-14 audited financial statements as provided to the Office and DPU.

196
 197 This chart illustrates that Carbon actually had some revenue gain (special access
 198 less a partial offset from land line loss), and that the loss in net income was
 199 largely due to additional depreciation associated with recent and ongoing plant
 200 additions.

201

202 **Q. So did expenses shift from the non-regulated companies to the regulated**
203 **companies?**

204 A. No. Expenses did not shift from non-regulated companies as suggested by Mr.
205 Ostrander. In fact, as shown, Carbon's "other expenses" only increased .6%
206 from \$4,370,460 to \$4,398,693.

207

208 **Q. What conclusions do you draw from a review of the net income numbers?**

209 A. The conclusions to be drawn from a top level financial analysis are as follows:

210

- 211 • there is no shift in allocated costs from the non-regulated entities
- 212 • actual non-depreciation expenses did not change significantly in Carbon
213 or Emery
- 214 • the decline in the net income of Carbon/Emery Telcom was not the result
215 of inappropriately allocating expenses in 2014, but rather it illustrates
216 consistency between the two years.

217

218 **Q. Did Mr. Ostrander's use of inaccurate numbers for regulated net income**
219 **affect his analysis?**

220 A. While I find it difficult to follow Mr. Ostrander's analysis, if his conclusion is that
221 "changes from year to year appear unusual", the "unusual" appearance could be
222 a result of his use of inaccurate numbers. In my opinion, the inaccurate numbers

223 and shallow analysis used by Mr. Ostrander make the analysis meaningless and
224 the conclusions reached unsupportable.

225

226 **Q. Why?**

227 A. The analysis is meaningless because Mr. Ostrander starts with inaccurate
228 numbers on regulated net income and these incorrect numbers flow through the
229 analysis causing Mr. Ostrander to incorrectly calculate the regulated companies'
230 profit margin. He then compares the inaccurate profit margin of the regulated
231 companies to his calculated profit margin on the non-regulated affiliates, which
232 Mr. Ostrander uses (in some unascertainable way) to support his adjustment to
233 reallocate "some expenses" between regulated and non-regulated operations. A
234 slightly deeper analysis than that performed by Mr. Ostrander, as discussed
235 above, evidences the reasons for the noted changes and shows why this course
236 is not supportable.

237

238 **Q. Are the regulated companies net income and profit margins the only**
239 **numbers Mr. Ostrander has stated incorrectly in his analysis?**

240 A. No. Mr. Ostrander identifies the ETV net income change from 2013 to 2014 as
241 \$.1M. The actual decrease in net income was \$212,275. Additionally, while Mr.
242 Ostrander correctly states the ETV net income in 2014 as \$3.1M, he misstates
243 ETV's percentage of total consolidated profit of 94%. Mr. Ostrander then
discusses expenses where he highlights an increase in RLEC expense of \$.5M

245 (the operating expense increase is actually only \$340,996) and implies that this
246 increase in regulated expenses corresponds to a similar decrease in ETV
247 expenses of the same amount of \$.5M (Operating expense decrease was
248 actually \$446,572). The implication in Mr. Ostrander's testimony is that
249 somehow this is related to a shift of costs from non-regulated to regulated
250 operations. This is misleading due to the errors in the numbers. However, the
251 increase in cost was a result of increased amortization and depreciation, which
252 are the result of company specific plant investments. The remaining actual costs
253 evidence only a slight increase in regulated costs of \$85,832 and a slight
254 decrease in non-regulated costs of \$46,203. Accounting for the change in DSL
255 wholesale handling (discussed below), non-regulated operating expense actually
256 went up by \$491,938 which does not support Mr. Ostrander's conclusion.

257

258 **Q. What actually caused the decreases in ETV expenses and revenue?**

259 A. The decline in both revenue and expenses in ETV related to a change in
260 *accounting for the DSL wholesale revenue* charged by the regulated company to
261 the non-regulated company which occurred when our new billing system was
262 implemented in the fall of 2013. The new billing method avoids showing the
263 revenue and matching expense in separate accounts on ETV and just moves the
264 revenue to the regulated companies where it ultimately ends up under the old or
265 new method. This change resulted in a \$538,141 decrease in ETV revenue and
266 corresponding expense in 2014. The remaining decrease in ETV revenue is

267 related to a decrease of DSL subscribers (ETV) as they moved to higher speed
268 Cable Internet (ETV LLC) between 2013 and 2014. This revenue shift can easily
269 be viewed in the trial balances of the two non-regulated companies.

270

271 **Q. Did the Office have the trial balances of the two companies?**

272 A. Yes. The Office had the trial balances of the two companies, the General Ledger
273 of all companies and the consolidated financial statements with consolidating
274 information from 2012 to 2014. However, in the testimony of Mr. Ostrander, he
275 states "it is possible that the decrease in ETV's expense of \$.5M and the
276 corresponding increase in regulated RLEC expenses of \$.5M was the result of a
277 favorable shift of allocated expense from non-regulated operations to regulated
278 operations, but that cannot be confirmed." The reality, however, is that the GL
279 detail and allocation detail for both years were provided to the Office, and the
280 Office could have confirmed that the decreases in non-regulated expenses did
281 NOT result from a favorable shift of allocated expenses to regulated operations.
282 But Mr. Ostrander either did not perform this analysis or did not like the results.
283 Rather, he relied on supposition and unsupported assumptions to justify a
284 reduction in the allocation factor from 74% regulated to 50% regulated.

285

286 **Q. Was there anything else in Mr. Ostrander's testimony related to his**
287 **assertion that Carbon overstates its regulated allocated expenses and**
understates its non-regulated allocated expenses that troubled you?

289 A. Yes. Mr. Ostrander suggests that because ETV has profit, it can readily absorb
290 his allocation adjustments. This seems to imply that ability to pay is a proper cost
291 allocation factor. This position is not reasonable; it is not supported by analysis;
292 and it should be rejected by the Commission. It is unreasonable to have
293 profitability drive allocations or adjustments.

294

295 **Q. Do you find it unusual that the company does not have any allocation**
296 **factors that allocate 50% or more of expenses to nonregulated operations?**

297 A. No. Because the company direct codes many costs, not all of the costs are
298 subject to an allocation factor. Additionally, I am very familiar with the drivers
299 that were used to develop the allocators. With a proper understanding and
300 examination of the cost drivers, and analysis of the company's direct coding to
301 ensure the non-regulated companies are not favored, the allocators are very
302 reasonable. However neither my subjective opinion, nor anyone else's, should
303 be considered support for a cost allocation. Rather, any cost allocation factor or
304 method should be supported by data, which Mr. Ostrander failed to provide.
305 Carbon has provided that data in response to various data requests to support its
306 allocation factors.

307

308 **Q. Mr. Ostrander suggests that total revenue and expenses can be used to**
309 **determine the appropriate allocation factors. Do you believe the total**
310 **revenue and expenses are rational drivers of costs?**

311 A. No. Revenue could be an appropriate standard to use to allocate costs if a
312 company had homogenous products. For example, if the consolidated entity of
313 Carbon/Emery Telcom consisted solely of Emery Telcom, Carbon Emery
314 Telcom, and Hanksville Telcom offering similar products at similar prices, then
315 revenue could be used without significant distortion (see possible exception
316 noted below). However when a consolidated entity offers non-homogenous
317 services, such as cable television, broadband internet, long haul transport, and
318 newsprint, as in the case of the consolidated entities of Carbon/Emery Telcom,
319 revenue is an illogical basis to use when developing cost allocations.

320

321 **Q. Please explain why revenues are not a rational driver of costs.**

322 A. As an example, consider this UUSF proceeding. Carbon/Emery Telcom is
323 requesting an additional \$816,909 in UUSF funding. If Carbon is successful and
324 receives this additional revenue, a cost allocation based on revenue would result
325 in increased expenses going to Carbon Emery Telcom. At first this may seem
326 rational because a large amount of expenses were incurred to go through this
327 process (although those costs are not likely to continue). However, let's now
328 assume that Carbon incurs these same expenses and Carbon/Emery Telcom's
329 current USF of \$1,038,714 is reduced to 0, as is being proposed by Mr.
330 Ostrander. A cost allocation based on revenue would then result in a reduction
331 of cost to Carbon/Emery Telcom. It is inappropriate to assume that the dollar
result of a UUSF proceeding should determine cost allocations. The fact that a

333 UUSF case is undertaken could be considered a reason for direct coding or
334 maybe even a temporary driver, but the result of the UUSF case should not be.

335

336 A second example is special access transport revenue earned from a route
337 provided significantly across ETV leased fibers from Grand Junction CO to Salt
338 Lake City, Utah. This route generates revenue with only a handful of customers
339 and related billing and compliance issues. The lease also provides for
340 maintenance, thus ETV is not allowed to work or manage work on the fibers
341 under such lease. As a result, this fiber generates revenue with no significant
342 management attention, billing complexity, compliance, or customer service. If
343 overhead costs were allocated on revenue ETV would receive an inappropriately
344 high level of costs unsupported by actual management time based on the
345 revenue from this route.

346

347 Similarly, but to a lesser extent, internet revenue generated by internet
348 customers on ETV and ETV LLC are much easier to manage as a one or two line
349 item billing compared to a phone customer with franchise fees, excise tax, sales
350 tax, E911, subscriber line charges, ARC charges, poison control, EAS, local
351 service, call features, universal service fees, and the associated billing and
352 compliance associated with all of these billing line items. These examples
353 highlight the inappropriateness of revenue as a cost driver. This example also
354 begins to show why the billing records are reflective of associated management

355 time in managing the complexity of regulated operations including compliance,
356 regulatory changes, proceedings, and oversight of CSR and administrative
357 employees.

358

359 **Q. Do you believe expenses are a rational driver of costs?**

360 A. No. Expenses are not a rational driver of costs.

361

362 **Q. Why not?**

363 A. There are significant direct coded expenses that have no relationship to the
364 amount of time spent by the CEO, Board, Marketing/PR, or CSR's. One of the
365 best examples that illustrates the problem with using expense as a substitute for
366 a substantive cost driver can be seen with the expenses of Emery Telcom Video
367 LLC (ETV LLC). The single largest expense category on the non-regulated
368 entities is Cable TV programming costs in ETV LLC. These costs totaled
369 \$2,203,681 for 2014 (activity 73 in account 7962.61 in previously provided GL
370 detail). This cost alone is similar to the entire non-depreciation costs of ETV, yet
371 programming and negotiation is handled through ETV LLC's association with the
372 National Cable Television Cooperative (NCTC) leaving very little management
373 time related to cable TV programming. If expenses were used as an allocation
374 basis, significant costs would be inappropriately allocated to ETV LLC. It simply
375 is not logical that a random programming cost increase would result in additional
CEO cost allocation. There is no reasonable correlation.

ERRATA

377
378 **Q. Do the “billing record” inputs to the company’s A&G allocation factor have**
379 **a “direct” or “cost-causative” relationship to the expenses in the**
380 **department cost pool that they are used to allocate?**

381 A. Yes. Billing records are representative because they are representative of the -
382 types of services, number of customers, complexity of regulatory compliance,
383 and issues that the CEO/Board, and Marketing represent. Forward looking plans
384 are extensions of or improvements to the existing services and have focused
385 primarily of regulated issues since 2011 when CAF/ICC reform was implemented
386 and continues today with ACAM model based support proposals being
387 considered by the FCC. Billing records also reflect forward looking CEO plans
388 board decisions, and marketing efforts as these efforts can be measured in
389 resulting customer growth in new and existing areas. Extension of plant to new
390 customers and areas is also reflected in the billing records on a slight lag. This
391 allocator is updated frequently.

392
393 **Q. What is your assessment of the revised A&G allocator calculation**
394 **performed by Mr. Ostrander?**

395 A. Carbon/Emery Telcom is not opposed to the idea of considering other cost
396 causative drivers in addition to billing records to maintain the accounting and
397 general allocator. As was pointed out by Mr. Ostrander, drivers in addition to
398 billing records have been used by Carbon/Emery Telcom in the past. However, I

399 do not agree with all of the Offices proposed drivers, or its methodology in
400 considering those drivers.

401

402 **Q Which of the proposed drivers suggested by Mr. Ostrander to you reject?**

403 A. I reject the use of "Revenue" and "Expenses" as cost allocators. For the reasons
404 I discussed above "Revenue" and "Expenses" are not at all appropriate to use to
405 develop allocations.

406

407 **Q. Do you agree that Plant can be used as an input for developing cost**
408 **allocators?**

409 A. Yes. Carbon/Emery Telcom could consider Plant as a possible cost driver to
410 determine the accounting and general allocator. If "plant" were to be used,
411 "Gross Plant" would be a better indicator than "Net Plant" because the regulated
412 entities use group asset depreciation per FCC part 32 whereas the non-regulated
413 entities use single asset straight line depreciation. Because group asset
414 depreciation has had an accelerated effect on the regulated entities, use of net
415 plant as an indicator for cost allocation would result in an artificially low allocation
416 to the regulated entities to the extent of the accelerated depreciation.

417

418 Also, when using Plant as a proposed driver, shared assets need to properly
419 accounted for and shown on the books of the correct entity based upon allocation
of that asset, not ownership. As indicated in Carbon's Application, to reduce

421 duplication of equipment and costs, the Carbon/Emery Telcom entities share
422 certain equipment, vehicles, and computers. This shared equipment is recorded
423 on the books of ETV. This cost of this shared equipment is then allocated to the
424 various related party entities based upon usage or other allocators. The shared
425 equipment is presented and discussed in the initial filing as Exhibit 7b – Shared
426 Assets and this exhibit was used as the basis for a rate base adjustment to
427 include the appropriate portion of shared equipment in the rate base of Carbon.
428 Therefore, an allocator based upon plant would need to reflect the portion
429 allocated to each entity to prevent the overstatement of assets on ETV and
430 related understatement on each of the other Carbon/Emery related entities. Mr.
431 Ostrander's analysis of plant as a driver does not take these issues into
432 consideration.

433

434 **Q. Are there other inputs that Carbon agrees are appropriate?**

435 A. Yes. Carbon believes that records and payroll can also be valuable inputs in
436 determining the appropriate A&G Allocation factor.

437

438 **Q. Has the Office employed the proper methodology for considering these**
439 **allocation inputs?**

440 A. No. The calculation performed by Mr. Ostrander in "Confid. 15-2302-01 - Ostr.
441 WP 1.3 - Adj. BCO-2 (OCS DR 2-40 CAM Alloc.).xlsx" uses an equal weighting
442 of the various dollar types and records. This method skews the allocation to the

443 highest dollars (revenue and net plant totaling \$57,224,371) and essentially gives
444 no weight to billing records (\$264,700). A more reasonable approach is to
445 assume that each of the drivers, if representative, should be given equal
446 weighting. This can be easily accomplished by taking the average of the
447 resulting allocation percentages of each appropriately identified driver.

448

449 **Q. Have you recalculated the Accounting and General Allocator using**
450 **additional inputs as suggested by Mr. Ostrander?**

451 A. Yes. Carbon recalculated the A&G Allocator using Gross Plant (properly adjusted
452 for shared assets), Monthly Records, and Payroll, and then weighted each
453 associated allocation percent equally. This produced essentially the same
454 allocation as was used by Carbon in the initial application 26.68% Emery (ET),
455 46.79% Carbon/Emery (CT) and .95% Hanksville (HT) (74.42% total to regulated
456 entities) as opposed to 25.67% ET, 47.55% CT, and .74% HT (73.96% total to
457 regulated entities). This calculation can be viewed in Carbon/Emery Rebuttal
458 Testimony of Woolsey – A&G Allocator Analysis - Exhibit 2.xlsx.

459
460 Although the revised allocation would result in slightly greater expenses being
461 allocated to the regulated entities (.47%), because of the insignificance of the
462 increase, I am of the opinion that the base year is representative and no
463 adjustment is necessary.

465 Q. The Office proposed a different basis for Public Relations/Marketing
466 allocations. Do you agree with the proposed adjustment?

467 A. No. Mr. Ostrander's proposed PR/MK adjustment premise is that because there
468 are three services and the one regulated service should be then allocated 33% of
469 the cost; he then randomly decides 25%. Neither the 33% or the 25% is backed
470 by substantive support. The three services considered by Mr. Ostrander were
471 IPTV, Internet, and Phone. The affiliated companies of Emery do not offer IPTV
472 but do offer Cable TV.

473 When considering how to allocate costs for marketing, if certain services are not
474 advertised at all they should get little or no allocation of costs, conversely if a
475 particular service appears more frequently it should receive an increased
476 allocation. With this in mind, only considering the number of services offered, is
477 over simplistic as it does not consider the focus or frequency of marketing efforts
478 of these services. If services are specifically non-regulated and do not contain
479 phone advertising they are *direct coded* as is the case with *Moab* advertising
480 which is all direct coded to non-regulated entities and reduces the actual amount
481 of PR/MK subject to the allocator. In the regulated operating areas, phone
482 receives a primary focus either directly or through bundles. Due to decreased
483 interest in land lines, the advertising of bundles is critical to the success and
484 survival of Carbon. Bundles in the regulated operating areas are designed to be
485 Phone and "something else" either LD, cable, internet provided over regulated
486 plant, or internet provided over non-regulated plant. Whenever a bundle is

487 advertised and sold the regulated entity benefits. This benefit is enhanced by the
488 sale of long-distance or DSL which are tied to the regulated entity due to the
489 requirement to have a land line or to allocate additional loop cost (DSL revenue
490 requirement) for standalone DSL. Thus, the actual sales (and advertising) of LD,
491 DSL, and Bundles in general, benefit the regulated entity and cost should reflect
492 this.

493
494 As of December 31, 2015, nearly half of the customers in the Carbon serving
495 area are phone customers (6,899 phone vs 7,066 (internet and cable). Of the
496 internet customers 3,096 were DSL making them also regulated customers (ETV
497 purchases wholesale DSL special access service from Carbon). The number of
498 Carbon serving area customers being serviced by regulated plant is 9,995 or
499 71.5%.

500
501 In the absence of a more appropriate allocation basis, the current use of the A&G
502 allocator by Carbon for PR/MK is reflective of the results of marketing efforts and
503 is comparable to the customers being served by regulated vs non-regulated
504 plant.

505
506 **Q. In addition to the A&G Allocation change and PR/MK Adjustment, the Office**
507 **is proposing an adjustment to the CSR Allocator. Do you agree with the**
508 **proposed adjustment?**

509 A. No. Mr. Ostrander's proposed CSR adjustment contains a variety of errors.

510

511 **Q. What errors are contained in the CSR adjustment being proposed by the**
512 **Office?**

513 A. Mr. Ostrander states that the CSR allocator should be adjusted from 63%
514 regulated and 37% non-regulated to 35% regulated and 65% non-regulated.
515 However, Mr. Ostrander has not provided any data or evidence to support this
516 conclusion. There is no evidence that Mr. Ostrander's opinion of how CSR costs
517 should be allocated is more accurate than the time study performed by Carbon in
518 2010. In fact, it would appear that Mr. Ostrander did not verify any of his findings
519 related to CSR's in the Office data requests, and as a result, Mr. Ostrander made
520 several errors in his testimony related to the CSR Allocation factor.

521

522 **Q. Please identify the errors you are referring to.**

523 A. In Mr. Ostrander's calculation of CSR costs he uses \$931,313 total CSR dollars
524 as a basis for allocating 2014 CSR costs, the correct amount of total CSR costs
525 is \$690,693.36 which results in a 35% misstatement upfront and makes any
526 resulting proposed adjustment wrong. This data is a subset of total allocations
527 given to the Office in DR 2-40. Carbon has utilized an Excel pivot table to
528 summarize the data and demonstrate the error, see Carbon Emery Rebuttal
529 Testimony of Woolsey – CSR Allocation - Exhibit 3.xlsx. The error was limited to
530 this one data point. From the pivot table you can see that total expenses subject

531 to allocation tie to Mr. Ostrander's analysis showing \$5.6M in total allocated
532 expenses. The highlighted green numbers on Carbon Emery Rebuttal Testimony
533 of Woolsey – CSR Allocation - Exhibit 3.xlsx also tie to amounts shown for
534 Board, CEO, Marketing/PR, and Human Resources. The CSR allocation amount
535 does not tie and should have been \$690,693.36.

536
537 Mr. Ostrander states that there are 31 CSR's per DPU 1-4(b), then goes on to
538 state that "It is not clear why 63%, or a substantial majority of these CSR costs
539 would be allocated to regulated operations". DPU 1-4(b) does not indicate that
540 63% of CSR costs were allocated to the regulated entities. It does however
541 clearly demonstrate that there were 31 different CSR's between January 31,
542 2012 and April 1, 2015. Mr. Ostrander failed however to notice that there were
543 also 3 additional "CSR/Advanced Trouble Shooting" employees making 34 total
544 CSR's that worked in any given month over the 40 month period presented. His
545 count does not consider turnover, part-time, or temporary employment. Mr.
546 Ostrander also failed to notice that there was a table at the bottom of this data
547 request that clearly demonstrates the number of employed employees in any
548 given month. The summary is presented below with highlights for the base year
549 and a summary at the bottom of the sheet:

550

563 **Q. Do all of the 19.4 FTE CSR employees use the CSR allocator for their**
564 **primary coding?**

565 A. No. Out of the 19.4 FTE employees there are 3 dispatch CSR's that primarily
566 use the dispatch allocator which more closely follows plant labor. There are also
567 3 CSRs included in the advanced trouble shooting CSR group and 1 Moab CSR
568 who's coding is all to non-regulated entities (ETV and ETV LLC). This essentially
569 lowers the actual number of CSR's using the CSR allocator for their primary
570 coding to 12.4.

571

572 **Q. What other changes have you made with respect to CSRs?**

573 A. In conjunction with the establishment of the troubleshooting group, additional
574 plant troubleshooting software tools were given to the CSR group to diagnose
575 initial trouble calls. If a CSR determined that the trouble is not isolated to the
576 outside plant, the call is passed to the advanced trouble shooting group. This
577 greatly reduces the amount of time the CSR's spend with non-regulated
578 customers. These changes were made as DSL and Cable internet customers
579 increased, and despite the increased number of customers, the additional tools
580 and cooperation between advanced troubleshooting has allowed customers to be
581 served without requiring a significant increase in CSRs. The CSRs' actual time
582 can be reviewed with a Pivot table on DPU DR1-4a Emery & Carbon- Labor
583 Reports – testimony analysis.xlsx the pivot reveals the following:

Sum of Total Amount	Column Labels								
Row Labels	10 - Customer Service Re 33 - CSR/Advanced	Grand Total	1 - Emery	2 - ET&V	4 - ETV LLC	05 - LD	6 - Carbon	7 - Hanksville	
CSR DISTRIBUTION	571,335.82	571,335.82	152,318.13	63,132.61	144,205.16	3,428.01	205,338.09	2,913.81	
DIRECTORY DISTRIBUTION	6,399.68	6,399.68	2,047.90	-	-	-	4,287.79	64.00	
DISPATCH DISTRIBUTION	159,769.06	159,769.06	32,992.31	14,554.96	70,090.69	-	41,476.05	655.05	
INTERNET SERVICES - PC		1,083.05		1,083.05					
LABOR - E COMPUTERS BUILDS/REPAI	126.00	49,997.68	50,123.68						
LABOR - INTERNET TECH SUPPORT	1,196.86	84,981.32	86,178.18						
LABOR - LOCAL CHANNEL	5.58	5.58				5.58			
MOAB CSR DISTRIBUTION	38,299.89	38,299.89		3,829.99	34,469.90				
Grand Total	777,132.89	136,062.05	913,194.94	187,358.34	218,902.47	248,771.33	3,428.01	251,101.93	3,632.86
			Regulated	442,093.13	48%				
			Non-Reg	471,101.81	52%				

585

586 Source: Carbon Response to DPU DR 1-4a Emery & Carbon-Labor Reports –
 587 testimony analysis.xlsx

588

589 **Q. What does the Pivot table show?**

590 A. The Pivot table reflects the final disposition of all CSR Labor and shows use of
 591 CSR, Dispatch, Directory, and Moab CSR distributions as well as direct coding.
 592 The results indicate that more CSR time is actually coded to the non-regulated
 593 entities than the regulated entities (52% non-reg vs 48% regulated). As the
 594 current actual coding is highly non-regulated and combines the proper use of
 595 direct coding and representative allocators based on real cost drivers, the
 596 hypothetical allocator proposed by Mr. Ostrander is not appropriate and is wholly
 597 without basis.

598

599 **Q. The Office is proposing several adjustments to your rate base accounts.**
600 **How did you determine the rate base accounts used in Carbon's**
601 **Application?**

602 A. Carbon/Emery Telcom relied on pages 17 and 18 of the Incumbent Local
603 Exchange Carrier Annual Report to the Public Service Commission of Utah
604 (Annual Report) for guidance in determining appropriate rate base accounts.
605 Carbon's Annual Report for the period January 1, 2014 to December 31, 2014
606 was submitted to the PSC and has been provided to the Office and DPU. Page
607 17 of the Annual Report lists the net telecommunications plant in service by
608 account. Page 18 is entitled "Other Rate Base Accounts" and includes a listing
609 of accounts typically considered as part of the rate base. A snap shot of
610 Carbon's 2014 report is shown below as an example of the included accounts:

612

613 Generally the asset accounts listed in the Annual Report are added to the rate
614 base and certain liability accounts are deducted from the rate base. Carbon
615 included these accounts in the Rate Base in its Application as has been the
616 practice in the previous proceedings before the PSC. Carbon has not departed
617 from the accounts prescribed by the Utah PSC in their Annual Report nor
618 changed the common practice with respect to rate case or UUSF filings.

619

620

621 **Q. Mr. Ostrander has identified 4 adjustments to rate base including**
622 **Prepayments (BCO-3), Long-Term Liabilities (BCO-4), Telephone Plant**
623 **Under Construction (BCO-5), and Materials and Supplies (BCO-6). Do you**
624 **agree with any of these adjustments?**

625 **A.** Yes, one. I believe that deducting the Long-Term Liabilities from Rate Base
626 (BCO-4) is appropriate. Carbon originally did not consider the deduction of a
627 post retirement benefit obligation because it was not specifically identified as a
628 liability account on the PSC report. Upon examination of the nature of this
629 account as well as the handling for interstate purposes as noted by Mr.
630 Ostrander, I agree that a reduction from rate base should be made. I do not,
631 however, agree with Mr. Ostrander's Part 36 value used for this adjustment. The
632 Long-Term liability represents post-retirement health care related obligations and
is appropriately removed from rate base because the company has already

634 recovered the expense that created the liability in prior years. However, the total
635 liability needs to be reduced by:

- 636 • the portion created through non-income statement adjustments (other
637 comprehensive income); and
- 638 • the portion that was allocated to other non-regulated entities.

639 Considering these adjustments, \$1,090,175 is the amount that should remain on
640 Emery, Carbon, Hanksville. Only Carbon's portion, in the amount of \$600,465,
641 should be deducted from Carbon's rate base. This amount differs slightly from
642 the Part 36 amount identified by Mr. Ostrander due to the adjustments for other
643 comprehensive income mentioned above.

644

645 **Q. Do you agree with BCO-3 related to prepayments?**

646 A. No. I reject the appropriateness BCO-3. The inclusion of prepaid expenses is
647 straight forward and allowed by practice. This policy should not be changed.

648

649 **Q. Do you agree that telephone plant under construction (TPUC) should be
650 excluded from rate base (BCO-5)?**

651 A. No. With respect to the adjustment BCO-5, Mr. Ostrander seeks to remove 50%
652 of TPUC in the amount of \$935,335 and provides two reasons for its exclusion.
653 The first is his opinion that a normalized basis of TPUC would result in a lower
654 and more appropriate TPUC value. Though normalization conveniently reduces
655 TPUC, it does not recognize that these are actual capital expenditures, that

656 TPUC is directly tied to plant investment, and that a lower TPUC just means the
657 assets have moved to another rate base account (plant in service) or have not
658 occurred yet. Carbon is not proposing known and measurable plant additions in
659 TPUC. Rather, Carbon is only including actual plant expenditures which
660 currently reside in TPUC. This is not an account that should be normalized to
661 find an "appropriate" operating level. This account by its very nature accurately
662 reflects actual plant expenditures.

663
664 **Q. What is the second reason that Mr. Ostrander gives for removing 50% of**
665 **TPUC?**

666 **A.** Mr. Ostrander also suggests that we should consider the "matching principle"
667 which is a GAAP principle not a "regulatory" principle. Matching attempts to align
668 the financial impact of actual events to the periods in which they occur. As
669 examples:

- 670 • a retail sale should match corresponding reductions in inventory and
671 recognition of cost of goods sold in the same period;
- 672 • expensing of a prepaid should be ratably over the periods of benefit;
- 673 • in the case of assets, they are not depreciated until they are placed in
674 service;
- 675 • likewise existing assets that new assets are to replace are not reduced on
676 the books until they incur an impairment or are actually taken out of
677 service.

678 Mr. Ostrander's strange interpretation of mismatching does not provide adequate
679 basis for adjustment; by suggesting that Carbon should somehow project an
680 offset to the inclusion of TPUC of events that have not occurred. With respect to
681 capital expenditures I have never heard of projecting future revenues, affiliate
682 transactions, or disposals related to an asset addition that have not yet occurred
683 under the theory of matching. This would in fact be a violation of both the
684 *matching principle which requires a transaction to be recorded in a correct period*
685 and also a violation of a second GAAP principle which prevents the recognition of
686 contingent gains. Mr. Ostrander's arguments on removing 50% of TPUC should
687 be rejected.

688

689 **Q. Do you agree with the Offices' proposed adjustment for Materials and**
690 **Supplies contained in BCO-6?**

691 A. No. In BCO-6, Mr. Ostrander has proposed a reduction in materials and supplies
692 to a "normalized" lower level arguing that the current level is artificially high.
693 While the current level of materials and supplies on site is higher than historical
694 levels, the higher level is real, on site, and necessary due to several factors:

- 695
- 696 • Carbon is experiencing increased construction activity associated
with the FTTH curb and business district in Price;
 - 697 • Carbon's lead time on fiber and fiber related products has
698 increased. Carbon is currently experiencing delivery delays of three
699 to six months.

700 • As a result of the increase lead times with vendors, Carbon is
701 required to keep more inventory on hand to prevent shortages, and
702 work stoppages that will result if required fiber and fiber facilities
703 are not on site.

704 The increased level of inventory is anticipated for at least the next five years and
705 is properly reflected in the rate base at full value.

706

707 **Q. The Office is proposing a depreciation adjustment on assets that the Office**
708 **believes are either fully depreciated or will be fully depreciated in about 2**
709 **years (BCO-8). Do you agree with this depreciation adjustment?**

710 **A.** No. Mr. Ostrander refers to his adjustment of BCO-8 as “remove depreciation
711 expense on fully depreciated assets”. Carbon has not depreciated any asset in
712 excess of the book value of the asset. We assume that what Mr. Ostrander is
713 attempting to describe is the effect of group asset depreciation. As indicated in
714 the testimony of Douglas Meredith, group asset depreciation is an FCC
715 prescribed method of depreciation which can have an accelerating effect on
716 depreciation in cases where there are older assets included in the group subject
717 to a depreciation calculation. However, group asset depreciation only
718 accelerates depreciation; it does not result in over-depreciation (depreciation in
719 excess of the book value) of any asset.

720

721 Q. **What errors has Mr. Ostrander made in his depreciation adjustment**
722 **contained in BCO-8?**

723 A. Mr. Ostrander's BCO-8 claims to reduce "depreciation expense by \$248,639 (and
724 corresponding increase in accumulated depreciation in rate base of \$124,320) on
725 assets that are either fully depreciated or [sic] will be fully depreciated within
726 about 3 years." Mr. Ostrander provides no rationale for his recommendation to
727 exclude depreciation expense in the amounts \$11,051 for Other Work Equipment
728 and \$11,551 for Interexchange Circuit Equipment. He states that these accounts
729 became fully depreciated in 2014 so he just excludes the entire amount. This
730 position assumes no continuing investment which would result in the continuation
731 of depreciation. Continued investment is anticipated since the company is a
732 going concern, and I assert that the depreciation levels projected in the base
733 year are representative of expected levels for at least the next five years based
734 upon this investment.

735
736 Q. **Are there other accounts that Mr. Ostrander adjusted besides "Other Work**
737 **Equipment" and "Interexchange Circuit Equipment"?**

738 A. Yes. Mr. Ostrander concludes that the deprecation in accounts for Subscriber
739 Circuit Equipment and Aerial Cable is currently overstated and that it will largely
740 disappear in four years (three years for the accounts subject to his adjustment).
741 This position again erroneously assumes no continued investment and no
742 disposals. Additionally, there is no determination whether the current

743 depreciation level of the chosen account groups is materially accelerated or is a
744 representative amount. A summary of data for the two targeted adjustment
745 accounts is as follows:

<u>Asset Group</u>	<u>GBV</u>	<u>NBV</u>	<u>Life</u>	<u>2 year Capital Anticipated</u>	<u>5 year Capital Anticipated</u>
Sub. Circ. Equip.	6,044,852	2,164,150	8 yrs	2,699,380	8,147,385
Aerial Cable	2,593,099	443,652	20 yrs	1,730,406	1,730,406

746
747 Source: From Confid. - 15-2302-01 Ostr. WP 1.8 - Adj. BCO-8 - DPU 1-11 Deprec.
748 Exp.xlsx – tab Dep Calc. and FCC 481 filing.

749
750 **Q. What does the above table show with regard to Subscriber Circuit**
751 **Equipment?**

752 A. The first targeted account, Subscriber Circuit Equipment (Accts 2232 and 3232),
753 with a GBV and NBV of \$6,044,852 and \$2,164,150 respectively and a
754 depreciation life of 8 years is completely appropriate at its current depreciation
755 level. The Subscriber Circuit Equipment Account consists largely of legacy
756 DSLAM type equipment which will be replaced by FTTH network interface device
757 equipment beginning in earnest in 2017. Taking the Gross Book Value (GBV) of
758 \$6,044,852 and dividing it by the asset life of 8 years results in \$755,606 of
759 depreciation expense per year, which evidences little acceleration from the
760 current year actual depreciation at \$705,024. Because the legacy equipment is
being disposed and replaced in the same year the old equipment will be fully

762 depreciated the current level of depreciation is appropriate. This also shows that
 763 depreciation will remain very similar to current levels in the short run, but will
 764 actually increase after five years based upon the projected five year investment.
 765 The adjustment proposed by Mr. Ostrander is entirely inappropriate.

766
 767

FCC Form 481 - Five Year Service Quality Improvement Plan
 Projected Operating and Capital Expenditures
 SAC 502278 - Carbon/Emery Telcom (one of three ILECs serving this SAC)

Operating Expenditures		Projected	Actual	2015	2016	2017	2018	2019
		2014	2014					
Carbon/Emery Telcom								
Plant Specific		1,921,608	1,951,088	1,970,594	1,990,300	2,010,203	2,030,305	2,050,608
Plant Nonspecific		509,267	363,936	367,576	371,252	374,964	378,714	382,501
Depreciation		1,936,841	2,038,846	2,280,037	2,501,922	2,848,004	3,142,748	3,571,515
Amortization		839,784	839,784	839,784	839,784	839,784	839,784	839,784
Customer Operations		761,738	788,057	795,938	803,897	811,936	820,055	828,256
Corporate Operations		1,120,804	1,191,714	1,203,631	1,215,667	1,227,824	1,240,102	1,252,509
Total Operating Expenses		6,250,257	7,173,420	7,457,560	7,722,822	8,112,715	8,451,703	8,119,367
Capital Expenditures		Projected	Actual	2015	2016	2017	2018	2019
		2014	2014					
Carbon/Emery Telcom		1,590,059	3,656,190	1,883,084	2,976,036	2,603,005	2,305,000	2,245,300
2116 Other Work Equipment		10,000	0	11,000		10,000	10,000	10,000
2121 Buildings		2,400	3,990		20,000			62,000
2122 Office Furniture and Equipment		0	0					
2124 General Purpose computers		37,108	0					
2212 Digital Electronic Switching		0	0			350,000		
2230 Interexchange Circuit Equipment		0	0			20,000	85,000	
2232 Subscriber Circuit Equipment		5,000	0	123,700	2,575,680	2,023,005	2,110,000	1,315,000
2232 Subscriber Circuit Equipment-packet		97,471	1,001,063					
2421 Aerial Cable		1,188,000	578,214	1,565,650	164,756			
2423 Buried Cable		240,080	1,532,302	182,734	105,600	100,000		758,800
2441 Conduit Systems		0	540,621					
Unexpected		10,000	0		100,000	100,000	100,000	100,000

768
 769 Source: FCC 481
 770
 771 Q. What does the above table show with regard to the Aerial Cable Account?

772 A. With respect to the Aerial Cable, Carbon anticipates fixed asset additions to this
773 category of \$1,730,406 over the next two years which will more than outpace the
774 depreciation expense levels currently projected by Mr. Ostrander in the five year
775 period. Though depreciation will not drop as projected by Mr. Ostrander, the
776 acceleration effect is present in the Aerial Cable account and can be maintained
777 near current levels if disposals of the older assets at levels similar to additions
778 are made. Carbon's current use of group asset depreciation does not result in an
779 inappropriate base level of depreciation, and (based upon anticipated additions
780 and disposals) future depreciation levels will not differ significantly from the
781 current 2014 base year levels. A more appropriate and encompassing
782 discussion of depreciation methodology, potential acceleration, and both the
783 expense and rate base implications of changing the methodology is included in
784 the Rebuttal Testimony of D Meredith filed in this Docket.

785
786 **Q. Describe how Carbon calculates depreciation expense.**
787 A. Carbon calculates depreciation expense using a straight line calculation in
788 conformity with a group plan of accounting as prescribed by Federal
789 Communications Commission (FCC) in the Code of Federal Regulations, Title
790 47, Chapter I, Subchapter B, Part 32. FCC part 32.2000 which states "(iii)
791 Charges for currently accruing depreciation shall be made monthly to the
792 appropriate depreciation accounts, and corresponding credits shall be made to
the appropriate depreciation reserve accounts. Current monthly charges shall

794 normally be computed by the application of one-twelfth of the annual depreciation
795 rate to the monthly average balance of the associated category of plant.”

796
797 “Group plan” is defined as follows in FCC Part 32.9000; “Group plan, as applied
798 to depreciation accounting, means the plan under which depreciation charges
799 are accrued upon the basis of the original cost of all property included in each
800 depreciable plant account, using the average service life thereof properly
801 weighted, and upon the retirement of any depreciable property its cost is charged
802 to the depreciation reserve whether or not the particular item has attained the
803 average service life.”

804
805 **Q. Does a group asset plan calculation of depreciation expense result in**
806 **higher depreciation?**

807 **A.** No. Using a group asset method to Calculate depreciation expense will always
808 result in the same total depreciation expense as calculated under any other
809 accepted method. Group asset depreciation is an accelerated depreciation
810 method. This means that group asset depreciation tends to produce a higher
811 depreciation expense in earlier years, and a lower depreciation expense in later
812 years. Conversely the rate base (NBV of associated assets subject to
813 depreciation) will be reduced more quickly resulting in a lower total disbursement
814 of UUSF based upon applying a rate of return on a lower NBV and over a shorter
815 (accelerated) asset life.

816

817 **Q. Is group asset an acceptable method of depreciation?**

818 A. Yes. Group asset depreciation is an acceptable method of depreciation that is
819 used for, and approved by the FCC. Carbon/Emery Telcom is using an accepted
820 methodology in the calculation of depreciation in accordance with the guidance
821 provided by the FCC, consistent with Carbon's historical practice, and consistent
822 with the method of depreciation used by many other rural ILEC's in the State of
823 Utah.

824

825 In the absence of rulemaking at the state level dictating the method of
826 depreciation to be employed by rural telecommunication providers in the State of
827 Utah, group asset depreciation should continue to be allowed by the
828 Commission. Carbon's base year depreciation calculated using the group asset
829 method is not abnormally high and is consistent with anticipated investment
830 levels and should not be modified.

831

832 **Q. Mr. Hellewell from the Division of Public Utilities proposed an adjustment**
833 **of \$563,276 to reduce depreciation expense. Can you speak to the**
834 **appropriateness of this proposed adjustment?**

835 A. The calculation is essentially a "worst of both worlds" approach to applying what
836 otherwise would be an acceptable depreciation methodology if consistently and
historically implemented.

838
839 Depreciation effects rate of return calculations in two ways: first by the
840 depreciation expense recorded in any given period; and second by the allowed
841 rate of return applied to the NBV of these associated assets. In addition to these
842 two components there are two sources of potential return – State and Federal.
843 These two jurisdictions as well as the methodology have to be closely examined
844 when any change is considered to ensure proper jurisdictional return (no loss of
845 recovery or double recovery).

846

847 **Q. How did the DPU calculate its depreciation adjustment?**

848 A. The DPU's proposed depreciation adjustment was calculated by applying single
849 asset straight line depreciation to individual asset detail provided in DPU DR1-11
850 Emery & Carbon – Assets and CY 2014 Depreciation.xlsx. Carbon recalculated
851 the DPU's single asset adjustment to within reasonable rounding differences of
852 \$20, and has supplied our calculation in Carbon Emery Rebuttal Testimony of
853 Woolsey–Depreciation-Exhibit 4.xlsx. This exhibit also contains additional
854 calculations which will be discussed latter.

855

856 **Q. Are there issues with the DPU's proposed adjustment?**

857 A. Yes. The DPU proposed adjustment provides single asset straight line
858 depreciation as if had occurred from the in-service date through 2014, then
859 compared the 2014 recalculated expense to the expense recorded by Carbon to

860 arrive at a difference of \$563,276. The DPU methodology which resulted in
861 lower depreciation expense was applied to all depreciable assets (not just
862 intrastate assets). This ignores the fact that Carbon in fact used a higher
863 depreciation expense amount in its interstate filings upon which rate of return will
864 be established for interstate recovery mechanisms. On the associated rate base
865 side of the depreciation transaction, the DPU used the NBV which reflects the
866 accelerated group asset methodology (lower) then added back only the current
867 year depreciation difference of \$563,276 as a proposed adjustment to NBV.
868 Thus the "worst of both worlds" occurred where the lowest possible NBV was
869 used for rate base and the lowest possible depreciation calculation (single asset
870 straight line) was used for expense.

871

872 **Q. Couldn't you just adjust the NBV to reflect historical application of the**
873 **single asset straight line depreciation proposed by the state to arrive at the**
874 **correct amount of return on rate base associated with their proposed**
875 **adjustment?**

876 A. No. Because recovery of both depreciation expense and return on rate base has
877 already been received on the interstate portion of these assets in prior years.
878 Any calculation by the state would have to consider this effect.

879

880 **Q. How would you address the DPU's concern regarding depreciation**
methodology?

882 A. The preferred course of action, which results in an overall lower total UUSF
883 distribution (as discussed in testimony provided by Douglas Meredith), would be
884 to allow companies to continue to use group asset depreciation as an acceptable
885 methodology as prescribed by the FCC. This would not preclude other
886 companies from using a different methodology it would just be one of the
887 acceptable methods of calculation.

888
889 As an alternative, if the State feels strongly about a particular methodology for
890 calculating depreciation and wishes to establish rules regarding this, the best
891 approach would be to avoid the complications and recovery concerns of
892 retroactive application and apply the new methodology going forward on new
893 asset investments. If a company chooses to not follow the State methodology at
894 that point then they would be subject to reconciling and adjusting their books for
895 state rate making purposes as necessary.

896
897 **Q. If single asset straight line methodology was prescribed by the State and**
898 **adopted by Carbon on a go-forward basis, how would depreciation**
899 **expense compare to the base year?**

900 A. I performed an analysis of the effects of making a prospective change to single
901 asset straight line depreciation as of January 1, 2014. In this analysis, Carbon
902 assumed that group asset depreciation would continue on historical assets as of
903 12/31/13, and single asset straight line methodology would apply to all 2014

904 additions and projected additions through 2019. For purposes of this analysis
905 Carbon used the projected capital improvements filed July 1, 2015 on FCC Form
906 481. From these assumptions, the analysis provided the following results:

- 907 • 2014 depreciation expense would have reduced by \$114,150 from
908 \$2,038,846 to \$1,924,696 in the 2014 base year.
- 909 • The six year average depreciation expense is projected at \$1,951,264
910 which is \$87,582 (4.3%) lower than the base year.
- 911 • The base year is materially representative of anticipated depreciation
912 expense levels as projected in this change scenario.

913 See Carbon Emery Rebuttal Testimony of Woolsey - Dep Est Single Asset 2014
914 to 2019 - Exhibit 5.xlsx

915

916 **Q. Is there another solution?**

917 A. The last solution would be an attempt to apply the DPU methodology in a way
918 that considers all aspects of the proposed change including depreciation
919 expense, rate base (NBV), and jurisdiction. Carbon has performed this
920 calculation which is included in Carbon Emery Rebuttal Testimony of Woolsey –
921 Depreciation -Exhibit 4.xlsx. In this Exhibit Carbon starts by recalculating
922 individual asset depreciation using the single asset straight line method through
923 12/31/2013. This allows the NBV at the beginning of the rate base period to be
924 presented. 2014 depreciation expense is then calculated in the same manner,
925 and a resulting NBV for 12/31/2014 is calculated. These numbers are then

ERRATA

926 totaled to see the current 2014 depreciation effect and cumulative NBV effect of
927 the proposed depreciation change. (See summary in rows 2531 to 2541 on the
928 Carbon tab of the spreadsheet). The depreciation change is calculated at
929 \$563,256 essentially the same as the DPU calculation of \$563,276. In this
930 section you can also see the effect of adding back the cumulative NBV difference
931 on rate base, which would result in a UUSF impact of \$235,723 (using
932 10.50001% Carbon rate of return). Carbon has already described the fault of
933 using this calculation as a NBV/rate base adjustment because it does not
934 consider interstate return previously received on these asset differences. The
935 next step in the calculation is contained in rows 2543 to 2553 in which the two
936 methodologies are applied to the asset mix with the group methodology applied
937 to interstate assets and the single asset methodology applied to the intrastate
938 assets. This results in a 2014 depreciation reduction adjustment of \$333,970
939 and a corresponding rate base/NBV increase adjustment of \$1,331,098 with an
940 estimated corresponding UUSF impact of \$139,767. The net decrease in the
941 UUSF request resulting from this theoretically correct analysis would be
942 \$194,203 ($-\$333,970 + 139,767$).

943

944 **Q. Are there any downsides to the mixed calculation performed above?**

945 A. Yes. The intrastate/interstate mix of assets can and does change over time
946 making this calculation slightly inaccurate at any given point in time. Also, any
947 change from existing methodology (unless the books could be restated) will

ERRATA

948 cause differences in federal and state reporting that would not be easily tracked
949 and would result in less transparency from a reporting standpoint.

950
951
952 Again the best course of action is the choice of an acceptable methodology that
953 is then applied consistently over a single asset or group asset life for both
954 interstate and intrastate rate of return recovery. In the absence of agreement on
955 methodology by all parties in this proceeding, the focus should be on whether the
956 amount presented in the initial filing is a representative base year amount. I
957 assert that the base year amount is materially representative whether Carbon
958 continues to use the group method, or if a change to single asset straight line
959 methodology were made as of the beginning of the 2014 base year.

960
961

962 **Q. Mr. Hellewell describes six reasons why group asset depreciation is not**
963 **recommended. What is your response?**

964 A: I will address each of the six reasons:

- 965 • Depreciation by computer: The ease of calculation was not a determining
966 factor in the original choice of Carbon to use group asset depreciation. In
967 fact until our recent system upgrade, Carbon's accounting system would
968 not handle the group calculation.

- 969 • Asset Tracking: This argument is not really an issue for Carbon because
970 *individual assets are tracked.* Only our oldest assets are an issue (think
971 Qwest acquisition). Either method could be deployed with adequate
972 tracking.
- 973 • Disposal: With appropriate individual tracking the methodology has no
974 impact on disposals.
- 975 • Group Characteristics: The problem of classification exists in either
976 method of depreciation. Vehicles are not necessarily a problem as they
977 are easily identified and generally disposed at or near their depreciable life
978 thus reducing any possible group depreciation effect.
- 979 • Standardization: I do not disagree with Mr. Hellewell's general statement
980 *here* but would argue that we are among a majority of companies that use
981 group asset depreciation.
- 982 • Volatility: I agree that volatility risk is increased under a group
983 methodology. However this risk is mitigated through proper and timely
984 disposals and balanced continued investment as needed for aging assets.

985

986 **Q. Previously you indicated that Carbon is proposing a revenue adjustment to**
987 **account for the impacts of converting non-regulated cable customers to**
988 **regulated fiber internet customer. Can you tell us what the financial**
989 **statement impacts of this conversion are?**

990 A. This type of migration has two major financial statement impacts. First, there
991 would be a shift in the various components of interstate revenue requirement,
992 and second there would be an increase in rate base from the additional plant
993 required to make the conversion. We contacted Moss Adams, LLP, the CPA firm
994 contracted to produce our annual Cost Study, to do a sensitivity analysis of what
995 would have happened to our 2014 cost study assuming that all of our December
996 31, 2014 cable internet customers in the Carbon ILEC service area had been
997 converted to fiber internet as of year-end. The following chart summarizes the
998 results of the Moss Adams Sensitivity Analysis which was performed at our
999 company's cost study area level (includes Emery, Carbon/Emery, and Hanksville
1000 which operates in the boundary of SAC 502278):

1001

Part 69 - Revenue Requirement				
	As Filed	2014 Sensitivity w/		
	<u>2014 Cost Study</u>	<u>Migrated Internet</u>		<u>Difference</u>
Common Line	2,653,206	2,584,318		68,888
Special Access	1,570,681	1,507,445		63,236
DSL	809,009	1,268,011		(459,002)
Total	5,032,896	5,359,774		(326,878)
Net change in Interstate Rev Req's				(326,878)
Rate Base Increase w/USF Effect		2,551,350	10.50%	267,892
Total UUSF Impact				(58,986) Annual
Additional Customer Impact			2,190	(2.24) per Month

1002 Source: Carbon Emery Rebuttal Testimony of Woolsey - Cable Internet Migration

1003 - Exhibit 1.xlsx

1004

1005 This analysis shows that the combined effects of the migration of cable internet
 1006 customers to fiber internet would have a per customer UUSF impact of (\$2.24)
 1007 per month. In order to make an adjustment to this UUSF proceeding, Carbon
 1008 used a three year anticipated conversion average (similar to land line loss) in
 1009 which the 1833 remaining cable internet customers in Carbon are converted to
 1010 fiber, as projected in 2015 through 2017, with a resulting projected base year
 1011 adjustment impact of \$13,714. Carbon presented this adjustment along with an
 1012 updated calculation of the USF impact of landline loss covering the same period.

1013 The summary above and adjustments below are included in Carbon Emery
 1014 Rebuttal Testimony of Woolsey - Cable Internet Migration - Exhibit 1.xlsx

1015

Cumulative Cable Migration Projected Impact by Year							Revenue Impact (UUSF reduction)
		Year	Cumulative	3yr Avg	Rate		
Conversion Customers Anticipated:	Emery 15	246	246				
	Emery 16	111	357				
	Emery 17		357	320	\$2.24	\$8,619.00	Emery
	Carbon 15		-				
	Carbon 16	458	458				
	Carbon 17	611	1,069	509	\$2.24	\$13,714.08	Carbon

Projected Land Line Loss Adjusted for Actuals as of 8/1/2015							Revenue Impact	
		YTD 8/1	Annualized	3yr Avg	Rate	Updated Land Line Loss		
Emery Land Line Loss	Bus	32	48	72	\$28.00	\$24,192		
	Res	60	90	135	\$17.00	\$27,540		
						Revised Loss Projection	\$51,732	
						Initial Filing Projection	\$66,378	
						Proposed UUSF Reduction Adjustment	\$14,646	Emery
Carbon Land Line Loss	Bus	62	93	139.5	\$27.50	\$46,035		
	Res	206	309	463.5	\$17.00	\$94,554		
						Revised Loss Projection	\$140,589	
						Initial Filing Projection	\$178,464	
						Proposed UUSF Reduction Adjustment	\$37,875	Carbon

1016 Source: Carbon Emery Rebuttal Testimony of Woolsey - Cable Internet Migration

1017 - Exhibit 1.xlsx

1018

1019 Q. You also previously referred to a land line loss adjustment. Please explain.

1020 A. The land line loss projection utilizes the same methodology used in the initial
 1021 filing which incorporated a three projection of loss for business and residential
 1022 customers and the application of current service rates for basic service. The
 1 initial filing for Carbon utilized 2013 and 2014 actual historical loss to project the

1024 loss forward to create a three year average. The Office rejected this adjustment,
1025 and in BCO-7 suggests that the land line loss projection should not be included
1026 as a decrease in revenue.

1027

1028 **Q. Do you agree with the Office's adjustment for land line loss in BCO-7?**

1029 A. No. It is not appropriate to completely eliminate the land line loss projection.
1030 However, actual land line losses through 8/1/2015 were less than the projection
1031 in the initial filing resulting in an increase in revenue in the amount of \$37,875,
1032 with a corresponding decrease in the UUSF request of \$37,875. Carbon's
1033 proposed adjustment accurately reflects the positive effects of lower than
1034 anticipated land line loss, and is a more appropriate adjustment than the Office's
1035 BCO-7 adjustment.

1036

1037 **Q. Is the adjustment made by Mr. Ostrander to adjust income taxes as a**
1038 **reflection of interest synchronization appropriate?**

1039 A. It is not appropriate.

1040

1041 **Q. Why isn't it appropriate?**

1042 A. With respect to the appropriateness of interest synchronization, I reject the
1043 assertion that this methodology is "common" or appropriate in cases of
1044 hypothetical capital structure. I am not aware of such an adjustment being
1045 adopted in current or historical Utah telecommunications proceedings or any

1046 FCC proceeding. I am also unaware of any such adjustment proposed or in
1047 practice in the traditional FCC rate making/cost study separation processes. The
1048 use of a hypothetical rate structure already penalizes Carbon to the extent the
1049 cost of debt is less than the cost of equity applied to any hypothetical capital
1050 structure of debt percent greater than its actual 0% debt. Effectively Carbon has
1051 been forced from actual capital structure to a lower rate of return hypothetical
1052 capital structure then, begrudging the already lower rate of return on debt, Mr.
1053 Ostrander proposes to take the return "hypothetically" lower again by adjusting
1054 for tax deductions that do not exist. The adjustment is not based upon Carbon's
1055 actual capital structure or tax deductibility. It has no precedence or place in this
1056 proceeding. If we are fully considering a hypothetical debt scenario, the very real
1057 result of hypothetical debt should be considered. In the case of Carbon debt
1058 would not be used to reduce equity, but rather the only reason Carbon would
1059 incur additional debt is to accelerate capital projects thus increasing rate base
1060 assets. Carbon has not projected hypothetical assets or even been aggressive
1061 in projecting "known and measurable" asset additions that have occurred to date
1062 in 2015. If all hypothetical consequences of a debt imputation are honestly
1063 considered then the positive effects of the scenario should be among them.

1064
1065 **Q. If you assume that interest synchronization is appropriate, has Mr.**
1066 **Ostrander calculated it correctly?**

1067 **A. No. It was incorrectly calculated by Mr. Ostrander.**

1068

1069 **Q. In what ways?**

1070 A. Mr. Ostrander applied a theoretical imputation of interest related to rate base
1071 assets, and then calculated a tax impact of this interest amount of \$83,508. In
1072 this calculation he used an incorrect state rate of 8.93% (Exh.1D,A-11 Ostr. Tab
1073 from Master – OCS Exhibit 2D – 15-2032-01 Ostrander Rev.Reg.xlsx) vs the
1074 correct Utah rate of 5%. Mr. Ostrander also uses a slightly incorrect tax gross
1075 up calculation. The correct gross up can be accurately represented by the
1076 unrounded formula $1/(1-.05-(.95*.34))$ or rounded to 1.594896.

1077

1078

1079 **Q. Have you calculated what the correct interest synchronization would be?**

1080 A. I am reluctant to provide the calculation because I don't think it is an appropriate
1081 adjustment. However, the correct numerical adjustment is not difficult to
1082 calculate. The correct UUSF/Tax amount, if we agreed with the initial adjustment
1083 in theory, would be \$78,078 not the \$83,508 calculated by Mr. Ostrander. I also
1084 disagree with the 50/50 debt to equity hypothetical capital structure that is
1085 factored into Mr. Ostrander calculation. If Carbon's actual capital structure were
1086 used this adjustment disappears, and if 35% debt is used the resulting
1087 calculation would only be \$54,655.

1088

1089

1090 Q. **In the Division of Public Utilities Calculation of Rate of Return, what is the**
1091 **appropriate input for the interstate rate?**

1092 A. As Mr. Coleman accurately states "The question of which rate to use is really a
1093 matter of whether Carbon participates in the Common Line Pool, or the smaller
1094 subset of companies that participate in both NECA's Common Line and Traffic
1095 Sensitive pools." Mr. Coleman states that he confirmed with Mr. Brandon
1096 Gardner, NECA Western Region Manager, that Carbon is not a Common Line
1097 Pool participant.

1098

1099 Q. **Is Carbon a Common Line Pool participant?**

1100 A. Yes.

1101

1102 Q. **Do you know how Mr. Coleman got this inaccurate information from Mr.**
1103 **Brandon Gardner of NECA?**

1104 A. Carbon/Emery Telcom is one of three ILECS reporting under Cost Study Area
1105 Code "502278 – Emery Consolidated" (together with Emery Telephone and
1106 Hanksville Telcom, Inc.). It is more typical for one ILEC to have multiple study
1107 areas than it is for one study area to have multiple ILEC's. On September 4,
1108 2015 I spoke with Mr. Brandon Gardner, who indicated that he had a follow-up
1109 call with Casey Coleman and that he had clarified the inclusion of Carbon in the
1110 Emery consolidated filing and the participation of Carbon in NECA's Common
1 Line Pool. With this clarified understanding, it is appropriate to use 11.45% per

1112 the September 30, 2014 FCC Form 492 filed by NECA as the interstate input
1113 when calculating allowed rate of return. Mr. Douglas Meredith will discuss this in
1114 more detail in his testimony.

1115

1116 **Q. Did you review the Testimony and curriculum vitae of Bion C. Ostrander?**

1117 A. Yes. Mr. Ostrander in his testimony and his curriculum vitae indicates he has
1118 maintained an uninterrupted permit to practice as a Certified Public Accountant
1119 ("CPA") in the State of Kansas since 1990. However, Mr. Ostrander footnotes
1120 this statement indicating that his permit to practice is pending renewal subject to
1121 meeting professional education hour requirements in Kansas. I reviewed the
1122 Kansas Board of Accountancy's website and database and determined that Mr.
1123 Ostrander has not held a permit to practice as a CPA in Kansas since June 30,
1124 2014.

1125

1126 **Q. Does this lapse in Mr. Ostrander's permit to practice concern you?**

1127 A. Yes. As a CPA myself, I am familiar with the rules regarding the profession.
1128 Kansas is a two-tiered state for CPA's. This means before practicing as a CPA
1129 or holding oneself out as a CPA, the individual must have a certificate of public
1130 accountancy and a permit to practice. Without meeting both requirements, an
1131 individual is not permitted to practice as a CPA in Kansas, or hold oneself out as
1132 a CPA.

1133 **Q. Do you know if Mr. Ostrander is required to be a CPA to provide testimony**
1134 **in this case?**

1135 A. To my knowledge, Mr. Ostrander is not required to be a CPA to provide
1136 testimony in this case, but the fact that he held himself out as a CPA "for
1137 credential" purposes when he does not hold this credential is troubling to me as a
1138 certified public accountant. I believe this is unprofessional conduct and speaks
1139 to Mr. Ostrander's credibility as an expert witness.

1140 **Q. To summarize, what is Carbon's current UUSF request?**

1141 A. \$570,643. This amount reflects the effect of the five adjustments (and
1142 associated tax effect) discussed herein. This amount accurately represents the
1143 amount that Carbon is entitled to under Utah law.

1144 **Q. Finally, are there any other adjustments that you have for your filing?**

1145 A: Yes. As is customary, legal and consulting fees are disbursed from the state
1146 USF on a lump sum basis after the proceeding is resolved. I won't know this
1147 amount until after the proceeding but wanted to include these items as a
1148 placeholder for resolution by the Commission.

1149 **Q. Does this conclude your testimony?**

1150 A. Yes.

BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

**IN THE MATTER OF CARBON/EMERY
TELCOM, INC.'S APPLICATION FOR
AN INCREASE IN UTAH UNIVERSAL
SERVICE FUND SUPPORT**

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Docket No. 15-2302-01

Applicant

SURREBUTTAL TESTIMONY

OF

DARREN WOOLSEY

ON BEHALF OF CARBON/EMERY TELCOM, INC.

September 18, 2015

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1 SURREBUTTAL TESTIMONY OF DARREN WOOLSEY

2 Q. What is your name?

3 A. My name is Darren Woolsey.

4

5 Q. Are you the same Darren Woolsey that filed Rebuttal Testimony in this Docket?

6 A. Yes.

7

8 Q. What is the purpose of your Surrebuttal testimony?

9 A. The purpose of my surrebuttal testimony is to respond to Mr. Hellewell's Rebuttal
10 testimony filed on behalf of the Division of Public Utilities (the "Division") with respect
11 to Depreciation expense.

12

13 Q. **In rebuttal testimony Mr. Hellewell (lines 36 to 38) indicates that the underlying**
14 **cause of both the DPU and OCS adjustments to depreciation expense is**
15 **Carbon/Emery's practice of using fully depreciated assets in the calculation of**
16 **depreciation expense. What is your response to this testimony?**

17 A. Carbon/Emery is not arbitrary or indiscriminate in its accounting for depreciation, but
18 instead has consistently applied the prescribed FCC accounting method of group asset
19 depreciation expense in accordance with 47 CFR Part 32 as required by Utah
20 Administrative Code R746-340-2.D.

21

22 Q. Does this conclude your surrebuttal testimony/

23 A. Yes.

BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

IN THE MATTER OF CARBON/EMERY)
TELCOM, INC.'S APPLICATION FOR)
AN INCREASE IN UTAH UNIVERSAL)
SERVICE FUND SUPPORT)
)
)
Applicant)

Docket No. 15-2302-01

REDACTED SUR-SURREBUTTAL TESTIMONY

OF

DARREN WOOLSEY

ON BEHALF OF CARBON/EMERY TELCOM, INC.

December 18, 2015

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1 **SURREBUTTAL TESTIMONY OF DARREN WOOLSEY**

2 **Q.** What is your name?

3 A. My name is Darren Woolsey.

4

5 **Q.** Are you the same Darren Woolsey that has filed previous testimony in this Docket?

6 A. Yes.

7

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

9 A. The purpose is to provide additional testimony regarding depreciation methods
10 subsequent to the Utah Public Service Commission's Order on Motion for Partial
11 Summary Judgment related to depreciation.

12

13 **Q.** Why Does Carbon/Emery use the Group Asset Depreciation Method?

14 A. As I have previously testified, Carbon/Emery consistently applies the prescribed FCC
15 accounting method of group asset depreciation expense in accordance with 47 CFR Part
16 32, a method which is also prescribed by Utah Administrative Code R746-340-2.D.

17 Carbon/Emery assigns asset units into groups based on the specific characteristics and
18 use. Once these units are assigned to a group, the asset group becomes the asset for
19 purposes of calculating depreciation. Carbon/Emery uses approved depreciation rates and
20 utilizes straight-line depreciation applied to each "group asset."

21

22 **Q.** Is this group asset method widely accepted in the industry?

23 A. Yes. Group asset depreciation is the most widely accepted industry standard.
24 Adjustments to this method, when deemed necessary, are generally accomplished using a
25 FCC formula, which Joseph Hellewell identifies in his Testimony and which will be
26 discussed herein.

27

28 **Q. Why is Group Asset the Industry Standard for Depreciation?**

29 A. Utilities use the group method for accounting for their assets because individual
30 components of the telecommunications network systems are too numerous to practically
31 track on an individual basis given the small relative value of each individual component
32 asset. Additionally, utilities use the group method for component parts of larger assets
33 such as fiber or cable lines which contain numerous component parts which are
34 impractical to track separately. The nature of the assets in a telephone network makes it
35 hard to separate various assets from the group. The assets are often so heavily intertwined
36 that separated alone, they are irrelevant.

37

38 **Q. Can you provide an example of what you mean by intertwined assets?**

39 A. Yes. Yes. As an example, in 2003, UDOT did a road project from Airport Road to
40 Wellington. As part of this project, Carbon/Emery was required to install new fiber and
41 cable to replace the abandonment of 40,198 feet of copper in eleven sections. The
42 following was abandoned:

43 **Abandoned Cable:**
44 **200 x 19 gauge = 596 feet**
45 **300 x 22 gauge = 596 feet**
46 **900 x 24 gauge = 596 feet**
47 **300 x 22 gauge = 13,018 feet**

48 200 x 24 gauge =18,698 feet
49 100 x 22 gauge = 274 feet
50 600 x 24 gauge = 274 feet
51 25 x 24 gauge = 464 feet
52 400 x 24 gauge = 1894 feet
53 200 x 24 gauge = 1894 feet
54 50 x 24 gauge = 1894 feet
55 **Total Footage of abandoned cable = 40,198 feet**

56 The newly installed copper was only useful because it was connected to the existing
57 copper unaffected by the UDOT project (copper not on the UDOT right of way feeding
58 the neighborhoods). This demonstrates the nature of the group. While part of the group
59 was plant installed years earlier by Qwest, this relatively recent installation was
60 integrated into the existing group. While this may result in the new copper being
61 depreciated more quickly as part of the group than if it were an individual component
62 depreciated at the unit level, the fact is that the component has no useful life outside of
63 the group of components with which it was installed. In other words, the group should
64 depreciate together, because it will likely be replaced or retired as a group at some point
65 in time. The new additions serve to prolong such replacement, but will not be useful
66 outside the group.

67

68 **Q. Do you have any examples of equipment that is too numerous to track individually?**

69 A. Yes. A good example of this scenario is subscriber circuit equipment or electronics on the
70 customer's side of the plant. On the fiber network, Carbon/Emery installs either switches
71 or Optical Line Terminals at the subscribers' premises. Carbon/Emery will purchase
72 these in bulk in order to handle reasonable install times on service orders, and if a
73 customer disconnects services, then Carbon/Emery retrieves the equipment and will

74 redeploy the equipment at other customers' locations. These pieces of equipment will
75 usually be retired as a group when the electronics become obsolete and Carbon/Emery
76 selects a new equipment line. To treat these assets as individual units would be an
77 administratively burdensome. There would be multiple "in service" dates for each asset
78 as they are installed, removed, and reinstalled in reaction to service orders. This is why
79 the industry treats them as part of a telecommunications network group. They are
80 selected as a group and will be retired as the group becomes obsolete or is no longer
81 supported.

82

83 **Q. In the Division's approach to depreciation, is the Division suggesting that each of**
84 **those individual units be accounted for or tracked on an individual basis?**

85 **A.** No. In fact, while the Division calls its method single asset, strictly speaking the
86 Division is not drilling down to each individual asset unit. The Division is merely
87 separating these various equipment units into smaller groups divided by year purchased,
88 and then treats this smaller group as a single asset. The Division likely recognizes that it
89 is not administratively prudent to maintain that level of detail. The Division's "Single
90 Asset" method is not actually accounting for assets individually, but only in a different
91 group. The question then becomes less about whether the group asset method is used but
92 rather whether the group is configured correctly and the remaining life of the group is
93 estimated correctly. Notwithstanding, the Division's proposal does not recognize the
94 intertwined nature, character and use of network assets. I recommend the Commission
95 reject the Division's proposed depreciation approach.

96

97

98 Consider a simple non-telecom example: imagine a business has a machine that it uses in
99 its operations. When improvements and modifications are done to that machine, the
100 improvements and modifications cannot exist or are of little value if they are not
101 integrated into the machine. Similarly, much of the telephone plant is linked in a manner
102 which only functions as a group.

103

104 Carbon/Emery employs the group method in accordance with industry standards and I
105 submit its groups are properly configured. Carbon/Emery's depreciation methods are
106 reviewed and audited each year; and Carbon/Emery submits reports to federal and state
107 jurisdictions for review. This group method of accounting used by Carbon/Emery is
108 prudent, just, and reasonable, and allows for a correct depreciation of assets.

109

110 **Q. The Division takes issue with Carbon/Emery's group method, and proposes use of a**
111 **single asset method. Do you agree with the Division's method?**

112 A. No. First, as stated above, the Division is not using a true "single asset" method, but is
113 using smaller groups of capitalized additions. This approach fails to reflect the nature of
114 telephone equipment and the reasoning behind using group depreciation.

115

116 Second, the Division recalculation of depreciation is unfair and flawed. The Division
117 goes back to the in-service date of each asset unit addition and recalculates all years of
118 depreciation through 2014. Because the 1/1/14 beginning accumulated depreciation used
119 by the Division differs from Carbon/Emery's actual audited and reported balance there is

120 not a way to implement its proposed methodology. Rather some transition to single asset
121 straight line would need to be implemented that would account for the beginning balance
122 of existing asset groups and accumulated depreciation with all new additions subject to
123 the new single asset straight line methodology. I have calculated the depreciation
124 expense using a transition and my calculation yields a five-year average depreciation of
125 [REDACTED].

126
127 Third, the Division's supposed "single asset" methodology assumes no cumulative
128 adjustment for rate base, which results in an artificially low depreciation expense in the
129 test period.

130
131 **Q. Why do you think the Division's depreciation expense is artificially low?**

132 A. The Division wants to apply the accumulated effect of accelerated depreciation to bring
133 down the rate base, but then wants to apply its "single asset" depreciation expense
134 calculation to lower current year depreciation expense.

135
136 This reduces revenue requirement for both rate of return and expense, by the selective use
137 of both methods. This is inconsistent with the "test period" approach stated in the Utah
138 Code and used by the Commission and Division for rate cases and UUSF proceedings.
139 Carbon/Emery's Application proposed to use 2014 as the test period adjusted for
140 known and measurable changes. The Division's method clearly does not establish a
141 correct test year. If depreciation is slowed using single asset depreciation beginning from
142 the in-service date, then rate base will rise (assuming additions projected by

143 Carbon/Emery). This would make the “test period” non-representative. Further, as the
144 rate base rises, eventually depreciation will rise from the artificially low number
145 proposed by the Division, because the asset base will be increasing over time.

146
147 **Q. The Division, in testimony, and in briefing filed in this case has indicated that it has**
148 **not required Carbon/Emery to make any changes in its accounting. Rather, the**
149 **Division has requested that the Commission adjust Carbon/Emery’s depreciation**
150 **expense, and the Division has used its alternative methodology to calculate the**
151 **amount of the recommended adjustment. Do you have concerns with this**
152 **approach?**

153 A. Yes. I am very concerned with this approach because I believe it has significant
154 consequences that may be unintended.

155
156 **Q. What are those consequences?**

157 A. If the Division (and ultimately the Commission) calculates the company’s depreciation
158 expense using a methodology that differs from Carbon/Emery’s and Carbon/Emery does
159 not change its accounting procedures to adopt this alternative depreciation methodology,
160 problems will arise in the future. Carbon/Emery’s rate base will be depreciated using a
161 group method that may lead to an increase in depreciation expense, but Carbon/Emery
162 will not be entitled to claim that higher depreciation expense associated with that rate
163 base for state UUSF purposes. On the contrary, the Division, and the Commission if it
164 adopts the Division’s argument, will use the lower rate base achieved by the group
165 method of depreciation, and the lower depreciation rate achieved by the single asset

166 method of depreciation. The consequence of this approach is that Carbon/Emery will be
167 required to file an application for UUSF disbursement annually to ensure it is permitted
168 to earn a rate of return on its rate base since the rate base is depreciating faster under the
169 group method, but the depreciation expense is calculated using the alternate method.

170

171 **Q. Can you demonstrate that the Division's number is artificially low?**

172 A. Yes. Carbon/Emery has run depreciation and rate-base projections and over five years the
173 depreciation will rise from the Divisions proposed [REDACTED] expense level
174 to an average of [REDACTED], and rate base will rise from the filed level of
175 [REDACTED] to [REDACTED]. This example illustrates that the
176 Division's methodology does not project a representative "test period."

177

178 **Q. Do you have other concerns with the Division's proposed method of depreciation**
179 **calculation?**

180 A. Yes. The Division's method does not address the changing asset mix from Intrastate to
181 Interstate jurisdictions. (See Division Response to Data Request 1.1(a)), attached hereto
182 as Carbon/Emery D Woolsey SSR Exhibit 1. Under the assumptions of the Division, the
183 Interstate assets will be depreciated on a group basis and the Intrastate assets will be
184 depreciated on a single-asset basis. However, these are actually the same assets and it is
185 an assignment of percentages of each asset to each jurisdiction that is depreciated under
186 different methods. Additionally, the interstate/intrastate percentage mix is changing each
187 year, so differing portions of the assets would be depreciated different ways each year.

188 There is currently no accurate way to report these changing asset mixes or the cumulative
189 rate base effect of differing and conflicting methods using the Annual Reports that have
190 been designed by the Division. This would leave the Division unable to regulate and
191 inspect the telephone companies under this dysfunctional dual method outside of a rate
192 case. Also, in rate cases it would confuse and skew the "base year" to make it
193 unrepresentative.

194

195 **Q. Are there additional concerns you have with the Division method?**

196 A. Yes. The Division's current methodology does not address:

197 • how asset disposals (with a different federal vs state basis) will be handled.

198 Typically, any gain or loss on disposal is adjusted through group depreciation
199 expense to prevent over or under expense recovery on the asset. This would
200 require separate calculation and historical tracking to properly adjust for the
201 state's method of depreciation expense.

202 • how the Division will view single-asset straight-line depreciation expense when it
203 exceeds the group method (at some point each asset has to have a reversal of
204 timing differences and/or remaining differences will be recognized on disposal).

205 • How the increased and cumulative rate base will be handled from the demarcation
206 point, or date, from which the state requires single asset methodology.

207 Previously, the Division has only considered the current year impact on rate base,
208 but going forward, the Division (and the Commission) will have to recognize the
209 cumulative rate base and individual asset difference from the point in time that the
210 Commission no longer recognizes the group methodology for interstate assets.

211 • Why creating rate base differences, two bases for every asset, timing differences,
212 jurisdictional reporting differences, additional tracking, loss of reporting
213 transparency, and possible increases in total USF distributions is in the public
214 interest. Though the Division says it is not requiring a change in methodology,
215 any company interested in ensuring proper jurisdictional returns will either switch
216 to the state prescribed methodology (with all associated interstate revenue
217 impacts) or most certainly bear the administrative burden to track these
218 differences to ensure correct state and interstate rate of return. However, the
219 Company would risk being penalized by the faster depreciation of rate base than
220 the slower depreciation expense calculated under the Division's method as stated
221 above, if the Company did not file a rate case or UUSF application each year. The
222 Company may be afraid that the regulators would say, "since you did not come in
223 for a rate case or UUSF case, we assume you earned a proper rate of return on
224 those assets." This approach is not prudent, and would encourage more frequent
225 rate cases.

226
227 **Q. Why does the Division's use of its depreciation method on a Total Company Basis**
228 **skew the results when a company is using group for Interstate purposes?**

229 A. The use of group depreciation for interstate purposes only skews the intrastate revenue
230 requirement. Because group depreciation is above the Divisions' supposed "Single
231 Asset", when the Division looks at the Interstate Revenues that were based on group
232 depreciation, it appears that the revenues are high because the Division uses its "Single
233 Asset" depreciation. Because the Division is looking at this on a "Total Company" basis,

234 the Division in effect reduces Carbon/Emery's revenue requirement on intrastate
235 depreciation, because of the supposed artificially high (created by the Division's use of a
236 differing method than the Interstate Jurisdiction) revenue recovery on the Interstate side.
237 In other words, the Division wants the extra revenue from the Interstate side as a result of
238 group depreciation, but wants the lower overall revenue requirement by use of its "single
239 asset" method of depreciation.

240

241 **Q. Does the Division address this issue in its calculations?**

242 A. No. The Division ignores this issue. (See Division's Response to Data Request
243 1.1(a),(b)), attached hereto as Carbon/Emery D Woolsey SSR Exhibit 1.) The result is
244 Carbon/Emery's Utah USF request is skewed downward.

245

246 In Carbon/Emery's Data Request DR1 to the Division, Carbon Emery identifies this
247 revenue impact issue and asks for the DPU's calculation of interstate revenue as follows:

248 "DR 1.1 In the filing of Carbon/Emery Telecom (Carbon) for UUSF funding
249 on April 2, 2015, Carbon included total company depreciation of
250 [REDACTED] utilizing a straight line depreciation
251 methodology applied to group assets as prescribed by 47 CFR Part
252 32. This depreciation included both interstate and intrastate
253 components. The interstate portion of the depreciation as
254 calculated at the time of the UUSF filing, based upon the 2014
255 PSC annual report (2013 factors), was [REDACTED] or
256 [REDACTED]%. Subsequently, the actual filed cost study filing for 2014
257 (2014 factors) evidenced [REDACTED] or [REDACTED]%
258 interstate depreciation. The interstate separated depreciation
259 amounts result in accompanying interstate revenue from various
260 sources, which for Carbon include: Interstate Common Line
261 Support, tariffed special access, switched access/ARC/CAF-ICC,
262 and DSL. The revenue resulting from interstate depreciation has
263 been realized or accrued in the 2014 financial statements and in the
264 UUSF filing. The Division disagrees with Carbon's group

265 depreciation calculation, and has proposed a recalculated single
266 asset approach applied to total (interstate and intrastate) company
267 assets which results in a depreciation reduction of [REDACTED].
268

269 a. Please identify the amount of interstate revenue associated with
270 the [REDACTED] depreciation adjustment and identify the
271 steps the DPU has taken to ensure that the associated interstate
272 rate of return revenue impact of the depreciation adjustment
273 has been addressed.”
274

275 The Division indicated in its response that it had not calculated the interstate revenue
276 associated with their depreciation adjustment calculation. Though Carbon/Emery does
277 not agree with the Division’s depreciations adjustment, Carbon/Emery has performed the
278 calculation of the interstate revenue impact and has determined that [REDACTED] of
279 interstate revenue is associated with the Division’s proposed depreciation expense
280 adjustment of [REDACTED].

281
282 **Q. When you say [REDACTED] of interstate revenue is associated with the Division’s**
283 **proposed depreciation expense adjustment of [REDACTED], what does that mean?**

284 **A.** It means that if the Division’s method of depreciation is used, Carbon/Emery’s interstate
285 revenue would be reduced by [REDACTED], and presumably, that amount of interstate
286 revenue would be recovered from the State UUSF; or stated another way, if
287 Carbon/Emery uses the Divisions method of depreciation for the Interstate side,
288 Carbon/Emery will receive \$246,858 less revenue from Interstate sources. This will then
289 have to be recovered from Intrastate sources.

291 Q. Are you familiar with the other “acceptable” methods of depreciation identified in
292 Mr. Hellewell’s direct testimony?

293 A. Yes To determine if group depreciation is following appropriate remaining asset service
294 lives for a given group, the FCC has provided a formula for recalculating depreciation
295 while still maintaining the group (or mass asset) *straight line methodology*. The formula
296 used for this calculation is correctly stated in 268678 Direct Testimony of Joseph
297 Hellewell for DPU 8-21-2015 lines 230-231 as follows:

$$\text{Depreciation Rate} = \frac{100\% - \text{Accumulated Depreciation \%} - \text{Future Net Salvage \%}}{\text{Average Remaining Life}}$$

298
299
300
301 Two factors that require assumptions in the calculation are the date of the accumulated
302 depreciation percentage and corresponding average remaining life as well as any
303 assumptions surrounding the establishment of the average remaining life. Because the
304 general methodology is maintained in the adjustment process and only the rate changes,
305 this adjustment has generally been accepted without explicit FCC approval.

306
307 **Q: You mention that the Division states that the FCC method is acceptable. Please**
308 **indicate where this acceptance is mentioned by Mr. Hellewell.**

309 A: Mr. Hellewell states on lines 201-203 of his Prefiled Direct Testimony that:

310 “there is [sic] a variety of alternatives that Carbon-Emery Telephone could use that
311 would use the Commission approved life and rates, and would be reasonable alternatives
312 for calculating revenue requirement and Utah USF if correctly employed.”

313
314 Lines 223-234 of Mr. Hellewell’s testimony provide:

315
316 “FCC Method: The FCC has developed a formula that has been used to recalculate the
317 depreciation rate based on the plants average remaining life, future net salvage, and
318 depreciation reserve ratio. This formula has been published in several orders. (FCC 00-
319 306, FCC 96-485) From FCC 00-306, “The depreciation rate for an account is a function

320 of the associated plant's average remaining life, future net salvage, and depreciation
321 reserve ratio. The depreciation rate is calculated using the following formula:
322

$$\text{Depreciation Rate} = \frac{100\% - \text{Accumulated Depreciation \%} - \text{Future Net Salvage \%}}{\text{Average Remaining Life}}$$

325
326 Both the average remaining life and the future net salvage factors are based upon
327 estimates that require periodic review to ensure their reasonableness."
328

329 **Q: To your knowledge, has the Division performed the calculations necessary to**
330 **determine what the FCC method produces for Carbon/Emery?**

331 A: The Division has not performed the FCC method for Carbon/Emery, despite confirming
332 that it is an acceptable method. (See Division Response to Data Request 1.3(c)), attached
333 hereto as Carbon/Emery D Woolsey SSR Exhibit 1.

334
335 **Q. Did Carbon/Emery employ the FCC Method in its calculation of depreciation**
336 **expense as filed?**

337 A. No. Carbon/Emery did not use the FCC Method when calculating the depreciation
338 expense in its application.

339
340 **Q. Why not?**

341 A. Historically, Carbon/Emery has not separately considered the average remaining life of
342 the group of assets, but rather has simply applied the straight-line depreciation rate to the
343 group of assets. This approach is reasonable because Carbon/Emery groups assets in
344 manner that results in the assets having similar average lives. For example, copper cables
345 that are added to repair a section of outside copper plant, are added to the outside copper
346 plant group because they will typically be retired at the same time as the group.

347 Additionally, Carbon/Emery purchased its plant from Qwest. Many of the assets were
348 not described in sufficient detail to make some of the calculations as precisely as
349 Carbon/Emery would normally make. However, Carbon/Emery has made proper
350 disposals over the year and has actually disposed of as many assets as it has added to the
351 groups. The fact that the FCC Method calculations are similar (as shown below) to
352 Carbon/Emery's current depreciation evidences that Carbon/Emery's method is
353 reasonable.

354

355 **Q. Have you calculated the depreciation expense for Carbon/Emery using the FCC**
356 **Method identified in Mr. Hellewell's testimony?**

357 A. Yes. I have reviewed Carbon/Emery's group depreciation methods. I believe our
358 depreciation methods, as implemented accurately reflect the Company's depreciation
359 expense. However, in an effort to corroborate our methods, we have recalculated our
360 depreciation using the FCC formula.

361

362 **Q. Please explain your calculation of the FCC method for Carbon/Emery.**

363 A. There are two recalculations based on different date assumptions, attached hereto as
364 Carbon/Emery D Woolsey SSR Exhibit 2 and Carbon/Emery D Woolsey SSR Exhibit 3.
365 The first FCC formula recalculation was performed using the end of the test period year
366 (12/31/2014) for purposes of establishing the accumulated depreciation percentage and
367 average remaining asset life. The second recalculation used a mid-year date or average to
368 determine the accumulated depreciation percentage and average remaining asset life.

369 Under both recalculations:

- 370 • Depreciation expense for 2014 group additions were prorated depreciation based
- 371 upon the number of month's in service,
- 372 • average useful lives for each group were calculated as a weighted average from
- 373 historical in-service dates and the commission approved lives,
- 374 • FCC prescribed salvage values were utilized (including reclamation/disposal
- 375 costs)¹
- 376 • The calculation was applied to total company assets which then requires
- 377 adjustment for the interstate portion of revenue affected by any proposed change

378 The results are as follows:

379 Table 1

380 FCC Method for Carbon/Emery

Item	As filed (as amended by testimony)	FCC Method Year End 2014	FCC Method Mid-Year Convention (June 30, 2014)
Depreciation Expense	██████████	██████████	██████████
Depreciation Diff from filed		██████████	██████████
Rate Base Impact @ 10.5%		██████████	██████████
Interstate Rev Impact (43.83%)		██████████	██████████

¹ Federal-State Joint Board on Universal Service; Forward-Looking Mechanism for High Cost Support for Non-Rural LECs, 14 FCC Rcd 20156, FCC 99-304, November 2, 1999, Errata: December 22, 1999, TENTH REPORT AND ORDER, Appendix A.

In 2014, the FCC rejected the elimination of its salvage values, stating that "Adopting a salvage rate of zero for certain asset classes, rather than a negative salvage rate, implicitly assumes that there is no cost associated with removing those assets at the end of their usable lives. Ignoring the fact that carriers face actual costs to remove certain assets would be akin to ignoring the cost of placing the asset and would result in a flawed estimate of cost recovery." FCC, Connect America Fund (Phase II Model-Based Support), 29 FCC Rcd 03964, (2014).

Revenue Requirement effect			
Total USF request	570,647	577,155	484,062

381

382 **Q. Please summarize your calculations reported in Table 1?**

383 A. The first recalculation using the FCC formula using a 12/31/14 date produced nearly
384 identical results to Carbon/Emery's filed depreciation expense number. The level of
385 depreciation expense is also consistent with forward looking annual FCC 481 additions as
386 presented in previous exhibits of averaging [REDACTED] over the next 6 years
387 (through 2020). With significant disposals also anticipated, depreciation (under any
388 method) will be outpaced by plant additions and will grow over time.

389

390 The second FCC calculation using an average 2014 accumulated depreciation percentage
391 and a 6/30/14 point in time to calculate the average remaining life resulted in a slightly
392 lower level of depreciation expense of [REDACTED]. This calculation is very similar
393 to the historical PSC annual reported average depreciation expense (2006 to 2014) of
394 [REDACTED] as well as reported average additions and disposals for the same period
395 of [REDACTED] and [REDACTED] respectively. I observe that Carbon/Emery's
396 existing groups are near the end of their lives, and our large projected investments will be
397 paired with significant disposals effectively refreshing these asset groups and I anticipate
398 levels over the next six years to be similar to historical levels presented. Though single-
399 asset straight-line depreciation could not be implemented as suggested by the Division
400 (because the Division recalculated all assets from their in-service date) a projected

401 1/1/2014 change to single asset straight line going forward on actual additions from 2014
402 and FCC 481 projected assets would result in an average annual depreciation expense of
403 [REDACTED] over the next six years.

404

405 **Q. Has Carbon/Emery considered other depreciation methodologies?**

406 A. Yes. We have considered numerous depreciation methods, many of which have been
407 discussed with the Division in an attempt to at least separate the depreciation calculation
408 into interstate and intrastate jurisdictions and thereby address the revenue impact
409 discussed above.

410

411 **Q. Does Carbon/Emery's group depreciation establish a correct "base" depreciation?**

412 A. Yes, the goal of this proceeding is to establish a representative "base year" for purposes
413 of determining an appropriate level of UUSF support. In reviewing the depreciation from
414 2006 through 2014, the depreciation has averaged [REDACTED]. In looking at the
415 projected capital expenditures and plans of Carbon/Emery from 2015 to 2020, the
416 average annual plant additions will be [REDACTED] and average depreciation will
417 increase overtime accordingly. This is representative of the numbers filed by
418 Carbon/Emery using group depreciation and the numbers stated in this testimony as
419 recalculated using the FCC adjustment formula. The results clearly demonstrate that the
420 number projected by the Division using its "Single Asset" method is artificially low and
421 not representative of historical or anticipated Carbon/Emery operating levels.

422

423 My testimony confirms that even with the Commission's clarifications in its order
424 allowing for adjustments to a group asset method does not alter materially the
425 Carbon/Emery filling in this proceeding.

426

427 **Q. Does this conclude your testimony.**

428 **A. Yes.**

BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

**IN THE MATTER OF CARBON/EMERY
TELCOM, INC.'S APPLICATION FOR
AN INCREASE IN UTAH UNIVERSAL
SERVICE FUND SUPPORT**

Applicant

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Docket No. 15-2302-01

CONFIDENTIAL SUR-SURREBUTTAL TESTIMONY

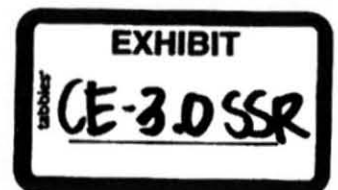
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1 **SURREBUTTAL TESTIMONY OF DARREN WOOLSEY**

2 **Q. What is your name?**

3 A. My name is Darren Woolsey.

4
5 **Q. Are you the same Darren Woolsey that has filed previous testimony in this Docket?**

6 A. Yes.

7
8 **Q. What is the purpose of your testimony?**

9 A. The purpose is to provide additional testimony regarding depreciation methods
10 subsequent to the Utah Public Service Commission's Order on Motion for Partial
11 Summary Judgment related to depreciation.

12
13 **Q. Why Does Carbon/Emery use the Group Asset Depreciation Method?**

14 A. As I have previously testified, Carbon/Emery consistently applies the prescribed FCC
15 accounting method of group asset depreciation expense in accordance with 47 CFR Part
16 32, a method which is also prescribed by Utah Administrative Code R746-340-2.D.
17 Carbon/Emery assigns asset units into groups based on the specific characteristics and
18 use. Once these units are assigned to a group, the asset group becomes the asset for
19 purposes of calculating depreciation. Carbon/Emery uses approved depreciation rates and
20 utilizes straight-line depreciation applied to each "group asset."

21
22 **Q. Is this group asset method widely accepted in the industry?**

23 A. Yes. Group asset depreciation is the most widely accepted industry standard.
24 Adjustments to this method, when deemed necessary, are generally accomplished using a
25 FCC formula, which Joseph Hellewell identifies in his Testimony and which will be
26 discussed herein.

27
28 **Q. Why is Group Asset the Industry Standard for Depreciation?**

29 A. Utilities use the group method for accounting for their assets because individual
30 components of the telecommunications network systems are too numerous to practically
31 track on an individual basis given the small relative value of each individual component
32 asset. Additionally, utilities use the group method for component parts of larger assets
33 such as fiber or cable lines which contain numerous component parts which are
34 impractical to track separately. The nature of the assets in a telephone network makes it
35 hard to separate various assets from the group. The assets are often so heavily intertwined
36 that separated alone, they are irrelevant.

37
38 **Q. Can you provide an example of what you mean by intertwined assets?**

39 A. Yes. Yes. As an example, in 2003, UDOT did a road project from Airport Road to
40 Wellington. As part of this project, Carbon/Emery was required to install new fiber and
41 cable to replace the abandonment of 40,198 feet of copper in eleven sections. The
42 following was abandoned:

43 **Abandoned Cable:**
44 **200 x 19 gauge = 596 feet**
45 **300 x 22 gauge = 596 feet**
900 x 24 gauge = 596 feet
47 **300 x 22 gauge = 13,018 feet**

48 200 x 24 gauge = 18,698 feet
49 100 x 22 gauge = 274 feet
50 600 x 24 gauge = 274 feet
51 25 x 24 gauge = 464 feet
52 400 x 24 gauge = 1894 feet
53 200 x 24 gauge = 1894 feet
54 50 x 24 gauge = 1894 feet
55 **Total Footage of abandoned cable = 40,198 feet**

56 The newly installed copper was only useful because it was connected to the existing
57 copper unaffected by the UDOT project (copper not on the UDOT right of way feeding
58 the neighborhoods). This demonstrates the nature of the group. While part of the group
59 was plant installed years earlier by Qwest, this relatively recent installation was
60 integrated into the existing group. While this may result in the new copper being
61 depreciated more quickly as part of the group than if it were an individual component
62 depreciated at the unit level, the fact is that the component has no useful life outside of
63 the group of components with which it was installed. In other words, the group should
64 depreciate together, because it will likely be replaced or retired as a group at some point
65 in time. The new additions serve to prolong such replacement, but will not be useful
66 outside the group.

67

68 **Q. Do you have any examples of equipment that is too numerous to track individually?**

69 A. Yes. A good example of this scenario is subscriber circuit equipment or electronics on the
70 customer's side of the plant. On the fiber network, Carbon/Emery installs either switches
71 or Optical Line Terminals at the subscribers' premises. Carbon/Emery will purchase
72 these in bulk in order to handle reasonable install times on service orders, and if a
73 customer disconnects services, then Carbon/Emery retrieves the equipment and will

74 redeploy the equipment at other customers' locations. These pieces of equipment will
75 usually be retired as a group when the electronics become obsolete and Carbon/Emery
76 selects a new equipment line. To treat these assets as individual units would be an
77 administratively burdensome. There would be multiple "in service" dates for each asset
78 as they are installed, removed, and reinstalled in reaction to service orders. This is why
79 the industry treats them as part of a telecommunications network group. They are
80 selected as a group and will be retired as the group becomes obsolete or is no longer
81 supported.

82
83 **Q. In the Division's approach to depreciation, is the Division suggesting that each of**
84 **those individual units be accounted for or tracked on an individual basis?**

85 A. No. In fact, while the Division calls its method single asset, strictly speaking the
86 Division is not drilling down to each individual asset unit. The Division is merely
87 separating these various equipment units into smaller groups divided by year purchased,
88 and then treats this smaller group as a single asset. The Division likely recognizes that it
89 is not administratively prudent to maintain that level of detail. The Division's "Single
90 Asset" method is not actually accounting for assets individually, but only in a different
91 group. The question then becomes less about whether the group asset method is used but
92 rather whether the group is configured correctly and the remaining life of the group is
93 estimated correctly. Notwithstanding, the Division's proposal does not recognize the
94 intertwined nature, character and use of network assets. I recommend the Commission
95 reject the Division's proposed depreciation approach.

96

97

98 Consider a simple non-telecom example: imagine a business has a machine that it uses in
99 its operations. When improvements and modifications are done to that machine, the
100 improvements and modifications cannot exist or are of little value if they are not
101 integrated into the machine. Similarly, much of the telephone plant is linked in a manner
102 which only functions as a group.

103

104 Carbon/Emery employs the group method in accordance with industry standards and I
105 submit its groups are properly configured. Carbon/Emery's depreciation methods are
106 reviewed and audited each year; and Carbon/Emery submits reports to federal and state
107 jurisdictions for review. This group method of accounting used by Carbon/Emery is
108 prudent, just, and reasonable, and allows for a correct depreciation of assets.

109

110 **Q. The Division takes issue with Carbon/Emery's group method, and proposes use of a**
111 **single asset method. Do you agree with the Division's method?**

112 A. No. First, as stated above, the Division is not using a true "single asset" method, but is
113 using smaller groups of capitalized additions. This approach fails to reflect the nature of
114 telephone equipment and the reasoning behind using group depreciation.

115

116 Second, the Division recalculation of depreciation is unfair and flawed. The Division
117 goes back to the in-service date of each asset unit addition and recalculates all years of
118 depreciation through 2014. Because the 1/1/14 beginning accumulated depreciation used
119 by the Division differs from Carbon/Emery's actual audited and reported balance there is

120 not a way to implement its proposed methodology. Rather some transition to single asset
121 straight line would need to be implemented that would account for the beginning balance
122 of existing asset groups and accumulated depreciation with all new additions subject to
123 the new single asset straight line methodology. I have calculated the depreciation
124 expense using a transition and my calculation yields a five-year average depreciation of
125 \$1,956,644.

126
127 Third, the Division's supposed "single asset" methodology assumes no cumulative
128 adjustment for rate base, which results in an artificially low depreciation expense in the
129 test period.

130
131 **Q. Why do you think the Division's depreciation expense is artificially low?**

132 A. The Division wants to apply the accumulated effect of accelerated depreciation to bring
133 down the rate base, but then wants to apply its "single asset" depreciation expense
134 calculation to lower current year depreciation expense.

135
136 This reduces revenue requirement for both rate of return and expense, by the selective use
137 of both methods. This is inconsistent with the "test period" approach stated in the Utah
138 Code and used by the Commission and Division for rate cases and UUSF proceedings.
139 Carbon/Emery's Application proposed to use 2014 as the test period adjusted for
140 known and measurable changes. The Division's method clearly does not establish a
141 correct test year. If depreciation is slowed using single asset depreciation beginning from
142 the in-service date, then rate base will rise (assuming additions projected by

143 Carbon/Emery). This would make the “test period” non-representative. Further, as the
144 rate base rises, eventually depreciation will rise from the artificially low number
145 proposed by the Division, because the asset base will be increasing over time.

146

147 **Q. The Division, in testimony, and in briefing filed in this case has indicated that it has**
148 **not required Carbon/Emery to make any changes in its accounting. Rather, the**
149 **Division has requested that the Commission adjust Carbon/Emery’s depreciation**
150 **expense, and the Division has used its alternative methodology to calculate the**
151 **amount of the recommended adjustment. Do you have concerns with this**
152 **approach?**

153 A. Yes. I am very concerned with this approach because I believe it has significant
154 consequences that may be unintended.

155

156 **Q. What are those consequences?**

157 A. If the Division (and ultimately the Commission) calculates the company’s depreciation
158 expense using a methodology that differs from Carbon/Emery’s and Carbon/Emery does
159 not change its accounting procedures to adopt this alternative depreciation methodology,
160 problems will arise in the future. Carbon/Emery’s rate base will be depreciated using a
161 group method that may lead to an increase in depreciation expense, but Carbon/Emery
162 will not be entitled to claim that higher depreciation expense associated with that rate
163 base for state UUSF purposes. On the contrary, the Division, and the Commission if it
164 adopts the Division’s argument, will use the lower rate base achieved by the group
165 method of depreciation, and the lower depreciation rate achieved by the single asset

166 method of depreciation. The consequence of this approach is that Carbon/Emery will be
167 required to file an application for UUSF disbursement annually to ensure it is permitted
168 to earn a rate of return on its rate base since the rate base is depreciating faster under the
169 group method, but the depreciation expense is calculated using the alternate method.

170

171 **Q. Can you demonstrate that the Division's number is artificially low?**

172 A. Yes. Carbon/Emery has run depreciation and rate-base projections and over five years the
173 depreciation will rise from the Divisions proposed \$1,475,570 expense level to an
174 average of \$1,956,644, and rate base will rise from the filed level of \$10,787,895 to
175 \$13,779,886. This example illustrates that the Division's methodology does not project a
176 representative "test period."

177

178 **Q. Do you have other concerns with the Division's proposed method of depreciation**
179 **calculation?**

180 A. Yes. The Division's method does not address the changing asset mix from Intrastate to
181 Interstate jurisdictions. (See Division Response to Data Request 1.1(a)), attached hereto
182 as Carbon/Emery D Woolsey SSR Exhibit 1. Under the assumptions of the Division, the
183 Interstate assets will be depreciated on a group basis and the Intrastate assets will be
184 depreciated on a single-asset basis. However, these are actually the same assets and it is
185 an assignment of percentages of each asset to each jurisdiction that is depreciated under
186 different methods. Additionally, the interstate/intrastate percentage mix is changing each
187 year, so differing portions of the assets would be depreciated different ways each year.

188 There is currently no accurate way to report these changing asset mixes or the cumulative
189 rate base effect of differing and conflicting methods using the Annual Reports that have
190 been designed by the Division. This would leave the Division unable to regulate and
191 inspect the telephone companies under this dysfunctional dual method outside of a rate
192 case. Also, in rate cases it would confuse and skew the "base year" to make it
193 unrepresentative.

194

195 **Q. Are there additional concerns you have with the Division method?**

196 **A.** Yes. The Division's current methodology does not address:

197 • how asset disposals (with a different *federal vs state basis*) will be handled.

198 Typically, any gain or loss on disposal is adjusted through group depreciation
199 expense to prevent over or under expense recovery on the asset. This would
200 require separate calculation and historical tracking to properly adjust for the
201 state's method of depreciation expense.

202 • how the Division will view single-asset straight-line depreciation expense when it
203 exceeds the group method (at some point each asset has to have a reversal of
204 timing differences and/or remaining differences will be recognized on disposal).

205 • How the increased and cumulative rate base will be handled from the demarcation
206 point, or date, from which the state requires single asset methodology.

207 Previously, the Division has only considered the current year impact on rate base,
208 but going forward, the Division (and the Commission) will have to recognize the
209 cumulative rate base and individual asset difference from the point in time that the
210 Commission no longer recognizes the group methodology for interstate assets.

211 • Why creating rate base differences, two bases for every asset, timing differences,
212 jurisdictional reporting differences, additional tracking, loss of reporting
213 transparency, and possible increases in total USF distributions is in the public
214 interest. Though the Division says it is not requiring a change in methodology,
215 any company interested in ensuring proper jurisdictional returns will either switch
216 to the state prescribed methodology (with all associated interstate revenue
217 impacts) or most certainly bear the administrative burden to track these
218 differences to ensure correct state and interstate rate of return. However, the
219 Company would risk being penalized by the faster depreciation of rate base than
220 the slower depreciation expense calculated under the Division's method as stated
221 above, if the Company did not file a rate case or UUSF application each year. The
222 Company may be afraid that the regulators would say, "since you did not come in
223 for a rate case or UUSF case, we assume you earned a proper rate of return on
224 those assets." This approach is not prudent, and would encourage more frequent
225 rate cases.

226
227 **Q. Why does the Division's use of its depreciation method on a Total Company Basis**
228 **skew the results when a company is using group for Interstate purposes?**

229 A. The use of group depreciation for interstate purposes only skews the intrastate revenue
230 requirement. Because group depreciation is above the Divisions' supposed "Single
231 Asset", when the Division looks at the Interstate Revenues that were based on group
232 depreciation, it appears that the revenues are high because the Division uses its "Single
233 Asset" depreciation. Because the Division is looking at this on a "Total Company" basis,

234 the Division in effect reduces Carbon/Emery's revenue requirement on intrastate
235 depreciation, because of the supposed artificially high (created by the Division's use of a
236 differing method than the Interstate Jurisdiction) revenue recovery on the Interstate side.
237 In other words, the Division wants the extra revenue from the Interstate side as a result of
238 group depreciation, but wants the lower overall revenue requirement by use of its "single
239 asset" method of depreciation.

240

241 **Q. Does the Division address this issue in its calculations?**

242 **A.** No. The Division ignores this issue. (See Division's Response to Data Request
243 1.1(a),(b)), attached hereto as Carbon/Emery D Woolsey SSR Exhibit 1.) The result is
244 Carbon/Emery's Utah USF request is skewed downward.

245

246 In Carbon/Emery's Data Request DRI to the Division, Carbon Emery identifies this
247 revenue impact issue and asks for the DPU's calculation of interstate revenue as follows:

248 "DR 1.1 In the filing of Carbon/Emery Telecom (Carbon) for UUSF funding
249 on April 2, 2015, Carbon included total company depreciation of
250 \$2,038,846 utilizing a straight line depreciation methodology
251 applied to group assets as prescribed by 47 CFR Part 32. This
252 depreciation included both interstate and intrastate components.
253 The interstate portion of the depreciation as calculated at the time
254 of the UUSF filing, based upon the 2014 PSC annual report (2013
255 factors), was \$897,533 or 44%. Subsequently, the actual filed cost
256 study filing for 2014 (2014 factors) evidenced \$875,987 or 43%
257 interstate depreciation. The interstate separated depreciation
258 amounts result in accompanying interstate revenue from various
259 sources, which for Carbon include: Interstate Common Line
260 Support, tariffed special access, switched access/ARC/CAF-ICC,
261 and DSL. The revenue resulting from interstate depreciation has
262 been realized or accrued in the 2014 financial statements and in the
263 UUSF filing. The Division disagrees with Carbon's group
264 depreciation calculation, and has proposed a recalculated single

265 asset approach applied to total (interstate and intrastate) company
266 assets which results in a depreciation reduction of \$563,276.
267

268 *a.* Please identify the amount of interstate revenue associated with
269 the \$563,276 depreciation adjustment and identify the steps the
270 DPU has taken to ensure that the associated interstate rate of
271 return revenue impact of the depreciation adjustment has been
272 addressed.”
273

274 The Division indicated in its response that it had not calculated the interstate revenue
275 associated with their depreciation adjustment calculation. Though Carbon/Emery does
276 not agree with the Division’s depreciations adjustment, Carbon/Emery has performed the
277 calculation of the interstate revenue impact and has determined that \$246,858 of
278 interstate revenue is associated with the Division’s proposed depreciation expense
adjustment of \$563,276.

280
281 **Q. When you say \$246,858 of interstate revenue is associated with the Division’s**
282 **proposed depreciation expense adjustment of \$563,276, what does that mean?**

283 **A.** It means that if the Division’s method of depreciation is used, Carbon/Emery’s interstate
284 revenue would be reduced by \$246,858, and presumably, that amount of interstate
285 revenue would be recovered from the State UUSF; or stated another way, if
286 Carbon/Emery uses the Divisions method of depreciation for the Interstate side,
287 Carbon/Emery will receive \$246,858 less revenue from Interstate sources. This will then
288 have to be recovered from Intrastate sources.

289

290 **Q. Are you familiar with the other “acceptable” methods of depreciation identified in**
291 **Mr. Hellewell’s direct testimony?**

292 A. Yes To determine if group depreciation is following appropriate remaining asset service
293 lives for a given group, the FCC has provided a formula for recalculating depreciation
294 while still maintaining the group (or mass asset) straight line methodology. The formula
295 used for this calculation is correctly stated in 268678 Direct Testimony of Joseph
296 Hellewell for DPU 8-21-2015 lines 230-231 as follows:

$$\text{Depreciation Rate} = \frac{100\% - \text{Accumulated Depreciation \%} - \text{Future Net Salvage \%}}{\text{Average Remaining Life}}$$

297
298
299
300 Two factors that require assumptions in the calculation are the date of the accumulated
301 depreciation percentage and corresponding average remaining life as well as any
302 assumptions surrounding the establishment of the average remaining life. Because the
303 general methodology is maintained in the adjustment process and only the rate changes,
304 this adjustment has generally been accepted without explicit FCC approval.

305
306 **Q: You mention that the Division states that the FCC method is acceptable. Please**
307 **indicate where this acceptance is mentioned by Mr. Hellewell.**

308 A: Mr. Hellewell states on lines 201-203 of his Prefiled Direct Testimony that:

309 “there is [sic] a variety of alternatives that Carbon-Emery Telephone could use that
310 would use the Commission approved life and rates, and would be reasonable alternatives
311 for calculating revenue requirement and Utah USF if correctly employed.”
312

313 Lines 223-234 of Mr. Hellewell’s testimony provide:

314
315 “FCC Method: The FCC has developed a formula that has been used to recalculate the
316 depreciation rate based on the plants average remaining life, future net salvage, and
317 depreciation reserve ratio. This formula has been published in several orders. (FCC 00-
318 306, FCC 96-485) From FCC 00-306, “The depreciation rate for an account is a function

319 of the associated plant's average remaining life, future net salvage, and depreciation
320 reserve ratio. The depreciation rate is calculated using the following formula:

321
322 Depreciation Rate = $\frac{100\% - \text{Accumulated Depreciation \%} - \text{Future Net Salvage \%}}{\text{Average Remaining Life}}$
323
324

325 Both the average remaining life and the future net salvage factors are based upon
326 estimates that require periodic review to ensure their reasonableness."
327

328 **Q: To your knowledge, has the Division performed the calculations necessary to**
329 **determine what the FCC method produces for Carbon/Emery?**

330 A: The Division has not performed the FCC method for Carbon/Emery, despite confirming
331 that it is an acceptable method. (See Division Response to Data Request 1.3(c)), attached
332 hereto as Carbon/Emery D Woolsey SSR Exhibit 1.

333
334 **Q. Did Carbon/Emery employ the FCC Method in its calculation of depreciation**
335 **expense as filed?**

336 A. No. Carbon/Emery did not use the FCC Method when calculating the depreciation
337 expense in its application.

338
339 **Q. Why not?**

340 A. Historically, Carbon/Emery has not separately considered the average remaining life of
341 the group of assets, but rather has simply applied the straight-line depreciation rate to the
342 group of assets. This approach is reasonable because Carbon/Emery groups assets in
343 manner that results in the assets having similar average lives. For example, copper cables
344 that are added to repair a section of outside copper plant, are added to the outside copper
345 plant group because they will typically be retired at the same time as the group.

346 Additionally, Carbon/Emery purchased its plant from Qwest. Many of the assets were
347 not described in sufficient detail to make some of the calculations as precisely as
348 Carbon/Emery would normally make. However, Carbon/Emery has made proper
349 disposals over the year and has actually disposed of as many assets as it has added to the
350 groups. The fact that the FCC Method calculations are similar (as shown below) to
351 Carbon/Emery's current depreciation evidences that Carbon/Emery's method is
352 reasonable.

353

354 **Q. Have you calculated the depreciation expense for Carbon/Emery using the FCC**
355 **Method identified in Mr. Hellewell's testimony?**

356 A. Yes. I have reviewed Carbon/Emery's group depreciation methods. I believe our
357 depreciation methods, as implemented accurately reflect the Company's depreciation
358 expense. However, in an effort to corroborate our methods, we have recalculated our
359 depreciation using the FCC formula.

360

361 **Q. Please explain your calculation of the FCC method for Carbon/Emery.**

362 A. There are two recalculations based on different date assumptions, attached hereto as
363 Carbon/Emery D Woolsey SSR Exhibit 2 and Carbon/Emery D Woolsey SSR Exhibit 3.
364 The first FCC formula recalculation was performed using the end of the test period year
365 (12/31/2014) for purposes of establishing the accumulated depreciation percentage and
366 average remaining asset life. The second recalculation used a mid-year date or average to
367 determine the accumulated depreciation percentage and average remaining asset life.
368 Under both recalculations:

Revenue Requirement effect		6,512	(86,581)
Total USF request	570,647	577,155	484,062

380

381 **Q. Please summarize your calculations reported in Table 1?**

382 A. The first recalculation using the FCC formula using a 12/31/14 date produced nearly
383 identical results to Carbon/Emery's filed depreciation expense number. The level of
384 depreciation expense is also consistent with forward looking annual FCC 481 additions as
385 presented in previous exhibits of averaging \$2,356,202 over the next 6 years (through
386 2020). With significant disposals also anticipated, depreciation (under any method) will
387 be outpaced by plant additions and will grow over time.

388

389 The second FCC calculation using an average 2014 accumulated depreciation percentage
390 and a 6/30/14 point in time to calculate the average remaining life resulted in a slightly
391 lower level of depreciation expense of \$1,849,286. This calculation is very similar to the
392 historical PSC annual reported average depreciation expense (2006 to 2014) of
393 \$1,850,377 as well as reported average additions and disposals for the same period of
394 \$1,812,695 and \$1,889,532 respectively. I observe that Carbon/Emery's existing groups
395 are near the end of their lives, and our large projected investments will be paired with
396 significant disposals effectively refreshing these asset groups and I anticipate levels over
397 the next six years to be similar to historical levels presented. Though single-asset
398 straight-line depreciation could not be implemented as suggested by the Division
399 (because the Division recalculated all assets from their in-service date) a projected

400 1/1/2014 change to single asset straight line going forward on actual additions from 2014
401 and FCC 481 projected assets would result in an average annual depreciation expense of
402 \$1,965,331 over the next six years.

403

404 **Q. Has Carbon/Emery considered other depreciation methodologies?**

405 A. Yes. We have considered numerous depreciation methods, many of which have been
406 discussed with the Division in an attempt to at least separate the depreciation calculation
407 into interstate and intrastate jurisdictions and thereby address the revenue impact
408 discussed above.

409

410 **Q. Does Carbon/Emery's group depreciation establish a correct "base" depreciation?**

411 A. Yes, the goal of this proceeding is to establish a representative "base year" for purposes
412 of determining an appropriate level of UUSF support. In reviewing the depreciation from
413 2006 through 2014, the depreciation has averaged \$1,850,377. In looking at the projected
414 capital expenditures and plans of Carbon/Emery from 2015 to 2020, the average annual
415 plant additions will be \$2,356,202 and average depreciation will increase overtime
416 accordingly. This is representative of the numbers filed by Carbon/Emery using group
417 depreciation and the numbers stated in this testimony as recalculated using the FCC
418 adjustment formula. The results clearly demonstrate that the number projected by the
419 Division using its "Single Asset" method is artificially low and not representative of
420 historical or anticipated Carbon/Emery operating levels.

421

422 My testimony confirms that even with the Commission's clarifications in its order
423 allowing for adjustments to a group asset method does not alter materially the
424 Carbon/Emery filling in this proceeding.

425

426 **Q. Does this conclude your testimony.**

427 **A. Yes.**

FCC Economic Depreciation Lives

Count	USOA Category	Economic Lives	Net Salvage Percent	Adjusted Projection Lives (years)	Adjusted Depreciation Rate
2112	Motor Vehicles	8.24	0.1038	9.19	10.9%
2115	Garage Work Equipment	12.22	-0.0558	11.57	8.6%
2116	Other Work Equipment	13.04	0.0169	13.26	7.5%
2121	Buildings	46.93	0.0164	47.71	2.1%
2122	Furniture	15.92	0.0402	16.59	6.0%
2123.1	Office Support Equipment	10.78	0.0412	11.24	8.9%
2123.2	Company Comm Equipment	7.4	0.0252	7.59	13.2%
2124	Computers	6.12	0.0229	6.26	16.0%
2212	Digital Switching	16.17	0.0157	16.43	6.1%
2220	Operator Systems	9.41	-0.0041	9.37	10.7%
2232.2	Digital Circuit Equipment	10.24	-0.0062	10.18	9.8%
2351	Public Telephone	7.6	0.0512	8.01	12.5%
	NID, SAI and Drop			19.00	5.3%
2411	Poles	30.25	-0.8998	15.92	6.3%
2421-m	Aerial Cable - Metallic	20.61	-0.2303	16.75	6.0%
2421-nm	Aerial Cable - Non-Metallic	26.14	-0.1753	22.24	4.5%
2422-m	Underground - Metallic	25	-0.1797	21.19	4.7%
2422-nm	Underground - Non-Metallic	26.45	-0.1458	23.08	4.3%
2423-m	Buried - Metallic	21.57	-0.0839	19.90	5.0%
2423-nm	Buried - Non-Metallic	25.91	-0.0691	24.24	4.1%
2426-m	Intrabuilding - Metallic	18.18	-0.1569	15.71	6.4%
2426-nm	Intrabuilding - Non-Metallic	26.11	-0.1043	23.64	4.2%
2441	Conduit Systems	56.19	-0.0995	51.11	2.0%

Federal-State Joint Board on Universal Service; Forward-Looking Mechanism for High Cost Support for Non-Rural LECs, 14 FCC Rcd 20156, FCC 99-304, November 2, 1999, Errata: December 22, 1999, TENTH REPORT AND ORDER, Appendix A.

FCC Economic Depreciation Lives

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2116	Other Work Equipment	13.04	0.0169	13.26	7.5%
2121	Buildings	46.93	0.0164	47.71	2.1%
2122	Furniture	15.92	0.0402	16.59	6.0%
2123.1	Office Support Equipment	10.78	0.0412	11.24	8.9%
2123.2	Company Comm Equipment	7.4	0.0252	7.59	13.2%
2124	Computers	6.12	0.0229	6.26	16.0%
2212	Digital Switching	16.17	0.0157	16.43	6.1%
2220	Operator Systems	9.41	-0.0041	9.37	10.7%
2232.2	Digital Circuit Equipment	10.24	-0.0062	10.18	9.8%
2351	Public Telephone	7.6	0.0512	8.01	12.5%
	NID, SAI and Drop			19.00	5.3%
2411	Poles	30.25	-0.8998	15.92	6.3%
2421-m	Aerial Cable - Metallic	20.61	-0.2303	16.75	6.0%
2421-nm	Aerial Cable - Non-Metallic	26.14	-0.1753	22.24	4.5%
2422-m	Underground - Metallic	25	-0.1797	21.19	4.7%
2422-nm	Underground - Non-Metallic	26.45	-0.1458	23.08	4.3%
2423-m	Buried - Metallic	21.57	-0.0839	19.90	5.0%
2423-nm	Buried - Non-Metallic	25.91	-0.0691	24.24	4.1%
2426-m	Intrabuilding - Metallic	18.18	-0.1569	15.71	6.4%
2426-nm	Intrabuilding - Non-Metallic	26.11	-0.1043	23.64	4.2%
2441	Conduit Systems	56.19	-0.0995	51.11	2.0%

Federal-State Joint Board on Universal Service; Forward-Looking Mechanism for High Cost Support for Non-Rural LECs, 14 FCC Rcd 20156, FCC 99-304, November 2, 1999, Errata: December 22, 1999, TENTH REPORT AND ORDER, Appendix A.

BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

IN THE MATTER OF CARBON/EMERY)
TELCOM, INC. APPLICATION FOR AN) DOCKET NO. 15-2302-01
INCREASE IN UTAH UNIVERSAL)
SERVICE FUND SUPPORT)

REVISED REBUTTAL TESTIMONY OF DOUGLAS DUNCAN MEREDITH

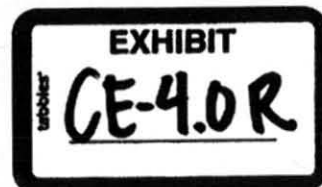
ON BEHALF OF

CARBON/EMERY TELCOM, INC.

September 4, 2015

(Revised Per Commission Order October 26, 2015)

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1 Introduction

2 **Q: Please state your full name, place of employment and position.**

3 A: My full name is Douglas Duncan Meredith. I am employed by John Staurulakis, Inc.
4 ("JSI") as Director – Economics and Policy. JSI is a telecommunications consulting firm
5 headquartered in Greenbelt, Maryland. My office is located at 547 Oakview Lane,
6 Bountiful, Utah 84010. JSI has provided telecommunications consulting services to local
7 exchange carriers since 1963.

8 **Q: Please describe your professional experience and educational background.**

9 A: As the Director of Economics and Policy at JSI, I assist clients with the development of
10 policy pertaining to economics, pricing and regulatory affairs. I have been employed by
11 JSI since 1995. Prior to my work at JSI, I was an independent research economist in the
12 District of Columbia and a graduate student at the University of Maryland – College
13 Park.

14
15 In my employment at JSI, I have participated in numerous proceedings for rural and non-
16 rural telephone companies. These activities include, but are not limited to, the creation of
17 forward-looking economic cost studies, the development of policy related to the
18 application of the rural safeguards for qualified local exchange carriers, the determination
19 of Eligible Telecommunications Carriers, the sustainability and application of universal
20 service policy for telecommunications carriers, as well as supporting incumbent local
21 exchange carriers in arbitration proceedings and rural exemption and suspension and/or
22 modification proceedings.

23
24 In addition to assisting telecommunications carrier clients, I have served as the economic
25 advisor for the Telecommunications Regulatory Board of Puerto Rico since 1997. In this
26 capacity, I provide economic and policy advice to the Board Commissioners on all
27 telecommunications issues that have either a financial or economic impact on carriers or
28 end-users. I have participated in a number of arbitration panels established by the Board

29 to arbitrate interconnection issues under Section 252 of the Telecommunications Act of
30 1996.

31
32 I am participating or have participated in numerous national incumbent local exchange
33 carrier and telecommunications groups, including those headed by NTCA, USTelecom,
34 and the Rural Policy Research Institute. My participation in these groups focuses on the
35 development of policy recommendations for advancing universal service and
36 telecommunications capabilities in rural communities and other policy matters.

37
38 I have a Bachelor of Arts degree in economics from the University of Utah, and a
39 Masters degree in Economics from the University of Maryland – College Park. While
40 attending the University of Maryland – College Park, I was also a Ph.D. candidate in
41 Economics, having completed all coursework, comprehensive and field examinations for
42 a Doctorate of Economics.

43
44 **Q: Have you testified previously in federal and state regulatory proceedings on**
45 **telecommunications issues?**

46 **A:** Yes. I have testified live or in pre-filed regulatory testimony in various states including
47 Utah, Maine, Vermont, New Hampshire, New York, Michigan, Wisconsin, North
48 Dakota, South Dakota, Texas, South Carolina, Tennessee, and Kentucky. I have also
49 participated in regulatory proceedings in many other states that did not require formal
50 testimony, including Florida, Louisiana, Mississippi, Puerto Rico and Virginia. In
51 addition to participation in state regulatory proceedings, I have participated in federal
52 regulatory proceedings through filing of formal comments in various proceedings and
53 submission of economic reports in an enforcement proceeding.

54
55 **Q: On whose behalf are you testifying in this proceeding?**

56 **A:** I am testifying on behalf of Carbon/Emery Telcom, Inc. (“Carbon/Emery”).
57
58

60 **Q: What is the purpose of your testimony?**

61 A. The purpose of my testimony is to address the various issues discussed in Direct
62 Testimonies offered by the Office of Consumer Services and the Division of Public
63 Utilities. In their testimonies, these parties propose modifications to *Carbon/Emery's*
64 Application for Increase in Utah Universal Service Fund ("Utah USF") support. In this
65 testimony, I recommend that the Commission reject or modify many of these proposed
66 modifications. Specifically, I will address the testimony of:

- 67 ○ Casey Coleman, Division of Public Utilities;
- 68 ○ David Brevitz, Office of Consumer Services;
- 69 ○ Joseph Hellewell, Division of Public Utilities.

70
71 **Q. Have you reviewed the testimony of the individuals you have identified above?**

72 A. Yes. I have reviewed all of the testimony filed in this docket.
73

74 **Rate of Return**

75
76 **Q: In his testimony on behalf of the Utah Office of Consumer Services (Office), Mr.**
77 **Brevitz argues that the Utah Public Service Commission should take guidance from**
78 **a bevy of cases in Kansas regarding the appropriate rate of return to be used by**
79 **Carbon/Emery. Do you agree that the Kansas information is helpful in informing**
80 **the Commission on this issue?**

81 A: Not at all. While Mr. Brevitz alludes that his Kansas cases were fully vetted, his
82 testimony actually indicates that only one case (LaHarpe 2012) was fully reviewed and
83 litigated. In all other cases, the cases ended with a stipulation. Furthermore, we have no
84 information from Mr. Brevitz that the LaHarpe case thoroughly reviewed the various
85 standard methods to determine return on equity. So I discount these citations and urge
86 the Commission to give them little if any weight. We simply don't have any information
87 suggesting that the rate used for the return on equity was fully examined in the cited
88 Kansas cases, especially absent is any reference or citation from the Commission about
89 its evaluation and determination of the rate of equity in the LaHarpe case.

91 **Q: Please describe what a small company premium is and how it is used.**

92 A: A small company premium is an adjustment to the calculated rate of equity and is
93 designed to account for the fact that access to equity is more constrained as companies
94 get smaller. Thus, due to various factors, access to capital requires a premium over a
95 return on equity for much larger companies.

96

97 **Q: Did Carbon/Emery propose a small company premium in this proceeding?**

98 A: No. Carbon/Emery did not propose a small company premium in this proceeding because
99 it used an overall rate of return that was proposed by the Division last year and was used
100 in Emery's Utah USF request finalized earlier this year. Carbon/Emery assumed that
101 since the Division was comfortable with its proposed rate of return in January for an
102 affiliate, the same rate of return should be used in this proceeding that was filed a few
103 months later.

104

105 **Q: What was the Division's overall rate of return used earlier this year?**

106 A: The overall rate of return used earlier this year was 10.50 percent. This accounts for the
107 cost of debt and the return on equity weighted by a debt and equity capital structure to
108 develop an overall rate of return.

109

110 **Q: Mr. Brevitz argues that a small company adjustment is not necessary or**
111 **appropriate in this proceeding. What is your opinion of the use of small company**
112 **adjustments when using a peer group whose members are much larger than the**
113 **target company?**

114 A: I disagree with Mr. Brevitz on the application of small company adjustments. A small
115 company adjustment or more specifically a size adjustment is a common adjustment that
116 is used when examining small companies. The outright rejection of this adjustment by
117 Mr. Brevitz appears strident and unreasonably designed to simply produce a low rate of
118 return for Carbon/Emery.

119

120 The Morningstar/Ibbotson Annual Yearbook routinely reports an adjustment that would
121 be applied to a company based on market capitalization. Depending on the size of the
122 company, the size premium ranges from a negative adjustment of 38 basis points for very
123 large companies to a positive adjustment of 6.10 percent for the smallest of companies.
124 In a presentation entitled "Telcom Cost of Capital Issues: January 1, 2012", Dr. Hal. B.
125 Heaton (BYU Professor, Stanford Ph.D.) describes a size premium as a "minimum
126 adjustment" to be used when applying the standard Capital Asset Pricing Model
127 (CAPM). (Rebuttal Testimony of D Meredith Exhibit 1- PDF page 18)

128
129 Furthermore, in 2013 Dr. Billingsley (Virginia Polytechnic Institute & State University
130 Associate Professor, Texas A&M Ph.D.) examined a Federal Communications Staff
131 report on rate of return that was proposed for rate-of-return carriers. (This is a report cited
132 by Mr. Brevitz in supporting his position.) Dr. Billingsley recommends using the Duff &
133 Phelps, another established and well respected company specializing in valuation and
134 corporate finance, small company adjustment. This process yielded a 5.32 percent
135 increase for mid-sized carriers and a 7.11 percent increase for smaller rate-of-return
136 carriers. Dr. Billingsley summarizes the impact of ignoring the size effect as follows:

137
138 "Using the CAPM, the Staff Report estimates that the average cost of equity for
139 its entire 16-company sample is 7.18 percent, 6.70 percent for the RHC
140 subsample, 7.75 percent for the mid-sized carrier subsample, and 6.90 percent for
141 the RoR subsample of companies. In contrast, the approach to applying the firm
142 size-adjusted CAPM recommended by Duff & Phelps produces an average cost of
143 equity for the entire Staff Report company sample of 12.74 percent, 9.13 percent
144 for the RHC subsample, 13.07 percent for the mid-sized carrier subsample, and
145 14.01 percent for the RoR [Rate of Return] subsample of companies.

146
147 Consistent with the empirical evidence on the size effect, the [FCC's] Staff
148 Report underestimates the equity costs of the smallest firms the most, which are
149 the RoR firms that are the most comparable subsample to the average RLEC. The
150 data used to generate the Duff & Phelps estimates are available by subscription

151 and are relied on by investment professionals. Duff & Phelps consequently
152 provide objective evidence that the Staff Report's failure to adjust for the small
153 firm effect provides significantly understated RLEC equity costs and, by
154 implication, an understated average RLEC WACC." (Rebuttal Testimony of D
155 Meredith Exhibit 2 - PDF page 55-56).

156
157 Also included as Rebuttal Testimony of D Meredith Exhibit 3 is the Federal
158 Communications Commission Staff Report that is the subject of this critique. A small
159 company adjustment or premium should be an adjustment adopted by the Commission to
160 evaluate the rate of equity for a small rural carrier in Utah.

161
162 **Q: Is it your testimony that the 10.50 percent rate of return should be used in this**
163 **proceeding?**

164 A: Now that the issue is fully open and witnesses for the Division and Office have argued
165 against the rate of return used last year, it is my recommendation that the Commission
166 take notice that the rate of return for Carbon/Emery should be higher than the proposed
167 10.50 percent. There is more than enough evidence to support the 10.50 percent rate of
168 return based on the information in this proceeding and filed at the Federal
169 Communications Commission.

170
171 **Q: Please explain the information you reviewed in reaching your recommendation that**
172 **10.50 percent is a minimum rate of return that will ensure that equity freely flows to**
173 **Carbon/Emery for its long-term infrastructure projects.**

174 A: First is the volume of information filed at the FCC and the FCC's actions in a docket to
175 examine the interstate rate of return. As I mentioned earlier, in 2013 the FCC examined
176 whether it should change its prescribed rate of return used for investments assigned to the
177 interstate jurisdiction. Currently the authorized rate of return used by the FCC is 11.25
178 percent. The FCC staff issued a report (Rebuttal Testimony of D Meredith Exhibit 3)
179 whose conclusion was cited by Mr. Brevitz. In this staff report, the recommended range
180 for a rate of return was 7.39 percent to 8.72 percent. What should inform the
Commission in this proceeding is the fact that the FCC did not accept the conclusions of

182 the staff report. The rebuttals of the staff report provided by NTCA, et al. (Rebuttal
183 Testimony of D Meredith Exhibit 2) and the Rural Broadband Alliance (Rebuttal
184 Testimony of D Meredith Exhibit 4) leveled a broadside against the staff findings to the
185 extent that the FCC has let the issue remain dormant for two years and no action has been
186 taken.

187

188 The NTCA report showed various errors in the staff report and also recommended an
189 alternative to the DCF method that uses small company data to calculate a rate of
190 return—these data are from purchases of small carriers across the country. The NTCA
191 report demonstrates that the 11.25 percent rate of return is in fact too low. (Using other
192 methods, the Rural Broadband Alliance examination demonstrates the same and applies a
193 6 percent small company adjustment on pages 18-23). So, from the FCC's docket we
194 have one staff report that was thoroughly rebutted. The findings of the two industry
195 rebuttals demonstrate that the 11.25 percent rate of return is low for small rural carriers
196 and if any change were to be made, this rate of return should increase. In light of the
197 evidence, the FCC has let the issue remain idle and the authorized prescribed interstate
198 rate of return for rural carriers remains set at 11.25 percent.

199

200 **Q: What should the Commission take from the FCC's proceeding examining the same**
201 **issue raised by the Division and the Office?**

202 A: First, the Commission should recognize that the FCC's docket has a wealth of
203 information about the procedures and pitfalls in determining a rate of return. (The
204 exhibits I have supplied provide the details needed to adjust CAPM for size and liquidity
205 and in producing a levered beta, etc.)

206

207 Second, the Commission should conclude that it should take no action to change the
208 interstate authorized prescribed rate of return after an exhaustive review demonstrates
209 that the 11.25 percent rate of return provides a reasonable incentive for equity to freely
210 flow to carriers, like Carbon/Emery, whose aim is to invest in long-term infrastructure
211 projects in the provision of telecommunications service regulated by the state. The FCC
212 as an expert agency in regulating telecommunications carriers has examined the issues,

213 pro and con, and has deferred from taking actions to lower its prescribed rate of return.
214 This fact should inform the Commission and provide sufficient support for retaining
215 Carbon/Emery's 10.50 percent rate of return in this proceeding.
216

217 Finally, the rebuttals to the FCC's staff report show that calculating a rate of return for
218 carriers that are not publicly traded a stock market challenges the standard financial
219 models, especially when there are so few companies with public information. Traditional
220 methods of calculating a rate of equity for small companies has a tendency to understate
221 the lack of access to equity markets and the corresponding return that is necessary to
222 attract equity to remote locations in Utah.
223

224 Based on this information alone, the Commission can reach the conclusion that a 10.50
225 percent rate of return is reasonable and properly balanced.
226

227 **Q: Mr. Coleman provides his update to one traditional method, the Capital Asset**
228 **Pricing Model (CAPM). What observations have you made concerning Mr.**
229 **Coleman's application of the CAPM?**

230 **A:** First, the CAPM is very sensitive to the selected peer group of publicly traded companies.
231 The CAPM methodology assigns a risk premium based on this peer group to calculate a
232 return on equity. So, the selection of similarly situated companies to be used for
233 comparison is very important. Mr. Coleman uses 13 companies in his peer group.
234 Examining this peer group shows serious problems that should give the Commission
235 reservations in using his peer group.

- 236 1. HickoryTech was purchased by Consolidated Communications on October 16,
237 2014 so this company cannot be in the peer group.
- 238 2. Alteva isn't a reasonable peer since the majority of its revenues is generated
239 from its VoIP operations and wireless partnership (which was sold in 2014),
240 and not its small ILEC operations.
- 241 3. Atlantic Tele Network does not have ILEC operations and its primary wireline
242 operations are in Guyana. It also has a good portion of revenues generated
from wireless operations.

- 244 4. Earthlink is not a good fit since it doesn't have ILEC operations.
 245 5. IDT is not a good fit since it doesn't have ILEC operations.
 246

247 Moreover, the size of these companies dwarfs Carbon/Emery and without adjustment the
 248 CAPM results cannot be reasonably applied to Carbon/Emery. In Table 1 I show the
 249 access line counts for the biggest set of operationally similar companies that can create a
 250 peer group. Table 1 includes more companies than what Mr. Coleman used. I presume
 251 Mr. Coleman didn't think that Verizon or AT&T are peers to Carbon/Emery and he
 252 excluded these from his analysis. I include them due to their operations as the largest
 253 ILECs in the nation.
 254
 255

Table 1

<u>Company</u>	<u>Exchange</u>	<u>Ticker</u>	<u>Access Lines 6/30/2015</u>
Verizon	NYSE	VZ	19,079,000
AT&T	NYSE	T	18,116,000
CenturyLink	NYSE	CTL	12,100,000
Frontier Communications	NYSE	FTR	3,476,000
Windstream	NSDQ	WIN	1,828,900
Fairpoint Communications	NSDQ	FRP	768,222
Telephone & Data Systems	NYSE	TDS	510,800
Consolidated Communications	NSDQ	CNSL	493,540
Cincinnati Bell	NYSE	CBB	389,000
Alaska Communications	NSDQ	ALSK	119,432
Lumos Networks	NSDQ	LMOS	105,298
Otelco	NSDQ	OTEL	59,506
New Ulm Telecom	OTCBB	NULM	26,570
Shenandoah Telecommunications	NSDQ	SHEN	21,615

256 Source: JSI Capital Advisors
 257

258 Also, as noted by Dr. Billingsley, some of these companies are distressed or are in
 259 bankruptcy, thereby affecting their beta value. FTR, WIN, ALSK, OTEL and NULM all
 260 report negative beta values using September 4, 2015 Yahoo Finance reports (the same
 261 source use by Mr. Coleman). These companies should be removed from the peer group.

263 Mr. Coleman is lukewarm endorsing the CAPM for this proceeding assigning it to a
264 "comfortable" status given that the Division found no other suitable alternative. Without
265 adjusting the CAPM, I recommend the Commission reject the CAPM as unable to
266 "produce credible results" and that the CAPM "must adjust for unusual economic
267 circumstances" such as size and a highly irregular interest rate market. (Rebuttal
268 Testimony of D Meredith Exhibit 1, PDF page 21, observation of Dr. Heaton on using the
269 CAPM).

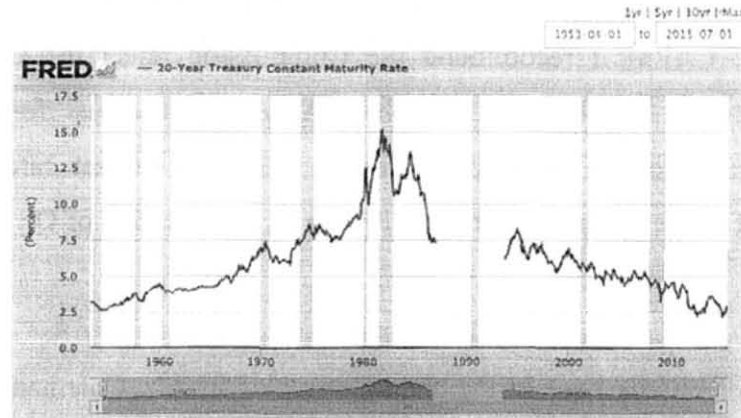
270
271 Another set of pitfalls I see in the update provided by Mr. Coleman is that he uses spot
272 rates for the inputs used in his CAPM. A generally accepted practice is to trend these
273 over a period of time to smooth out normal and expected fluctuations in the market. Data
274 from the U.S Department of Treasury reports that the trend for the three-month T-Bill
275 from 1990-today is 3.04 percent, and the trend for the twenty-year T-Bond is 5.009
276 percent. These trends are based on all the data available online at the Department of
277 Treasury and correspond generally to other data analysis I have examined and include in
278 my testimony.

279
280 In Graph 1, I illustrate the 20-year yield over time and in this graph, the abnormally low
281 yield since 2009 is clearly illustrated. I propose the Commission use the Department of
282 Treasury 20-year T-Bond rate of 5.009 percent that was generated over 1990-today. This
283 corresponds to the recommendation of using an historic 4 to 5 percent value to represent
284 a more "normal" 20-year yield. Dr. Billingsley suggests this in his review as does Dr.
285 Heaton.

Graph 1

20-Year Treasury Constant Maturity Rate

2015-07 2.77 Percent (vs 1960s)
 Monthly, Not Seasonally Adjusted, GS20, Updated: 2015-08-06 2:21 PM CDT



Source: Federal Reserve of St. Louis - Federal Reserve Economic Data (FRED) website.

Mr. Coleman fails to adjust his results with a small company adjustment, perhaps because he excluded the two largest carriers in the nation in his peer group. It should be obvious that a small company such as Carbon/Emery is challenged in the equity markets when compared with much larger companies in the marketplace. The fact that there are only 14 publicly traded ILEC peers in the nation and only two whose line counts are comparable to small company line counts—there are 1,101 small company study areas in the nation—demonstrates that small companies do not have easy access to the equity markets.

Another adjustment to CAPM is the recognition of a liquidity premium. This is discussed in some detail by Dr. Heaton and his conclusion is that CAPM “must adjust for differences” between securities [size] and illiquid property.” (Rebuttal Testimony of D Meredith Exhibit 1, PDF page 21)

Lastly, adjusting for the leverage of a company, by adjusting the beta to account for leverage, is another standard tool when using CAPM. The levered beta equals the product of the unlevered beta and the expression $(1 + (1 - \text{effective tax rate}) \times (\text{Debt}\% / \text{Equity}\%))$.

315 Q: Have you been able to adjust the Division's CAPM analysis to account for these
316 adjustments?

317 A: Yes, except for the liquidity premium. I have used the meaningful peers because some of
318 the peers have negative betas. I have gathered today's spot beta, effective tax rate and
319 debt and equity values that are needed to produce a levered beta. I have also used a mid-
320 point value of 3 percent for the company premium. I also am using the historic T-Bill
321 and T-Bond rates. The following table reports the results of a cost of equity of 16.83
322 percent. The calculation is presented in Table 2. A 16.83 percent intrastate cost of equity
323 yields an adjusted weighted average cost of capital of 12.34 percent—exceeding the
324 10.50 percent value proposed by Carbon Emery in its filing.

325 Table 2

*Roll
Debt
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Company	Access Lines 6/30/2015	Today's Spot Beta	CAPM unadjusted	Tax	Debt %/Equity %	Levered Beta	Levered CAPM
Verizon	19,079,000	0.5628	6%	22%	8.9881	4.5234	25.70%
AT&T	18,116,000	0.5521	6%	35%	0.8801	0.8700	7.40%
CenturyLink	12,100,000	1.0013	8%	30%	1.3393	1.9340	12.72%
Fairpoint Communications	768,222	0.5808	6%	0%	1.7500	1.5971	11.04%
Telephone & Data Systems	510,800	0.5557	6%	0%	0.5078	0.8379	7.23%
Consolidated Communications	493,540	0.8226	7%	46%	4.1933	2.6705	16.41%
Cincinnati Bell	389,000	1.4934	11%	43%	1.0000	2.3467	14.79%
Lumos Networks	105,298	0.9233	8%	40%	3.9032	3.0870	18.50%
Shenandoah Telecommunications	21,615	0.9945	8%	39%	0.8682	1.5211	10.66%
Average							13.83%
						Small company (size) premium	3.00%
T-Bill Rate (1990-today)	3.04%						
T-Bond Rate (1990-today)	5.01%					Adjusted CAPM	16.83%

326
327
328 I recommend the Commission accept these adjustments to the CAPM when examining
329 the cost of equity for small companies in Utah.

330
331 Q: If the Commission were to use a small company premium to account for increased
332 risk and constrained access to equity, or adjust for liquidity constraints, or leverage,
333 would it be reasonable to conclude the 10.50 percent rate of return is a minimum
334 rate of equity for any of these adjustments?

335 A: Yes. There are a number of adjustments or premiums that are used to assess value and
336 return. I have used only two. Graph 2 shows the various premia required to calculate
337 returns across financial instruments.

339
 340
 341
 342

Graph 2

Stocks		Bonds		Cash	Real Estate	Small Stocks	Foreign Stocks	Foreign Bonds
Equity risk premium						Small-stock premium	Foreign stock premium	Foreign bond premium
Bond horizon premium	Bond horizon premium					Equity risk premium	Equity risk premium	Foreign bond premium
Real riskless rate	Real riskless rate	Real riskless rate	Real return on real estate			Bond horizon premium	Bond horizon premium	Bond horizon premium
Inflation	Inflation	Inflation	Inflation			Real riskless rate	Real riskless rate	Real riskless rate

Source: Ibbotson and Siegel (1988).

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(Ibbotson, Roger G., and Laurence B. Siegel. 1988. "How to Forecast Long-Run Asset Returns." *Investment Management Review* (September/October).)

It is claimed that "the liquidity premium is perhaps as important as any of the risk premiums." In a paper entitled *The Demand for Capital Market Returns: A New Equilibrium Theory* (1984), Roger Ibbotson, *et al.* proposed that the three security characteristics that investors most wish to avoid and, therefore, need to be most compensated for in the long run are (1) risk, (2) lack of liquidity, and (3) taxation. (Ibbotson, Roger G., Jeffrey J. Diermeier, and Laurence B. Siegel. 1984. "The Demand for Capital Market Returns: A New Equilibrium Theory." *Financial Analysts Journal*, vol. 40, no. 1 (January/ February):22-33.) In 2011, Ibbotson extended his research on liquidity and the impact of this risk on small companies. he quantified the liquidity risk associated with small companies. In Table 3 I report these findings.

Table 3

Size	Liquidity			
	1 (lowest)	2	3	4 (highest)
1 (smallest)	18.17%	17.46%	13.51%	6.16%
2	16.87	15.15	11.68	6.52
3	15.15	14.36	12.87	9.56
4 (largest)	12.49	11.48	11.55	9.87

Source: Ibbotson, Chen, and Hu (2011).

364

365 Ibbotson, Roger G., Zhiwu Chen, and Wendy Y. Hu. 2011. "Liquidity as an Investment
366 Style." Working paper, Yale University (April).

367

368 While I have accounted for a conservative size premium in my analysis, I haven't
369 assessed a liquidity premium because without further analysis I cannot separate the
370 liquidity premium from the small company premium. Nevertheless, these data reveal that
371 adjustments are necessary to determine the appropriate return for a small company and
that a standard/textbook CAPM approach should be rejected.

373

374 I cannot address in detail the results of Mr. Brevitz because I believe he has failed to
375 indicate the method used to calculate the returns on equity proposed by the staff in
376 Kansas. But since he argues strongly against a size adjustment, I suppose that the CAPM
377 without adjustment was used. My discussion about adjusting the CAPM applies equally
378 to his testimony.

379

380 **Q: Do you agree that with Mr. Coleman that there is no other practicable way to**
381 **calculate a rate of equity for rural carriers?**

382 **A:** No. There are other approaches in the financial literature that attempt to resolve the
383 knotty issues raised by CAPM and its failure as a predictive tool. NTCA proposes a
384 method that uses actual rate-of-return transactions to calculate a Free Cash Flow rate.
385 This method is a variant of the DCF method and is explained by NTCA (Rebuttal
386 Testimony of D Meredith Exhibit 2 — Appendix B PDF page 81). Using this method,
the weighted average cost of capital equals Free Cash Flow divided by Value. NECA

388 calculated the rate of return for rural carriers and the median value was at least 11.75
389 percent. This alternative method informs the Commission that the 10.50 percent rate of
390 return proposed by Carbon/Emery is reasonable and should be adopted. I have attached
391 the ILEC Transaction Roster that shows small carrier activity up to 2015. There have not
392 been many closed transactions since NTCA's analysis, so the conclusions in the NTCA
393 submission to the FCC appear to remain valid. (Rebuttal Testimony of D Meredith
394 Exhibit 5).

395

396 **Q: Let me ask you about the debt/equity structure of Carbon/Emery. Mr. Brevitz**
397 **argues that a 50/50 ratio should be used. Please explain how the debt/equity sliding**
398 **scale is used in Utah.**

399 **A:** As discussed by Mr. Coleman, the standard practice in Utah stems from a lengthy series
400 of workshops and technical conferences. To account for and balance the various
401 interests, a sliding scale has been used by the Division for many years and was
402 recommended as a rule but the Commission declined to establish this policy as a rule.
403 Notwithstanding the Commission's reluctance to adopt the sliding scale as a rule, it is a
404 very good approach to balance the state's interest. The sliding scale has endpoints at 35
405 percent and 65 percent. If a carrier has a debt percentage above 35 percent but below 65
406 percent, then the actual rate structure is used. Otherwise, if debt is 35 percent or lower a
407 hypothetical 35 percent debt structure is used and similar treatment is on the other side of
408 the scale. In this proceeding both Carbon/Emery and the Division recommend the
409 Commission use the sliding scale approach with a hypothetical 35 percent debt structure.
410 These percentages are then used to weight the costs of capital and debt which results in
411 an overall rate of return. Mr. Brevitz takes exception to this long-standing practice and
412 argues for a hypothetical 50 percent debt. I have reviewed his testimony and I find
413 nothing new in Mr. Brevitz's testimony that wasn't thoroughly discussed when the
414 sliding scale was developed. His comparison of large companies is unconvincing. Only
415 SHEN is relatively "close" to the size of Carbon/Emery and it has 43 percent debt.
416 Without considering the specific circumstances of SHEN, Mr. Brevitz's own evidence
417 shows that the Division's sliding scale approach is reasonable and since 43 percent is
418 relatively close to the 35 percent the Division and Carbon/Emery use, the Commission

419 should continue to apply the Division's sliding scale method to adjust for capital
420 structure.

421

422 **Q: What is the appropriate interstate rate of return to be used for interstate services?**

423 A: The appropriate interstate rate of return is 11.45 percent. Mr. Brevitz is incorrect in
424 proposing another rate. The development of the interstate rate has been defined by
425 Commission rule. Mr. Brevitz argues that even his incorrect rate of 9.40 percent is too
426 high despite the fact that the Commission has established the method of how to apply the
427 interstate rate in Utah.

428

429 Mr. Coleman also proposes that the Commission apply 9.40 percent in this proceeding.
430 Mr. Coleman is also incorrect in this recommendation. As explained by Mr. Woolsey,
431 Carbon/Emery participates in the NECA Common Line pool in conjunction with Emery
432 Telecom. For purposes of NECA, only Emery Telecom is listed, but Carbon/Emery and
433 Hanksville are included in the Emery Telecom submissions to NECA. The appropriate
434 interstate rate of return, per Commission rule, is 11.45 percent.

435

436

437 **Depreciation Method**

438

439 **Q: Have you reviewed the testimony of Mr. Joseph Hellewell offering testimony on**
440 **behalf of the Division of Public Utilities?**

441 A: Yes.

442

443 **Q: What is depreciation?**

444 A: Depreciation can be defined many ways, perhaps the most important definition is how
445 accountants define the term:

446 "Depreciation accounting is a system of accounting which aims to distribute cost
447 or other basic value of tangible capital assets, less salvage (if any), over the
estimated useful life of the unit (which may be a group of assets) in a systematic

449 and rational manner. It a process of allocation, not of valuation.” (American
450 Institute of Certified Public Accountants)

451
452 A good description of depreciation can be found in a book entitled “Telephone
453 Economy,” written by AT&T in 1952. AT&T states:

454 “[t]he cost of telephone plant is charged to an asset account at the time the plant is
455 installed. Then, each year of the plant’s service life, a portion of its cost is charged
456 against that year’s revenues. This charge, called *depreciation*, is designed to
457 provide for the recovery of capital invested in plant as that plant is used up.”

458
459 “In theory, depreciation accruals could actually be repaid to the investors, and in
460 some ventures this is done. However, in a business which requires substantial
461 amounts of money each year for construction, there would be no point in repaying
462 the investors an amount equal to the depreciation accrual and then going to the
463 capital market for that much more in new funds. Instead, depreciation accruals
464 are reinvested in the business, and these accruals provide funds for the purchase
465 of new plant. ... In a sense, the reinvestment of depreciation represents a recycling
466 of capital.” (Telephone Economy, pp 72-73)

467
468 Carbon/Emery's depreciation expense is reinvested into infrastructure that is necessary
469 due to plant that has reached its useful life, plant that has become obsolete due to
470 technological change—including where vendors discontinue support of vital equipment
471 that is required to operate 24x7, or for new plant where demand has exceeded the existing
472 plant or where demand occurs due to economic activity in the area.

473
474 **Q: What core issue with regards to depreciation is raised by Mr. Hellewell?**

475 A: The Division disagrees with the use of a standard and industry-accepted method of
476 depreciation called group asset depreciation. Currently Carbon/Emery uses the group
477 asset straight-line depreciation method to calculate allowable depreciation expense for
478 infrastructure it puts into service for the provision of regulated telecommunications
479 services.

480

481 **Q: Does Carbon/Emery use group asset depreciation in the interstate jurisdiction as**
482 **approved by the FCC?**

483 A: Yes. Carbon/Emery has used group asset depreciation since the transfer of ownership in
484 2001. It uses the FCC approved group asset depreciation method for cost recovery in both
485 the interstate jurisdiction and state jurisdiction. Using two methods of depreciation in the
486 two jurisdictions would be administratively burdensome and would pose intractable
487 problems.

488

489 **Q: Does the Division describe the “questionable results” it believes occur with the**
490 **group asset depreciation method used by Carbon/Emery?**

491 A: Not fully. Mr. Hellewell correctly states that group asset depreciation effectively
492 accelerates the allowed depreciation expense for an asset. The degree of the acceleration
493 depends on the total amount of investments in the particular group. However, Mr.
494 Hellewell incorrectly concludes that this has the effect of inflating the depreciation
495 expense leading to an increase in Utah USF support.

496

497 The facts are quite the opposite. The use of group asset depreciation accelerates the
498 recovery of allowed depreciation expense and over the life of the asset REDUCES the
499 amount of Utah USF support that would be generated by this asset. This is because the
500 acceleration of depreciation expense reduces the rate base for which an authorized rate of
501 return is applied. Ultimately, Carbon/Emery will recover 100 percent of the investment
502 of the asset through depreciation expense, but with group asset depreciation the asset is
503 not earning a rate of return for as long as if Carbon/Emery were using a single asset
504 straight-line depreciation method. This fact is missed by the Division and consequently
505 leads the Division to incorrectly assume that group asset depreciation yields a
506 “questionable result.”

507

508 **Q: Could one reason for the Division’s unease over group asset depreciation be the**
509 **possibility that Carbon/Emery would view the acceleration of depreciation to the**

510 **level of complete depreciation as a reason to replace prematurely plant or**
511 **equipment that has remaining economic life?**

512 A: Mr. Hellewell does not describe this hypothetical possibility. However, to the extent the
513 Division's proposal is based in part on this hypothetical, the Division has not identified in
514 the testimony any instances that Carbon/Emery has replaced prematurely plant or
515 equipment. Given the extensive review of Carbon/Emery in this proceeding, if there
516 were an example of this type of activity, I am certain that the Division would have
517 identified it in testimony. The absence of any instances of premature retirement suggests
518 the hypothetical is a canard.

519
520 Moreover, the decision of whether or not to replace plant is not based on past activity.
521 "The decision of whether or not to replace plant must be based on a comparison of future
522 expenditures, and it should not be influenced by the extent depreciation accruals have
523 been realized on the existing plant." (Telephone Economy, p. 162)

524
525 If the Division is attempting to guard against this type of behavior, it doesn't have any
526 basis to claim that Carbon/Emery is making retirement decisions that are in any way
527 untoward. Moreover, if an asset has value after retirement the standard method of
528 calculating net salvage accounts for this value and appropriate adjustments to the
529 accounts are made.

530
531 **Q: The Division admits that there are benefits to the group asset depreciation method**
532 **but argues that everyone needs to be on the same method to assist in reviewing**
533 **company reports. Do you agree?**

534 A: I agree there are recognized benefits to group asset depreciation method. However, I
535 disagree that there needs to be a standardized method across all carriers. Having a
536 standard across all companies provides little or no benefit. Contrary to the Division's
537 claim, the regulated companies in Utah do not compete with one another for regulated
538 services, so there is no need to be concerned about competitive issue in this context.

539

540 Also, the Division has shown it is capable of examining various systems of accounts, so
541 standardization doesn't improve administrative efficiency. On the contrary, if the
542 Commission were to mandate using single asset depreciation for carriers that are
543 currently using group asset depreciation, there are a host of administrative issues related
544 to keeping track of interstate group asset accounting and whether the asset is correctly
545 accounted for between the interstate and intrastate jurisdictions. Since the allocation of
546 cost between jurisdictions (interstate and intrastate) changes annually, there will always
547 be a gap between the state's single asset method and the interstate group asset method. I
548 cannot think of how the accounting would be able to resolve easily this discrepancy.
549

550 Furthermore, if the Commission were to require single asset depreciation for state USF,
551 the annual reports for each company would be less transparent since depreciation expense
552 would need a separate reconciliation schedule. While this added administrative effort can
553 be ordered, I ask to what purpose? It seems that the Division's proposal is based on a
554 misguided belief that something strange is happening and the single-asset method of
555 depreciation will solve the problem. In reality, there is nothing fishy going on and the
556 single-asset method will create more administrative problems than it will solve. Again, a
557 reconciliation could not easily deal with the gap between the state's single asset method
558 and the interstate group asset method.
559

560 I also note that if the Division wanted to standardize the depreciation method for all
561 carriers—for some unspecified state purpose, doing so in Utah USF disbursement
562 requests is a strange way to go about establishing a new state policy. To achieve full
563 compliance with its policy, the Division's only hope is that all carriers will eventually
564 request a USF disbursement. And even then, the only effect is an extraordinary
565 adjustment to the Utah USF. No carrier would be mandated to move to a single asset
566 depreciation method unless the Commission sets a statewide policy. To set this policy
567 the Commission will have to be convinced that moving from an acceptable group asset
568 method, used for and approved by the FCC, will further the state's interests and hopefully
569 reduce the administrative burden of rural carriers in Utah. We have nothing in this
proceeding that supports such a monumental change of policy by the Commission.

571
572 **Q: If the Commission wanted to move to a single asset depreciation method, how would**
573 **you recommend it implement this policy change?**

574 A: If single asset depreciation were adopted as a policy, I recommend the Commission adopt
575 the policy on a prospective basis for new assets that are purchased and placed into
576 service. The Commission should allow purchases of past plant assets to remain in their
577 group for purposes of the group asset method until the group account has no more
578 depreciation expense to realize. Since the Commission has allowed the use of the group
579 asset depreciation method, the retirement of this method should be orderly and should
580 allow the current depreciation method to be used for existing plant infrastructure.

581
582 The primary reason for this recommendation is to prevent Carbon/Emery from
583 experiencing a sudden and dramatic decline in depreciation expense—funds that are used
584 to reinvest in plant infrastructure. In a well managed company, my experience is that
585 aside from growth or technological change that requires additional investment, the
586 depreciation expense and the additions to replace existing infrastructure generally trend
587 together. The disruption caused by a sudden change to single asset from group asset
588 accounting for existing assets will result in a cash-flow squeeze and should be minimized.
589 Mandating a change on a prospective basis will help minimize this cash flow disruption
590 and allow Carbon/Emery to continue to invest in infrastructure as identified in its planned
591 capital budget.

592
593 **Q: Is Carbon/Emery's test year depreciation expense representative of what it will**
594 **experience in the next five years?**

595 A: Yes. As explained by Mr. Woolsey, Carbon/Emery has a capital plan filed with the FCC.
596 Based on the method I described above, the level of depreciation expense in the test year
597 is representative for the single asset straight-line depreciation of planned investment
598 combined with group asset depreciation for prior investments over the next five years.
599 While the data show that the test year expense is higher than the resulting depreciation
600 expense for planned investment, there will be uncertainties leading to the need to replace
601 infrastructure in the future that Carbon/Emery cannot quantify, so a cushion of an

602 additional 4.3 percent in depreciation expense is reasonable. The depreciation expense in
603 the test year is reasonable estimate of what Carbon/Emery is expected to experience in
604 the next five years.
605

606 **Q: Does Carbon/Emery manipulate Commission approved depreciation rates?**

607 A: No. Carbon/Emery uses the approved Commission depreciation rates for each asset
608 classification. The only difference between group asset and single asset methods is the
609 calculation of authorized depreciation expense for a given year. Both methods use
610 straight-line depreciation, but under the group asset method, the group account
611 investment balance is multiplied by the approved depreciation rate and this amount
612 becomes the maximum depreciation expense for the group of assets. If there is a
613 sufficient remaining net investment balance, the depreciation expense will equal the
614 maximum depreciation expense. Otherwise, only the remaining portion of undepreciated
615 plant will be depreciated. Consider for example the following: the initial group account
616 investment balance is \$1,000,000, the accumulated depreciation for this group is
617 \$750,000, the new investment is \$200,000 and the depreciation rate is 10 percent. Under
618 group asset method, the allowable depreciation for the group (undepreciated plant and
619 new investment) is $10\% \times \$1,200,000 = \$120,000$. Under single asset depreciation the
620 allowable depreciation for the group of assets is $10\% \times (\$500,000 + \$200,000) = \$70,000$,
621 (assuming that half of the assets are fully depreciated). If the rate of return were 11.25
622 percent. The group asset method would reduce return by \$13,500, while the single asset
623 method would reduce return on rate base by \$5,062.50. This example is simplified since
624 no mid-year convention was used. So over time, which method is preferred? If the goal
625 is to minimize total Utah USF over time, the group asset method will reduce return on
626 rate base since the rate base is being reduced at an accelerated rate. The calculation of
627 group asset accounting and the corresponding continuing property records held by
628 Carbon/Emery allow for absolute transparency using the group asset method of
629 depreciation.

630
631 There is no manipulation of Commission approved depreciation rates. When the
Commission set Carbon/Emery's specific depreciation rates in 2006, Carbon/Emery was

633 using (and has continuously used) group asset depreciation. Historically, neither the
634 Division, nor the Commission have had any concern or issue with group asset
635 depreciation. In fact, they have tacitly approved it's use since the rates were approved
636 with the knowledge that group asset depreciation was being used.

637
638 The use of group asset depreciation certainly allows for accelerated depreciation expense
639 recovery, but on its flip-side, it reduces the rate base at an accelerated rate and saves the
640 Utah USF money in the long run.

641

642 **Q: What is your response to the various other methods the Division proposes?**

643 A: I find it ironic that in on one hand the Division argues for standardization across all
644 carriers and on the other hand says that five other methods would be perfectly acceptable.
645 Such inconsistency in its advocacy of policy should cast serious doubt on the
646 thoughtfulness of the Division's proposal. Further, there is no suggestion that these
647 alternative methods improve or advance the state's interests.

648

649 **Q: Please summarize your testimony on depreciation methods.**

650 A: Emery uses a standard and industry approved depreciation method. This method has the
651 effect of accelerating depreciation but also accelerates the decline of the rate base used
652 for ratemaking purposes. The accounting and reporting hazards of using two different
653 methods—one for interstate purposes and the other for state USF purposes has been
654 ignored by the Division. Carbon/Emery's method is transparent and widely, but not
655 universally used. The Division's position is a change in policy based on unidentified
656 concerns. If one of these concerns is to guard against the disposal and replacement of
657 plant infrastructure that has a remaining economic life, there is no evidence supporting
658 this concern. Furthermore, Carbon/Emery does not dispose of and replace its plant
659 infrastructure and assets until the asset is no longer useful. Group asset depreciation
660 minimizes the need for state USF disbursements over the life of the asset since it is
661 removed from the rate base at a faster rate. If a change were to be made, single asset
662 straight-line depreciation method should be adopted on a prospective basis. The
663 depreciation expense in the Carbon/Emery test year is representative of plans for future

664 years and changing all assets to single asset method would cause a significant reduction
665 in deprecation expense recovery that will be used for future investment. For these
666 reasons, I recommend the Commission allow Carbon/Emery to continue to use group
667 asset depreciation in calculating its need for Utah USF support.

668

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

670 **A. Yes.**

671

Identifying Risk Factors in Telecomm

Tuesday, July 31, 2012

8:30 a.m.

Speaker

DR. HAL B. HEATON is a professor of finance at Brigham Young University where he teaches advanced corporate finance and capital markets. He has also served on the finance faculty at the Harvard Business School and the University of Santa Clara. Dr. Heaton holds a Ph.D. in finance from Stanford University, a Masters degree in economics from Stanford University, an MBA from Brigham Young University, and a bachelors degree in mathematics/computer science also from BYU.

Following the completion of his MBA, Dr. Heaton was a consultant with the Boston Consulting Group where he dealt with strategic planning issues for major firms in the paper, farm equipment, lumber, oil, banking, and electronics industries. He currently serves as a consultant to a number of multinational organizations on issues in corporate finance, valuation, exposure management, capital markets and as an expert witness in hearings and court proceedings for cases involving business valuation.

An author of several articles, Dr. Heaton has research interest in valuation and related topics including optimal capital structure, cost of capital, mergers/acquisitions, and capital markets. He has authored articles dealing with business appraisal techniques, the impact of taxation on valuation and firm behavior, and capital market efficiency.

Moderators

ROBERT D. BUTTERBAUGH, CMI, is a Senior Manager in Ernst & Young's Philadelphia office and a leader of the firm's East Central Property Tax practice specializing in property tax consulting and credits and incentives. He has over 26 years of property tax and incentives experience in public accounting and industry where he has provided a range of real and personal property tax services including valuation, litigation support, expert testimony, research, planning and compliance. He has provided property tax administration or consulting services in thirty-eight states. Mr. Butterbaugh received his Bachelor's degree in Accounting from Indiana University and MBA in Finance from DePaul University. Prior to joining Ernst & Young, Bob managed the global grants and incentives and property tax practices for E.I. du Pont de Nemours and Company and was a Partner with another Big 4 accounting firm. Mr. Butterbaugh has been active in the Institute for Professionals in Taxation (IPT), having served as the President for the 2010-2011 term and currently serving on the Board of Governors and the



Professional Designation Committee - Property Tax. He has lectured on various property tax issues for the IPT, Appraisal Workshop for Ad Valorem Taxation of Communications, Energy and Transportation Properties, Broadband Tax Institute, Chicago Tax Club, IBC - Tax Minimization and Compliance for Electric and Gas Utilities and EXNET Utility Tax Conference.

MARK F. SEMERAD, C.M.I., is Senior Manager, Property Tax for Level 3 Communications, Inc. in Broomfield, Colorado. Prior to joining Level 3 in October, 2000, he was Director, Property Tax for ConAgra, Inc. in Omaha, Nebraska for over 16 years where his duties included tax incentive negotiation and lobbying as well as overall property tax management. Prior to joining ConAgra, he served as Attorney, Property Tax Division, Nebraska Department of Revenue. He holds a B. A. degree from Creighton University and a J. D. degree from the University of Nebraska.

Mr. Semerad is an inactive member of the Nebraska Bar Association and is an inactive Certified Public Accountant. He is a certified member of the Institute for Professionals in Taxation and has been a registered lobbyist in the Nebraska Legislature. Mr. Semerad has served as Chair, Board of Trustees, Nebraska Tax Research Council and President, Nebraska Tax Forum. He has spoken at the Institute for Professionals in Taxation annual conference and property tax symposium and before other local and regional groups. He was formerly a member of the IPT Board of Governors and served as Overall Chair of Property Tax Education. He is also an instructor of the IPT Intermediate Real Estate Tax Management course. He has previously served as chair of that committee.

Telecom Cost of Capital Issues: January 1, 2012

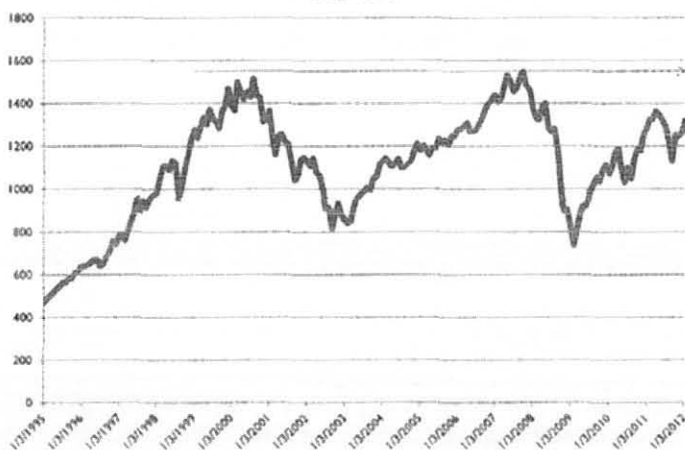
Hal Heaton, PhD

Issues in 2012

- In typical capitalization model, parameters must be long term
 - Must not reflect short term distortions
 - NOI/k requires that **both** NOI and k be long term
- Debt as percent of capital
 - Debt less available for landline telco with declining customer base
- Appropriate risk premiums
 - Historical average still biased low due to massive negative return in 2008
 - Market evidence suggests investors require higher risk premiums than historically
 - CAPM estimates unacceptably low
 - Dividend Growth Model better
 - Decomposing the beta
- Liquidity is a critical issue
 - Adjustments to final value or discount rates essential
 - Estimated Cost of Capital

The stock market is lower than 12 years ago...

S&P 500



But earnings have risen dramatically ... discount rates must be higher!

S&P 500 Earnings



Headlines are clear that obtaining credit is difficult ...

■ Wall Street Journal: February 24, 2010

"Lending Falls at Epic Pace

U.S. banks posted last year their sharpest decline in lending since 1942, suggesting that the industry's continued slide is making it harder for the economy to recover. ... According to the FDIC, the number of U.S. banks at risk of failing hit a 16-year high at 702. More than 5% of all loans were at least three months past due, the highest level recorded in the 26 years the data have been collected. And the problems are expected to last through 2010. ... The struggling U.S. banking industry remains a problem for policy makers eager for banks to lend again."

**Smaller, undiversified properties
have greater difficulty obtaining debt**

- "Company size and diversification often plays role. While we have no minimum size criterion for any given rating level, company size tends to be significantly correlated to rating levels. This is because larger companies often benefit from economies of scale and/or diversification, translating into a stronger competitive position. Small companies are, almost by definition, more concentrated in terms of product, number of customers, and geography. To the extent that markets and regional economies change, a broader scope of business affords protection."

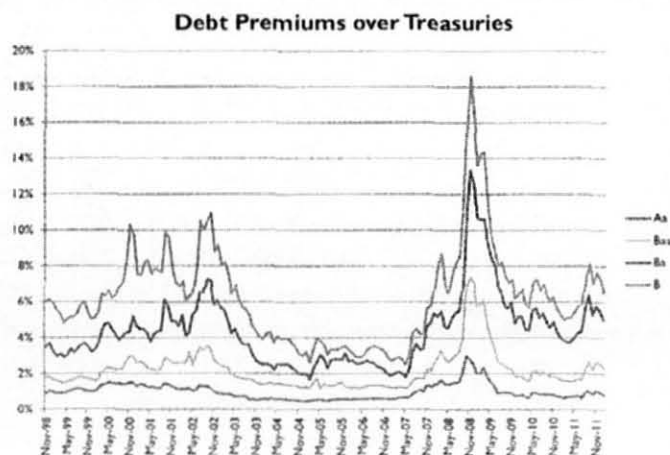
[Standard and Poor's, "Corporate Ratings Criteria" page 22.]

Ibbotson risk premium still biased by 2008 return

- Return on large stocks in 2008: -37.0%
- Return on long term Treasury bonds in 2008: +25.9%
- One year risk premium

$$= R_m - R_f = -37.0\% - 25.9\% = -62.9\%$$
- Historical average risk premium fell almost a full 1% as a result of one year's number

Risk spreads for debt elevated ...



CAPM Data

	Share Price 12/31/2011	Shares Outstanding (millions)	Market Value of Equity (\$millions)	Debt (\$millions)	Percent Debt	Bloomberg Beta	Unlevered Beta*
Alaska Communications	\$3.01	45.3	\$136	\$570	80.7%	0.74	0.21
Cincinnati Bell Consolidated	\$3.03	195.2	\$591	\$2,534	81.1%	1.13	0.31
Communications	\$19.05	29.9	\$570	\$885	60.8%	1.00	0.51
CenturyLink	\$37.20	618.5	\$23,009	\$21,836	48.7%	0.78	0.49
Frontier Communications	\$5.15	995.1	\$5,125	\$8,300	61.8%	0.98	0.49
Metro PCS	\$8.68	362.5	\$3,146	\$4,744	60.1%	1.08	0.56
Sprint Nextel	\$2.34	2996.0	\$7,011	\$20,274	74.3%	1.24	0.45
AT&T	\$30.24	5926.5	\$179,218	\$64,753	26.5%	0.82	0.67
Verizon Communications	\$40.12	2835.5	\$113,761	\$55,152	32.7%	0.79	0.61
Windstream	\$11.74	586.3	\$6,883	\$9,150	57.1%	0.90	0.50

CAPM Estimate

- **Required Return = $R_f + \beta(R_m - R_f)$**
- **Morningstar/Ibbotson**
 - Using 20% debt and relevering .5 unlevered beta
 - **$2.48\% + .58 \times 6.62\% = 6.3\%$**
- **Treasury Rates absurdly low**
 - Lower than inflation
 - Due to demand from foreign banks
 - ...and foreigners terrified of European meltdown
 - ...Foreign governments keeping currencies low for employment reasons
- **6.3% equity rate is lower than the rate on long term telecom debt—impossible!**
- **As shown earlier, these results not supported by the market evidence.**

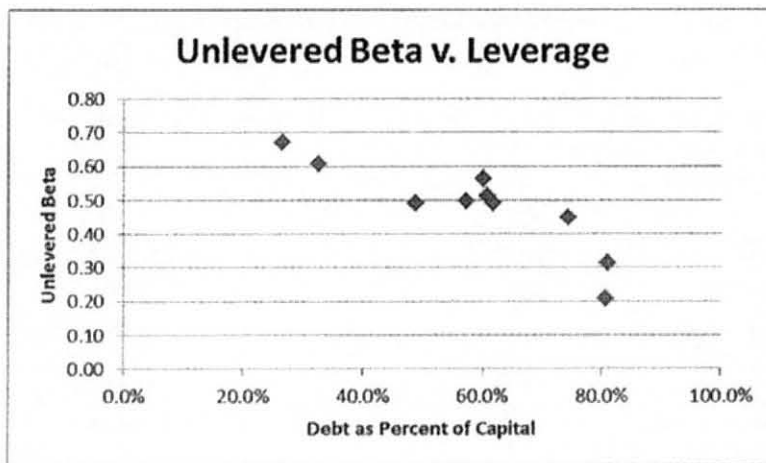
Dividend Growth Model

	Share Price	Bloomberg 2012 Cash Distribution	Yield	Value Line Projected Growth	Bloomberg Projected Growth	Estimated Return
	12/31/2011	Forecast				
Alaska Communications	\$3.01	\$0.20	6.6%	NMF	9.0%	15.6%
Cincinnati Bell Communications Consolidated	\$3.03	\$0.00	0.0%	18.4%	3.0%	10.7%
CenturyLink	\$19.05	\$1.55	8.1%	10.8%	1.5%	14.3%
Frontier Communications	\$37.20	\$2.90	7.8%	16.1%	-1.3%	15.2%
Metro PCS	\$5.15	\$0.75	14.6%	21.4%	-5.9%	22.3%
Sprint Nextel	\$8.68	\$0.00	0.0%	15.3%	19.5%	17.4%
AT&T	\$2.34	\$0.00	0.0%	NMF	4.0%	4.0%
Verizon Communications	\$30.24	\$1.77	5.9%	9.9%	4.9%	13.2%
Windstream	\$40.12	\$2.05	5.1%	11.5%	8.8%	15.3%
	\$11.74	\$1.00	8.5%	17.8%	0.2%	17.5%
Average						14.6%

Deeper analysis of beta

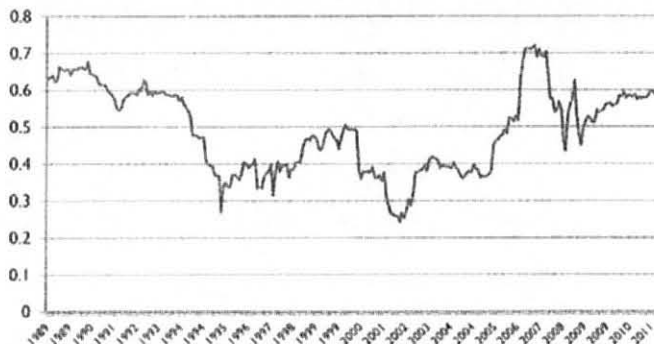
- DGM model estimates better, but still not very reliable
 - Growth estimates exhibit wide range
 - Affected by extreme leverage of some telcos
- Beta estimates composed of two elements:
 - $\beta_i = \rho_{im} \times (\sigma_i / \sigma_m)$
 - ρ_{im} = correlation with the market
 - σ_i / σ_m = volatility relative to the market

Leveraging Formula Assumes Debt Essentially Risk Free



Example: AT&T rolling five year correlation to the S&P 500

AT&T Rolling Five Year Correlation Coefficient with the S&P 500



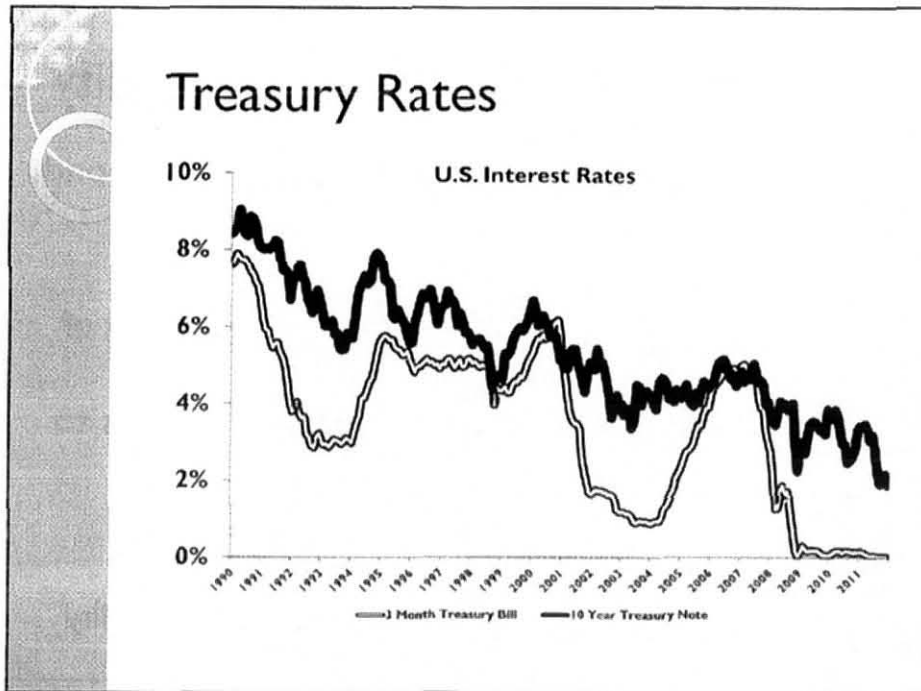
Example: AT&T rolling five year relative volatility to the S&P 500

AT&T Rolling Five Year Volatility Relative to the S&P 500



Discussion of beta

- Correlation fell during the merger mania of the 1990's
- ...But came back to normal levels
- Relative volatility rose as competition intensified but plunged with economic meltdown in late 2008
 - Why?



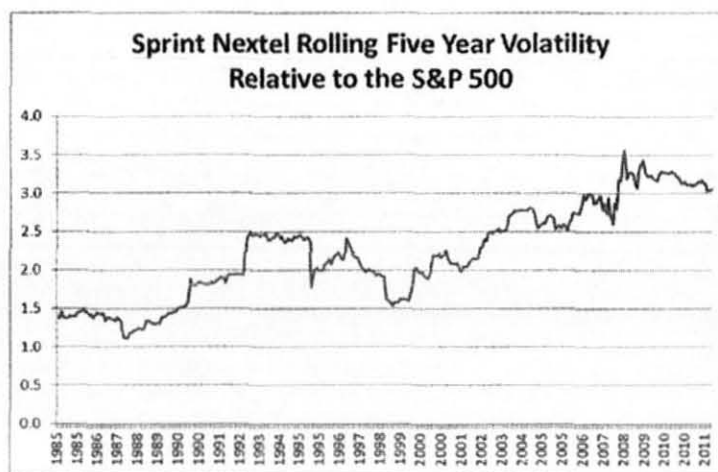
Example: Investors buying AT&T for yield

- "With tens of millions of people -- particularly retiring baby boomers -- looking for investment income and fed up with dismally low interest rates on bank accounts and bonds, brokerages and money managers believe there's a huge and growing audience for the dividend pitch." [Los Angeles Times February 26, 2012]
- "Dividends are winning new respect now that yields on U.S. Treasuries are near record lows. ... The focus on dividend-paying stocks could intensify, as investors look to Inflation protection. ... AT&T, for instance, has a dividend yield of more than 6% ..." [USA TODAY August 24, 2011]
- "THE first security I was ever aware of was a dividend-paying stock, the AT&T shares that my grandfather, a retired postman, owned when I was little. ... So when I heard recently that some advisers were using dividend-paying stocks to coax people who still hold their money in cash or low-yielding bonds back into the equity markets, my ears perked up. ... These stocks also offer at least some sort of hedge against inflation." [The New York Times June 4, 2011]

Example: AT&T Relative Volatility

- Investor's treating AT&T more like a bond
 - Inflation protection
 - Will end when Treasury rates rise
 - Long run, relative volatility will reflect risk of telecommunications industry
- Low relative volatility applies even less to current risk in telecoms
 - Declining demand as consumers shift to cellular = high risk for landlines
 - Other telecoms showing increasing volatility

Other telecoms show rising relative volatility ...



Beta estimate

- $\beta_i = \rho_{im} \times (\sigma_i / \sigma_m)$
 - Historically telecommunications have a correlation of about .6 with the S&P 500
 - Telecoms are historically about 2 to 3 times as volatile as the (diversified) S&P 500
 - $\beta = .6 \times 2.5 = 1.5$
 - **Cost of Equity (for security)**
 - CAPM $2.48\% + 1.5 \times 6.62\% = 12.4\%$
 - DGM 14%
 - Choose 13%
 - **WACC (for securities)**
 - $.2 \times 5.43\% \times (1-.39) + .8 \times 13\% = 11.0\%$

Liquidity

- Liquidity refers to the ability to sell an investment easily, quickly, and at low cost
 - A **liquidity discount** refers to the lower value of an illiquid asset compared to a liquid asset of similar risk
 - A **liquidity premium** refers to the higher return that investors will require for an illiquid asset
- Liquidity became critical in January 2009
 - Ability to generate cash to meet obligations critical
 - Treasury bills were offering virtually zero interest
 - 30-day Treasury bills briefly offered **negative** interest

Liquidity: Illustration

- Build a pipeline/refinery/power plant ...
 - Cost \$800 million
- Hire managers, train a work force, market to obtain contracts and customer base
 - Cost \$200 million
- If property generates \$100 million per year and 10% is required rate
 - Value = $\$1000 = \$100 / 10\%$
- May need intangibles such as patents, licenses, copyrights, intellectual property
 - Higher revenue/cash flow/value to compensate
- Problem: what is value for property taxes?

Liquidity Illustration (continued)

- Issue and sell stock (debt) claims on the property
 - Incur substantial costs to issue
 - Incur *ongoing* costs to stay listed
 - Exchange listing fees
 - Disclosure costs
 - Regulatory costs
 - Additional auditing costs
- Compare owning the property versus buying shares

Liquidity Illustration (continued)

- If you own the property you must
 - Have substantial knowledge of how to operate facility, market products or services
 - Worry about hiring, firing, training
 - Take care of all regulatory, licensing, disclosure, and other issues
- If you own the property you do not have limited liability
 - Environmental, accident, other litigation may lead to losing other assets
- Selling property takes time, expense, ...

Liquidity Illustration (continued)

- If you buy the shares
 - You do not have to know anything about managing, operating, marketing, regulations
....
 - You can buy a few shares or a lot
 - Easy to diversify
- Shareholders have absolute limited liability
- You can turn your ownership into cash in seconds with the click of an icon
- Which you would rather own?

Liquidity Illustration (continued)

- If the shares sell for, say, \$1.5 billion due to all the conveniences and advantages
 - The property is still only generating \$100 million a year
 - Hence the discount rates extracted from stock and bond data must be lower than 10%
- In addition, shares can trade at higher values due to property which does not even exist on the assessment date!
 - Wynn Resorts example

Liquidity

- We are dealing with a **property** tax ...
- Not what highly liquid claims on property will sell for
- If the data obtained and used comes from stocks and bonds ...
- Which are so liquid they can be sold in seconds with the click of an icon ...
- The estimated discount rates must be adjusted to make them useful to value illiquid property which is expensive to sell, takes months to sell, and carries substantial risk that securities don't

Using Securities Data

- Securities are very liquid
- Securities can be sold in small or large amounts
- Operating property requires dealing with management hassles
- Securities have absolute limited liability
- Securities represent ownership in companies that can expand, enter new businesses
- Securities capture value from assets that do not even exist on the lien date
- Securities capture all intangible values
- Not only do these facts affect extracted rates, it means measures of "market/book" do not mean there is no 'economic obsolescence'

Assessors recognize need for liquidity adjustments

- ◎ California State Board of Equalization, *Assessors' Handbook*, Section 502, Advanced Appraisal, p. 63.
 - ▣ "Most financial assets are liquid. Real estate and most business assets, however, are relatively illiquid, and real estate investors must be compensated for this reduced liquidity."
- ◎ California State Board of Equalization, *Assessors' Handbook*, Section 502, Advanced Appraisal, pp. 183-184.
 - ▣ "The argument based on lack of liquidity is a much stronger one. There is no question that financial assets are significantly more liquid than real estate assets. ... An adjustment for lack of liquidity can be made in two ways: (1) consider lack of liquidity as an added risk factor and add a premium for it to the cost of equity estimated by the CAPM; or (2) value the real estate asset using the CAPM/WACC without any liquidity adjustment, and then apply a liquidity discount to the estimated value."

Appraisal texts require adjustment:

- 13th Edition Appraisal of Real Estate
 - "If there are differences between a comparable property and the subject property that could affect the overall capitalization rate concluded, the appraiser must account for these differences."
- The word "must" is a very strong word

Size premium represents a minimum adjustment ...

Size Premia (market capitalization in millions) ¹

Decile	Smallest Company		Largest Company	Size Premium (Return in Excess of CAPM)
Mid-Cap (3-5)	\$1,621,096	-	\$6,896,389	1.14%
Low-Cap (6-8)	422,999	-	1,620,860	1.88
Micro-Cap (9-10)	1,028	-	422,811	3.89

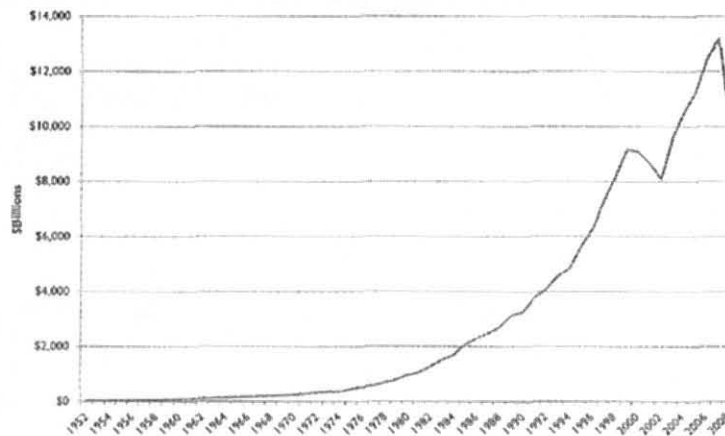
Breakdown of Deciles 1-10

Decile	Smallest Company		Largest Company	Size Premium (Return in Excess of CAPM)
1-Largest	15,484,940	-	354,351,912	-0.38
2	6,827,557	-	15,408,314	0.78
3	3,598,535	-	6,896,389	0.94
4	2,386,464	-	3,577,774	1.17
5	1,621,096	-	2,362,532	1.74
6	1,090,852	-	1,620,860	1.75
7	683,059	-	1,090,515	1.77
8	422,999	-	682,750	2.51
9	206,802	-	422,811	2.80
10-Smallest	1,028	-	206,795	6.10

Datasource: Morningstar/Ibbotson Annual Yearbook 2012

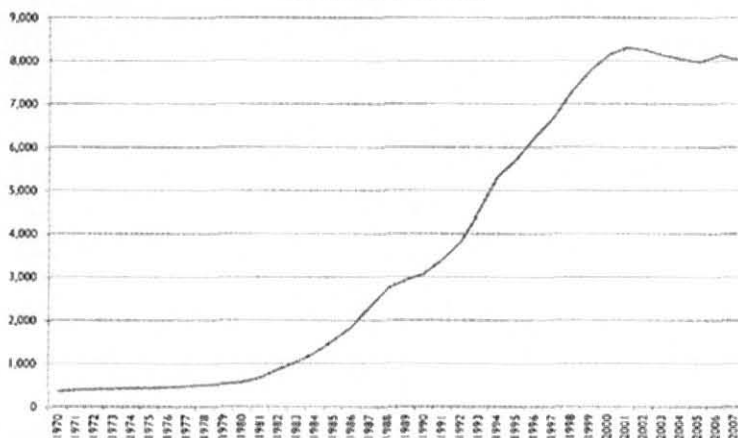
Why is liquidity becoming such a critical issue now?

U.S. Pension Fund Assets



Why is liquidity becoming such a critical issue now?

U.S. Mutual Funds



Damadoran Liquidity Adjustment

- Capital Asset Pricing Model (CAPM)
 - Required return
 - = Risk Free Rate + Beta x Market Risk Premium
- Beta = $\beta_i = \rho_{i,m} \times (\sigma_i / \sigma_m)$
- Adjusted Beta = $\beta_i / \rho_{i,m}$
- Adjustment =
 - (Adjusted Beta – Beta) x Market Risk Premium

Damodaran liquidity adjustment

	Bloomberg Beta	R-squared	Damodaran Adjusted Beta	Difference in Equity Return	Percent Debt	Difference in WACC
Alaska Communications	0.74	0.114	1.20	3.03%	80.7%	0.58%
Cincinnati Bell	1.13	0.381	1.82	4.60%	81.0%	0.87%
Consolidated Communications	1.00	0.383	1.61	4.06%	60.8%	1.59%
CenturyLink	0.78	0.284	1.45	4.50%	49.1%	2.29%
Frontier Communications	0.98	0.443	1.47	3.25%	61.5%	1.25%
Metro PCS	1.08	0.222	2.30	8.04%	60.1%	3.20%
Sprint Nextel	1.24	0.220	2.64	9.28%	72.6%	2.55%
AT&T	0.82	0.482	1.18	2.39%	28.4%	1.71%
Verizon Communications	0.79	0.462	1.16	2.46%	32.7%	1.65%
Windstream	0.90	0.490	1.29	2.56%	51.7%	1.24%
Average	0.94		1.61	4.47%		1.69%

Summary

- Prevailing debt/equity ratios in early 2012 biased high
 - Must tie debt capacity to subject property
 - Comparable companies are large, diversified corporations
- CAPM approach does not produce credible results
 - Must adjust beta for unusual economic circumstances
 - Long run cash flows require long run risk measure
- CAPM approach still low even after adjustment
 - Treasury rate not realistic
 - Equity risk premium still biased low
- DGM expected growth estimates very wide
- Must adjust for differences between securities and illiquid property
 - Illiquidity/Size adjustment
 - Damodaran approach

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 200554**

In the Matter of

Connect America Fund

-) GN Docket No. 09-51
-) CC Docket Nos. 01-92, 96-45
-) WC Docket Nos. 10-90, 07-135, 05-337,
-) 03-109
-) WT Docket No. 10-208

COMMENTS

of the

NATIONAL EXCHANGE CARRIER ASSOCIATION, Inc.;
NTCA – THE RURAL BROADBAND ASSOCIATION;
USTELECOM;
EASTERN RURAL TELECOM ASSOCIATION; and
WESTERN TELECOMMUNICATIONS ALLIANCE

July 25, 2013

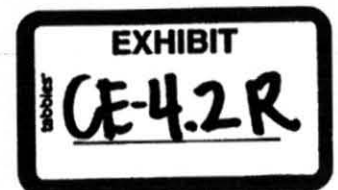


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Appendix A: Professor Randall Billingsley Statement: In Re: Wireline Competition Bureau
Rate of Return Represcription Staff Report, DA 13-1110, May 16, 2013.

Appendix B: Free Cash Flow Methodology to Calculate RLEC Cost of Capital – Detailed
Explanation.

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 200554**

In the Matter of) GN Docket No. 09-51
) CC Docket Nos. 01-92, 96-45
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) 03-109
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COMMENTS

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NATIONAL EXCHANGE CARRIER ASSOCIATION, Inc.;
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EASTERN RURAL TELECOM ASSOCIATION; and
WESTERN TELECOMMUNICATIONS ALLIANCE

I. INTRODUCTION AND SUMMARY

By Public Notice,¹ the Wireline Competition Bureau (Bureau) has requested comment on a report prepared by Bureau staff regarding potential data and methods to be used in represcribing the authorized interstate rate of return (RoR) for rate-of-return regulated local exchange carriers (RLECs).²

In these comments, the above-listed Associations³ describe a number of concerns regarding the data, methods, assumptions and analyses presented in the *Staff Report*. These

¹ Wireline Competition Bureau Seeks Comment on Rate of Return Represcription Staff Report, WC Docket No. 10-90, *et al.* Public Notice, DA 13- 1110 (rel. May 16, 2013) (*Public Notice*).

² Wireline Competition Bureau, *Prescribing the Authorized Rate of Return: Analysis of Methods for Establishing Just and Reasonable Rates for Local Exchange Carriers*, Staff Report, WC Docket No. 10-90 (rel. May 16, 2013) (*Staff Report*).

³ The National Exchange Carrier Association, Inc. (NECA) is responsible for preparation of interstate access tariffs and administration of related revenue pools, and collection of certain

concerns are based, in part, on an analysis of the *Staff Report* conducted by Professor Randall Billingsley of Virginia Tech. Prof. Billingsley's statement, attached as Appendix A, makes clear that the methods used in the *Staff Report* to estimate the weighted cost of capital (WACC) suffer from serious shortcomings as applied to RLECs, and require significant modification. In particular, Prof. Billingsley's statement describes:

- The need for methods that use data from a representative sample of RLECs, rather than data from a group of proxy companies chosen largely because data for these companies were available;
- The need for alternative methods for calculating the WACC, in place of (or as a supplement to) traditional economic models the Bureau admits are flawed as applied to RLECs;
- The need for methods and data that do not need corrections or adjustments to offset anomalous input values;
- The critical need to adjust WACC estimates upward for the well-established small firm effect on equity capital costs and the dramatic effects of the lack of marketability and low liquidity for the majority of RLECs; and
- The need to recognize that currently low Treasury bond rates do not necessarily imply that RLEC capital costs have fallen in tandem.

high-cost loop data. *See generally*, 47 C.F.R. §§ 69.600 *et seq.*; *MTS and WATS Market Structure*, CC Docket No.78-72, Phase I, Third Report and Order, 93 FCC 2d 241 (1983). NTCA – The Rural Broadband Association (NTCA) represents nearly 900 rural rate-of-return regulated telecommunications providers. All of NTCA's members are full service local exchange carriers (LECs) and broadband providers, and many of its members provide wireless, cable, satellite, and long distance and other competitive services to their communities. Each member is a "rural telephone company" as defined in the Communications Act of 1934, as amended. USTelecom - The Broadband Association (USTelecom) is the premier trade association representing service providers and suppliers for the telecommunications industry. USTelecom members provide a full array of services, including broadband, voice, data and video over wireline and wireless networks. The Eastern Rural Telecom Association (ERTA) is a trade association representing rural community based telecommunications service companies operating in states east of the Mississippi River. The Western Telecommunications Alliance (WTA) is a trade association that represents more than 250 small rural telecommunications companies that provide voice, broadband and video services in the 24 states west of the Mississippi River. NECA, NTCA, USTelecom, ERTA and WTA are referred to herein as the "Associations.")

Many of these concerns can be attributable to the use of severely outdated methods to calculate the WACC for RLECs. The *Staff Report* forthrightly admits in this regard that the Commission's represcription rules "have remained largely unchanged for almost two decades."⁴ In fact, most of the methods used by the Bureau to analyze cost of capital data for RLECs were developed in the 1980's, and were last used by the Commission to represcribe the authorized RoR for the telecommunications industry as a whole in 1990.⁵ At that time, the industry was still considered "unified" for rate prescription purposes⁶ and telephone companies did not face the widespread competition unleashed by the Telecommunications Act of 1996 (the 1996 Act), the proliferation of wireless and other alternatives to landline telephone services, or any of the myriad changes associated with the advent of Internet Protocol (IP)-based services including the World Wide Web.

Even before these regulatory and market upheavals had begun to occur, the Commission recognized its Part 65 rate-of-return rules were in need of a "complete review."⁷ Today, more than 20 years after the Commission made that determination that review has not occurred yet the

⁴ *Staff Report* ¶ 4.

⁵ See *Represcribing the Authorized Rate of Return for Interstate Services of Local Exchange Carriers*, CC Docket No. 89-624, Order, 5 FCC Rcd. 7507 (1990) (*1990 Represcription Order*).

⁶ See, e.g., *Mountain States Tel. & Tel. Co., Nw. Bell Tel. Co., & Pac. Nw. Bell Tel. Co. Revisions to Tariff F.C.C. No. 1 Petition for Waiver of Section 65.702(c) of the Comm'n's Rules*, Order, 4 F.C.C.R. 797 (1989).

⁷ *Multi-Association Group (MAG) Plan for Regulation of Interstate Services of Non-Price Cap Incumbent Local Exchange Carriers and Interexchange Carriers*, CC Docket No. 00-256, *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, *Access Charge Reform for Incumbent Local Exchange Carriers Subject to Rate of Return Regulation*, CC Docket No. 98-77, *Prescribing the Authorized Rate of Return for Interstate Services of Local Exchange Carriers*, CC Docket No. 98-166, *Second Report and Order and Further Notice of Proposed Rulemaking in CC Docket No. 00-256, Fifteenth Report and Order in CC Docket No. 96-45, and Report and Order in CC Docket Nos. 98-77 and 98-166*, 16 FCC Rcd 19613 (2001) ¶ 210 (*MAG Order*). See *infra*, pp. 34-36.

Staff Report primarily relies on the same methods to develop its recommendations. It should come as no surprise that the results obtained in the process are unreliable.

It is highly noteworthy, for example, that the WACC estimates for RLECs produced under the Bureau's methods are *lower* than estimates produced for the regional Bell Holding Companies (RHCs).⁸ This appears to reflect the 1980's-era assumption that RHCs are riskier than RLECs because they engage in a variety of unregulated lines of business.⁹ From a modern business perspective, however, the situation is reversed: RLECs now face significantly more marketplace and regulatory risk than RHCs precisely because they are primarily focused on serving customers in sparsely-populated, high-cost rural areas, and are highly dependent on vanishing intercarrier compensation (ICC) revenue streams and capped universal service (USF) support flows. Compared to the larger and more diversified RHCs, RLECs also have smaller percentages of large, more profitable business customers, and are thus more susceptible to business risks associated with local economic changes (*e.g.* plant closures). Whereas an RHC might easily weather the loss of one large customer out of many, such changes can be devastating for an RLEC.

Common sense suggests that an investor familiar with today's telecommunications business environment would not put dollars in an RLEC when he or she could expect the same or a *higher* return investing in an RHC (or some other entity that has diversified operations in larger markets with more enterprise customers). Yet, this is precisely the result implied by the *Staff Report's* calculations.

⁸ *Staff Report*, App. K - CAPM and DCF WACC Ranges, at 68 (suggesting an RLEC range of 6.78 percent - 8.10 percent and a RHC range of 7.35 percent - 9.13 percent.)

⁹ *Staff Report*, n.45.

Clearly, alternative methods should be used. In prior comments, the Rural Associations¹⁰ proposed using a Free Cash Flow (FCF) methodology to estimate WACC for RLECs.¹¹ The FCF approach is essentially an alternative specification of the traditional discounted cash flow (DCF) model used by the Bureau, one that uses market data specific to RLECs. It is commonly used by other regulatory agencies¹² and the investment community to value firms similar to RLECs and to evaluate such firms' capital requirements, and should be used by the Commission as well to estimate the WACC for RLECs.

The *Staff Report* considered the Rural Association's FCF proposal but dismissed this approach in a footnote, citing several minor concerns with the method.¹³ In response to those concerns, these comments include additional market data, and FCF results recalculated using weighted means in place of median data. These modifications are described in detail in Appendix B. Updated WACC estimates using the FCF method continue to show that a RoR of at least 11.25 percent is clearly reasonable and necessary in order for RLECs to continue

¹⁰ The "Rural Associations" include NECA, NTCA, ERTA and WTA.

¹¹ See Initial Comments of NECA, NTCA, OPASTCO, and WTA, WC Docket No. 10-90, *et al.*, (filed Jan. 18, 2012) (*January 2012 Rural Association Comments*) at 57-60.

¹² *E.g.*, The Federal Energy Regulatory Commission (FERC) has considered FCF in its evaluation of approval of a power company's issuance of long-term debt. *Westar Energy, Inc.*, Order Conditionally Granting Authorization to Issue Long-term Unsecured Debt & Announcing New Policy on Conditioning Securities Authorizations, 102 FERC ¶ 61,186, at ¶¶ 16-17 (2003). Similarly, it has evaluated FCF evidence in considering requested regulatory incentives for desired investments. *ITC Great Plains, LLC*, Order Granting in Part & Denying in Part Rate Incentives, Conditionally Accepting Tariff Revisions, and Establishing Hearing & Settlement Procedures, 126 FERC ¶ 61,223 (2009). The Nuclear Regulatory Commission has considered FCF in determining the adequacy of financial resources required for an applicant to decommission a nuclear power plant. *Honeywell Intern., Inc. v. NRC*, 628 F.3d 568, 474 (D.C. Cir. 2010). The Copyright Royalty Judges ("CRJ") for the Librarian of Congress used FCF analysis in their decision prescribing "the royalty rate satellite radio services must pay to copyright owners for the use of sound recordings during the years 2007-2012." *Soundexchange, Inc. v. Librarian of Congress*, 571 F.3d 1220, 1221-22, 1223 (D.C. Cir. 2009).

¹³ *Staff Report*, n.94.

attracting capital to support ongoing operations and additional investment in broadband services. The Associations urge the Commission to use the FCF approach as it estimates the WACC for RLECs going forward.

The Commission must also address what procedural rules it will apply in this proceeding to represcribe the authorized RoR (assuming the Commission continues to find that a new prescription is needed). The Rural Associations have previously explained that, having “waived” its Part 65 procedural rules for purposes of this proceeding, the Commission now needs to establish clear replacement rules or policies to govern the process.¹⁴ A rule waiver does not permit the Commission to ignore section 205(a) of the Act and relevant provisions of the Administrative Procedure Act (APA), which require the Commission to provide parties with a “full opportunity for hearing” prior to issuing a rate prescription.¹⁵ As explained below, obtaining comments on the proposals outlined in the *Staff Report* may inform the Commission in this regard, but obtaining comments on the *Staff Report* will not, by itself, satisfy section 205(a)’s requirement for a “full opportunity for hearing.”¹⁶

For these reasons, the Commission should leave the existing RoR prescription in place for the time being and focus instead on developing new, valid procedures and reasonable rules to govern future potential represcriptions. By doing so, the Commission will assure that the authorized RoR continues to balance ratepayer interests with the RLEC industry’s need to attract capital investment, and that any new RoR is prescribed strictly in compliance with section 205(a) of the Act and in accordance with the APA.

¹⁴ *January 2012 Rural Association Comments* at n.79.

¹⁵ *Id.* 48; *See also* Petition for Reconsideration of NECA, OPASTCO, and WTA, WC Docket No. 10-90, *et al.*, at 29 (filed Dec. 29, 2011) (*December 2011 Rural Association PFR*) at 26.

¹⁶ 47 U.S.C. § 205(a).

II. BACKGROUND

In its November 2011 *USF/ICC Order*,¹⁷ the Commission reviewed rates for 10-year Treasury obligations and determined on that basis that the current interstate authorized rate of return of 11.25 percent was too high.¹⁸ It accordingly initiated a proceeding to re prescribe the authorized RoR¹⁹ and asked parties to submit comments on a number of questions relating to the WACC for RLECs, including information on RLEC capital structures, whether larger publicly-traded companies such as the RHCs should continue to be used as surrogates for RLECs, information on RLEC costs of debt, preferred stock and equity investments, and what factors should be used in determining a “zone of reasonableness” prior to arriving at a RoR prescription.²⁰ In the same Order, however, the Commission peremptorily concluded that the authorized interstate RoR for RLECs “should be no more than 9 percent.”²¹

NECA, OPASTCO and WTA sought reconsideration of this and other aspects of the Commission’s *USF/ICC Order*.²² The *December 2011 Rural Association PFR* pointed out that the Commission had previously determined its traditional methods for analyzing cost of capital

¹⁷ *Connect America Fund*, WC Docket No. 10-90, *A National Broadband Plan for Our Future*, GN Docket No. 09-51, *Establishing Just and Reasonable Rates for Local Exchange Carriers*, WC Docket No. 07-135, *High-Cost Universal Service Support*, WC Docket No. 05-337, *Developing an Unified Intercarrier Compensation Regime*, CC Docket No. 01-92, *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, *Lifeline and Link-Up*, WC Docket No. 03-109, Notice of Proposed Rulemaking and Further Notice of Proposed Rulemaking, 26 FCC Rcd. 17663 (2011) (*USF/ICC Order* or *FNPRM*).

¹⁸ *See Id.* ¶¶ 638-640.

¹⁹ *Id.* ¶ 641.

²⁰ *FNPRM* ¶ 1056.

²¹ *Id.* ¶ 1057.

²² *December 2011 Rural Association PFR* at 26-29.

for RLECs could not be used any longer, yet it appeared the Commission was planning to use those very same outdated methods to prescribe a new RoR.²³ The Rural Associations explained that the Commission must first establish a prescription methodology that reflects the circumstances RLECs actually face today – not “industry” conditions that prevailed in the 1980’s²⁴ – and also explained that the Commission would need to provide interested parties an opportunity to present and respond to evidentiary showings focused on that methodology in order to satisfy section 205(a)’s requirement for a “full opportunity for hearing.”²⁵ To date, the Commission has not addressed this aspect of the Rural Associations’ reconsideration petition.

Despite the significant uncertainty surrounding prescription methods and evidentiary procedures to be used in this proceeding, the Rural Associations responded as extensively as possible to the questions the Commission posed in the *FNPRM* regarding the authorized RoR.²⁶ The *January 2012 Rural Association Comments* explained in detail changes in the telecommunications marketplace and regulatory environment that have occurred since 1990 and why various assumptions regarding the impacts and relevance of national interest rate trends, as well as the supposed comparability of RLECs to larger “industry” players like AT&T and Verizon, have clearly become outdated.²⁷

²³ *Id.* 27.

²⁴ For example, at the end of the 1980s and continuing until recently, RLECs could charge for the use of their network for the origination and termination of interstate calls, through interstate access charges. Today, RLECs are on a path that eliminates terminating access charges without full replacement of the revenue taken away by revised Commission policies. Changes in Commission policy towards Universal Service funding between the 1980’s and the present day are even more dramatic.

²⁵ *December 2011 Rural Association PFR* at 27-29.

²⁶ *See, January 2012 Rural Association Comments* at 47-63.

²⁷ *E.g.*, the Rural Associations explained that the Commission cannot assume AT&T and Verizon are comparable in risks to RLECs, but must explain why their risks are comparable and why

The Rural Associations also provided the Commission with a paper by Professors Barbara Cherry, of Indiana University, and Steven Wildman, then of Michigan State University,²⁸ which further emphasized the need for the Commission to consider overall universal service policy directions and the impact of regulatory and marketplace changes before engaging in rate represcriptions. Professors Cherry and Wildman concluded that, when represcribing the rate of return for RLECs,

the FCC is, by regulatory design, creating interdependencies between the financial viability of RLECs and the availability of affordable universal service to rural and remote areas. For both legal and economic reasons, this regulatory design must enable the RLECs to remain financially viable firms. . . . There is long-standing legal precedent for prescribing rate of return in the upper range for RLECs, and both legal and economic reasons for treating RLECs differently from price cap LECs. Furthermore, we apply a multi-period economic model to show that numerous design flaws and uncertainties under the *CAF Order* can be addressed, at least in part, by prescribing a rate of return in the upper range. *Reductions in funding support, costly new obligations, more stringent waiver requirements, and uncertainties regarding interpretation and implementation of the CAF Order must all be offset by a higher rate of return.*²⁹

The *January 2012 Rural Association Comments* included extensive information demonstrating the cost of capital for RLECs in the current market and regulatory environment is

other companies not selected as comparable have dissimilar risks. *Id.* n.74; *December 2011 Rural Association PFR* at 26-27. See also, *Petal Gas Storage, L.L.C. v. FERC*, 496 F.3d 695 (D.C. Cir. 2007) (“What matters is that the overall proxy group arrangement makes sense in terms of relative risk and, even more importantly, in terms of the statutory command to set ‘just and reasonable’ rates, 15 U.S.C. § 717c, that are ‘commensurate with returns on investments in other enterprises having corresponding risks’ and ‘sufficient to assure confidence in the financial integrity of the enterprise ... [and] maintain its credit and ... attract capital’” *Id.* at 700, citing *Hope Natural Gas Co.*, 320 U.S. at 603.)

²⁸ Prof. Wildman currently serves as the Commission’s chief economist. News Release, FCC, FCC Announces Appointment of Steven Wildman as New Chief Economist (Dec. 27, 2012).

²⁹ *January 2012 Rural Association Comments*, App. B, Professor Barbara Cherry & Professor Steven Wildman, Paper: The Rate of Return for RLECs Must be in the Upper Range for Reform under the Connect America Fund Order to Ensure Sustainable Policy Goals, at 21-22 (emphasis added).

significantly higher than the Commission's analysis of AT&T and Verizon data would otherwise indicate, justifying continuation of an interstate RoR of at least 11.25 percent, if not higher, for RLECs during the foreseeable future.³⁰ This information included an analysis developed by Professor Randall Billingsley, of Virginia Tech, that examined capital costs for a portfolio of firms exhibiting comparable overall risk to RLECs.³¹ Professor Billingsley pointed out that the Commission cannot rely on data of companies like AT&T and Verizon to determine the RLECs' WACC unless it can demonstrate that the risks of these two companies are in fact similar to those of RLECs.³² Professor Billingsley also explained how it is possible to use objective financial measures based on cluster analyses to determine groups of firms facing business and financial risks comparable to those faced by RLECs. His analysis showed that the forward-looking WACC for RLECs is at least 11.48 percent.³³

The Rural Associations also provided evidence based on RLEC acquisition prices that suggested costs of capital for RLECs substantially exceed the Commission's preliminary estimates. This approach determined a market-based cost of capital for RLECs by dividing current free cash flow (FCF) by the value of the firm.³⁴ In this case, valuation was determined by examining per-line prices paid in RLEC acquisition transactions. This reasonably assumes

³⁰ *Id.* 49-50.

³¹ *Id.* 50, Appendix C, Statement of Prof. Randall S. Billingsley, FRM, CRR, CFA.

³² *Id.* To be clear, mere co-existence in the same industry is not enough to make a company comparable for purposes of assessing risk. For example, saying that a given RLEC serving a single study area of 6,000 households faces the same level of risk as a multi-national conglomerate like AT&T would be akin to saying that a food truck parked on the corner of 13th and K Street has the same risk profile as McDonalds – the simple fact that both sell hamburgers does not, by itself, make them realistic proxies or even relevant comparisons for risk assessment.

³³ *Id.* 57, Appendix C at 8, 28, 30.

³⁴ *Id.* 50.

that per-line prices paid by knowledgeable investors fully account for current and prospective market and regulatory factors that influence the value of the transaction. Because most RLECs do not have publicly-traded stock that allow direct estimation of a required return on equity, looking at per-line acquisition prices is the best, most objective means of measuring the required return. Indeed, it is that absence of liquidity characterizing non-traded RLECs that makes investing in these companies far riskier than investing in an RHC like Verizon or AT&T.

The *January 2012 Rural Association Comments* recognized that a number of issues are associated with using per-line prices to estimate RLEC capital costs. The comments also pointed to difficulties with selecting a representative price per line given lack of more recent acquisition data and differences in quality between RHC and RLEC exchange assets.³⁵ Instead of attempting to address each of these issues on a case-by-case basis, however, the Rural Associations suggested a reasonable alternative approach would be to look at a range of prices for sales occurring between 2008 and 2011.³⁶ These numbers show a steady decline in valuations over the period.³⁷ Since sales prices in prior years were considerably higher, it is reasonable to expect that prices would continue to decline in the future. The Rural Associations conservatively analyzed FCF values using per-line prices ranging from \$2,400 to \$1,200. This

³⁵ *Id.* 58. It is reasonable to expect that RHC exchange assets generally sell for higher per-line prices than RLEC exchange assets, which implies higher RLEC capital costs.

³⁶ *Id.* 59. See also FairPoint Communications, Inc., Form 10-K (Dec. 31, 2008) (purchase of 1.6 million access lines for approximately \$1,700 per line); Qwest Communications International, Inc., Form 10-K (Dec. 31, 2011) (purchase of 8.8 million access lines for approximately \$2,400 per line). Additional information on acquisition pricing was obtained from JSI Capital Advisors, LLC.

³⁷ *Id.* 59.

produced median cost of capital values of at least 11.75 percent, depending on price-per-line values.³⁸

The Rural Associations explained that these numbers appear to reflect an objective marketplace assessment by investors of current business risks associated with RLEC operations.³⁹ Indeed, given today's marketplace uncertainties as well as regulatory risks posed by various factors, including reforms to existing USF and ICC mechanisms (which consist almost entirely of cuts and reductions to existing programs), the Rural Associations suggested that investors would probably not pour additional money into a small rural telephone company without the potential for significant upside returns.⁴⁰ This practical, market-based assessment strongly contravenes the conventional, but unproven, assumption that historically low spot-market interest rates meaningfully reflect the true cost of capital for RLECs.⁴¹

The Rural Associations accordingly suggested the Commission defer further action on rate prescriptions until the market has had time to adjust more completely to changes effectuated in the *USF/ICC Order* as well as any further changes adopted pursuant to the Commission's *Further Notice*. At that point, the Commission and interested parties would be in a far better position to gather factual evidence and analyze comprehensively how changes in the telecommunications, financial and regulatory environments are affecting RLECs and their actual costs of obtaining capital.

³⁸ *Id.*

³⁹ *Id.* 60.

⁴⁰ *Id.*

⁴¹ *Id.*

III. THE COMMISSION CANNOT REASONABLY RELY ON THE RECOMMENDATIONS SET FORTH IN THE *STAFF REPORT* TO REPREScribe THE AUTHORIZED RATE OF RETURN.

One year following submission of comments and replies in response to the Commission's FNPRM, the Bureau issued its *Staff Report* discussing various methods and data sources the Commission might use to determine the WACC for RLECs. Among other things, the *Staff Report* recommends use of the RHCs, publicly-traded mid-size companies, and a small number of publicly-traded RLECs as a proxy group for RLECs generally.⁴² The *Staff Report* also recommends calculating the cost of equity using both the Capital Asset Pricing Model (CAPM) and the Discounted Cash Flow (DCF) model, and discusses various issues surrounding determination of a "zone of reasonableness" within which the rate of return can be selected.⁴³

Based on these analyses, the *Staff Report* estimates a reasonable range for the RLEC authorized RoR would extend from 7.39 percent to 8.72 percent.⁴⁴ Inasmuch as interest rates are currently at historically low levels, and considering the fact that RoR represcription proceedings are conducted infrequently, the *Staff Report* concludes that the Commission should consider establishing the authorized RoR for RLECs in the upper half of this range, between 8.06 percent and 8.72 percent.⁴⁵

The Commission has substantial discretion when setting an authorized rate of return, and may consider a broad array of evidence and methodologies in prescribing the authorized rate of

⁴² *Staff Report* ¶ 13.

⁴³ *Id.* i, ¶¶ 51, 117.

⁴⁴ *Id.* i, ¶¶ 62, 93.

⁴⁵ *Id.* ¶ 3.

return.⁴⁶ But the Commission's discretion is not unbounded. The Administrative Procedure Act (APA) would require a court to set aside a represcription order that is arbitrary or capricious.⁴⁷

An agency is also allowed to change its policies, but only if it provides a reasoned explanation for the change. As the Supreme Court recently noted:

[T]he requirement that an agency provide reasoned explanation for its action would ordinarily demand that it display awareness that it *is* changing position. An agency may not, for example, depart from a prior policy *sub silentio* or simply disregard rules that are *still on the books*. See *United States v. Nixon*, 418 U. S. 683, 696 (1974). And of course the agency must show that there are good reasons for the new policy.⁴⁸

Here, a represcription decision based on the recommendations set forth in the *Staff Report* would almost certainly be considered arbitrary and capricious because the Bureau's analyses are based on rules that demonstrably do not reflect today's telecommunications environment and that the Commission itself has said require updating. As such, the *Staff Report's* recommendations appear to reflect numerous *unacknowledged* and unexplained reversals of Commission policy.

Moreover, the calculations set forth in the *Staff Report* are based on data from a proxy group of RHCs, mid-size companies and publicly-traded RLECs that the Bureau admits were chosen primarily because data from these companies were available, not because these proxy companies have been demonstrated to be representative of RLECs.⁴⁹ The Commission cannot reasonably prescribe a new authorized RoR based on data chosen for the sake of its convenience rather than comparability. Finally, the *Staff Report* also reflects a number of incorrect and

⁴⁶ *E.g.*, *Amendment of Parts 65 and 69 of the Commission's Rules to Reform the Interstate Rate of Return Represcription and Enforcement Process*, CC Docket No. 92-133, Report and Order, 10 FCC Rcd. 6788 (1995) ¶ 12 (*1995 Represcription Order*); *Illinois Bell v. FCC*, 988 F.2d at 1254, 1265-66 (D.C. Cir. 1993).

⁴⁷ 5 U.S.C. § 706(2)(A).

⁴⁸ *FCC v. Fox*, 556 U.S. 502, 515 (2009).

⁴⁹ See *Staff Report* ¶¶ 11-25.

unrealistic assumptions regarding the cost and availability of credit to RLECs, and relies on estimation techniques which the Bureau admits are flawed and which the Commission itself has previously rejected.

In the following sections, the Associations discuss these concerns in detail. Further analyses are presented in the statement of Prof. Randall Billingsley, attached to these comments as Appendix A.

A. The Commission Must Give Adequate Weight to The Dramatic Marketplace And Regulatory Changes Affecting The Cost of Capital For RLECs.

The record in this proceeding shows that RLECs face unprecedented challenges in the provision of regulated telecommunications services.⁵⁰ Changes in the landline telephone business, combined with cuts to universal service support and ICC revenue streams under the Commission's *USF/ICC Order* imposed despite continuing carrier-of-last-resort (COLR) service and new broadband investment obligations, are literally causing investment in regulated RLEC businesses to dry up⁵¹ and all but shutting the spigot on access to capital for network investment.⁵²

While the *Staff Report* acknowledges concerns about outdated methods, it makes only minor adjustments (*e.g.*, slight expansion of the sample of proxy companies) to methods and assumptions that appear firmly rooted in the telecommunications environment of the 1980's

⁵⁰ See *e.g.*, Comments of Moss Adams, *et al.*, WC Docket No. 10-90, at 24 (filed Jan. 24, 2012); Alaska Rural Coalition, WC Docket No. 10-90, at 3, 12 (filed Jan. 18, 2012); Comments of Calaveras Telephone, WC Docket No. 10-90, at 11-12 (filed Jan. 18, 2012).

⁵¹ See *e.g.*, Petition for Stay of NECA, NTCA, OPASTCO, and WTA, WC Docket No. 10-90, at 10-12 (filed May 25, 2012); Comments of the Nebraska Rural Independent Companies, WC Docket No. 10-90, at 55 (filed Jan. 18, 2013); Comments of Chillicothe Telephone, WC Docket No. 10-90, at 11 (filed Jan. 18, 2012).

⁵² See Michael J. Balhoff & Bradley Williams, *State USF White Paper: New Rural Investment Challenges*, (Balhoff & Williams, LLC, June 2013).

rather than today's world. Factors requiring recognition by the Commission in considering any potential represcription of the authorized RoR have previously been described by the Rural Associations,⁵³ and include the following:

Marketplace Changes: For most of the last century, RLECs recovered the costs of originating and terminating long distance calls from revenue sharing or settlement arrangements with traditional long distance carriers. During the 1980's and 1990's, these arrangements were replaced by tariffed access charges during a period where companies saw substantial growth in interstate and intrastate long distance toll services. These traditional voice services now face competition from "over the top" VoIP providers, wireless services, and cable companies, and there have been substantial drops in revenues and demand for traditional switched access services. RLECs' interstate access minutes of use in the 1990's, for example, grew at a rate of about 13 percent per year. Current demand for RLEC switched access service is declining by approximately 8 percent per year.⁵⁴ Similarly, access lines grew at a rate of about 5-6 percent per year in the 1990's as customers added second lines for fax machines and dial-up Internet services. Today, RLEC access lines are declining by approximately 4 percent per year as consumers increasingly employ single, multiple-use broadband connections for voice, data and video or elect to depend entirely on mobile services.⁵⁵

The Commission itself has acknowledged this transition, opening up dockets to examine how to manage this evolution and seeking input on how to recast universal service support to enable RLEC-served consumers to obtain affordable broadband services without purchasing

⁵³ *January 2012 Rural Association Comments* at 51-54.

⁵⁴ Growth rates based on a sample of 1,026 members of NECA's Common Line pool.

⁵⁵ *Id.*

local telephone service as well.⁵⁶ These reforms have not yet been accomplished, however, and thus RLECs continue to face uncertainty regarding cost recovery for existing services and for critical new broadband services.

The Economy: In initiating this proceeding, the Commission correctly noted that interest rates are at historically low levels.⁵⁷ However, the history of business cycles and Federal Reserve Board interest rate policies make it certain that interest rates will rise and fall periodically, and that 10-year Treasuries will exceed their current low level for much of the 15- to-30 year useful life of broadband lines. As discussed below and as explained in the accompanying statement of Prof. Billingsley, the Commission should use a higher normalized rate, as current market rates are likely to prove unrepresentative of future interest rates.

Low interest rates that may be available to large companies like AT&T and Verizon mean little or nothing for RLECs. Lenders indicate they have been reluctant to extend new loans to rural carriers since implementation of the *USF/ICC Order* began because they are unsure of carriers' abilities to service the debt in a world of 5 percent annual reductions to ICC revenues and capped, budgeted and otherwise unpredictable USF revenues.⁵⁸ There is a key difference between the mere level of risk-free interest rates as reflected in Treasury notes and the ability of

⁵⁶ See *Pleading Cycle Established on AT&T and NTCA Petitions*, GN Docket No. 12-353, Public Notice, DA 12-1999 (rel. Dec. 14, 2012); *Technology Transition Policy Task Force Seeks Comment on Potential Trials*, GN Docket No. 13-5, Public Notice, DA 13-1016 (rel. May 10, 2013); *Wireline Competition Bureau Seeks Comment on options to Promote Rural Broadband in Rate-of-Return Areas*, WC Docket No.10-90, Public Notice, DA 13-1112 (rel. May 16, 2013).

⁵⁷ *FNPRM* ¶ 1046.

⁵⁸ *E.g.*, Comments of NECA, WC Docket No. 10-188, at 10 (filed Oct. 15, 2010). *See, e.g.*, Comments of CoBank, WC Docket No. 10-90, *et al.* (filed Apr. 18, 2011); Letter from Jonathan Adelstein, Rural Utilities Service, to Marlene Dortch, FCC, WC Docket No. 10-90, *et al.*, Attach. (July 29, 2011); Letter from C. Douglas Jarrett, Rural Telephone Finance Cooperative, to Marlene H. Dortch, FCC, CC Docket No. 01-92, *et al.*, attach. (Aug. 10, 2011).

RLECs to obtain loans. For example, RLEC investments consist mostly of sunk costs (*e.g.*, copper or fiber transmission plant, legacy switches and new “softswitches”, SONET transport technology, etc.). Because such investments have little value on the open market, RLECs are unable to offer much in the way of collateral to lenders. Lack of liquid collateral tends to make lenders hesitant to extend credit to RLECs.

The *Staff Report* assumes that RLECs have access to “extensive funding” as well as below-market rate loans from lenders such as CoBank.⁵⁹ But as CoBank itself recently made clear, “[t]here is no such thing as a CoBank ‘subsidized’ interest rate for telecommunication borrowers.”⁶⁰ CoBank further explained that it uses a variety of key ratios for decision-making and risk assessment to evaluate loans⁶¹ and that, in light of changes in the marketplace and the various caps and limitations placed on USF and ICC pursuant to Commission rule changes, many RLECs do not currently meet its lending standards.⁶² Since, in CoBank’s view, any reduction in the prescribed RoR will further decrease the ability of RLECs to obtain debt capital, CoBank strongly advises the Commission not to take further action regarding the RoR at this time.⁶³

The Associations strongly agree. Uncertainty regarding stable, predictable cost recovery is clearly making it difficult for RLECs to obtain credit from traditional industry financing

⁵⁹ See, *e.g.*, *Staff Report* ¶ 49.

⁶⁰ See Comments of CoBank, ACB, WC Docket No. 10-90 (filed June 21, 2013) at 4 (CoBank Comments).

⁶¹ Including: Debt/EBITDA (Earnings before Interest, Taxes, Depreciation and Amortization, Equity/Assets, Debt Service Coverage (DSC) which is (EBITDA – taxes / principal payments on long term debt + interest expense); and EBITDA/Interest Expense. *Id.* 5-6.

⁶² *Id.* 4.

⁶³ *Id.* 6.

sources such as CoBank. In this environment, it is unreasonable for the Commission to assume the availability of “easy credit” at below-market rates for RLECs. This further reduces the relevance of today’s abnormally low market interest rates in calculating the WACC for RLECs.

Regulatory Uncertainty: RLECs have operated under a regulatory cloud for years as the Commission has considered fundamental changes to its universal service and ICC policies. Although the *USF/ICC Order* addressed a number of outstanding issues, significant implementation issues and details remain unresolved, and fundamental hurdles to the establishment of a Connect America Fund for RLECs remain unaddressed. Moreover, RLECs and their potential lenders and investors are still trying to determine the long-term as well as near-term impacts of the Commission’s implementation decisions. What is known at this time regarding the Commission’s 2011 *USF/ICC Order* is that RLECs must meet new obligations to provide broadband services to their rural customers while simultaneously absorbing cuts in USF funding, with the threat of further cuts to come as the Commission continues to adopt changes to rules governing support.

Over the next decade, the industry will also be transitioning from the traditional “calling party pays” regime, which as noted above provided carriers with reimbursement of costs to originate and terminate interexchange calls, to one where such intercarrier compensation is reduced to zero. While the Commission’s rules provide an access Recovery Mechanism (RM) for some portion of these costs, it has not yet been established for all aspects of the rate elements the Commission indicates must ultimately go to zero.⁶⁴

⁶⁴ *USF/ICC Order* ¶ 847. See also *January 2012 Rural Association Comments* at 55.

The *Staff Report* devotes only a single paragraph to discussing changes in the telecommunications marketplace and regulatory environment,⁶⁵ but fails to consider the significance these changes might have on the reprscription process. This is surprising, considering the active role played by the Bureau in proposing and implementing these significant regulatory shifts in the past few years. It is essential that the Commission fully take into account the impacts these changes have had on the overall telecommunications marketplace, and the plight of RLECs in particular, as it evaluates recommendations set forth in the *Staff Report*.

B. The "Opportunity Sample" Chosen by The Bureau For Its WACC Analysis is Unrepresentative of RLECs And Must be Rejected.

The Commission has previously recognized the critical need to base rate reprscriptions on data from "comparable" firms (*i.e.*, firms exhibiting risk characteristics that are similar to those experienced by providers subject to the prescribed RoR). In developing the initial Part 65 reprscription process, for example, the Commission had hoped to use a series of "screens" to identify "comparable" firms, but concluded that additional refinement to the methodology was necessary because the firms produced by the "screens" did not exhibit risk characteristics similar to firms offering interstate access service.⁶⁶ Comparability was likewise critical in the 1990 reprscription proceeding.⁶⁷ Courts have recognized as well that the authorized rate of return

⁶⁵ *Staff Report* ¶ 4.

⁶⁶ *Authorized Rates of Return for Interstate Services of AT&T Communications and Exchange Telephone Carriers*, CC Docket No. 84-800, Phase II, *Memorandum Opinion and Order on Reconsideration*, 104 FCC 2d 1404 (1986) ¶¶ 21-23 (citations omitted) (*1986 Part 65 Reconsideration Order*).

⁶⁷ *1990 Reprscription Order* ¶ 181 ("We have examined each of the LECs' comparable firms analyses and have found that they are entitled to little weight in our decision because those analyses have not identified groups of firms comparable in risk to interstate access service.").

should be “commensurate with returns on investments in other enterprises having corresponding risks.”⁶⁸

The *Staff Report* acknowledges that “[t]he reliability of the Commission’s analysis depends in large part on the representativeness of the proxy group it uses.”⁶⁹ The Bureau’s solution to the “comparable firm” problem, however, is to select a sample of sixteen telecommunications companies that include mid-sized companies and a few publicly-traded RLECs in addition to three RHCs.⁷⁰

The *Staff Report* acknowledges that the RHCs differ significantly from the RLECs that are the subject of this re prescription proceeding,⁷¹ but utilizes them, not because they exhibit comparable risk, but because there is a wealth of information about them that supposedly makes for robust cost of equity calculations.⁷²

⁶⁸ *Illinois Bell Tel. Co. v. FCC*, 988 F.2d 1254, 1260 (D.C. Cir. 1993) (quoting *Hope Natural Gas Co.*, 320 U.S. at 603).

⁶⁹ *Staff Report* ¶ 11. The *Staff Report* ¶ 6 similarly quotes from the same court decisions cited above.

⁷⁰ *Id.* ¶ 13.

⁷¹ *E.g.*, *id.* ¶ 25 (“With regard to the second and third prongs, however, there appears to be an inverse relationship between the similarity to rate-of-return operations and the reliability of financial data. The RHC Proxy companies have frequently-traded equity and numerous analysts’ growth estimates, making their financial data highly reliable for purposes of our CAPM and DCF analysis, but with their more urban service areas and price-cap or price-flexibility regulation, have operations least similar to those of rate-of-return carriers.”); *Id.* ¶ 48 (“The average embedded cost of debt for all 16 carriers is 6.19 percent. For the RHCs it is 5.17 percent, the lower rate likely reflecting, among other things, their financial stability in the eyes of lenders.”); *Id.* ¶ 16 (“We agree that RHCs likely differ significantly from other incumbent LECs and we therefore do not recommend that the Commission rely *exclusively* on RHC data in a re prescription proceeding.”) (emphasis in original). Given the admitted lack of comparability, however, it would appear *prima facie* arbitrary and capricious to accord *any* reliance on the RHCs’ financial information.

⁷² *Id.* ¶ 19 (“In this vein, the RHCs should be included in any analysis of incumbent LECs’ rates of return because they will provide the most reliable discounted cash flow (DCF) estimates for

In this regard, the *Staff Report* appears to suffer from “streetlight effect” bias – *i.e.*, the tendency to use data simply because it is available, not because it is relevant.⁷³ The Bureau’s selection criteria appear arbitrary for other reasons as well. For example, the Bureau’s approach limits consideration to companies with a minimum of 10 percent of operations associated with interstate telecommunications services.⁷⁴ No justification is provided for this percentage, which on its face appears far lower than for RLECs as a group.⁷⁵ Companies have also been selected on the basis that they offer services similar to those offered by RLECs,⁷⁶ yet it is entirely unclear how the Bureau defines “similar services.” Another reason proffered by the Bureau for selecting its “comparable” group is that these companies offer publicly-traded, liquid securities.⁷⁷ But by definition, such companies are not representative of RLECs.

Within each subgroup of supposedly comparable companies there are other anomalies that should raise caution flags at the Commission. For example, the *Staff Report* assumes without proof that the RHCs are in riskier businesses than RLECs.⁷⁸ While it might have been reasonable in the 1980’s to assume that new lines of business such as mobile telecommunications

the cost of equity. There is a significantly greater number of analysts’ growth estimates for the RHCs than for the other incumbent LECs.”)

⁷³ See, e.g., http://en.wikipedia.org/wiki/Streetlight_effect (recounting story of a policeman who sees a drunk man searching for something under a streetlight and asks what the drunk has lost. The drunk replies that he lost his keys and they both look under the streetlight together. After a few minutes the policeman asks if he is sure he lost them here, and the drunk replies, no, he lost them in the park. The policeman asks why he is searching here, and the drunk replies, “this is where the light is.”)

⁷⁴ *Staff Report* ¶ 12.

⁷⁵ Professor Randall Billingsley Statement, App. A, at 2, 4 (*Billingsley Statement*).

⁷⁶ *Staff Report* ¶ 12.

⁷⁷ *Id.* ¶¶ 12-13.

⁷⁸ *Id.* n.45.

and information services exposed the RHCs to increased risk, few investors today would suggest a small rural company primarily dependent on the landline voice telephony business and declining federal USF support and ICC dollars is less risky than a giant telecommunications company with extensive, diverse wireline, wireless, Internet and information services holdings.

Differences in regulatory approaches applied to the RHCs and RLECs also require recognition.⁷⁹ Indeed, common sense suggests that diversified RHCs are now much safer than RLECs and should therefore find it easier (and cheaper) to attract capital investment. Yet the Bureau's analyses show ranges of WACC estimates for RHCs that are higher than the range developed for RLECs.⁸⁰

The Bureau also suggests that data from RHCs will produce the most reliable estimates of DCF cash flows.⁸¹ While quality of data is important, the fact that RHCs provide more reliable estimates of cash flows may only demonstrate that these companies are much safer and more reliable from an investor's viewpoint.⁸²

The Bureau likewise admits that mid-size companies differ from RLECs in that they are under price cap regulation, are larger than most RLECs, have a larger share of debt in their capital structures, and have non-investment grade debt ratings.⁸³ They are thus less than ideal

⁷⁹ The Commission and Congress have made major policy decisions since the 1980s that have made RBOCs and other larger LECs very different from RLECs (*e.g.*, price cap regulation, the authorization for the RBOCs to offer interLATA services, forbearance from many legacy regulations, auction and consolidation of wireless spectrum, permission to offer video and other entertainment services, bundling of services). The *Staff Report* does not appear to recognize the importance of these policy decisions and their differing economic effects on RHCs and RLECs

⁸⁰ *Supra*, n.8.

⁸¹ *See Id.* ¶ 25.

⁸² The Bureau admits there appears to be an inverse relationship between reliability of financial data and similarity to RLECs. *Id.*

⁸³ *Id.* ¶ 22.

for estimating the cost of capital for RLECs, who typically have lower levels of debt. The Bureau also recognizes that the poor debt ratings of some of the mid-size companies could be an indication of the riskiness of their landline operations, yet elects to treat such companies as outliers in its analysis,⁸⁴ effectively ignoring the potentially critical effect such risks impose on RLECs.⁸⁵

Finally, the Bureau's analysis incorporates data from a small group of publicly-traded RLECs, including Hickory Tech, ShenTel, TDS, Consolidated, New Ulm, Lumos, and Alteva.⁸⁶ But publicly-traded companies are qualitatively different from non-traded RLECs and thus cannot be considered representative of all RLECs. Some of the publicly-traded RLECs have substantial wireless operations, which may not be typical for RLECs in general. Numerous firms showed signs of financial distress during the sample time period and FairPoint was in bankruptcy during this time.⁸⁷ The *Staff Report* recognizes that these companies are followed by only a small number of financial analysts, which raises questions about the reliability of analysts' estimates used in the Bureau's DCF calculations. These companies' stocks also tend to be thinly-traded, which in turn causes a downward bias in CAPM estimates based on their data.⁸⁸ No solutions are offered for these concerns.

⁸⁴ *Staff Report* ¶ 21.

⁸⁵ The *Staff Report* only notes in passing that one of the mid-size companies (FairPoint) was in bankruptcy during the period October 2009 – January 2011. See <http://biz.yahoo.com/e/110114/frp8-k.html>. This circumstance almost certainly caused significant operational problems for the company during this period, as management resources are typically focused on bringing the company out of bankruptcy rather than on normal day-to-day business. Bankruptcy of a key company reinforces the point that the sample is probably unrepresentative.

⁸⁶ *Id.* ¶ 23.

⁸⁷ *Billingsley Statement* at 7.

⁸⁸ *Staff Report* ¶ 24.

The Commission might reasonably overlook these problems if it were true, as the *Staff Report* suggests, that no reasonable alternative exists.⁸⁹ But in fact it is perfectly possible for the Commission to obtain reliable, relevant data from RLECs themselves. The *January 2012 Rural Association Comments* suggested one method that relies on RLEC data. Section IV and Appendix B of these comments includes additional detail regarding that proposal.

C. In Seeking to Determine The Cost of Equity, The Bureau Relies on Applications of Economic Models it Admits Are Unreliable And Flawed.

In previous represcription proceedings, the Commission rejected any reliance on the Capital Asset Pricing Model (“CAPM”). For example, in the Commission’s inaugural represcription of the authorized rate of return under the then-new Part 65 procedures, the Commission declined to utilize a CAPM methodology.⁹⁰ Likewise, in the last formal represcription proceeding in 1990 using the Part 65 procedures, the Commission accorded no weight to CAPM results.⁹¹

The *Staff Report* quotes the Commission’s statement from the 1990 represcription decision that “[w]e continue to believe that the CAPM approach has the potential to provide

⁸⁹ *But see AT&T v. FCC*, 449 F.2d 439 (2nd Cir. 1974) (where the court remanded the Commission’s prescription of a practice requiring unlimited sharing of TELPAK services because the Commission failed to find such practice was “just, fair and reasonable” but instead only “the best alternative available.” *Id.* at 450-51. Here, the Commission seeks to prescribe a new RoR and, under section 205(a) must find it “just, fair and reasonable.” The *Staff Report’s* recommendation to use flawed information (data from firms not shown to be comparable to RLECs) on the basis that such data is the “best available alternative” will not in the Rural Associations’ view support the necessary “just and reasonable” findings.

⁹⁰ *1986 Part 65 Reconsideration Order* ¶ 79.

⁹¹ *1990 Represcription Order* ¶ 139 (“We conclude that these CAPM estimates are likely to overstate the cost of equity capital, and that no weight should be given to them”) and at ¶ 181 (“We have also found that the CAPM analyses in the record can be accorded little weight in this represcription proceeding”).

estimates of the cost of equity capital with the same reliability as the DCF approach,”⁹² but cites no authorities or studies that have since validated the use of the CAPM for RLECs. Indeed, the *Staff Report* cites a litany of problems with utilizing CAPM analyses in a regulatory context, including the fact that key components “are prone to measurement error because these estimates involve speculation as to investor expectations.”⁹³ The *Staff Report* also acknowledges that “[t]he true value of each of the inputs required to implement the CAPM is unknown, and each is difficult to measure precisely.”⁹⁴ Indeed, the *Staff Report* goes on to note that:

As for the CAPM, there is compelling evidence that it does not accurately predict equity returns, which is the ultimate test for a model used specifically for the purpose of estimating the cost of equity, as we do here.⁹⁵

The *Staff Report* also admits that the CAPM results it obtained were “anomalous”:

As shown in Appendix I1, the CAPM estimates are low compared to the cost of debt. This is anomalous; because equity is subordinate to debt with regard to a company’s profits and assets, equity should command a higher return.⁹⁶

The Bureau attempts to gloss over problems with the CAPM by “averaging” the results,⁹⁷ but does not explain why averaging bad information would turn flawed information into accurate estimates of the cost of equity. Nor does the *Staff Report* acknowledge, let alone explain, good

⁹² *Staff Report* ¶ 57, quoting from the *1990 Represcription Order* ¶ 139.

⁹³ *Id.* ¶ 58, citing Eugene F. Fama and Kenneth R. French, *The Capital Asset Pricing Model: Theory and Evidence*, J. ECON. PERSP. at 44 n.7 (2004) (*Fama and French*).

⁹⁴ *Id.*

⁹⁵ *Staff Report* ¶ 61, citing *Fama and French*; Roger A. Morin, *Regulatory Finance: Utilities’ Cost of Capital*, 175-89, 338 (Public Utilities Reports 1994) (*Morin Regulatory Finance*).

⁹⁶ *Staff Report* ¶ 84.

⁹⁷ *Id.* (“By averaging the estimates for the entire sample of 16 companies, and emphasizing that average in our analysis, however, the effect of at least some, though not necessarily all, of any such measurement error might be removed.”)

reasons to change the Commission's previous rejection of such averaging as a cure.⁹⁸ The Bureau attempts to make other adjustments to address these anomalies, but it is unclear what impacts such adjustments may have on results.⁹⁹ Prof. Billingsley's attached Statement elaborates on the small firm and liquidity effect adjustments that would make the application of the CAPM to the RLECs yield more reliable cost of capital estimates.¹⁰⁰

In addition, as Prof. Billingsley explains in his attached Statement, the Bureau's use of an artificially low risk-free rate of return in applying the CAPM also results in an understatement of forward-looking equity costs for RLECs. He notes that the *Staff Report* uses a Treasury bond rate as of a single day that is artificially depressed to a level not seen for decades due to the effects of the recent financial crisis. A higher normalized rate should be used because the *Staff Report*'s risk-free rate is unrepresentative.¹⁰¹

⁹⁸ See 1990 Represcription Order ¶ 164:

Siegel's comparable firms analysis has also been criticized. Various parties contend that his cash flow selection criterion is biased towards highly profitable companies, that his firm size criterion gives significance to the irrelevant history of how the LECs chose to divide up their operations into subsidiaries, and that the extremely large range of betas for the selected companies indicates that he has not identified companies with similar risks. Siegel denies that the cash flow criteria is biased and responds to the beta analysis by arguing that he only used the group average beta in making his cost of equity estimate. *We do not believe that averaging nullifies the criticism.* (emphasis added)

⁹⁹ *Staff Report* ¶ 88:

This adjustment is not without its own problems. On one hand, to the extent our estimates of the cost of debt are too high, this choice would bias upward our estimates of the return on equity. On the other hand, since the cost of equity typically would materially exceed the cost of debt, assuming a cost of equity that equals the cost of debt tends to bias our estimates downwards. *It is not clear which of these two offsetting biases is likely to be larger.*"

(emphasis added)

¹⁰⁰ *Billingsley Statement* at 8 - 13.

¹⁰¹ *Id.* 13-15.

Given the failure to explain the departure from the Commission's previous rejection of CAPM and the *Staff Report's* acknowledgement of the flaws with CAPM, Commission reliance on the *Staff Report's* CAPM results would clearly be considered arbitrary and capricious.

D. The Bureau's Analysis Fails to Consider The Impacts of Small Firm Size And Illiquidity on RLEC Capital Costs.

In his attached Statement, Prof. Billingsley observes that the *Staff Report* considered, but rejected, the concept of adding a risk premium based on size to the cost of equity.¹⁰² In Prof. Billingsley's view, this contradicts exhaustive, published research by Ibbotson Associates and Duff & Phelps that documents the magnitude of small firm and illiquidity effects on stock returns and should have resulted in an upward adjustment in equity capital costs for RLECs. In specifically considering the impact of the size effect on the cost of equity capital, Prof. Billingsley cites evidence from Duff & Phelps showing that this effect can understate equity costs from a minimum of 0.42 percent for relatively large firms to a maximum of 6.72 percent for the smallest firms. Since RLECs are generally small, Prof. Billingsley estimates that the Bureau's analysis underestimates RLEC equity costs by a degree that more closely approaches the larger indicated amount.¹⁰³

Prof. Billingsley provides Duff & Phelps-based estimates of the magnitude of the bias introduced by ignoring size effects specifically for the 16-company sample used in the *Staff Report*. While rejecting this sample because it is unrepresentative of the average RLEC's riskiness, Prof. Billingsley notes that while the *Staff Report* estimates the average cost of equity for its entire 16-company sample is 7.18 percent (6.70 percent for the RHC subsample, 7.75 percent for the mid-sized carrier subsample, and 6.90 percent for the RoR subsample of

¹⁰² *Id.* 8, citing *Staff Report* ¶ 75.

¹⁰³ *Id.* 9-10.

companies),¹⁰⁴ a size-adjusted CAPM as recommended by Duff & Phelps would produce an average cost of equity for the entire sample of 12.74 percent (9.13 percent for the RHC subsample, 13.07 percent for the mid-sized carrier subsample, and 14.01 percent for the RoR subsample of companies).¹⁰⁵ In Prof. Billingsley's view, the Duff & Phelps data provide objective evidence that failure to adjust for the small firm effect provides significantly understated RLEC equity costs and, by implication, an understated average RLEC WACC.¹⁰⁶

Prof. Billingsley also explains that size alone may not be the sole reason for such higher capital costs. Smaller firms are typically less liquid, which means that fewer of their shares trade on a given day and that they have higher bid/ask spreads. According to Prof. Billingsley, less liquid shares command lower prices, which imply higher equity capital costs.¹⁰⁷ This suggests that equity capital costs for most RLECs should significantly exceed those of the publicly-traded RLECs used in the *Staff Report* sample. Indeed, evidence assembled by Pratt and Niculita from a sample of hundreds of transactions over a 30-year period shows that discounts due to illiquidity range from about 40 percent to 72 percent under different market conditions, even after eliminating outliers.¹⁰⁸ In Prof. Billingsley's view, such discounts imply the Bureau's analysis

¹⁰⁴ *Staff Report* ¶ 83, App. H.

¹⁰⁵ In order to allow more detailed comparisons and as discussed below, note that Duff & Phelps uses a normalized risk-free rate of 4 percent in light of current unrepresentative interest rate conditions and a conservative risk premium of 5 percent. In contrast, the *Staff Report* uses a risk-free rate of only 1.92 percent (as of a single day, March 26, 2013) and a risk premium of 7.57 percent, which is higher than the long-term Ibbotson Associate's average of 6.7 percent. Note that the *Staff Report* justifies using the higher risk premium as necessary to prevent contradictory, "anomalous" results. *See id.* ¶¶ 64, 87.

¹⁰⁶ *Billingsley Statement* at 11.

¹⁰⁷ *Id.*

¹⁰⁸ *Id.* 12.

substantially understates equity costs for non-publicly traded RLECs over those of otherwise comparable publicly-traded firms.

E. The Staff Report Arbitrarily Incorporates Anomalous Input Values That Run Contrary to Basic Economic Principles.

Prof. Billingsley also explains in his attached statement that the Bureau's CAPM analysis produced equity costs for about one-third of the Bureau's sample that "are low compared to the cost of debt" and that these results are "anomalous", a problem the Bureau admits exists.¹⁰⁹ However, while the *Staff Report* attributes this to "measurement error," Prof. Billingsley points out such results should serve as a red flag that there are serious flaws in either the sample identification procedure and/or the Bureau's application of the CAPM.

Cost of equity estimates that are lower than the associated cost of debt for a company violate the well-accepted risk/return trade-off. Equities should have higher expected returns than debt securities because equities are riskier.¹¹⁰

Rather than determine what went wrong with the sampling process or its CAPM calculations, however, the Bureau decided to adjust the results, masking the problem:

As an approximation designed to remove this anomaly, we performed the cost of equity calculation using 7.57 percent as the lower bound of the market premium .
..¹¹¹

In other words, the *Staff Report* acknowledges that the specific value of the equity market risk premium used in its CAPM analysis was chosen solely on the basis of the need to offset "anomalous" findings, an adjustment the Bureau admits "is not without its own problems."¹¹² In Prof. Billingsley's view, this practice is arbitrary, unsupported and misleading. It suggests that

¹⁰⁹ *Staff Report* ¶ 84.

¹¹⁰ *Billingsley Statement* at 16.

¹¹¹ *Staff Report* ¶ 87.

¹¹² *Id.* ¶ 88.

the risk premium was chosen not on the basis of the best empirical evidence or using firmly-based financial economic theory, but rather to compensate for internally inconsistent cost of equity and cost of debt estimates. The fact such adjustments were necessary strongly supports the Associations' view that the Commission should give the *Staff Report* little weight in considering the appropriate RoR for RLECs going forward.

IV. THE COMMISSION SHOULD RELY ON RLEC-SPECIFIC DATA TO EVALUATE THE WACC FOR RLECs, UTILIZING THE FREE CASH FLOW METHOD DESCRIBED IN PRIOR RURAL ASSOCIATION COMMENTS.

The *January 2012 Rural Association Comments* included an analysis of RLECs' cost of capital that, unlike the approaches used in the *Staff Report*, relied exclusively on RLEC-specific data rather than data assembled from proxy companies.¹¹³ This approach estimated a market-based cost of capital for RLECs by dividing current free cash flow (FCF) by the value of the firm.¹¹⁴ Firm valuation was determined by examining per-line prices paid in RLEC acquisition transactions.

Recognizing that there were a number of issues associated with using per-line prices, including possible impacts of non-regulated services, the declining numbers of acquisition transactions and differences in quality between RHC and RLEC exchange assets, the Rural Associations examined a range of prices for sales occurring between 2008 and 2011.¹¹⁵ These numbers showed a steady decline in valuations over the period, with some recent sale transactions priced at only \$600 per line. Since low per-line prices imply a greater cost of

¹¹³ See *January 2012 Rural Association Comments* at 47-50.

¹¹⁴ *Id.* 57.

¹¹⁵ *Id.*

capital,¹¹⁶ the Rural Associations opted to apply a conservative approach and analyzed FCF values using estimates of price per line ranging from \$2,400 to \$1,200 (leaving out low-priced recent transactions, which would tend to bias cost of capital estimates upwards).

This analysis produced median cost of capital values ranging from 11.75 percent and higher, depending on price-per-line values.¹¹⁷ In the Rural Associations' view, these results reflected an objective marketplace assessment by investors of the risks associated with RLEC operations in the current marketplace and regulatory environment.¹¹⁸

The Bureau did not accept the Rural Association's estimates based on the FCF method, stating in a footnote that the Rural Associations' filing "does not provide sufficient information to allow meaningful assessment of its calculations."¹¹⁹ The *Staff Report* asserts in this regard that the Rural Associations' FCF analysis was "based on unsubstantiated assumptions about the value of RLEC lines instead of demonstrated market values";¹²⁰ that it "arbitrarily reduces price-per-line data" and "relies on a non-random sample of cost companies that chose to respond to a NECA data request;"¹²¹ and "relies on unweighted median data without providing mean data."¹²²

In these comments, the Associations update and resubmit the FCF method originally filed in the *January 2012 Rural Association Comments*. The additional information provided in

¹¹⁶ A low per-line price indicates the buyer has more heavily discounted the present value of future cash flow from an investment, likely as a result of higher perceived risk. To offset this higher risk, the investor seeks a higher rate of return.

¹¹⁷ *January 2012 Rural Association Comments* at 59.

¹¹⁸ *Id.* 60.

¹¹⁹ *Staff Report*, n.94

¹²⁰ *Id.*

¹²¹ *Id.*

¹²² *Id.*

Appendix B demonstrates that the Associations' proposed FCF method is analytically sound, as it is tied to a standard DCF practice for evaluating firms previously endorsed by the Commission and relied upon, in part, by the Bureau for its analysis.

The Associations also show that the few concerns identified by the Bureau are misplaced. First, any assumptions in the *January 2012 Rural Association Comments* regarding the relative values of RHC and RLEC lines were reasonable, but irrelevant because RHC line values have little weight in the proposed FCF analysis.¹²³ Moreover, the proposed FCF approach uses a statistically unbiased sample that is representative of RLECs as a group. In this respect, the FCF produces a far more accurate estimate of WACC for RLECs than methods that rely on samples of unrepresentative publicly-traded proxy companies. The application of the FCF method is also superior in that it focuses exclusively on valuation of the regulated portion of the business, rather than total company operations.

The Bureau's suggestion that the Rural Associations arbitrarily reduced per-line prices for purposes of their analysis is incorrect. In fact, the Rural Associations conservatively *excluded* low per-line price data from their analysis. Had this information been included in the analysis, resulting cost of capital estimates would be higher. Finally, while the Associations continue to believe that median calculations should be used in the analysis to prevent outliers from dominating the WACC calculation, an alternative FCF calculation based on the weighted mean is provided in Appendix B. This revised calculation continues to show that the true WACC for RLECs is well above the range identified in the *Staff Report*.

¹²³ Moreover, the FCF analysis displayed in Appendix B focuses on recent sales that do not involve RHCs.

V. **BEFORE TAKING ANY FURTHER ACTION WITH RESPECT TO POTENTIAL PRESCRIPTION OF A NEW AUTHORIZED ROR, THE COMMISSION MUST ADOPT CLEAR RULES GOVERNING THE REPRESRIPTION PROCESS THAT PROVIDE PARTIES WITH A FULL OPPORTUNITY FOR HEARING, AS REQUIRED BY LAW.**

In its 2001 *MAG Order*,¹²⁴ the Commission noted that its Part 65 rate-of-return represcription rules were adopted before Congress enacted the Telecommunications Act of 1996 (the Act), with its myriad changes to both federal and state laws governing the telecommunications industry. Given this changed environment, the Commission found that

it would be counterproductive to initiate a new automatic review of rate-of-return carriers' authorized rate of return at this time without a complete review of the Part 65 procedures to determine if they are appropriate and workable. Staying the effectiveness of section 65.101 will allow us to comprehensively review the Part 65 rules to ensure that decisions we make are consonant with current conditions in the marketplace.¹²⁵

As the Rural Associations have previously pointed out, that "complete review" of the Part 65 rules has not yet occurred.¹²⁶ Yet the *Staff Report* rushes forward to apply the WACC estimation procedures set forth in the Part 65 rules as if nothing had changed. For the reasons stated in the *December 2011 Rural Association PFR* and prior comments in this proceeding, the Commission must undertake this review and promulgate new "rules of the road" prior to any potential prescription of a new authorized RoR.

As part of such a rulemaking the Commission must also establish clear procedures to govern the represcription process. As noted above, section 205(a) of the Act requires the Commission to provide a "full opportunity for hearing" prior to prescribing new rates. While the

¹²⁴ *MAG Order*, *supra* note 7, at 3.

¹²⁵ *MAG Order*, ¶ 210

¹²⁶ *December 2011 Rural Association PFR* at 26-27; *January 2012 Rural Association Comments* at 51.

Act does not necessarily require the Commission to conduct traditional “trial-type” hearing procedures, RoR represcription proceedings are “adversarial in nature and depend upon a thorough fact-based inquiry that develops a great amount of probative evidence.”¹²⁷

The Associations recognize that, as part of its Order initiating this proceeding, the Commission waived several Part 65 rules governing service of process and other outdated procedural requirements.¹²⁸ This waiver purported to include section 65.103 of the rules, which provides for detailed presentation, testing and consideration of evidence relating to rate prescription issues in the form of direct cases, replies and rebuttal testimony. The *USF/ICC Order* did not, however, specify alternative procedures to govern the represcription process.

The Rural Associations pointed out that the Commission’s failure to specify detailed methods for gathering and examination of factual evidence constitutes legal procedural error and would likely leave a rate prescription order open to reversal by an appellate court.¹²⁹ If the procedures outlined in section 65.103 of the Commission’s rules are not to be used, the Commission must specify what other process will be followed to assure that parties are provided with a rigorous, adjudicative, adversarial fact-finding hearing as required under section 205(a) of the Act and the APA. Put another way, waiver of its rules does not permit the Commission to ignore substantive and procedural requirements contained in applicable statutes.

Like the Commission’s 2011 *USF/ICC Order*, the *Staff Report* does not address or make recommendations regarding the process to be used to assure compliance with section 205(a)’s

¹²⁷ *USF/ICC Order* ¶¶ 641-642. See also *Authorized Rates of Return for the Interstate Services of AT&T Communications and Exchange Telephone Carriers*, Report and Order, 59 Rad. Reg. 2d (P&F) 651 (1985); *1995 Represcription Order* ¶ 51.

¹²⁸ *USF/ICC Order* ¶ 645.

¹²⁹ *December 2011 Rural Association PFR* at 27.

hearing requirements. It should be clear, however, that by simply issuing the *Staff Report* and requesting comment thereon, the Commission has not provided parties with a “full opportunity for hearing” as required by the Act. Prior rate prescription hearings have often involved multiple submissions from parties, giving each side a fair chance to address and rebut proffered facts and arguments.¹³⁰ Additionally, parties have been given reasonable access to discovery (mainly interrogatories and document requests), either directly or as part of a required filing.¹³¹ None of these procedural safeguards is present in the context of the *Staff Report*.¹³²

Certainly, the Commission cannot rely on the limited opportunity provided by the *Public Notice* to comment on the *Staff Report* as providing the “full opportunity for hearing” mandated by section 205 of the Act. Even without considering the substantive defects described above, this procedural error will render arbitrary and capricious any decision made by the Commission

¹³⁰ See e.g., *Refinement of Procedures and Methodologies for Represcribing Interstate Rates of Return for AT&T Communications and Local Exchange Carriers*, CC Docket No. 87-463, Notice of Proposed Rulemaking, 2 FCC Rcd. 6491 (1987); *Amendment of Parts 65 and 69 of the Commission’s Rules to Reform the Interstate Rate of Return Represcription and Enforcement Processes*, CC Docket No. 92-133, Notice of Proposed Rulemaking and Order, 7 FCC Rcd 4688 (1992); *Regulatory Reform for Local Exchange Carriers Subject to Rate of Return Regulation*, CC Docket No. 92-135, Notice of Proposed Rulemaking, 7 FCC Rcd. 5023 (1992); *Common Carrier Bureau Sets Pleading Schedule in Preliminary Rate of Return Inquiry*, AAD 96-28, Public Notice, 11 FCC Rcd. 3651 (1996).

¹³¹ The Commission has, on limited occasions, used “pure” notice and comment procedures to prescribe rates and tariff regulations. But these instances have typically involved policy matters requiring determination of legislative facts, as opposed to adjudicative facts. For example, the Commission used informal notice and comment procedures to prescribe tariff regulations that permitted the resale of interstate private lines (*AT&T v. FCC*, 572 F.2d 17 (2nd Cir. 1978)) and the establishment of ceilings for subscriber line charges (SLC) (*Access Charge Reform*, CC Docket No. 96-262, First Report & Order, 12 FCC Rcd. 15982 (1997) ¶¶ 75-87, *aff’d* *Southwestern Bell Tel. Co. v. FCC*, 153 F.3d 523 (8th Cir. 1998)). Such examples do not support abandonment of adversarial procedures in a RoR represcription hearing.

¹³² For example, interested parties might seek access to detailed descriptions and explanations as to how the DCF model was implemented by the Bureau, and propound questions regarding specific steps or assumptions used. Parties might also reasonably request access to underlying data in spreadsheet form so as to facilitate replication of results.

to revise the authorized RoR based on the present record.

Reliance on simple notice and comment opportunities regarding the *Staff Report* would also be inconsistent with prior Commission determinations that additional procedural safeguards are key to better serving the public interest. For example, in its 1995 decision reforming its Part 65 Rules, the Commission concluded:

Based on our review of the record, we conclude that the public interest would be better served by streamlining our existing paper hearing procedures, than by adopting the simpler notice and comment regime that we proposed in the Notice. ... Although almost all parties to this proceeding support some form of simplification, they emphasize that rescription proceedings are adversarial in nature and depend upon a thorough fact-based inquiry that develops a great amount of probative evidence. In recognition of this, even the parties who support simpler notice and comment procedures urge us to continue to promulgate rules that allow for, among other procedures, rebuttal pleadings and significant discovery, including interrogatories.¹³³

The Commission's *USF/ICC Order* failed to acknowledge this earlier decision or provide any explanation as to why existing rules governing presentation of substantive evidence should be changed.

As part of any new rules intended to govern the rescription process, the Commission must specify who bears the burden to demonstrate the existing RoR is unjust and unreasonable and what level of new return on investment would be just and reasonable.¹³⁴

¹³³ 1995 *Rescription Order* ¶ 51.

¹³⁴ See generally *January 2012 Rural Association Comments* at 61-63. Under Commission precedent, any entity favoring a lower RoR (including Commission staff) must provide sufficient evidence and establish on the record that their proffered RoR is just and reasonable under section 205(a) of the Act. For example, in a case where AT&T filed tariff revisions proposing a higher RoR and higher prices for interstate calls, the Commission assigned AT&T the burden of going forward with the evidence supporting such changes and the burden of persuasion, in accordance with section 204(a)(1) of the Act. *AT&T Co. Charges for Domestic Telephone Service*, Memorandum Opinion & Order, 27 FCC 2d 151 (1971) ¶ 24. See also, *American Television Relay, Inc. Refunds Resulting from the Findings and Conclusions in Docket 19609*, Memorandum Opinion & Order, 67 FCC 2d 703 (1978) ¶ 10; *800 Data Base Access Tariffs and*

Finally, the Commission should observe the normal 60-60-21-day time frames for adversarial filings set forth in section 65.103 of its rules.¹³⁵ This is critical for RLECs with limited resources to develop the data needed to prepare direct cases, to obtain the services of qualified experts to analyze this data, and to respond fully to adversarial filings.

VI. CONCLUSION

The Commission must make substantial modifications to methodologies used to develop the Bureau's *Staff Report* before it seeks to represcribe the authorized RoR for RLECs. As shown above and in the attached statement of Prof. Randall Billingsley, the initial approach taken by the Bureau relies on an unrepresentative sample of companies and fails to recognize circumstances faced by small rural telecommunications companies in today's marketplace and regulatory environment. Results produced by the Staff's methodology for RLECs appear obviously counterintuitive when compared with results produced for the much larger and less risky RHCs.

The Commission should instead use the FCF method described briefly in prior Rural Association comments and more fully in the attached Appendix B. This approach utilizes data

the 800 Service Management System Tariff, Order Designating Issues for Investigation, 8 FCC Rcd. 5132 (1993) ¶ 44. Even when rate increases are not sought, a carrier seeking a "rule or order from the Commission approving or prescribing a [new] charge, regulation, classification or practice the carrier would have the burden of proof." *Amendment of Part 61 of the Commission's Rules Relating to Tariffs and Part 1 of the Commission's Rules Relating to Evidence*, Memorandum Opinion & Order, 40 FCC 2d 149 (1973) ¶ 9. This result is consistent with ratemaking decisions of other federal agencies such as the Federal Energy Regulatory Commission ("FERC"). See, e.g., *Kern River Gas Transmission Company*, Initial Decision, Docket No. RP04-274-023, *slip op.*, at 46 (FERC, Apr. 12, 2011). See also, *Colo. Interstate Gas Co. v. FERC*, 791 F.2d 803, 807 (10th Cir. 1986), *cert. denied*, 479 U.S. 1043 (1987); *Tenn. Gas Pipeline Co.*, 94 FERC ¶ 61,117, at 61,447 (2001); *Southern Company Services, Inc.*, Opinion & Order on Initial Decision, Docket Nos. EL91-29-000 and EL94-85-000, *slip op.* at 1, (1998). *Association of Oil Pipe Lines v. FERC*, 83 F.3d 1424, 1431 (D.C. Cir. 1996).

¹³⁵ *December 2011 Rural Association PFR* at 29.

from RLECs themselves, and accurately portrays the WACC for these companies based on actual marketplace data.

Finally, before going any further, the Commission must clarify the procedures it intends to follow in any proceeding to revise the authorized RoR. As previously shown by the Rural Associations, the Commission cannot lawfully re prescribe the authorized RoR based on informal comments, but must instead provide parties with a full opportunity for hearing, as required by section 205(a) of the Act. While this need not include trial-type hearings, at a minimum parties must have the opportunity to present evidence in full and obtain discovery regarding other parties' presentations.

Respectfully submitted,

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July 25, 2013

Appendix A:

**Professor Randall Billingsley Statement:
In Re: Wireline Competition Bureau Rate of Return,
Represcription Staff Report, DA 13-1110, May 16, 2013**

BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, DC 20544

In the Matter of

Connect America Fund

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)
)

WT Docket No. 10-90

STATEMENT

of

DR. RANDALL S. BILLINGSLEY, FRM, CRRRA, CFA

July 25, 2013

STATEMENT OF RANDALL S. BILLINGSLEY

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Attachment 1 - Randall S. Billingsley Resume

BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, DC 20544

In the Matter of

Connect America Fund

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WT Docket No. 10-90

STATEMENT OF RANDALL S. BILLINGSLEY¹

I. PURPOSE AND SUMMARY OF STATEMENT

The purpose of this Statement is to critically evaluate the report issued by the Wireline Competition Bureau² of the Federal Communications Commission (FCC or Commission) concerning the data and methods to be used in potentially represeting the authorized interstate rate of return (RoR) for rate of return-regulated rural local exchange carriers (RLECs)³. I explain that the *Staff Report's* recommended reasonable range for the RLEC authorized RoR of only 8.06 percent to 8.72 percent is unrealistically low, unreliable, and

¹ Details on my qualifications may be found in Billingsley Exhibit No. RSB-1. This statement presents my independent professional opinions and is not presented by me as a representative of Virginia Polytechnic Institute and State University.

² Wireline Competition Bureau, *Prescribing the Authorized Rate of Return: Analysis of Methods for Establishing Just and Reasonable Rates for Local Exchange Carriers*, Staff Report, WC Docket No. 10-90, (released May 16, 2013)(*Staff Report*).

³ Federal Communications Commission, Public Notice, "Wireline Competition Bureau Seeks Comment on Rate of Return Represetion Staff Report," DA 13-1110, May 16, 2013.

results from depending on unrepresentative data and errors in applying commonly-used methodologies.⁴ My recommendation is to defer estimating the authorized rate of return until the Commission can develop an approach that addresses several estimation issues:

- A representative sample of RLECs
- Methods applicable to small, non-traded, regulated RLECs
- A representative time period for conducting the analysis

In brief summary, the errors and inconsistencies in the *Staff Report* discussed in my statement that support my recommendation to the Commission include:

- Reliance on an unrepresentative sample of telecommunications firms that are *assumed* rather than *demonstrated* to be comparable to the average RLEC. The RLECs themselves should be used as much as possible as a direct sample.⁵
- Use of arbitrary sample selection criteria.
- Inclusion of financially distressed firms within the sample.
- Failure to consider the material, well-documented effects of small firm size and illiquidity on RLEC capital costs, which biases the *Staff Report's* estimates downward.
- An inconsistent relationship among the *Staff Report's* recommended weighted average cost of capital (WACC) estimates for its sample of publicly-traded RLECs, publicly-traded mid-sized carriers, and selected regional Bell holding companies

⁴ *Staff Report*, p. i.

⁵ The Rural Associations have previously provided the Commission with free cash flow (FCF)-based cost of capital evidence based exclusively on a relatively large sample of RLECs. See *Initial Comments of NECA, NTCA, OPASTCO, and WTA*, WC Docket No. 10-90, *et al.*, at 57-60 (filed January 18, 2012).

(RHCs). The *Staff Report* assumes rather than proves that the RHCs are riskier than the average RLEC, which is counter-intuitive.

- Inclusion of admittedly anomalous input values that contradict well-accepted risk/return trade-off principle. While this is attributed to “measurement error,” I explain below that this is compelling evidence that there are serious flaws in either the *Staff Report’s* sample identification procedure and/or in the application of its cost of capital estimation approaches. Further, the specific value of the equity market risk premium used is apparently chosen solely on the basis of the need to offset the above-noted anomalous cost of capital estimates. This practice is arbitrary, unsupported, and misleading.
- Reliance on a sample of regulated companies that violates the *Staff Report’s* stated concerns about circularity. The process employed in the *Staff Report* should have avoided the circularity trap by identifying a sample of *unregulated* firms that are demonstrably comparable in risk to the average RLEC using objective, well-accepted financial data.⁶
- Use of an artificially low risk-free rate of return in applying the capital asset pricing model (CAPM). Treasury bond rates are depressed to levels not seen for decades due to unprecedented Fed intervention in the wake of the financial crisis. By definition, current rates are unrepresentative and a normalized rate should be used. Further, the implicit assumption that capital costs must have fallen along with the current general

⁶ This was provided in previously-filed RLEC cost of capital analysis in this proceeding. See *January 2012 Association Comments*, Appendix C, Professor Randall Billingsley Statement: In Re: Interstate Rate of Return Represcription Report and Order of Further Notice of Proposed Rulemaking, FCC 11-161, November 18, 2011.

level of interest rates is incorrect. There is reason to believe that the more competitive environment faced by RLECs has increased these companies' riskiness. The *Staff Report's* use of an artificially low risk-free rate of return understates forward-looking equity capital costs for RLECs.

The remainder of my statement elaborates on the above observations concerning the *Staff Report*.

II. THE *STAFF REPORT'S* SAMPLE IS UNREPRESENTATIVE OF THE AVERAGE RLEC

A. THE *STAFF REPORT'S* SAMPLE SELECTION CRITERIA ARE ARBITRARY

An objective sampling method is clearly needed because the sample selection criteria used in the *Staff Report* are arbitrary. For example, the sample is limited to companies with at least 10 percent of operations associated with price-regulated interstate telecommunications services.⁷ Yet no justification is offered for why 10 percent is the appropriate threshold for including a firm in the sample. Nor is any insight provided into the effect, if any, on the composition of the sample if this arbitrary threshold is changed.

In another example of the arbitrary sample selection criteria, the *Staff Report* notes that the Commission assumes that "the RHCs are involved in activities which are perceived as riskier than their regulated telephone business."⁸ Yet the *Staff Report* includes the RHCs in its sample based on the following rationale:

⁷ *Staff Report*, p. 6, ¶12.

⁸ *Staff Report*, footnote 45.

The RHC Proxy companies have frequently-traded equity and numerous analysts' growth estimates, making their financial data highly reliable for purposes of our CAPM and DCF analysis, but with their more urban service areas and price-cap or price-flexibility regulation, have operations least similar to those of rate-of-return carriers.⁹

The *Staff Report* consequently admits that firms have been included in the sample that are not comparable to the RLECs based on the criterion that having more reliable data is apparently more important than using data that are relevant to the task at hand. It is particularly ironic that the *Staff Report* asserts that the RHCs' "frequently-traded equity" makes their data more reliable when only a handful of RLECs have market-traded equity. This in fact makes RHCs vastly different from the average RLEC.

The *Staff Report's* approach also recognizes significant differences between RLECs and its sample of mid-sized incumbent local exchange carriers in noting that:

[T]hese carriers are primarily subject to price cap regulation rather than rate-of-return regulation, and are much larger than most RLECs, and therefore are still an imperfect proxy group. In addition, these companies in general have a large share of debt in their capital structures, low times-interest-earned ratios, and non-investment-grade debt ratings and thus are less than ideal for estimating the cost of capital for providers with lower, often subsidized, debt.¹⁰

Thus, the *Staff Report* once again arbitrarily includes firms in its sample that are admitted to not be comparable to the average RLEC.

The *Staff Report* attempts to overcome this problem, in part, by including a small

⁹ *Staff Report*, p. 10, ¶25

¹⁰ *Staff Report*, p. 9, ¶22.

group of publicly-traded RLECs.¹¹ However, this does not render the overall sample sufficiently comparable to the average RLEC. The *Staff Report's* RLEC sample is composed of publicly-traded companies and the average RLEC is not publicly-traded. The sample is consequently not representative of the average RLEC. And, as discussed below, the market exacts a substantial penalty for the lack of marketability and liquidity common to firms like the average RLEC. This penalty has the effect of increasing capital costs. It is critically important that the Commission recognize the need to adjust capital costs upward to adequately reflect the impact of RLECs not having publicly-traded equity.

The *Staff Report* does not identify a sample of companies that are demonstrably comparable to the average RLEC. There is, however, a straightforward solution. A sample should be identified using the actual RLECs as much as possible.

B. THE STAFF REPORT'S SAMPLE OF REGULATED COMPANIES VIOLATES ADMITTED CONCERNS ABOUT CIRCULARITY

The *Staff Report* acknowledges that:

Using market values, however, presents a regulatory difficulty: market forces determine the value of a firm's debt and equity based on expectation of that firm's earning capacity, which is exactly what the regulator is trying to control in setting a regulated rate of return. This introduces circularity in the reasoning.¹²

This implies that a sample of *unregulated* firms matched on risk measures to the RLECs would provide valuable evidence that does not fall victim to the circularity dilemma.

Notwithstanding this admission, the analysis in the *Staff Report* relies on a sample of

¹¹ *Staff Report*, p. 10, ¶ 23.

¹² *Staff Report*, Appendix C, ¶11.

regulated firms that are affected by such circularity. In contrast, a sample of unregulated firms that are demonstrably comparable in risk to the average RLEC using objective, well-accepted financial data, should have been identified.¹³

C. THE REPRESENTATIVENESS OF THE *STAFF REPORT'S* SAMPLE IS MARRED BY THE PRESENCE OF FINANCIALLY DISTRESSED FIRMS

The representativeness of the sample used in the *Staff Report* is also marred by the presence of numerous financially distressed firms. A prominent example is that FairPoint was in bankruptcy during the sample period.¹⁴ More importantly, numerous firms in the sample had losses and negative book values during the five year sample time period. Specifically, seven of the sixteen firms (about 44%) suffered losses during the five year sample time period (Alaska Communications Systems Group, Alteva, Cincinnati Bell, FairPoint Communications, Frontier Communications, Hawaiian Telecom, and Lumos Networks) and four of the firms (25%) had negative book values during this period (Alaska Communications Systems Group, Cincinnati Bell, FairPoint Communications, and Hawaiian Telecom). The *Staff Report* provides no evidence that the average RLEC experienced comparable losses or negative book values during the five year sample period.

Financially distressed firms that are clearly unrepresentative of steady-state conditions in general or the average RLEC in particular were not removed from the *Staff Report's* sample. The use of such firms renders the associated cost of capital

¹³ A sample of firms not subject to the circularity effect was provided previously to the Commission in this proceeding. See *January 2012 Association Comments*, Appendix C, Professor Randall Billingsley Statement: In Re: Interstate Rate of Return Represcription Report and Order of Further Notice of Proposed Rulemaking, FCC 11-161, November 18, 2011.

¹⁴ *Staff Report*, p. 16, footnote 75.

estimates unreliable.

III. FAILURE TO CONSIDER THE EFFECTS OF SMALL FIRM SIZE AND ILLIQUIDITY ON CAPITAL COSTS

A. EFFECT OF SMALL FIRM SIZE ON CAPITAL COSTS

The *Staff Report* considers but rejects “adding a risk premium based on size to the cost of equity.”¹⁵ The only support offered for rejecting this step is a citation to an unpublished working paper that provides a literature review of the size effect.¹⁶

While questioning the impact of the size effect over various sub-periods, the cited paper nonetheless observes that “[e]mpirical research shows that, over long time horizons, firm size has been a factor in explaining returns on listed stocks”.¹⁷ The paper also observes that the size effect may be a proxy for the underlying liquidity risk of firms. This is significant in the context of the current FCC proceeding because the average RLEC would be considered both relatively small and illiquid. Thus, ignoring the small firm and illiquidity effects significantly understates the estimates of RLEC equity capital costs presented in the *Staff Report*.

Exhaustive, published research by Ibbotson Associates and Duff & Phelps documents the magnitude of the small firm effect on stock returns and recommends

¹⁵ *Staff Report*, p. 28, ¶75.

¹⁶ As indicated in footnote 138 on page 28 of the *Staff Report*, the working paper citation is: Crain, Michael A., *A Literature Review of the Size Effect* (October 29, 2011), available at SSRN: <http://ssrn.com/abstract=1710076> (last visited Apr. 16, 2013) or <http://dx.doi.org/10.2139/ssrn.1710076> (last visited Apr. 16, 2013).

¹⁷ Crain, p. 21.

how practitioners should adjust equity capital costs upward accordingly.¹⁸ Both companies provide evidence that the relative performance of small vs. large capitalization (cap) stocks does indeed vary over time. Interestingly, Duff & Phelps' research examines all 10-year periods on a monthly basis between 1982 and 2012. Their research reveals that small-cap stocks outperformed large-cap stocks 54 percent of the time.¹⁹ And the same study finds that small-cap stocks significantly outperformed large cap stock between 2000 and 2012. This evidence contradicts the opinion expressed in the unpublished working paper cited in the *Staff Report* that the small firm effect has disappeared in recent years. Ibbotson Associates also presents evidence that the above-noted pattern between small-cap and large-cap stock returns is common over time.²⁰

While both Duff & Phelps and Ibbotson Associates support the continued general relevance of the size effect in estimating the cost of equity capital, it is important to specifically consider how much of an effect the appropriate adjustment would have on the *Staff Report's* estimates of RLEC equity capital costs. Using alternate measures of firm size beyond just traditional market-cap and considering time periods of various lengths between 1963 and 2012, Duff & Phelps estimates average size premiums of

¹⁸ See 2013 Ibbotson® *Stocks, Bonds, Bills, and Inflation Valuation Yearbook*®, Morningstar, Inc., and 2013 Duff & Phelps Risk Premium Report, Duff & Phelps, LLC.

¹⁹ 2013 Duff & Phelps Risk Premium Report, Duff & Phelps, LLC, pp. 33-34. Note that the study examines a total of 253 120-month periods between 1982 and 2012.

²⁰ 2013 Ibbotson® *Stocks, Bonds, Bills, and Inflation Valuation Yearbook*®, Morningstar, Inc., chapter 7, pp. 85-108.

0.42 percent for the largest companies and 6.73% for the smallest companies.²¹ In other words, other things being equal, the *Staff Report's* CAPM estimates understate RLEC equity capital costs from a minimum of 0.42 percent to a maximum of 6.72%. And RLECs are generally small, which implies that the Staff underestimates RLEC equity costs by a degree that more closely approaches the larger indicated amount.

The magnitude of the bias introduced by the ignoring the size effect may be illustrated more specifically for the 16-company sample used in the *Staff Report*. While rejecting this sample because it is unrepresentative of the average RLEC's riskiness, it is nonetheless instructive to compare the *Staff Report's* estimates with CAPM results that capture the size effect. Using the CAPM, the *Staff Report* estimates that the average cost of equity for its entire 16-company sample is 7.18 percent, 6.70 percent for the RHC subsample, 7.75% for the mid-sized carrier subsample, and 6.90 percent for the RoR subsample of companies.²² In contrast, the approach to applying the firm size-adjusted CAPM recommended by Duff & Phelps produces an average cost of equity for the entire *Staff Report* company sample of 12.74 percent, 9.13 percent for the RHC subsample, 13.07% for the mid-sized carrier subsample, and 14.01 percent for the RoR subsample of companies.²³ Thus, the *Staff Report* produces RLEC cost of

²¹ 2013 *Duff & Phelps Risk Premium Report*, p. 37.

²² *Staff Report*, p. 30, ¶83 and Appendix H.

²³ In order to allow more detailed comparisons and as discussed below, note that Duff & Phelps uses a normalized risk-free rate of 4 percent in light of current unrepresentative interest rate conditions and a conservative risk premium of 5 percent. In contrast, the *Staff Report* uses a risk-free rate of only 1.92 percent (as of a single day, March 26, 2013) and a risk premium of 7.57 percent, which is higher than the long-term Ibbotson Associate's average of 6.7 percent. Note that the *Staff Report* justifies using the higher risk premium as necessary to prevent contradictory, "anomalous" results. See *Staff Report*, p. 25, ¶64 and p. 32, ¶ 87.

equity results that compare with professional Duff & Phelps estimates by the following amounts: 5.56 percent lower for the entire sample, 2.43 percent lower for the RHC subsample, 5.32 percent lower for the mid-sized carrier subsample, and 7.11 percent lower for the RoR subsample. Consistent with the empirical evidence on the size effect, the *Staff Report* underestimates the equity costs of the smallest firms the most, which are the RoR firms that are the most comparable subsample to the average RLEC. The data used to generate the Duff & Phelps estimates are available by subscription and are relied on by investment professionals. Duff & Phelps consequently provide objective evidence that the *Staff Report's* failure to adjust for the small firm effect provides significantly understated RLEC equity costs and, by implication, an understated average RLEC WACC.

B. EFFECT OF ILLIQUIDITY ON CAPITAL COSTS

While there is compelling evidence that firm size is inversely related to capital costs, size alone may not be the sole reason for such higher capital costs. Smaller firms are typically less liquid, which means that fewer of their shares trade on a given day and that they have higher bid/ask spreads. Evidence indicates that less liquid shares command lower prices, which implies higher equity capital costs.²⁴ It appears that there is a liquidity discount that is reflected in capital costs that is not captured in the size premium. RLECs are typically not publicly-traded, which make them extremely illiquid. Their equity capital costs should consequently significantly exceed those of the

²⁴ For example, see Roger G. Ibbotson, Zhiwu Chen, Daniel Y.-J. Kim, and Wendy Y. Hu, "Liquidity as an Investment Style," *Financial Analysts Journal*, Vol. 69, No. 3, 2013, pp. 30-44.

publicly-traded RLECs used in the *Staff Report* sample of firms.

Consider the extensive evidence cited in Pratt and Niculita's book on valuing a business.²⁵ They explain that it is common for equity values to be substantially discounted for the illiquidity and/or lack of marketability that characterize private, non-publicly-traded companies. Pratt and Niculita discuss two types of evidence on marketability discounts. The first looks at data on restricted stocks, which are public company stocks that are restricted from trading on the open market for a specific period of time. The difference in the prices of restricted and otherwise comparable publicly-traded stocks provides an estimate of the value discount resulting from limited marketability. Pratt and Niculita cite studies that find the average price discount associated with restricted stocks to be between 13 percent and 45 percent.²⁶ The second approach studies the relationship between the prices at which companies were initially offered to the public (IPO prices) and the prices at which the latest private transactions occurred in the months prior to the given IPO. Pratt and Niculita find that a sample of hundreds of such transactions over a 30-year period exhibits discounts from about 40 percent to 72 percent under different market conditions even after eliminating outliers.²⁷ Such discounts imply a significant increase in equity costs over those of otherwise comparable publicly-traded firms. Thus, the magnitude

²⁵ Pratt, Shannon P., and Niculita, Alina V. *Valuing a Business: The Analysis and Appraisal of Closely Held Companies* (New York: McGraw-Hill, 2008, 5th edition).

²⁶ Pratt and Niculita, p. 431.

²⁷ Pratt and Niculita, p. 438.

of the valuation discount for the lack of marketability provides another perspective on why the RLECs should have a risk premium added to their equity costs beyond that indicated by the CAPM. The *Staff Report's* failure to consider a lack of marketability/liquidity risk premium implicitly argues that the average RLEC is fully marketable and liquid even though most of them are private and therefore are *not publicly-traded*. The *Staff Report* consequently significantly underestimates RLEC equity costs.

For an additional perspective on how much the *Staff Report's* RLEC equity costs are understated because they implicitly assume that RLECs are liquid publicly-traded stocks, consider Ibbotson Associates' evidence on the relationship between liquidity and stock returns. From 1972 to 2012 a broad sample of stocks traded on the NYSE, NYSE Amex, and NASDAQ shows that higher returns are associated with less liquid stocks. Indeed, the (arithmetic) average return on the least liquid stocks was 16.58 percent while the average return on the most liquid stocks was only 11.15 percent, for a difference of 5.43 percent.²⁸ Liquidity premiums are not the same as size premiums and liquidity seems to have an even stronger effect on stock returns than size.

Given that RLECs are largely not publicly-traded, they are by definition illiquid and deserving of a liquidity premium. The above Ibbotson evidence consequently provides a sense of just how much the *Staff Report* understates RLEC equity costs and the associated WACC.

²⁸ 2013 Ibbotson® *Stocks, Bonds, Bills, and Inflation Valuation Yearbook*®, Morningstar, Inc., pp. 105-106.

IV. THE *STAFF REPORT* USES AN ARTIFICIALLY LOW RISK-FREE RATE OF RETURN IN APPLYING THE CAPITAL ASSET PRICING MODEL (CAPM)

As noted above, in its CAPM analysis the *Staff Report* uses a risk-free 10-year Treasury bond (spot) rate of only 1.92 percent, which was selected as of a single day, March 26, 2013. The CAPM should be specified to reflect the forward-looking perspective of an investor. However, it is almost universally agreed that Treasury bond rates are currently artificially depressed to levels not seen for decades due to unprecedented Fed intervention in the wake of the financial crisis. Thus, the *Staff Report* relies on a single recent day's Treasury bond rate that is unrepresentative and, by definition, not forward-looking.

Valuation professionals recognize the pitfalls of using current unrepresentative, historically low returns that are symptomatic of the financial market crisis of 2008 and the market's continuing volatility. For example, Duff & Phelps recommends the use of a normalized 20-year yield on Treasury bonds of 4 percent.²⁹ The *Staff Report's* use of a spot risk-free rate proxy of only 1.92 percent as of a single recent day is not representative of steady-state financial market conditions, is not forward-looking, and contributes to its underestimation of RLEC equity costs using the CAPM.

In its 2011 *USF/ICC Order* the FCC took the position that the current interstate authorized RoR of 11.25 percent was too high on the basis of a review of 10-year Treasury

²⁹ "Client Alert: Duff & Phelps Decreases U.S. Risk Premium Recommendation to 5.0%, Effective February 28, 2013," Duff & Phelps, LLC, March 20, 2013, pp. 4 and 9-21.

bond rates.³⁰ The FCC apparently believes that all capital costs must fall in tandem with the level of interest rates. Yet this is incorrect. Decreases in interest rates do not necessarily imply an equivalent decrease in the overall cost of capital. There is evidence that the equity risk premium is related inversely to the returns on low risk benchmark debt securities.³¹ Thus, when interest rates decline, the equity risk premium widens and when interest rates rise, the equity risk premium narrows. Equity costs and interest rates consequently do not move perfectly in tandem, and equity costs fall less than interest rates in a declining environment. It is consequently important not to *assume* that the authorized RoR must have fallen because the *general level of interest rates has fallen* so low of late because of the financial crisis. Objective empirical analysis is required to determine if changes in risk have more than offset the effect of lower interest rates on equity capital costs in general and RLEC equity capital costs in particular. Given the greater risks faced by RLECs in the current competitive landscape, there is reason to believe that their capital costs have increased on net.³²

³⁰ See *Connect America Fund*, WC Docket No. 10-90, *A National Broadband Plan for Our Future*, GN Docket No. 09-51, *Establishing Just and Reasonable Rates for Local Exchange Carriers*, WC Docket No. 07-135, *High-Cost Universal Service Support*, WC Docket No. 05-337, *Developing an Unified Intercarrier Compensation Regime*, CC Docket No. 01-92, *Federal-State Joint Board on Universal Service*, CC Docket No. 96- 45, *Lifeline and Link-Up*, WC Docket No. 03-109, Notice of Proposed Rulemaking and Further Notice of Proposed Rulemaking, 26 FCC Rcd. 4554 (2011) ¶¶ 636-640.

³¹ For example, see R. S. Harris and F. C. Marston, "Estimating Shareholder Risk Premia Using Analysts' Growth Forecasts," *Financial Management*, 1992, pp. 63-70. Specifically, their study finds evidence that the equity market risk premium is expected to change an average of -0.651 of changes in the level of long-term Treasury bond yields. More recent work by Harris and Marsden also finds the same inverse relationship between expected risk premiums and interest rates ("The Market Risk Premium: Expectational Estimates Using Analysts Forecasts," *Journal of Applied Finance*, 2001, pp. 6-16).

³² My previously filed statement in this proceeding provides evidence that RLEC capital costs have not changed sufficiently to justify the Commission represcribing an authorized RoR below the current 11.25 percent rate. See *January 2012 Association Comments*, Appendix C, Professor Randall Billingsley Statement: In Re: Interstate Rate of

V. THE STAFF REPORT ARBITRARILY AND SELECTIVELY LIMITS CHOSEN INPUT VALUES AND CONTRADICTS THE WELL-ACCEPTED RISK/RETURN TRADE-OFF PRINCIPLE

The *Staff Report* admits that its CAPM results “are low compared to the cost of debt” and that this result is “anomalous.”³³ This counter-intuitive situation is found for about one-third of the Staff’s overall sample. While the *Staff Report* attributes this anomalous result to “measurement error,” it serves as a red flag that there are serious flaws in either the sample identification procedure and/or the application of the CAPM. Cost of equity estimates that are lower than the associated cost of debt for a company violate the well-accepted risk/return trade-off. Equities should have higher expected returns than debt securities because equities are riskier.

Consider the *Staff Report’s* explanation of the anomalous relationship between the provided debt and equity cost estimates:

Any equity premium less than 7.57 percent results in a cost of equity that is less than the cost of debt for some of our firms, which violates a fundamental precept of economics, strongly implying error in our estimates (*footnote omitted*). As an approximation designed to remove this anomaly, we performed the cost of equity calculation using 7.57 percent as the lower bound of the market premium ...³⁴

Thus, the *Staff Report* acknowledges that the specific value of the equity market risk premium used in its CAPM analysis is chosen solely on the basis of the need to offset the above-noted anomalous findings. Indeed, the *Staff Report* cautions that “[t]his adjustment

Return Prescription Report and Order of Further Notice of Proposed Rulemaking, FCC 11-161, November 18, 2011.

³³ *Staff Report*, p. 30, ¶84.

³⁴ *Staff Report*, pp. 31-32, ¶87.

is not without its own problems” because it introduces other biases that might not be offsetting.³⁵ Thus, the risk premium was not chosen on the basis of the best empirical evidence and was not informed by an understanding of firmly-based financial economic theory. In contrast, it was chosen only to compensate for internally inconsistent cost of equity and cost of debt estimates. This practice is arbitrary, unsupported, and misleading. It renders the *Staff Report’s* associated cost of capital recommendations unreliable.

VI. THE STAFF REPORT’S COST OF CAPITAL RESULTS DEFY COMMON SENSE

As previously noted, the *Staff Report* accepts the unsubstantiated assumption that the RHCs are perceived to operate in riskier businesses than RLECs.³⁶ The report consequently argues that an RHC’s cost of equity should be higher than an RLEC’s. Indeed, the *Staff Report* presents a RLEC WACC range of 6.78 percent to 8.10 percent and a RHC WACC range of 7.35 percent to 9.13 percent.³⁷

This begs common sense: which is riskier, a pure landline, small rural telecommunications company or a broadly diversified, large telecommunications firm with extensive wireless holdings? Which would you be more comfortable investing in and how would you adjust your return requirements in light of your intuition? More specifically, would you be comfortable investing in an RLEC that offered you about a one percent *lower* expected return than an RHC like Verizon or AT&T? Few investors would likely invest in RLECs in such circumstances. The *Staff Report’s* cost of capital estimates

³⁵ *Staff Report*, p. 32, ¶188.

³⁶ *Staff Report*, p. 8, footnote 45.

³⁷ *Staff Report*, Appendix K.

defy financial common sense, which shows that its overall recommendations to the Commission are unreliable.

VII. CONCLUSION

The *Staff Report's* recommended reasonable range for the RLEC authorized RoR of only 8.06 percent to 8.72 percent is unrealistically low, unreliable, and results from depending on unrepresentative data and errors in applying commonly-used methodologies. One of the greatest limitations of the *Staff Report* is that it relies on an unrepresentative sample of telecommunications firms that are *assumed* rather than *demonstrated* to be comparable to the average RLEC. The RLECs themselves should be used as much as possible as a direct sample. At a minimum, their characteristics should be explicitly matched with a sample of firms *demonstrated* rather than *assumed* to be comparable to the average RLEC.

Of extraordinary significance is also that the *Staff Report* does not consider the material, well-documented effects of small firm size and illiquidity on RLEC capital costs, which biases its estimates downward. It is apparent that the *Staff Report* does not consider that the average RLEC is not publicly-traded and is consequently relatively small and illiquid, which indicates the need for additional risk premiums to be reflected in capital costs.

The *Staff Report* would have us be comfortable investing in an RLEC that offered about a one percent *lower* expected return than an RHC like Verizon or AT&T. This defies financial common sense. Few investors would likely invest in RLECs in such circumstances and the Commission's acceptance of the *Staff Report's* cost of capital recommendations

will likely deprive the RLECs of the ability to attract the capital needed to stimulate continued and additional investment in broadband. It is particularly telling that the *Staff Report* arbitrarily and selectively limits chosen input values and contradicts the well-accepted risk/return trade-off principle in applying its cost of capital methods. The *Staff Report's* admittedly anomalous findings and the numerous shortcomings discussed in my comments suggest that the Commission should leave the authorized RoR at or above its current level of 11.25 percent pending development of new sampling and methodological approaches that can accurately determine the cost of capital for RLECs.

Appendix A -Attachment 1

Randall S. Billingsley Resume

RANDALL S. BILLINGSLEY

July 2013

UNIVERSITY ADDRESS

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APPOINTMENTS

- 2013 – current:** Associate Professor of Finance
Advisor, Student-Managed Endowment for Educational Development (SEED)
Virginia Polytechnic Institute & State University
- 2011 – 2013:** Visiting Professor of Finance, Schools of Business, Wake Forest University
- 2010 – 2011:** Assistant Department Head, Department of Finance, Virginia Polytechnic Institute & State University
- 2002 – 2011:** Advisor, Student-Managed Endowment for Educational Development (SEED)
Virginia Polytechnic Institute & State University
- Duties: Organize, advise, and instruct finance undergraduates and MBAs managing approximately \$5.0 million equity fund on behalf of the Virginia Tech Foundation.
- 1994 - Current:** Associate Professor of Finance
Virginia Polytechnic Institute & State University
- 1993:** Vice President
Association for Investment Management and Research
(Subsequently renamed the CFA Institute)
Education and Programs Department

Duties: Project director, responsible for the development and design of education technology products. Projects included videos on options and futures analysis, ethical issues in the investment profession, and financial statement analysis for investment valuation and management.

Responsible for the design and offering of continuing education programs to meet the needs of AIMR's members in particular and the investment industry in general.

Associate Professor, On Leave of Absence
Virginia Polytechnic Institute & State University

1987-1992: Associate Professor of Finance
Virginia Polytechnic Institute & State University

1981-1987: Assistant Professor of Finance
Virginia Polytechnic Institute & State University

1978-1981: Lecturer of Finance
Texas A&M University

1977-1978: Lecturer of Economics
Research Assistant in Economics
Texas A&M University

Summers 1978, 1980: Research Associate
Texas Transportation Institute
Texas A&M University

Duties: (1978) Principal researcher and author of a study concerning design of optimal subsidy techniques for public transit projects. (1980) Co-author of research proposal for study of the projected economic impact of user charges on the Texas Gulf Intra-Coastal Waterway (proposal accepted and fully funded). Performed research concerning various policy issues in transportation economics.

PROFESSIONAL DESIGNATIONS

1986: Chartered Financial Analyst (CFA)
The Institute of Chartered Financial Analysts

1992: Certified Rate of Return Analyst (CRRRA)
National Society of Rate of Return Analysts

2007: Financial Risk Manager (FRM)
Global Association of Risk Managers

EDUCATION

1982: Doctor of Philosophy in Finance, supporting field in Economics
Dissertation Title: "A Multivariate Analysis of Bank Holding Company
Capital Note and Debenture Ratings"
Chairman: Dr. Donald R. Fraser
Texas A&M University

1978: Master of Science in Economics, supporting field in Statistics
Texas A&M University

1976: Bachelor of Arts in Economics
Texas Tech University

PRIMARY TEACHING AND RESEARCH INTERESTS

Teaching: Equity valuation and portfolio management; risk management/financial derivatives.

Research: Equity valuation methods, information uncertainty, and regulatory financial issues.

TEACHING HONORS

William E. Wine Award Teaching Achievement Award, Virginia Polytechnic Institute & State University, 2011.

Teaching Excellence Award, Pamplin College of Business, Virginia Polytechnic Institute & State University, 2008-2009.

Holtzman Outstanding Educator Award, Pamplin College of Business, Virginia Polytechnic Institute & State University, 2008-2009.

Teaching Excellence Award, Pamplin College of Business, Virginia Polytechnic Institute & State University, 2002-2003.

Holtzman Outstanding Educator Award, Pamplin College of Business, Virginia Polytechnic Institute & State University, 2002-2003.

Teaching Excellence Award, Pamplin College of Business, Virginia Polytechnic Institute & State University, 1986-1987.

Excellence in Teaching Award, MBA Association, Virginia Polytechnic Institute and State University, 1985-1986.

PUBLICATIONS

Books

Understanding Arbitrage: An Intuitive Approach to Financial Analysis, (Upper Saddle River, New Jersey: Wharton School Publishing, 2006), (Author listing: Randall S. Billingsley).

Candidate Study Notes: CFA Exam Review, Authored material on equity valuation, portfolio analysis, and derivatives and alternative investments, which are in Volumes 1 and 3. (Cengage Learning: Mason, OH, 2008), (Author listing: Randall S. Billingsley, John Paul Broussard, John S. Howe, Edward Nelling, J. Clay Singleton, and E. Theodore Veit. Series Editor: Michael D. Joehnk).

Candidate Study Notes: CFA Exam Review, Authored material on equity valuation, portfolio analysis, and derivatives and alternative investments, which are in Volumes 1 and 3. (Cengage Learning: Mason, OH, 2009), (Author listing: Randall S. Billingsley, John Paul Broussard, Johan S. Howe, Edward Nelling, J. Clay Singleton, and E. Theodore Veit. Series Editor: Michael D. Joehnk).

Personal Financial Planning, (Cengage Learning: Mason, OH, 13th edition, 2013), (Author listing: Lawrence J. Gitman, Michael D. Joehnk, and Randall S. Billingsley).

PFIN, (South-Western College Publishing: Mason, OH, 2013, 3rd edition), (Author listing: Lawrence J. Gitman, Michael D. Joehnk, and Randall S. Billingsley). (Personal finance textbook related to above *Personal Financial Planning* book.)

Journal Articles - Refereed

"The 2008 Short Sale Ban: Liquidity, Dispersion of Opinion, and The Cross-Section of Returns of U.S. Financial Stocks," *Journal of Banking and Finance*, Vol. 35, No. 9, September 2011, pp. 2252-2266 (Author listing: Don M. Autore, Randall S. Billingsley, and Tunde Kovacs).

"Information Uncertainty and Auditor Reputation," *Journal of Banking and Finance*, Vol. 33, No. 2, February 2009, pp. 183-192 (Author listing: Don M. Autore, Randall S. Billingsley, and Meir Schneller).

"The Benefits and Limits of Diversification Among Commodity Trading Advisors," *Journal of Portfolio Management*, Vol. 23, No. 1, Fall 1996, pp. 65-80 (Author listing: R. S. Billingsley and D. M. Chance).

"Why Do Firms Issue Convertible Debt?" *Financial Management*, Vol. 25, No. 2, Summer 1996, pp. 93-99, (Author listing: R. S. Billingsley and D. M. Smith).

"Simultaneous Debt and Equity Offerings and Capital Structure Targets," *Journal of Financial Research*, Vol. 17, No. 4, Winter 1994, (Author listing: R. S. Billingsley, D. M. Smith, and R. E. Lamy).

"Regional Reciprocal Interstate Banking: The Supreme Court and the Resolution of Uncertainty," *Journal of Banking and Finance*, Vol. 16, No. 1, 1992, pp. 665-686, (Author listing: R. S. Billingsley and R. E. Lamy).

"Integration of the Mortgage Market," *Journal of Financial Services Research*, Vol. 6, 1992, 137-155, (Author listing: R. S. Billingsley, V. A. Bonomo, and S. P. Ferris).

"Units of Debt with Warrants: Evidence of the 'Penalty-Free' Issuance of an Equity-Like Security," *The Journal of Financial Research*, Vol. 13, No. 3, Fall 1990, pp. 187-199, (Author listing: R. S. Billingsley, R. E. Lamy, and D. M. Smith).

"Shareholder Wealth and Stock Repurchases by Bank Holding Companies," *Quarterly Journal of Business and Economics*, Vol. 28, No. 1, Winter 1989, pp. 3-25, (Author listing: R. S. Billingsley, D. R. Fraser and G. R. Thompson).

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"Industry Analysis: The Telecommunications Industry," Seminar Proceedings, Charlottesville, VA: The Association for Investment Management and Research, (Author listing: R. S. Billingsley, Editor), 1994.

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Colorado, October 1985. (Subsequently published in *The Journal of Financial Research*, see article citation.)

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**PROFESSIONAL EDUCATIONAL SEMINARS PLANNED AND ORGANIZED FOR THE
ASSOCIATION FOR INVESTMENT MANAGEMENT AND RESEARCH
(Subsequently renamed the CFA Institute)**

"Corporate Financial Decision Making and Equity Analysis," New York, NY, February 2000. Conference Moderator: M. Kritzman.

"Risk Management," Boston, MA, March 1999. Conference Moderator: B. Putnam.

"Investing in the "New" Telecommunications Industry," New York, NY, September 1997. Conference Moderator: L. J. Haverty, Jr.

"Managing the Investment Professional," Chicago, IL, April 1996. Conference Moderator: R. S. Lannamann.

"Effective Risk Management in the Investment Firm," Boston MA, October 1995. Conference Moderator: G. L. Gastineau.

"Equity Analysis: The Role of Corporate Financial Decision Making," Washington, D.C., January 1995. Conference Moderator: R. S. Billingsley.

"Blending Quantitative and Traditional Equity Analysis," Boston, MA, March 1994. Conference Moderator: H. R. Fogler.

"Industry Analysis: The Telecommunications Industries," New York, NY, November 1993. Conference Moderator: R. S. Billingsley.

PROFESSIONAL SERVICE

Board of Directors

Virginia Tech Services, chair of audit committee, 2005 – 2010.

Society of Utility and Regulatory Financial Analysts, 1993 – 2002.

Virginia Tech Faculty Senate

Senator, 2006 - 2009.

CFA Institute Activities

(Formally the Association for Investment Management and Research)
Professional service beyond duties performed as Vice President.

Grading Staff, Institute of Chartered Financial Analysts, June 1987.

Candidate Curriculum Committee, Institute of Chartered Financial Analysts, Quantitative Analysis Subcommittee, 1987-1989.

CFA Examination Analysis Team, Levels I-III, March 1988.

CFA Examination Grading Review Team, July 1988.

Faculty, CFA Refresher Course, Valuation: Equity, Charlottesville, VA, June 1992, June 1993, June 1994, UCLA, November 1994.

Faculty, Basics of Equity Analysis, Montreal, Quebec, Canada, November 1994.

Manuscript Referee for Selected Journals

Journal of Banking and Finance

Journal of Business Research

Journal of Financial Research

Journal of Futures Markets

Financial Review

Quarterly Review of Business and Economics

International Review of Economics and Finance

Journal of Business Research

SELECTED INVITED SPEECHES/WORKSHOPS

Paper presented at Wake Forest University and Rollins College, Spring 2011, "Short Sale Constraints and Dispersion of Opinion: Evidence from the Short Sale Ban on U.S. Financial Stocks," Author listing: Don M. Autore, Randall S. Billingsley, and Tunde Kovacs.

Mubadala Development, "Company Analysis: Valuation, Forecasting, and Financial Modeling," Abu Dhabi, UAE, April 2009.

The Richmond Society of Financial Analysts, "Reverse Financial Engineering and the Consensus Equity Valuation," Richmond, VA, January 2004.

LDC / Virginia State Corporation Commission Conference, "LDC Return On Equity: Has The World Changed? Common Myths in Cost of Capital Analysis," Roanoke, VA, October 2003.

Securities Analysts' Association, "Equity Valuation and Analysis Workshop," Bangkok, Thailand, March 1997 and March 1998.

Maryland - District of Columbia Utilities Association, "Telecommunications: Increasing Risk on the Horizon? An Investment Community Perspective," 71st Annual Fall Conference, Ocean City, MD, September 1995.

Bell Atlantic, "Do the 'Traditional' Cost of Equity Estimation Methods Work in the Current Environment?" National Accounting Witness Conference, Landsdowne Conference Resort, VA, April 1994.

Southeastern Electric Exchange, "Trends in Estimating the Cost of Equity for Public Utilities," St. Petersburg, FL, October 1993.

Securities Analysts' Association, "Common Problems in Valuing Equity Securities," Bangkok, Thailand, April 1992.

Virginia Bankers Association, Group Five (Credit Policy Committee), "Want to Sell Your Bank?" Interstate Banking in 1987 and Beyond," Credit Policy Conference, Radford, VA, April 1987.

CONSULTING ACTIVITIES

Equity Valuation and Portfolio Management Consulting

Equity valuation modeling and portfolio optimization.

Cost of Capital Analysis and Financial Damages Estimation Consulting

Expert witness consulting and testifying (especially for U.S. telecommunications firms), economic damages analysis, and valuation of private firms. See testimony filings below.

Investment Education Consulting

Train investment professionals preparing for CFA examinations in the U.S., Europe, and Asia.

Selected Consulting Clients

Bell Atlantic

BellSouth Telecommunications

CFA Institute (formerly the Association for Investment Management and Research)

The Financial Analysts' Review of the United States

Howrey Simon Arnold & White, LLP

Institut Penembangan Analisis Finansial, Jakarta, Indonesia

LECG

Mubadala Development, Abu Dhabi, UAE

National Exchange Carrier Association

Schweser Study Program (a Kaplan Professional Company)

Securities Analysts' Association, Bangkok, Thailand

Sprint

Union Bank of Switzerland and UBS AG, Zürich and Basel

United States Telecommunications Association

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(Note: only original docket indicated; direct and rebuttal not distinguished in same docket spanning over one year.)

<u>Company</u>	<u>Docket No. and Year</u>	
National Exchange Carrier Association	FCC WT 10-208	2102
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<u>Company</u>	<u>Docket No. and Year</u>	
BellSouth Telecommunications (Mississippi)	MPSC 98-AD-035	1998
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Appendix B:

**Free Cash Flow Methodology to Calculate RLEC Cost of Capital –
Detailed Explanation**

APPENDIX B: DCF Using the Free Cash Flow Method

Estimating the cost of capital is a very difficult issue, especially for companies whose ownership and debt are not traded on open markets. Economists have developed techniques to capture basic elements of the cost of equity and debt. The cost of debt is primarily associated with market interest rates. The Discounted Cash Flow (DCF) approach focuses on discounting future cash flows a company is expected to yield to an equity holder. The Capital Asset Pricing Model (CAPM) model predicts a relationship between the expected return on an asset and its risk. Economic theory underlying Weighted Average Cost of Capital (WACC) shows that business risk is the key element of the cost of capital.¹

These techniques are based on simplifying assumptions of rational investors, highly efficient markets, and market expectations that are closely in line with market performance. The Staff Report recognizes that these assumptions have been called into question by economists including Fama and French, and Shiller.² According to another scholar, Joseph Stiglitz, a Nobel Prize winner in economics, neoclassical approaches to determining cost of capital are suspect because they assume no credit rationing, despite the widespread use of such techniques to limit loans to less risky customers instead of charging higher interest rates.³

As to the cost of capital techniques developed by Modigliani and Miller and used by the Bureau, Stiglitz said, "Modigliani and Miller ignored the possibility of bankruptcy and the costs associated with it – and the fact that the more a firm borrows, the higher the probability of bankruptcy. They also ignored the information that might be conveyed by an owner's decision to sell shares; an owner's eagerness to sell shares at a very low price almost surely says

¹ Modigliani, F.; Miller, M., "The Cost of Capital, Corporation Finance and the Theory of Investment", AM. ECO. REV. 48 (3): 261–297 (1958). The theorem assumes away default risk and tax shields.

² Staff Report ¶¶ 58 n.99, 62 n.108.

³ See JOSEPH E. STIGLITZ, FREEFALL: AMERICA, FREE MARKETS, AND THE SINKING OF THE WORLD ECONOMY 246 (W.W.Norton & Company, Inc. 2010) In regard to credit rationing, in recently filed comments in this proceeding, CoBank asked that the Staff Report

"include a paragraph discussing the lack of funding availability for RLECs given that unpredictability in the cost recovery mechanism because of limits and caps on universal service funding and inter-carrier compensation adversely impact RLEC creditworthiness. Essentially, lenders are constrained with respect to prudent and appropriate RLEC lending, consistent with regulatory underwriting and credit administration requirements, when the income capacity of a RLEC borrower is not reasonably predictable and well established over time."

Comments of CoBank, WC Docket No. 10-90, 5 (filed Apr. 18, 2011).

something about his views of the firm's future prospects."⁴ Recent sales of assets, therefore, could have a strong bearing on an investor's required rate of return. This information is a key benefit of using the Free Cash Flow (FCF) approach described below.

The FCF method estimates the cost of capital based on actual information conveyed by buyers and sellers of rural access lines, rather than generalized market data and "proxy" companies. The FCF method is another form of the DCF technique. However, the standard textbook illustration of DCF assumes a passive investor valuing a traded share of equity, deriving a bid price based on the stock's future cash inflows (i.e., the dividends the investor expects to receive). The required return of this type of investor is limited to a return on equity, that is, the return on the stock purchase. To derive a WACC, an analyst would then have to estimate the cost of debt and weight the debt and equity funding sources, which adds complexity and is likely to introduce errors, especially for estimating the WACC for companies not traded on organized exchanges.

The FCF method relies on actual operating data for the current cash flow, growth in operations, and actual asset sales to estimate the value of a firm. In effect, it relies on a DCF calculation made by an investor who is acquiring assets and is likely to manage them. The investor values the company by estimating the future free cash flow the company will generate and discount back to the present. The strike (sales) price is in effect the value of the firm measured as either the market value of its assets or the market value of its debt and equity. As a result, the required rate of return of an active investor already embeds the cost of equity and debt. The FCF approach, therefore, avoids having to deal with separate errors of estimating the cost of debt and equity as well as the target capital structure weights.

The FCF method is closely akin to a standard payback technique that produces a return on investment estimate. People buying and selling properties typically want to know how long it will take to recover their original investment and what level of return the investor can expect. For example, if the FCF multiple is 5, it means that investors want their money back in five years and effectively want a return on investment of 20%. In sales of rural access lines, the transaction is defined by the sale price, the number of lines, and XEBITDA.⁵

⁴ See Stiglitz at 246.

⁵ Times EBITDA is similar to estimating the sales price as a multiple of cash flow. See Attachment 1, provided by JSI Capital, Inc., which includes one such multiple analysis based on OIBDA (Operating Income Before Depreciation and Amortization).

The FCF approach is well accepted by financial analysts and is described in standard textbooks, including McKinsey & Company's book on Valuation,⁶ cited as authoritative in the *Staff Report*.⁷ The 2005 edition of this text describes the "well-known cash flow perpetuity formula:"⁸

$$\text{Value} = \text{FCF}_{t=1} / (\text{WACC} - g)$$

According to *Koller et al.*, "this formula is well established in the finance and mathematics literature."⁹

The Rural Associations used this formula to derive the following relationship:¹⁰

$$\text{WACC} = \text{FCF} / \text{Value}$$

This formula does not include growth or g , because an analysis of yearly revenue requirement growth showed that the three-year average of g is .01 percent. Given the uncertainty in the environment, this is our best guess of the future level of g . Since the predicted g has a negligible impact on the calculations, it can be ignored when using the formula to derive WACC.

There are other practical advantages of using the FCF method besides its simplicity. For example, FCF data are limited to RLEC regulated activities, for which cost of capital determinations are relevant for purposes of prescribing an authorized RoR. By contrast, the Staff Proposed Proxy includes companies for which as little as 10 percent of overall operations could be classified as incumbent LEC price-regulated interstate telecommunications.¹¹

⁶ Tom Copeland, Tim Koller, and Jack Murrin, VALUATION: MEASURING AND MANAGING THE VALUE OF COMPANIES (McKinsey & Company 2000).

⁷ *Staff Report* ¶¶ 12, 64.

⁸ McKinsey & Company: Tim Koller, Marc Goedhart, and David Wessels, VALUATION: MEASURING AND MANAGING THE VALUE OF COMPANIES 62 (John Wiley & Sons, Inc. 2005).

⁹ *Id.* at 62.

¹⁰ *January 2012 Association Comments* at 57.

¹¹ *Staff Report* ¶ 12.

Moreover, the dataset used by the Rural Associations in this analysis consists of 633 cost and average schedule companies, as opposed to the 16 proxy companies used by the Bureau in preparing its recommendation.¹²

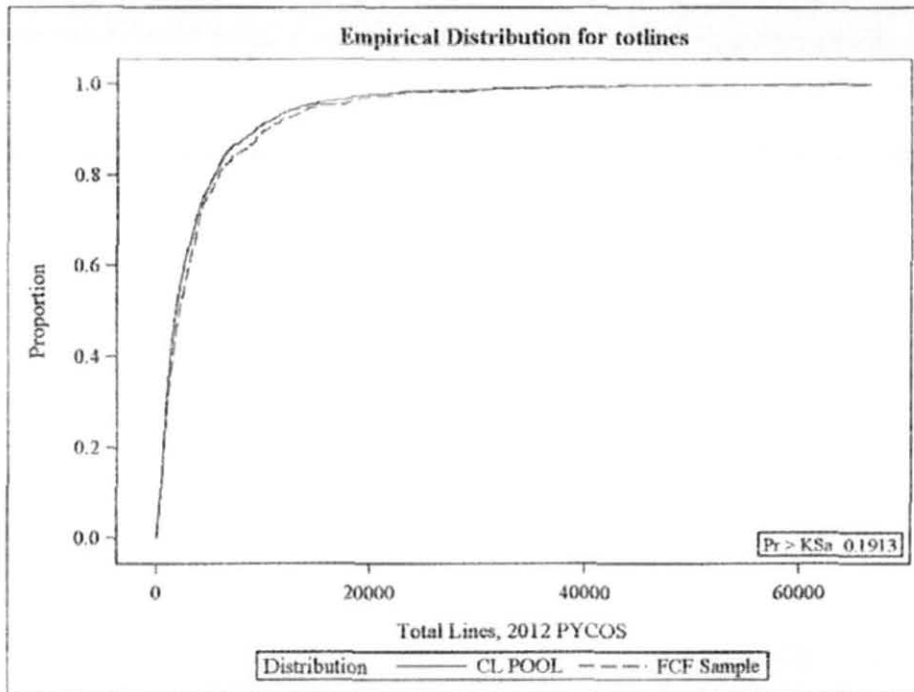
The WCB staff expressed concern that the FCF analysis “relies on a non-random sample of cost companies that chose to respond to a NECA data request.”¹³ In fact, as noted above, the dataset consists of both cost and average schedule companies. To test whether the FCF sample is representative of the NECA common line pool, however, it is possible to plot the line size distribution of the common line pool and overlay it with the line size distribution of the FCF sample. As one can see in Figure 1, the two distributions are very similar, which is further supported by a statistical test.¹⁴

¹² These data have previously been provided to the Commission. See Letter from Regina McNeil, Vice President of Legal, General Counsel & Corporate Secretary, National Exchange Carrier Association, Inc., to Ms. Marlene H. Dortch, Secretary, FCC, CC Docket No. 01-92 (filed Feb. 29, 2011).

¹³ *Staff Report* ¶ 56 n.94.

¹⁴ The Kolmogorov-Smirnov two-sample test had a p value of 0.19, indicating the null hypothesis of identical line size distributions in the FCF sample and the common line pool could not be rejected.

Figure 1. Cumulative line size distributions of the NECA common line pool and FCF sample.



CL Pool: NECA Common Line Pool.

FCF Sample: Sample of companies used in FCF analysis.

The WCB staff also expressed concern the Rural Associations approach “arbitrarily reduces price-per-line data.”¹⁵ Attachment 1 displays data from a number of ILEC property transactions, including ones as recent as July 2, 2012. In computing the cost of capital at different price-per-line values, the Rural Associations originally used a range of \$1,200 to \$2,400, with \$1,800 as the midpoint price-per-line.¹⁶ The only transaction reported in the accompanying JSI Capital table for the most recent years that does not include a large fraction of non-regulated services¹⁷ had a price of \$1,053 per line. This recent sale recorded by JSI Capital suggests the value of RLEC lines continues to drop.

¹⁵ Staff Report ¶ 56 n.94.

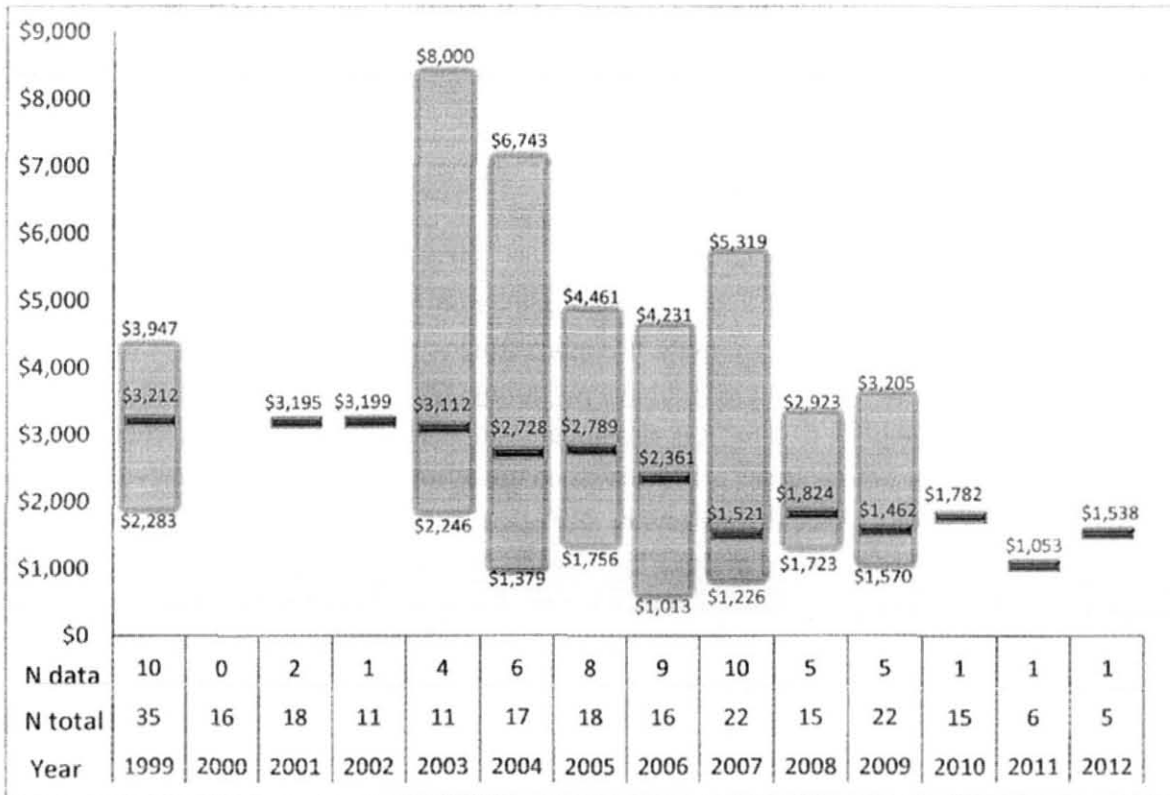
¹⁶ January 2012 Association Comments.

¹⁷ In the JSI table, Attachment 1, recent transaction prices are based on connections which include ILEC and CLEC access lines, DSL and high speed subscribers and video subscribers. In cases where the difference between access lines and connections are substantial we drop the observation because we cannot determine what proportion of the observation is related to the regulated service.

This recent transaction price is well below the midpoint value of \$1,800 shown in the Rural Associations' *January 2012 Comments*. In fact, \$1,053 is less than the \$1,200 at the low end of the Rural Associations' range. Since cost of capital estimates using the FCF method increase as per-line prices decrease, it is clear that the line sales price range used in the Rural Associations' *January 2012 Comments* provides a conservative view of recent market valuations and WACC for RLECs.

Figure 2 displays the data supplied by JSI Capital for all rural service area transactions, whether related to regulated services or a broader class including non-regulated services. It is apparent that prices are clearly trending downwards. It is interesting to note that recent sales whether they include non-regulated services or not have per connection prices that are below \$1800 per connection. Besides the price decline, it is also apparent that the number of transactions has drifted downward over time and has practically dried up in the last two years reported, 2011 and 2012. The lack of more recent transactions strongly suggests that the market is in paralysis: buyers and sellers cannot agree on prices. This suggests rural properties are becoming increasingly illiquid, which should also drive up the required return by an investor.

Figure 2. High, low and weighted average price per connection paid for observed ILEC property transactions.



Notes:

1. Data extracted from JSI Capital table of observed deals.
2. Chart shows observed deals with available price per connection. Number of deals used is indicated by *N data*. *N total* counts the number of total deals reported in the JSI Capital table for each year. Transactions are counted within a year depending on the transactions' "announce date".
3. Connections include ILEC and CLEC access lines, DSL and high speed data subscribers and video subscribers.

The *Staff Report* also criticized the Rural Associations' analysis based on its use of unweighted median data, without providing mean data. We continue to recommend use of median calculations to prevent outliers from dominating the WACC calculation. This is consistent with the Commission's approach to developing capital and operating expense benchmarks in its USF/ICC Order, which adopted quantile regression techniques partly as a means of limiting the effects of outliers in analyzing data. Koller *et al.* also generally use medians to reduce the weight given to extreme returns when evaluating an investment opportunity. The median is also a practical way to summarize cost of capital estimates for the sample as 159 companies

reported a negative free cash flow in 2010. As in the case of developing price/earnings ratios, the FCF ratio makes little sense as valuation tool when a company is operating at a loss.¹⁸

Nonetheless, to address the Bureau's concern the following chart displays the weighted mean, which among other problems reflects negative estimates. Using this approach the resulting range for WACC is between 8.69% and 17.38%, still well above the Bureau's estimated range.

Cost of Capital for Different per Line Purchase Prices

	Price = \$2400	Price = \$2100	Price = \$1800	Price = \$1500	Price = \$1200
Weighted* Median	11.75%	13.42%	15.66%	18.79%	23.49%
Weighted* Mean	8.69%	9.93%	11.59%	13.91%	17.38%

* Weighted by total access lines.

Finally, it bears noting that WACC estimates obtained by the proposed FCF method range 2-6% above estimates produced by the Bureau for larger companies such as the RHCs and mid-size price cap companies. This result appears reasonable considering that larger companies, particularly the RHCs, are more diversified than RLECs and have significantly less exposure to regulatory risk based on changes to USF and ICC mechanisms. Several of the small and mid-sized companies in the Bureau's sample recently were either under financial stress or in bankruptcy. This likewise suggests that an investor would want a default premium to invest in small companies such as RLECs. The lack of rural line transactions is an indicator that the market is frozen. This is a strong indicator that a liquidity premium is necessary as well.

Conclusion

The FCF DCF is an accepted approach to estimating WACC. For purposes of this proceeding, it has distinct advantages over other approaches. FCF uses a large sample of rate of return companies for its calculations, not proxy companies. It focuses on the required return for regulated services. The FCF method calculates WACC directly, without the use of proxy estimates for the cost of debt, the cost of equity, and the calculation of debt and equity shares. Most importantly, it passes a reasonability test. The required return on a rate of return property is several percentage points higher than that for AT&T and Verizon. This premium is consistent with the riskiness documented by, among other things, steep recent declines in sales prices for rural lines.

¹⁸ At best, one could think of the weighted mean as an expectation of both positive and negative reported FCF levels in a particular period. However, in a period of extended recession, the weighted mean is likely to be sensitive to short term depressed conditions.

Appendix B -Attachment 1

Observed Deals: Incumbent Local Exchange Carriers

Attachment 1 - Observed Deals: Incumbent Local Exchange Carriers

OBSERVED DEALS: Incumbent Local Exchange Carriers

Announce Date	Close Date	Property	Buyer	EV (\$m)	Access Lines (k)	Cash (\$)	Estimated/Implied Private Market Multiples			
							S/room	REV	T_OISDA	P_OISDA
1/3/12	Pending	Wedge Point Home Telephone Company	Telephone Service Company	n.a.	8.5	n.a.	n.a.	n.a.	n.a.	n.a.
11/26/12	1/21/2013	FairPoint Mobile Operations	Midwest Telecommunications	20.0	42	n.a.	n.a.	3.7x	6.5x	n.a.
11/21/12	12/20/2012	ICIC Group, Inc.	CBL, Inc.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
9/25/12	12/11/2012	Millington Telephone Company	Etter Communications	n.a.	19.8	n.a.	n.a.	n.a.	n.a.	n.a.
8/24/12	Pending	Bar/Bo Telephone Company	Balsam View, LLC	n.a.	0.4	n.a.	n.a.	n.a.	n.a.	n.a.
5/4/12	7/2/2012	SaraWest	Consolidated Communications	547.2	176.4	346.2	1,530	2.1x	6.3x	4.8x
9/20/11	1/6/2012	Visite Communications	EAHL	n.a.	10.7	n.a.	n.a.	n.a.	n.a.	n.a.
8/9/11	1/1/2012	Andrew Telephone	Lo North Telephone	n.a.	0.7	n.a.	n.a.	n.a.	n.a.	n.a.
6/20/11	8/23/2011	United Telephone Company	Woods Equity Partners	n.a.	12.5	n.a.	n.a.	n.a.	n.a.	n.a.
4/10/11	11/10/2011	Westhatch Telephone	Great Lakes Connect	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4/4/11	10/14/2011	Shelburne Telephone	Onco	5.3	5.8	5.8	1,853	2.7x	6.1x	n.a.
1/9/11	10/21/2011	ATN Telecom	Metropolitan Telephone	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
12/8/10	11/1/2011	BTLOS Wireless Business	Spin-off	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
11/15/10	6/12/2011	ATA TeleCom	Advantage Partners	n.a.	35.0	n.a.	n.a.	n.a.	n.a.	n.a.
11/9/10	12/31/2010	Excelsior Telephone	Smithville Telephone	n.a.	0.9	n.a.	n.a.	n.a.	n.a.	n.a.
10/26/10	12/31/2010	Timberline Telecom	North State Telephone	n.a.	0.2	n.a.	n.a.	n.a.	n.a.	n.a.
10/7/10	12/20/2010	Yuba Farmers Telephone	Farmers Mutual Telephone	n.a.	0.3	n.a.	n.a.	n.a.	n.a.	n.a.
9/27/10	12/31/2010	Panola Telephone	Act Communications	n.a.	0.9	n.a.	n.a.	n.a.	n.a.	n.a.
9/10/10	12/29/2010	Owenscom	Arvig Enterprises	n.a.	9.3	n.a.	n.a.	n.a.	n.a.	n.a.
9/9/10	12/17/2010	Redwood County Telephone	Arvig Enterprises	n.a.	3.2	n.a.	n.a.	n.a.	n.a.	n.a.
8/14/10	6/12/2010	ITS Telecom	Jeff Leslie	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
7/23/10	9/6/2010	Community Telephone Company	Edinary Communications	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4/24/10	11/4/2010	Bova Telephone Company	VNC Enterprises	n.a.	1.8	n.a.	n.a.	n.a.	n.a.	n.a.
5/21/10	9/15/2010	Centron Communications	American Broadband	n.a.	11.8	25.4	n.a.	n.a.	n.a.	n.a.
5/21/10	1/1/2010	Tri-County Telecom	McCook Cooperative Telephone	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5/20/10	4/29/2010	Southern Kansas Telephone	AlbionTel	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4/22/10	4/1/2011	Quest	CenturyLink	22,200.0	n.a.	12,515.0	1,702	1.9x	5.0x	4.4x
3/16/10	4/7/2010	Inter-Community Telephone	Smithville PCS	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
12/14/09	9/2/2010	Tetelcom Communications	TOIE Holdings	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
11/24/09	6/1/2010	Irwin Telecom	Windstream	754.0	255.6	209.6	2,434	2.5x	7.0x	5.0x
11/17/09	4/30/2010	Prarie Telephone (35 Access Lines)	Panora Communications	n.a.	0.0	n.a.	n.a.	n.a.	n.a.	n.a.
10/20/09	1/31/2010	Whelan Telephone Company	Boomer Creek Telephone Company	n.a.	1.1	n.a.	n.a.	n.a.	n.a.	n.a.
10/24/09	12/31/2009	Midvale's Astoria & Harper Exchanges	Oregon Telephone	n.a.	0.2	n.a.	n.a.	n.a.	n.a.	n.a.
10/16/09	12/10/2009	Irwin Telecom Access Line	Williston Cooperative Telephone	n.a.	0.0	n.a.	n.a.	n.a.	n.a.	n.a.
10/9/09	1/31/2010	Lamy Telephone Company	Barnstone Telephone Association	n.a.	0.8	n.a.	n.a.	n.a.	n.a.	n.a.
9/23/09	10/20/2009	Wilbur Telephone Company	Windnago Cooperative	n.a.	0.1	n.a.	n.a.	n.a.	n.a.	n.a.
9/14/09	10/24/2009	Midvale Telephone Exchange	Midvale ISDP	n.a.	3.0	n.a.	n.a.	n.a.	n.a.	n.a.
9/8/09	11/1/2009	Leavenworth	Windstream	141.0	22.0	64.0	2,305	3.2x	5.8x	4.9x
4/12/09	12/21/2009	Academe Telephone Company	Sparig Technology Partners	n.a.	0.4	n.a.	n.a.	n.a.	n.a.	n.a.
8/4/09	12/1/2009	Union Telephone	Telephone & Data Systems	12.2	6.5	1.5	1,533	2.2x	3.6x	4.5x
7/14/09	7/1/2009	Albion Communications	Act Communications	n.a.	6.5	n.a.	n.a.	n.a.	n.a.	n.a.
7/15/09	9/15/2009	Home Telephone	Arvig Enterprises	n.a.	0.6	7.7	n.a.	n.a.	n.a.	n.a.
6/25/09	9/1/2009	Pyramount Independent Telephone	Townes Telecommunications	n.a.	2.1	n.a.	n.a.	n.a.	n.a.	n.a.
5/20/09	10/30/2009	Draco Telephone Company	Fed Communications	n.a.	2.6	n.a.	n.a.	n.a.	n.a.	n.a.
5/14/09	4/21/2009	Dalvorn Telephone Company	Blue Earth Valley Communications	n.a.	0.3	n.a.	n.a.	n.a.	n.a.	n.a.
5/13/09	7/1/2010	Yorison (yard lines in 14 states)	Frontier Communications	8,579.8	4,010.0	5,049.0	1,462	2.0x	6.5x	5.5x
5/11/09	11/16/2009	ORE Communications	Windstream	330.0	104.6	217.4	1,518	2.2x	5.1x	3.7x
3/20/09	11/1/2009	North River Telephone Cooperative	Shanabrook Telecommunications	0.6	1.8	n.a.	600	n.a.	n.a.	n.a.
1/12/09	5/1/2009	Midvale's Conner Creek Exchange	Legle Telephone System	n.a.	0.0	n.a.	n.a.	n.a.	n.a.	n.a.
1/12/09	3/21/2009	Richmond Telephone Company	ConnerStone Telephone Company	n.a.	1.1	n.a.	n.a.	n.a.	n.a.	n.a.
11/21/08	7/1/2009	Shelburne Tele Systems	Irwin Telecommunications	73.3	25.7	42.9	1,723	2.5x	6.3x	n.a.
10/20/08	10/20/2008	Piedmont Telephone Membership Corp.	Sary Telephone Membership Corp.	n.a.	3.0	n.a.	n.a.	n.a.	n.a.	n.a.
10/27/08	7/1/2009	ENHARQ	CenturyTel	13,200.0	5,832.0	7,241.0	1,823	2.1x	5.1x	4.8x
10/24/08	12/31/2008	State Long Distance	Telephone & Data Systems	87.0	9.0	11.5	2,340	2.9x	6.5x	6.4x
8/7/08	11/4/2008	Country Road Communications	Onco	101.3	10.7	111.5	n.a.	2.2x	8.1x	7.0x
7/14/08	Terminated	Margaretville Telephone Company	American Broadband	n.a.	4.2	5.0	n.a.	n.a.	n.a.	n.a.
5/22/08	8/1/2008	Western Telephone Company	Western Communications Cooperative	n.a.	1.1	n.a.	n.a.	n.a.	n.a.	n.a.
5/21/08	8/15/2008	Linschville Telephone Company	Shepard Hill	n.a.	12.5	n.a.	n.a.	n.a.	n.a.	n.a.
3/13/08	12/31/2008	Felix Waiz Telephone Company	Lowell Highland Total Communications	n.a.	0.3	n.a.	n.a.	n.a.	n.a.	n.a.

Attachment 1 - Observed Deals: Incumbent Local Exchange Carriers

3/16/08	5/31/2008	Mexican Telephone Company	Telephone & Data Systems	17.3	4.9	5.9	2,923	2.9%	9.7%	6.8%
3/4/08	10/31/2008	Swisher Telephone Company (TAC)	South Slope Communications	n.a.	0.9	n.a.	n.a.	n.a.	n.a.	n.a.
3/16/08	5/15/2008	Swisher Telephone Company	Telephone Acquisition Company	n.a.	0.9	n.a.	n.a.	n.a.	n.a.	n.a.
2/24/08	8/4/2008	Blackhawk Telephone	Paul Bunyan Rural Telephone Coop.	7.0	1.5	n.a.	n.a.	n.a.	n.a.	n.a.
3/7/08	7/16/2008	Ensign Communications	Iowa Telecommunications	43.9	12.0	25.0	1,254	2.2%	7.6%	n.a.
1/2/08	12/3/2006	Citizens Telephone of Broward N.C.	Comparium	n.a.	20.8	27.3	n.a.	n.a.	n.a.	n.a.
12/21/07	2/12/2008	West Point Telephone	Telephone & Data Systems	6.8	0.8	n.a.	3,207	n.a.	n.a.	n.a.
11/9/07	1/4/2008	Gracibo Total Communications	Knology	75.0	4.5	25.7	2,917	3.8%	9.9%	7.5%
10/17/07	7/31/2008	Mount Angel Telephone	Comby Telcom	n.a.	1.9	n.a.	n.a.	n.a.	n.a.	n.a.
10/17/07	12/31/2007	Shell Rock Telephone	Duffer-Bremer Mutual Telephone	n.a.	1.0	n.a.	n.a.	n.a.	n.a.	n.a.
10/15/07	6/3/2008	United Companies	GCI	77.0	6.0	n.a.	n.a.	3.0%	10.1%	6.8%
10/8/07	11/28/2007	Wayland Telephone	Hight	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
9/19/07	11/20/2007	Lalorche Telephone	Boston Ventures	60.0	12.3	16.4	3,663	3.2%	7.5%	6.6%
9/12/07	10/15/2007	Reserve Telephone	Sean and Kevin Kelly	n.a.	5.8	n.a.	n.a.	n.a.	n.a.	n.a.
8/17/07	11/20/2007	Common Valley Communications	Blue Earth Valley Communications	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
8/8/07	1/4/2008	Whitman Telephone	New Era Telecom	57.0	14.8	18.5	3,082	3.4%	11.8%	7.7%
7/19/07	7/4/2004	Teliaske	American Broadband	n.a.	12.5	n.a.	n.a.	n.a.	n.a.	n.a.
7/5/07	11/1/2007	Global Valley Networks	Citizens Communications	62.0	15.8	18.8	3,207	2.9%	7.3%	6.4%
7/1/07	12/31/2007	North Pittsburgh Systems	Consolidated Communications	209.0	101.6	118.5	2,416	3.2%	8.8%	6.7%
5/29/07	8/31/2007	CI Communications	Windstream	470.0	157.0	181.0	2,527	3.3%	9.1%	6.6%
5/29/07	8/9/2007	Clark's Telecom	Northwest Nebraska Telephone	n.a.	0.9	n.a.	n.a.	n.a.	n.a.	n.a.
4/12/07	8/1/2007	Yates City Telephone Exchange	Mid-Century Telephon	2.3	0.5	n.a.	5,319	n.a.	n.a.	n.a.
3/12/07	8/29/2007	Telephone Service Company	Hanson Communications	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
3/2/07	4/1/2007	New Florence Telephone	Direct Communications - Beckland	n.a.	0.5	n.a.	n.a.	n.a.	n.a.	n.a.
1/24/07	3/1/2007	Mountain View Telephone	Yelco	n.a.	7.2	n.a.	n.a.	n.a.	n.a.	n.a.
1/14/07	3/31/2008	Perizon Northern New England	FairPoint Communications	1,962.4	1,278.1	1,681.8	1,226	1.6%	5.6%	3.6%
1/9/07	4/2/2007	ProvilleWay Communications	Knology	215.0	69.8	156.2	1,431	2.9%	7.5%	6.7%
1/5/07	8/29/2007	Harvey Communications	Quadrangle Capital Partners	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
10/16/06	4/23/2007	Madison River Communications	CenturyTel	820.0	115.6	229.2	3,156	4.0%	7.7%	6.6%
12/2/06	3/28/2007	Carthage Telephone	Consolidated Companies (NY)	n.a.	0.8	n.a.	n.a.	n.a.	n.a.	n.a.
11/29/06	10/6/2010	Innovative Communications	CTL	n.a.	66.8	n.a.	n.a.	n.a.	n.a.	n.a.
11/10/06	5/1/2007	North Dakota Telephone Exchange	NET Communications	n.a.	0.7	n.a.	n.a.	n.a.	n.a.	n.a.
10/16/06	11/15/2006	Greenwood Independent Telephone	FairPoint Communications	9.4	4.4	n.a.	2,140	2.8%	6.9%	n.a.
9/18/06	3/8/2007	Comstockville Telephone	Citizens Communications	1,168.0	454.3	491.4	2,553	3.5%	7.1%	6.8%
6/22/06	11/2/2006	Harco Communications	Harco Acquisition Corporation	119.8	29.3	37.3	6,091	3.7%	8.1%	n.a.
5/21/06	7/27/2006	Rural Telephone Service Exchanges	Gorham Telephone	0.9	0.3	n.a.	3,147	3.5%	7.8%	n.a.
4/13/06	6/20/2004	Yorkville Telephone Cooperative	West Kentucky Telephone Cooperative	n.a.	1.8	n.a.	n.a.	n.a.	n.a.	n.a.
4/10/06	7/5/2006	Mid-Maine Communications	Otelco	18.8	16.5	n.a.	1,813	3.1%	6.9%	n.a.
4/3/06	3/21/2007	YI's 52% Interest in Puerto Rico Tel	Novel S.A. de C.V.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
3/22/06	12/19/2006	Qwest - New Mexico Territory	Sunred Wind Communications	n.a.	2.4	n.a.	n.a.	n.a.	n.a.	n.a.
3/5/06	12/20/2006	Kellam	ATAI	52,827.6	20,037.6	22,919.6	2,486	2.9%	7.0%	n.a.
3/3/06	1/27/2006	12 Kansas Exchange Exchanges	Rural Telephone Service	17.8	5.4	n.a.	3,148	3.5%	8.7%	n.a.
1/27/06	6/20/2006	Eya Telephone & South Park Telephone	American Broadband	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1/25/06	7/24/2006	Cass County Telephone	FairPoint Communications	33.6	7.8	n.a.	4,221	3.1%	6.1%	n.a.
12/12/05	7/5/2006	Manitowish Mutual Telephone	Iowa Telecommunications	9.6	2.2	3.9	4,356	3.6%	7.0%	n.a.
12/9/05	7/17/2004	Alford Wireless	Value Communications Group	9,130.0	2,919.8	3,279.8	3,127	3.1%	6.4%	n.a.
12/1/05	7/7/2006	Dalton & Elsie Communications	American Broadband	n.a.	1.4	n.a.	n.a.	n.a.	n.a.	n.a.
11/28/05	2/1/2006	Stockholm-Strandburg Telephone	Interstate Telecommunications Coop	n.a.	0.7	0.9	n.a.	n.a.	n.a.	n.a.
11/22/05	2/1/2006	Laurel Telephone	Board of Iowa Communications Coop	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
11/17/05	5/9/2006	Postal Systems	American Broadband	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
10/21/05	5/1/2006	Cemaytel Arizone Exchanges	Deja Telecommunications	4.0	2.0	n.a.	3,800	2.5%	7.1%	n.a.
10/21/05	2/1/2006	Iowa Telecom Exchange	East Nation Broadband Telephone	0.3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
8/1/05	12/1/2005	Qwest - New Mexico Exchanges	NAI	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
7/29/05	11/15/2005	Waverly Hill Telephone	American Broadband	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
7/27/05	3/1/2006	Grady Telephone	American Broadband	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
6/22/05	3/1/2006	13 Kansas Sprat Exchanges	Twiss Valley Telephone	16.0	5.2	n.a.	3,461	3.9%	8.5%	n.a.
4/22/05	9/1/2005	Bedfordville Communications	FairPoint Communications	9.3	3.2	n.a.	2,906	2.8%	7.4%	n.a.
3/28/05	6/20/2005	Mid-South Telecommunications	American Broadband	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
3/8/05	9/1/2005	Forsyth Telephone	Sebastian Enterprises	14.5	3.3	n.a.	4,463	2.6%	7.1%	n.a.
3/3/05	7/1/2005	Other Tel Corporation	Avig Enterprises	30.2	6.9	n.a.	4,359	6.0%	7.1%	n.a.
3/1/05	5/21/2006	Hiway Telephone	MSG Telephone	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1/27/05	4/30/2005	RedSouth Exchanges	Madison River Communications	4.3	3.6	n.a.	1,756	2.4%	4.8%	n.a.
12/20/04	5/5/2005	Sully Telephone Exchange	Reserve Telephone	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
12/15/04	5/26/2005	Pymatung Independent Telephone	American Broadband	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

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12/15/04	12/31/2004	Dwight Telephone & Communications	Albion Communications	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
9/29/04	1/26/2005	I-71 County Telecom	McCook Cooperative Telephone	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5/9/04	12/31/2004	Green Telephone Authority	Telecom Holdings	147.0	65.0	n.a.	n.a.	n.a.	n.a.	n.a.
4/26/04	4/14/2005	Golden West Exchange	Alliance Communications Cooperative	2.9	0.1	n.a.	5,249	3.5e	7.9e	n.a.
8/20/04	10/8/2004	United Telephone	Blue Valley Telecommunications	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4/6/04	5/6/2005	Sumner Farmers Telephone	Northwest Communications Cooperative	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4/14/04	8/12/2004	Iowa Telecom Exchanges	Partner Communications	2.1	2.0	n.a.	1,379	n.a.	n.a.	n.a.
5/21/04	5/3/2005	Verizon Exchange	Carlyle Group	1,400.0	690.0	n.a.	2,318	2.7e	6.9e	n.a.
5/10/04	12/15/2004	Mid-Missouri Telephone Company	Onix	37.5	4.1	n.a.	n.a.	n.a.	n.a.	n.a.
4/30/04	4/30/2004	PBI Telecom	Comparan	n.a.	18.3	n.a.	n.a.	n.a.	n.a.	n.a.
4/14/04	4/16/2004	Grandby Telephone	Country Road Communications	n.a.	3.0	n.a.	n.a.	n.a.	n.a.	n.a.
3/24/04	8/30/2005	Cal-Or Telecommunications	Lynch Interactive	13.1	2.5	n.a.	5,570	2.4e	7.5e	n.a.
1/19/04	5/2/2005	KTLOS	Project Holdings	350.0	51.9	n.a.	6,743	2.0e	4.0e	n.a.
1/16/04	9/5/2004	Oregon Farmers Mutual Telephone	American Broadband	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1/14/04	4/15/2004	T2U Communications	Consolidated Communications	527.0	168.0	n.a.	5,127	2.1e	9.1e	6.9e
11/24/03	4/28/2004	Iowa Telecom Exchanges	Heart of Iowa Communications Coop	4.8	0.6	n.a.	8,000	n.a.	n.a.	n.a.
9/13/03	9/13/2003	Sourthern Telephone	KBRiff Telephone	n.a.	0.1	n.a.	n.a.	n.a.	n.a.	n.a.
8/11/03	1/2/2004	Bellevue Telephone & Telegraph	Rural Telephone Company	n.a.	3.2	n.a.	n.a.	n.a.	n.a.	n.a.
7/10/03	7/10/2003	Sioux Valley Telephone	Golden West Telecommunications	n.a.	5.3	n.a.	n.a.	n.a.	n.a.	n.a.
7/10/03	7/10/2003	Wilt Telephone	Alliance Communications Cooperative	n.a.	3.3	3.3	n.a.	n.a.	n.a.	n.a.
6/20/03	5/2/2005	Barabara Telephone	FairPoint Communications	16.4	7.5	n.a.	2,246	2.7e	6.3e	n.a.
5/12/03	9/30/2003	Fair Point's 50 properties	Golden West Telecommunications	24.0	4.1	n.a.	5,470	5.4e	5.5e	n.a.
5/2/03	4/30/2003	Waverly Telephone	Sageport Capital	n.a.	3.3	n.a.	n.a.	n.a.	n.a.	n.a.
4/26/03	4/26/2003	Georgetown Telephone Company	American Broadband	n.a.	0.3	n.a.	n.a.	n.a.	n.a.	n.a.
4/14/03	12/1/2003	Community Service Telephone	FairPoint Communications	31.1	17.6	n.a.	2,552	2.8e	9.5e	n.a.
1/27/03	4/1/2003	Citizens Communications	Missouri Valley Communications	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
12/6/02	4/1/2003	Citizens Communications WDCExchanges	Missouri Valley Communications	n.a.	5.4	n.a.	n.a.	n.a.	n.a.	n.a.
12/6/02	4/1/2003	Citizens Communications MD Exchanges	Reservation Telephone Loop	n.a.	1.3	n.a.	n.a.	n.a.	n.a.	n.a.
11/1/02	7/1/2004	ETC	Direct Communications - Backland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
9/14/02	1/1/2003	Delta Telecom Cooperative	Alliance Communications Cooperative	n.a.	3.0	n.a.	n.a.	n.a.	n.a.	n.a.
4/21/02	8/31/2002	Verizon - Missouri Lines	CenturyTel	1,140.4	354.0	n.a.	3,199	4.0e	8.0e	n.a.
7/17/02	12/31/2002	Illinois Consolidated	Bancbase Acquisition Corp	271.8	96.0	n.a.	n.a.	n.a.	n.a.	n.a.
5/15/02	5/30/2002	Delaware Telecommunications Group	PraxisWorld Communications	n.a.	7.0	n.a.	n.a.	n.a.	n.a.	n.a.
3/31/02	3/31/2002	Oregon Telephone/ North State Tel	Direct Communications - Backland	n.a.	2.5	n.a.	n.a.	n.a.	n.a.	n.a.
3/12/02	2/16/2002	Iowa Telecom Exchanges	Sioux Valley Telephone Company	n.a.	8.2	n.a.	n.a.	n.a.	n.a.	n.a.
2/14/02	7/1/2002	Telecommunications Systems of MI	Telephone & Data Systems	n.a.	7.5	n.a.	n.a.	n.a.	n.a.	n.a.
1/15/02	1/15/2002	Arizona Telecommunications	AT&T	n.a.	4.0	n.a.	6.0e	n.a.	n.a.	n.a.
12/21/01	10/21/2002	Citizens Communications MD Exchanges	Dickey Rural Telephone Cooperative	n.a.	2.5	n.a.	n.a.	n.a.	n.a.	n.a.
12/21/01	10/21/2002	Citizens Communications MD Exchanges	Polar Communications	n.a.	0.7	n.a.	n.a.	n.a.	n.a.	n.a.
12/21/01	10/21/2002	Citizens Communications MD Exchanges	Red River Rural Telephone Association	n.a.	1.1	n.a.	n.a.	n.a.	n.a.	n.a.
12/1/01	2/1/2002	Delaware and Nevada Telephone	Farmers Mutual Cooperative	n.a.	0.9	n.a.	n.a.	n.a.	n.a.	n.a.
11/21/01	5/24/2002	Conestoga Enterprise	D&I Communications	n.a.	85.6	n.a.	n.a.	n.a.	n.a.	n.a.
11/16/01	4/1/2002	AT&T, Inc	Telephone & Data Systems	n.a.	18.7	n.a.	n.a.	n.a.	n.a.	n.a.
11/14/01	11/14/2001	Albion Telephone Company	Albion Telephone Ventures, LLC	n.a.	0.0	n.a.	n.a.	n.a.	n.a.	n.a.
11/9/01	11/9/2001	Miller Telephone Company	TelAtlantic Communications	n.a.	1.3	n.a.	n.a.	n.a.	n.a.	n.a.
10/31/01	7/31/2002	Verizon - Kentucky Lines	AT&T	1,961.0	460.0	n.a.	3,193	4.1e	7.6e	n.a.
10/22/01	7/1/2002	Verizon - Alabama Lines	CenturyTel	170.0	300.0	n.a.	3,199	4.0e	8.0e	n.a.
9/21/01	2/1/2002	Kerrville Communications	Polar Telecommunications LLC	n.a.	29.9	n.a.	n.a.	n.a.	n.a.	n.a.
9/1/01	9/1/2001	Cobleskill Telephone	Telephone & Data Systems	n.a.	0.8	n.a.	n.a.	n.a.	n.a.	n.a.
5/21/01	10/2/2001	Saw River Telegraph and Telephone	Country Road Communications	n.a.	10.5	n.a.	n.a.	n.a.	n.a.	n.a.
5/8/01	9/4/2001	Marion and Senary Hill Telephone	FairPoint Communications	n.a.	2.0	n.a.	n.a.	n.a.	n.a.	n.a.
5/1/01	9/4/2001	MidwestUSA - Consolidated IL Lines	FairPoint Communications	n.a.	7.7	n.a.	n.a.	n.a.	n.a.	n.a.
3/13/01	5/1/2001	Chippewa County Telephone	Horizon Communications	n.a.	1.2	n.a.	n.a.	n.a.	n.a.	n.a.
2/23/01	8/1/2001	Zenda Telephone Company	TelAtlantic Communications	n.a.	0.2	n.a.	n.a.	n.a.	n.a.	n.a.
2/23/01	1/29/2001	West Side Telecom (9.9% Interest)	TelAtlantic Communications	n.a.	2.8	n.a.	n.a.	n.a.	n.a.	n.a.
12/27/00	7/26/2001	Madison River Tel - IL Exchanges	Madison Telephone Company	n.a.	4.2	n.a.	n.a.	n.a.	n.a.	n.a.
11/27/00	9/4/2001	Charis Communications	Telephone & Data Systems	n.a.	45.0	n.a.	n.a.	n.a.	n.a.	n.a.
11/6/00	11/6/2000	Condon Telephone Company (40.7%)	Telephone & Data Systems	52.5	12.1	n.a.	n.a.	n.a.	n.a.	n.a.
10/17/00	4/23/2001	Central Utah Telephone Company	Lynch Interactive	n.a.	7.7	n.a.	n.a.	n.a.	n.a.	n.a.
10/1/00	3/1/2001	Vista United Telecommunications	Smart City Networks	n.a.	17.0	n.a.	n.a.	n.a.	n.a.	n.a.
9/12/00	4/1/2001	Evans Telephone Company	Country Road Communications	n.a.	13.0	n.a.	n.a.	n.a.	n.a.	n.a.
9/12/00	5/18/2001	Yale - Apache Reservation Assets	Resolera Tribe	n.a.	0.9	n.a.	n.a.	n.a.	n.a.	n.a.
7/21/00	6/6/2001	Amann Columbus Telephone	South Slope Cooperative	n.a.	1.5	n.a.	n.a.	n.a.	n.a.	n.a.
7/19/00	7/19/2000	Burdick-Nouston Telephone Company	CIA Capital - Sageport Capital	n.a.	12.0	n.a.	n.a.	n.a.	n.a.	n.a.

Attachment 1 - Observed Deals: Incumbent Local Exchange Carriers

7/12/00	6/30/2001	Global Crossing - Frontier Comm	Citizens Communications	n.a.	1,100.0	n.a.	n.a.	n.a.	n.a.	n.a.
7/7/00	7/3/2000	Centers - Yelm Telephone Company	FairPoint Communications	72.3	12.7	n.a.	n.a.	n.a.	n.a.	n.a.
6/21/00	1/2/2001	Sauk River Telegraph and Telephone	Local Cellular Communications	190.0	10.0	n.a.	n.a.	n.a.	n.a.	n.a.
5/18/00	2/13/2001	N&B Communications	NILOS	77.6	12.5	n.a.	n.a.	n.a.	n.a.	n.a.
4/14/00	4/9/2000	Hooper Telecom	Affinity Telecommunications	9.1	7.0	n.a.	n.a.	n.a.	n.a.	n.a.
4/13/00	6/1/2000	Freemantle Telecom	FairPoint Communications	n.a.	6.3	n.a.	n.a.	n.a.	n.a.	n.a.
3/13/00	5/21/2000	Fort Bend Communications Companies	CDU Communications	n.a.	41.0	n.a.	n.a.	n.a.	n.a.	n.a.
12/29/99	4/1/2000	Peoples Mutual Telephone Company	FairPoint Communications	n.a.	7.5	n.a.	n.a.	n.a.	n.a.	n.a.
12/29/99	4/3/2000	TPG Communications	FairPoint Communications	n.a.	52.0	n.a.	n.a.	n.a.	n.a.	n.a.
12/23/99	4/28/2000	Southeast Telephone Co. of MI	Telephone & Data Systems	n.a.	10.0	n.a.	n.a.	n.a.	n.a.	n.a.
12/16/99	11/20/2000	Verizon (GTE) - Illinois	Citizens Communications	303.0	112.0	n.a.	2,332	n.a.	n.a.	n.a.
11/23/99	3/28/2000	Coastal Utilities	Madison River Telephone Company	n.a.	38.0	n.a.	n.a.	n.a.	n.a.	n.a.
10/24/99	6/20/2000	Verizon (GTE) - Oklahoma	Valor Telecommunications Southwest	360.0	120.0	n.a.	3,000	n.a.	n.a.	n.a.
10/1/99	10/1/1999	Mid-Missouri Telephone Company	CEA Capital Partners	n.a.	6.1	n.a.	n.a.	n.a.	n.a.	n.a.
10/1/99	10/1/1999	Orwell Telephone	MDJ Communications	n.a.	8.9	n.a.	n.a.	n.a.	n.a.	n.a.
9/21/99	4/28/2000	Verizon (GTE) - Nebraska	Citizens Communications	204.0	61.0	n.a.	2,458	n.a.	n.a.	n.a.
9/7/99	9/1/2000	Verizon (GTE) - New Mexico	Valor Telecommunications Southwest	222.0	95.0	n.a.	n.a.	n.a.	n.a.	n.a.
9/7/99	9/1/2000	Verizon (GTE) - Texas	Valor Telecommunications Southwest	1,074.5	325.0	n.a.	n.a.	n.a.	n.a.	n.a.
8/19/99	9/29/2000	Verizon (GTE) - Wisconsin	CenturyTel	166.6	70.5	n.a.	2,736	4.6x	1.2x	n.a.
8/19/99	9/29/2000	Verizon (GTE) - Wisconsin	CenturyTel/ Telephone USA Investments	177.4	52.9	n.a.	2,736	4.6x	8.3x	n.a.
8/10/99	4/6/2001	Qwest - Utah Lines	Manit/Conor, Utah/USTA/Emery/AM West	90.0	55.0	n.a.	n.a.	n.a.	n.a.	n.a.
8/10/99	12/1/2000	Qwest - South Dakota Lines	Sulley Bates/ Venture Communications	n.a.	2.4	n.a.	n.a.	n.a.	n.a.	n.a.
7/8/99	7/21/2000	Verizon (GTE) - Missouri	Spectra Communications - CenturyTel	250.0	127.0	n.a.	2,283	n.a.	n.a.	n.a.
7/1/99	6/26/2000	Verizon (GTE) - Iowa	Iowa Telecommunications	552.0	280.0	n.a.	3,400	5.0x	9.0x	n.a.
7/1/99	7/1/1999	Albion Communications	Altel	n.a.	265.0	n.a.	n.a.	n.a.	n.a.	n.a.
7/1/99	7/1/1999	Central South Telephone Company	Lynch Interactiva	n.a.	6.0	n.a.	n.a.	n.a.	n.a.	n.a.
7/1/99	7/1/1999	Dell Telephone	Madison River Telephone Company	n.a.	40.0	n.a.	n.a.	n.a.	n.a.	n.a.
7/1/99	7/1/1999	Hager Telephons	CEA Capital Partners	n.a.	3.4	n.a.	n.a.	n.a.	n.a.	n.a.
7/1/99	7/1/1999	Teles City Telephons	MDJ Communications	n.a.	1.1	n.a.	n.a.	n.a.	n.a.	n.a.
6/29/99	2/21/2000	Verizon (GTE) - Arkansas	CenturyTel	824.0	231.0	n.a.	3,947	5.1x	9.1x	n.a.
6/15/99	10/21/2000	Qwest - North Dakota Lines	Citizens Communications	n.a.	17.3	n.a.	n.a.	n.a.	n.a.	n.a.
5/27/99	8/21/2000	Verizon (GTE) - Missouri	Citizens Communications	454.4	133.0	n.a.	3,500	3.0x	5.0x	n.a.
5/27/99	8/31/2000	Verizon (GTE) - Alaska	AT&T	50.0	21.0	n.a.	2,400	n.a.	n.a.	n.a.
5/15/99	1/19/2000	Pine Tree Telephone and Telegraph Co.	Country Road Communications	n.a.	7.0	n.a.	n.a.	n.a.	n.a.	n.a.
4/1/99	4/1/1999	Arctic Slope Telephone Utilities	Alaska Communications Systems	n.a.	161.0	n.a.	n.a.	n.a.	n.a.	n.a.
4/1/99	4/1/1999	CenturyTel - Alaska Operations	Alaska Communications Systems	n.a.	131.0	n.a.	n.a.	n.a.	n.a.	n.a.
4/1/99	4/1/1999	Union Telephone	MDJ Communications	n.a.	2.6	n.a.	n.a.	n.a.	n.a.	n.a.
1/1/99	1/1/1999	Standard Telephone	Altel	n.a.	68.0	n.a.	n.a.	n.a.	n.a.	n.a.
1/1/99	1/1/1999	Columbus Grove Telephone	MDJ Communications	n.a.	1.9	n.a.	n.a.	n.a.	n.a.	n.a.
1/1/99	1/1/1999	Dakota Telecommunications Group	McLeodUSA	n.a.	7.3	n.a.	n.a.	n.a.	n.a.	n.a.
1/1/99	1/1/1999	Dawson Telephone	CEA Capital Partners	n.a.	7.0	n.a.	n.a.	n.a.	n.a.	n.a.
1/1/99	1/1/1999	Barneswood	MDJ Communications	n.a.	2.1	n.a.	n.a.	n.a.	n.a.	n.a.

Notes: Information obtained from FCC, PUC and SEC filings as well as other publicly available information. Some amounts estimated. Terminated = previously acquired deal terminated or withdrawn. BEV = Total estimate of total purchase price allocable to wiring operations. A/E = includes ILEC and LEC lines. Cash = cash proceeds including IEC and CLEC access lines, DSL and high-speed data subscribers and video subscribers. T. OIBDA = reported or estimated trailing twelve month operating income before depreciation and amortization. P. OIBDA = Reported or estimated annual operating income before depreciation and amortization.

CERTIFICATE OF SERVICE

I hereby certify that a copy of the Associations' Comments was served this 25th day of July, 2013 by electronic filing and e-mail to the persons listed below.

By: /s/ Elizabeth R. Newson
Elizabeth R. Newson

The following parties were served:

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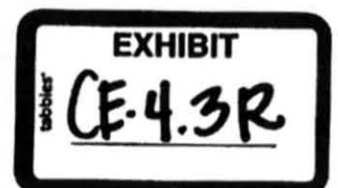
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Prescribing the Authorized Rate of Return
ANALYSIS OF METHODS FOR ESTABLISHING JUST AND REASONABLE RATES
FOR LOCAL EXCHANGE CARRIERS

WIRELINE COMPETITION BUREAU
STAFF REPORT

WC DOCKET NO. 10-90

MAY 16, 2013



Executive Summary

The rules of the Federal Communications Commission authorize incumbent local exchange carriers (LECs) subject to rate-of-return regulation to earn a prescribed rate of return, currently 11.25 percent, on specified investment in plant used and useful in the efficient provision of certain interstate telecommunications services. The authorized rate of return is also used to determine the support incumbent LECs receive from the Universal Service Fund (USF or Fund) for High Cost Loop Support and Interstate Common Line Support.

In keeping with its statutory obligation to ensure that rates are just and reasonable, the Commission must set the rate of return high enough to allow carriers to maintain their credit-worthiness and attract capital, but no higher. If the rate is too high, customers pay unreasonably high prices both through direct payments to carriers and through excessive Universal Service Fund fees.

In the *USF/ICC Transformation Order*, the Commission concluded that it should represcribe the authorized rate-of-return and initiated a represcription proceeding. One formula for determining the rate of return is the Weighted Average Cost of Capital (WACC), which the Commission's rules specify is the sum of the cost of debt, the cost of preferred stock, and the cost of equity, each weighted by its proportion in the capital structure of the telephone companies. Both the National Exchange Carrier Association and the Ad Hoc Telecommunications Users Committee provided analyses of the WACC, relying on one or both of the methodologies to find the cost of equity that the staff uses in this Report. We appreciate their contribution to the record and build on their work in this Report. Although our analyses differ from theirs in certain respects, the approaches are fundamentally similar to the approach set out in this Staff Report.

The Commission last represcribed the authorized rate of return in 1990, reducing it from 12 to 11.25 percent. The Commission no longer has current data of the type it used to prescribe the rate of return in 1990, and substantial changes in technology, regulation, and the marketplace in the last 23 years raise a number of issues regarding how to represcribe the rate of return.

In an effort to inform the Commission as it moves to resolve this proceeding and set a rate of return that better reflects market realities and protects the consumers and businesses that pay into the Fund while providing more certainty for rate-of-return carriers, this Wireline Competition Bureau Staff Report reviews the record in this proceeding, discusses various methods and data sources that could be used to determine the WACC, and considers Commission options for addressing the Commission's goals and the issues raised by carriers, state regulators, consumer advocates, and others. Specifically, the Report discusses, among other things:

- Using publicly-traded rate-of-return incumbent LECs as proxies for rate-of-return incumbent LECs generally to determine the WACC. The Commission's 1990 represcription proceeding used the Regional Bell Holding Companies as proxies.
- Calculating the cost of equity using both the Capital Asset Pricing Model and the Discounted Cash Flow Model. In 1990, the Commission used the Discounted Cash Flow Model to determine the cost of equity.
- Determining a "zone of reasonableness" within which the rate of return can be selected.

Finally, the Report calculates the WACC using various methods and data sources and determines a zone of reasonable WACC estimates ranging from 7.39 percent to 8.72 percent. Noting, among other things, the current historically-low interest rates and the infrequency of represcription, the Report concludes that the Commission should consider establishing the authorized rate of return in the upper half of this range, between 8.06 percent and 8.72 percent.

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I. INTRODUCTION

1. The Federal Communications Commission (Commission) prescribes a unitary rate of return (commonly referred to as the “rate of return” or “authorized rate of return”) for the roughly 1200 incumbent local exchange carrier (incumbent LEC) study areas subject to rate-of-return regulation.¹ The authorized rate of return is used to determine interstate common line rates and special access rates for rate-of-return incumbent LECs² and is also used in calculating some forms of support provided by the Universal Service Fund (USF or Fund), including High Cost Loop Support (HCLS)³ and Interstate Common Line Support (ICLS).⁴ The Commission, noting the major changes that have occurred in the market since the authorized rate of return was last prescribed in 1990, initiated a represcription proceeding in the *Further Notice* portion of the *USF/ICC Transformation Order*.⁵

2. The staff of the Wireline Competition Bureau (Bureau) has prepared this Staff Report (Report) to assist the Commission as it considers prescribing a new authorized rate of return. Taking into account comments filed in response to the *Further Notice* released in conjunction with the *USF/ICC Transformation Order*,⁶ as well as regulatory and market changes since the Commission’s last represcription, this Report analyzes various policies regarding represcription and possible procedural and substantive changes to the represcription process. We discuss analytical approaches to calculating the rate of return, with particular emphasis on

¹ The Commission is required by Section 201 of the Communications Act of 1934 to ensure that rates are “just and reasonable.” See 47 U.S.C. § 201(b). Section 205(a) of the Act authorizes the Commission, on an appropriate record, to prescribe just and reasonable charges of common carriers. See 47 U.S.C. § 205(a).

² In the *USF/ICC Transformation Order*, the Commission took rate-of-return incumbent LECs off of rate-of-return regulation for interstate switched access services. See *Connect America Fund et al.*, WC Docket No. 10-90 et al., Report and Order and Further Notice of Proposed Rulemaking, 26 FCC Rcd 17663, 17983-84, para. 900 (2011) (*USF/ICC Transformation Order*), *pets. for review pending sub nom.* In re: *FCC 11-161*, No. 11-9900 (10th Cir. filed Dec. 8, 2011).

³ See 47 C.F.R. § 36.621(a)(1).

⁴ See 47 C.F.R. § 54.901.

⁵ *USF/ICC Transformation Order*, 26 FCC Rcd at 17870, paras. 639-40. The Commission reduced the authorized rate of return from 12% to 11.25% in 1990. See *Represcribing the Authorized Rate of Return for Interstate Services of Local Exchange Carriers*, CC Docket No. 89-624, Order, 5 FCC Rcd 7507 (1990) (*1990 Represcription Order*). The Commission’s rules require that the Commission issue a notice inquiring whether it should undertake a represcription if the monthly average yields on ten-year United States Treasury securities remain, for a consecutive six month period, at least 150 basis points above or below the average of the monthly average yields in effect for the consecutive six month period immediately prior to the effective date of the current prescription. See 47 C.F.R. § 65.101. The Commission noted that the trigger was met and initiated a represcription proceeding in 1998, but the proceeding was terminated in the *MAG Order*, leaving the authorized rate of return unmodified. See *Multi-Association Group (MAG) Plan for Regulation of Interstate Services of Non-Price Cap Incumbent Local Exchange Carriers and Interexchange Carriers*, CC Docket No. 00-256, Second Report and Order and Further Notice of Proposed Rulemaking, 16 FCC Rcd 19613, 19701, para. 208 (2001) (*MAG Order*). In the *USF/ICC Transformation Order*, the Commission noted that the monthly average yields for the past six months had been “over 450 basis points below the monthly average yields in the six months immediately prior to the last prescription.” *USF/ICC Transformation Order*, 26 FCC Rcd at 17870, para. 640 (citing 10-Year Treasury Constant Maturity Rate (GS10), Federal Reserve Bank of St. Louis (*available at* <http://research.stlouisfed.org/fred2/series/GS10>) (last visited Oct. 21, 2011)).

⁶ *USF/ICC Transformation Order*, 26 FCC Rcd at 18051-56, paras. 1044-60.

calculating the cost of equity, and examine how best to establish a “zone of reasonableness,” a range within which the rate of return should be set.

3. As discussed in greater detail below, we believe a reasonable analytical approach, using available data, would establish the zone of reasonableness for a unitary rate of return between 7.39 percent and 8.72 percent.⁷ Based upon our analysis of another important financial benchmark for rate-of-return carriers (based upon times interest earned ratios), and given current historically-low interest rates and the infrequency of reprscription, we conclude that the rate of return should be selected from the upper end of this range, between 8.06 percent and 8.72 percent.

II. BACKGROUND

4. Large market and regulatory changes have occurred since the Commission last prescribed the unitary rate of return in 1990.⁸ At that time, there were 135 million incumbent LEC access lines, with that number increasing at a rate of three percent annually.⁹ By 2008, the number of incumbent LEC access lines had decreased to 122 million, and were continuing to decrease at a rate of 7.5 percent annually.¹⁰ In 1990, there were five million wireless subscribers, while there were 270 million by 2008.¹¹ Since 1990, the Commission has promulgated rules to implement the 1996 Communications Act¹² and expand price cap regulation,¹³ and has removed interstate switched access from rate-of-return regulation.¹⁴ The provision of video and data services, including broadband data services by incumbent LECs, has grown exponentially.¹⁵ In addition, there has been substantial industry consolidation.¹⁶ The Commission has granted AT&T, Verizon, and Qwest forbearance from the Cost Accounting Rules, including the filing of Automated Reporting Management Information System (ARMIS) reports upon which the last

⁷ Commission rules require that the final determinations of the cost of debt, cost of equity, cost of preferred stock, and of their capital structure weights be accurate to two decimal places. 47 C.F.R. § 65.306.

⁸ 1990 Reprscription Order, 5 FCC Rcd at 7507, para. 1.

⁹ See *Trends in Telephone Service*, Federal Communications Commission, Wireline Competition Bureau, Industry Analysis and Technology Division at Table 7-3 (Sept. 2010) (2010 *Trends in Telephone Service*), available at <http://www.fcc.gov/reports/trends-telephony-service-2010>.

¹⁰ *Id.*

¹¹ *Id.*, Table 11-3 (reporting CTIA statistics).

¹² 47 U.S.C. § 1302.

¹³ See, e.g., *Joint Petition of Price Cap Holding Companies for Conversion of Average Schedule Affiliates to Price Cap Regulation and for Limited Waiver Relief*, WC Docket No. 12-63; *Consolidated Communications Companies Tariff F.C.C. No. 2*, Transmittal No. 41; *Frontier Telephone Companies Tariff F.C.C. No. 10*, Transmittal No. 28; *Windstream Telephone System Tariff F.C.C. No. 7*, Transmittal No. 57, Order, 27 FCC Rcd 15753 (2012).

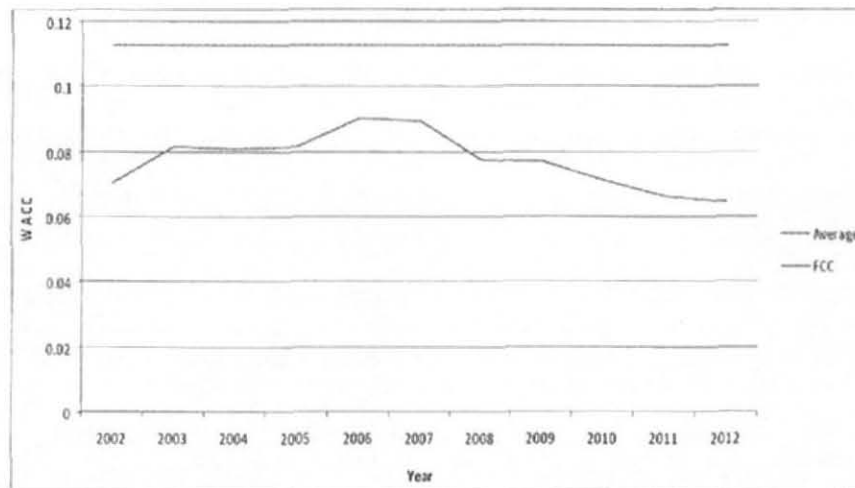
¹⁴ *USF/ICC Transformation Order*, 26 FCC Rcd at 18052, para. 1049.

¹⁵ *Id.* at 17983, para. 900.

¹⁶ See, e.g., *AT&T Inc. and BellSouth Corporation Application for Transfer of Control*, WC Docket No. 06-74, Memorandum Opinion and Order, 22 FCC Rcd 5662 (2007); Order on Reconsideration, 22 FCC Rcd 6285 (2007); *SBC Communications Inc. and AT&T Corp. Applications for Approval of Transfer of Control*, WC Docket No. 05-65, Memorandum Opinion and Order, 20 FCC Rcd 18290 (2005); *Verizon Communications Inc. and MCI, Inc. Applications for Approval of Transfer of Control*, WC Docket No. 05-75, Memorandum Opinion and Order, 20 FCC Rcd 18433 (2005).

represcription was based.¹⁷ The Commission's represcription rules, however, have remained largely unchanged for almost two decades.¹⁸ Those rules specify that the Commission establish a unitary rate of return (*i.e.*, a single rate of return) for specified interstate services for all rate-of-return incumbent LECs,¹⁹ and that the Commission may, but need not, initiate a represcription of this unitary rate of return if there has been a specified change in the yield on U.S. Treasury securities.²⁰

Estimated Weighted Average Cost of Capital 2002 – 2012²¹



¹⁷ See *Petition of AT&T Inc. for Forbearance Under 47 U.S.C. § 160 from Enforcement of Certain of the Commission's Cost Assignment Rules*; *Petition of BellSouth Telecommunications, Inc. for Forbearance Under 47 U.S.C. § 160 from Enforcement of Certain of the Commission's Cost Assignment Rules*, WC Docket Nos. 07-21, 05-342, Memorandum Opinion and Order, 23 FCC Rcd 7302, 7307, para. 12 (2008), *pet. for recon. pending, pet. for review pending, NASUCA v. FCC*, Case No. 08-1226 (D.C. Cir., filed June 23, 2008); *Petition of Qwest Corporation for Forbearance from Enforcement of the Commission's ARMIS and 492A Reporting Requirements Pursuant to 47 U.S.C. § 160(c)*; *Petition of Verizon for Forbearance Under 47 U.S.C. § 160(c) from Enforcement of Certain of the Commission's Recordkeeping and Reporting Requirements*, WC Docket Nos. 07-204, 07-273, Memorandum Opinion and Order, 23 FCC Rcd 13647, 13660, para. 23 (2008).

¹⁸ 47 C.F.R. §§ 65.101 *et seq.*

¹⁹ 47 C.F.R. § 65.1.

²⁰ 47 C.F.R. § 65.101(a), (b). If the Commission determines that the monthly average yields on ten (10) year United States Treasury securities remain, for a consecutive six month period, at least 150 basis points above or below the average of the monthly average yields in effect for the consecutive six month period immediately prior to the effective date of the current prescription, the Commission is required to issue a notice inquiring whether a rate of return represcription should commence. 47 C.F.R. § 65.101(a). It is not, however, required to commence the represcription. 47 C.F.R. § 65.101(b).

²¹ WACC calculations in this table were made using CAPM with betas from SNL Kagan, which use daily data and are not adjusted towards one. While our main analysis uses weekly data for the betas and adjusts them towards one, we show in the report that this methodological difference is inconsequential. We assume a 5.79 percent market risk premium, and risk-free rates from September 17 of each year. Otherwise, the methodology is identical to that used for the 2012 capital asset pricing model estimates described in the report.

5. If the Commission elects to represcribe the authorized rate of return, its rules require the new rate to be based upon its analysis of the cost of debt and equity, and the ratio of debt to equity, also known as the "capital structure." Specifically, the Commission is to calculate a Weighted Average Cost of Capital (WACC) by summing the estimated cost of debt, cost of preferred stock, and cost of equity, each weighted by its proportion in the capital structure of the telephone companies taken as a whole.²² Because there is a range of reasonable estimates for each of the elements of the WACC, the Commission identifies a zone of reasonable WACC estimates and then decides, based on policy considerations, where within that "zone of reasonableness" to prescribe the unitary rate of return.²³

6. One thing that has not changed is the critical importance to both the industry and customers that the Commission establish an appropriate rate of return. The WACC is the *minimum rate of return required to attract capital to an investment (e.g., by incurring debt and/or selling stock)*. The rate of return must be high enough to provide investors confidence in the "financial integrity" of a carrier, so that it can maintain its credit-worthiness and attract capital.²⁴ It "should not be higher than necessary for this purpose,"²⁵ because this would result in unreasonably high prices for customers and excessive demands on USF. The rate of return should also be "commensurate with returns on investments in other enterprises having corresponding risks."²⁶ As the United States Court of Appeals for the District of Columbia Circuit (D.C. Circuit) has recognized, "rate of return decisions are appropriately treated as policy determinations in which the agency is acknowledged to have expertise."²⁷

7. Further explaining the need to set the rate of return correctly, the Commission has observed that if the authorized rate of return exceeds a carrier's actual WACC, the carrier may have an increased incentive to expand its rate base inefficiently,²⁸ thereby affecting customer prices and demands on USF.²⁹ Conversely, if the authorized rate of return is insufficient to cover carriers' WACC, carriers will be denied the opportunity to earn a reasonable rate of return on their investment, and ultimately will decline to make ongoing investments in the provision of efficient service. In either case, incentives to provide and consume regulated services would be

²² 47 C.F.R. § 65.305(a).

²³ 1990 *Represcription Order*, 5 FCC Rcd at 7508, para. 7.

²⁴ *U.S. v. FCC*, 707 F.2d 610, 612 (D.C. Cir. 1983) (quoting *Federal Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591, 603 (1944)).

²⁵ *U.S. v. FCC*, 707 F.2d at 612 (citing *Permian Basin Area Rate Cases*, 390 U.S. 747, 791-92 (1968)).

²⁶ *Illinois Bell Tel. Co. v. FCC*, 988 F.2d 1254, 1260 (D.C. Cir. 1993) (quoting *Hope Natural Gas Co.*, 320 U.S. at 603).

²⁷ *Id.* at 618 (citing *Sun Oil Co. v. FPC*, 445 F.2d 764, 767 (D.C. Cir. 1971)).

²⁸ See, e.g., *Policy and Rules Concerning Rates for Dominant Carriers*, CC Docket No. 87-313, Further Notice of Proposed Rulemaking, 3 FCC Rcd 3195, 3219-20, paras. 39-40 (1988); *Policy and Rules Concerning Rates for Dominant Carriers*, CC Docket No. 87-313, Report and Order and Second Further Notice of Proposed Rulemaking, CC Docket No. 87-313, 4 FCC Rcd 2873, 2889-90, para. 30 (1989).

²⁹ As the Commission noted in the context of USF assessment reform, one of its primary goals was to "ensure the stability and sufficiency of the universal service fund as the marketplace continues to evolve." *Federal-State Board on Universal Service et al.*, CC Docket No. 96-45 *et al.*, Further Notice of Proposed Rulemaking and Report and Order, 17 FCC Rcd 3752, 3759, para. 15 (2002).

distorted, creating economic inefficiencies.³⁰ While the fundamental principles of WACC analysis remain unchanged and largely unchallenged in this proceeding, commenters highlight a number of changes in regulation, technology, and the marketplace that have occurred since 1990. These changes raise questions about when and how the Commission should calculate the estimated cost of debt, preferred stock, and equity, and about how the Commission should calculate the capital structure of the companies subject to rate-of-return regulation. We discuss these issues, and other issues raised by commenters, below.

III. DISCUSSION

A. Identifying and Obtaining Data to Compute the Weighted Average Cost of Capital

8. As discussed above, the WACC is the key to establishing the rate of return. We therefore begin this section with an analysis of the financial data needed to calculate the WACC and then consider the sources from which we can obtain that data.

1. Data Needed to Calculate the WACC

9. To calculate a company's (or a group of companies')³¹ WACC, we need to determine: 1) the company's capital structure, *i.e.*, the proportions of debt, equity, and preferred stock a company uses to finance its operations; and 2) how much that debt, equity, and preferred stock cost.³² In these calculations, we will consider book values (also called "accounting values") or market values (also called "economic values"), as appropriate, and as discussed in greater detail below.

10. While the cost of debt can often be estimated directly for each firm, the cost of equity for firms that are not publicly traded can only be inferred based on data from firms that are publicly traded. In the past, the Commission used the Regional Bell Holding Companies (RHCs) as proxy firms to determine capital structure and the costs of debt, equity, and preferred stock for all incumbent LECs.³³ We discuss below the extent to which the RHCs, as well as other groups

³⁰ A significant portion of the assets to which the authorized rate of return applies will be paid for, directly or indirectly, from the nationwide universal service funds. This could lower the risks debt and equity holders bear as compared with purely commercial activities, but that we have made no attempt to quantify that effect or any other impacts of regulation on carrier risk.

³¹ The Commission's rules specify that WACC analysis be based on whole-company costs and capital structure. *See* 47 C.F.R. § 65.300. Although carriers are entitled to earn a prescribed rate of return only on specified investment in plant used and useful in the efficient provision of certain interstate telecommunications services, *i.e.*, its rate base, 47 C.F.R. § 65.800, it is not possible to buy stock solely in the LECs' interstate access operations. *1990 Rescription Order*, 5 FCC Rcd at 7516, para. 76. Accordingly, the Commission must use a company's overall equity to determine the cost of equity applicable to the company's rate base for which the rate of return is authorized.

³² A firm's cost of debt and equity can vary by line of business depending on the specific risk of the business. So, too, might a firm's mix of debt and equity financing vary depending on the risk or other factors specific to the particular line of business. Thus, the WACC estimate for a particular project or line of business should be based on the costs of debt and equity for the project or the business line, and on the mix of financing that would be optimal for that project or business line, even if these are not independently financed. In practice, we cannot measure the WACC of any particular line of business with sufficient accuracy (most notably because the relevant data are not available below the level of the firm), and so have developed WACC estimates that reflect the cost of debt and equity and the mix of debt and equity financing for the entire business. *See 1990 Rescription Order*, 5 FCC Rcd at 5710-11, paras. 31-34.

³³ *See generally 1990 Rescription Order.*

of companies that the Commission could use, are suitable proxies for incumbent LECs generally, and rate-of-return LECs in particular.

2. Identifying an Appropriate Proxy Group for Rate-of-Return Carriers

11. The reliability of the Commission's analysis depends in large part on the representativeness of the proxy group it uses. Accordingly, we must consider how to identify a group of firms that can serve as an effective proxy for rate-of return LECs as a whole. We discuss below potential proxy groups identified by our rules, commenters, and Commission staff.

12. The cost of capital is a function of risk, and it is difficult to measure risk differences among the incumbent LECs precisely. In selecting a representative proxy group, it is important to compare the qualitative characteristics of the firms for which the WACC is being calculated with those of the potential proxies—looking in particular at whether the potential proxies face similar risks, and whether, in the view of experienced industry observers, the potential proxies have an institutional setup similar to that of the represented firms.³⁴ It is also important to consider the type of financial data available about those firms. Staff used the following three-part test to select proxy companies:

- *Threshold of Incumbent LEC Operations.* Staff attempted to discern the amount of companies' total operations that can be classified as incumbent LEC price-regulated interstate telecommunications services, limiting consideration to those companies for which this proportion of operations constituted at least 10% of overall operations. Although this is a low threshold, we note that these are still fundamentally communications companies, and many of their other lines of business provide related services.
- *Similarity to Rate-of-Return Operations.* Staff attempted to determine the extent to which firms offer the same or similar services as those for which we are trying to determine the WACC. As discussed above, the relevant service is price-regulated interstate special access and common line service. Companies providing this service will face similar market and regulatory risks that affect the cost of capital. Companies serving rural or high-cost areas are more similar to rate-of-return LECs than companies serving urban areas, and companies subject to rate-of-return regulation are more similar than those subject to price cap or other incentive regulation.³⁵
- *Reliability of Financial Data.* As discussed in detail below, the analysis of the cost of equity relies on data associated with the public trading of a company's equity and the availability of analysts' growth estimates of a company. If a company's equity is traded infrequently, or is infrequently the subject of analysts' growth estimates, its financial data is less reliable in determining the cost of equity. Similarly, a company's overall financial health makes its financial data more reliable in determining the cost of equity than that of a company in financial difficulty.

13. Though each possible proxy group has its strengths and weaknesses when analyzed according to these criteria, staff proposes that the Commission use data from a group of

³⁴ See generally Tom Copeland, Tim Koller, and Jack Murrin, *Valuation: Measuring and Managing the Value of Companies* at 219 (McKinsey & Company, Inc. (2000)).

³⁵ It may also be worthwhile to consider the similarity of operations of publicly-traded "pure play" cable companies.

16 carriers (the "Staff Proposed Proxy") consisting of three groups of proxy carriers discussed below: the RHCs,³⁶ the Mid-Size Proxy Companies,³⁷ and the Publicly-Traded RLECs.³⁸ We also discuss our grounds for rejecting proxy groups proposed by commenters in this proceeding.³⁹

a. Staff Proposed Proxy

14. We believe it is appropriate to use the RHCs, the Mid-Size Proxies, and the Publicly-Traded RLECs to create a Staff Proposed Proxy to use as a proxy for the universe of rate-of-return carriers. While none of these sub-groups, standing alone, is necessarily sufficient, we believe that the 16 companies that comprise the Staff Proposed Proxy represent a range of company types and capital costs that collectively can serve as a reasonable proxy for the rate-of-return carriers. We analyze the WACC for these companies individually, by group, and collectively. Each of the companies in the Staff Proposed Proxy satisfies the first prong of the three-part test. That is, based upon staff review of publicly-filed documents, 10 percent or more of their revenues come from the provision of price-regulated interstate telecommunications services as an incumbent LEC.

(i) Regional Bell Holding Companies

15. The Commission's current reclassification rules explicitly contemplate using the RHCs⁴⁰ as proxies,⁴¹ but a number of parties filed comments opposing the use of RHCs as proxies for rate-of-return incumbent LECs.⁴² For example, the Ad Hoc Telecommunications Users Committee (Ad Hoc) suggests that the RHCs, among other large companies, are not appropriate proxies for rate-of-return carriers because larger companies have capital structures "more heavily weighted toward the relatively more expensive equity than debt" compared to smaller RLECs that "never go to capital markets to raise funds" and instead "borrow funds directly from [the Rural Utility Service] at rates that include no risk premium."⁴³ The National Exchange Carrier

³⁶ The RHCs are AT&T, Verizon, and CenturyLink. The Commission decided in 1990 to use the capital structure of the Regional Bell Holding Companies rather than the Regional Bell Operating Companies because the capital structure of the BOCs is subject to manipulation by the holding companies. *See 1990 Represcription Order*, 5 FCC Rcd at 5708, para. 8.

³⁷ The Mid-Size Companies are Alaska Communications, Inc., Cincinnati Bell, FairPoint Communications, Frontier Communications, Hawaiian Tel., Lumos, and Windstream.

³⁸ The Publicly-Traded RLECs are Alteva, Consolidated Communications, HickoryTech, New Ulm Telephone, Shenandoah Telecommunications, and Telephone and Data Systems.

³⁹ The Staff Proposed Proxy includes all publicly traded Incumbent LECs meeting the test described above, for which reliable data is available. As discussed below, a number of publicly-traded RLECs were omitted from the Staff Proposed Proxy.

⁴⁰ Many commenters in the current reclassification proceeding refer to "RBOCs" or "BOCs" or simply AT&T, CenturyLink, and Verizon. There is no indication that the commenters believe the operating companies should be used rather than the holding companies, and this Report does not revisit the distinction between the two.

⁴¹ The Commission's rules specify that the components of the WACC be calculated using RHC data reported to the Commission through ARMIS. 47 C.F.R. § 65.300(a). The rules do not, however, require that the Commission use the results of those calculations to determine the unitary rate of return "if the record in that proceeding shows that their use would be unreasonable." *Id.*

⁴² *See, e.g., NECA et al. Comments at 56, n.98 and App. C, Statement of Prof. Randall S. Billingsley, Billingsley Exhibit RSB-2; see generally Ad Hoc Comments.*

⁴³ Ad Hoc Comments at 5-6.

Association (NECA or NECA et al.) argues that "other companies, when measured on objective terms, in fact more closely resemble RLECs in terms of business risk than [AT&T and Verizon] and should accordingly be used in any analysis intended to estimate RLEC costs of capital."⁴⁴ In 1990, the Commission addressed the issue of the extent to which the RHCs were representative of regulated incumbent LEC operations generally, noting RHC diversification, including then-nascent cellular operations, but concluding that the RHCs were appropriate proxies.⁴⁵

16. We agree that RHCs likely differ significantly from other incumbent LECs and we therefore do not recommend that the Commission rely *exclusively* on RHC data in a rescription proceeding.⁴⁶ Nevertheless, the RHCs, like most other incumbent LECs, whether subject to price cap or rate-of-return regulation, offer regulated wireline voice service as a significant portion of their business; this similarity supports the inclusion of RHCs among the proxies to be used in this proceeding. As discussed above,⁴⁷ this diversification, in particular with regard to expansion of wireless service, has continued.

17. Among the companies in the Staff Proposed Proxy, the financial data available for the RHCs is more likely to produce a reliable WACC measurement than data from any other group of incumbent LECs. As compared with the incumbent LECs generally, the RHCs are subject to substantially greater scrutiny from regulators, analysts and investors, including stock market traders, and consequently their self-reports are likely to be undertaken with greater care, and more quickly corrected where errors are made. At the same time, there is relatively accurate external information available about these firms. For example, their shares are traded frequently, and in relatively high volumes, by highly informed traders. *This means that the share price for these firms is likely to rapidly capture new information about these companies as it becomes available.* Additionally, the RHCs have many large and sophisticated shareholders, who have strong incentives to watch the companies' behavior and to seek damages for misreporting. Similarly, analysts and credit agencies, all in competition with each other, follow such companies carefully, and publish reports about the same.

18. Further, WACC estimates are likely to be most accurate for carriers, such as the RHCs, with relatively constant and unremarkably high or low debt-to-equity and times-interest-earned-ratios, and solid bond ratings. Thus, we believe that the nearly certain and significant

⁴⁴ NECA et al. Comments at 50.

⁴⁵ 1990 Rescription Order, 5 FCC Rcd 7516-19, paras. 76-102. The Commission noted ("[T]he record does show that the RHCs are also involved in activities which are perceived as riskier than their regulated telephone business. We therefore find that we should give some weight in our decision to the possibility that a cost of equity estimate for an RHC as a whole company might somewhat overstate the cost of equity for interstate access service alone." *Id.* at 7517, para. 86.

⁴⁶ The Commission's rules specify that the calculations "shall be based on data reported to the Commission in ARMIS report FCC Report 43-02. 47 C.F.R. § 65.300(a). In 2008, the Commission granted AT&T, Verizon, and Qwest forbearance from the filing of FCC Report 43-02. See, e.g., *Petition of Qwest Corporation for Forbearance from Enforcement of the Commission's ARMIS and 492A Reporting Requirements Pursuant to 47 U.S.C. § 160(c)*, WC Docket No. 07-204, Memorandum Opinion and Order, 23 FCC Rcd 18483 (2008). The Commission has not collected the ARMIS data identified in our rules since 2007 due to the grant of forbearance to the RHCs. In the Further Notice portion of the *USF/ICC Transformation Order*, the Commission sought comment on what additional data the Commission should require and rely upon in the absence of current ARMIS data. *USF/ICC Transformation Order*, 26 FCC Rcd at 18052-53, para. 1050. Staff recommends that the Commission waive the requirement of Section 65.300 of the Commission's rules. 47 C.F.R. § 65.300.

⁴⁷ See *supra*, para. 4.

benefit of having a more accurate estimate of the RHCs' WACCs provides an objective benchmark for our analysis (albeit one that must be treated carefully). At a minimum, given the size of the RHCs, the substantially large share of the industry's debt and equity capital they raise, and competition among all incumbent LECs for the limited amount of capital provided by debt and equity investors, WACC estimates for the RHCs provide a benchmark against which to judge the reasonableness of differences among WACC estimates for all of the incumbent LECs. To enable comparisons, we report WACC estimates for RHCs separately from WACC estimates for other incumbent LECs, in addition to developing an overall WACC estimate.

19. In this vein, the RHCs should be included in any analysis of incumbent LECs' rates of return because they will provide the most reliable discounted cash flow (DCF) estimates for the cost of equity. There is a significantly greater number of analysts' growth estimates for the RHCs than for the other incumbent LECs. These growth estimates are used to establish the consensus growth rate used in one of the models (the Discounted Cash Flow, or DCF Model) used to determine the cost of equity. The greater number of analysts' growth estimates makes the consensus growth rate more reliable, and therefore makes the DCF model cost of equity, and ultimately the WACC, more reliable (though again, such numbers must be treated with care: we do not assume that the RHCs are identical to other incumbent LECs, but there are important similarities between these groups, and it is valuable to have reasonably objective information about at least one).

20. For these reasons, we believe that RHCs should be included among those companies in the proxy group for calculation of the WACC.

(ii) Mid-Size Proxies

21. Staff also considered publicly-traded mid-sized incumbent LECs,⁴⁸ and recommends that Alaska Communications Services, Inc., Cincinnati Bell, FairPoint, Frontier, Hawaiian Telcom, and Windstream (the "Mid-Size Proxies"), be included in the Staff Proposed Proxy for calculation of a composite WACC. The Mid-Size Proxies are more similar to rate-of-return operations than are the RHCs: unlike Verizon and AT&T, which also provide extensive wireless service, the Mid-Size Proxies are less diversified and thus more closely match the majority of incumbent LECs' wireline service offerings, have a significant fraction of their incumbent LEC operations in population sparse, high cost, rural areas of the country, and have a relatively large number of analysts' growth estimates reflected in the consensus growth rate used in the DCF model to estimate the cost of equity.

22. However, these carriers are primarily subject to price cap regulation rather than rate-of-return regulation, and are much larger than most RLECs, and therefore are still an imperfect proxy group. In addition, these companies in general have a large share of debt in their capital structures, low times-interest-earned ratios, and non-investment-grade debt ratings and thus are less than ideal for estimating the cost of capital for providers with lower, often subsidized, debt. As with the RHC proxies, we recommend that the Commission include them in

⁴⁸ See PA PUC Reply at 6. Such a group would be consistent with the Pennsylvania PUC's recommendation that "proxy company groups that are composed [of] mid-size carriers that are subsidiaries of publicly traded holding companies without wireless operations should be utilized for the derivation of the [return on equity] estimates applicable to the operations of wireline carriers that primarily serve higher cost rural areas." We note by way of example that AT&T and Verizon together accounted for over 61% of wireless subscribers by 2008. *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993*, Fifteenth Report, WT Docket 10-133, 26 FCC Rcd 9664, 9696, para. 31 (2011) (using 2009 statistics).

calculating a composite WACC, but not rely on them exclusively.

(iii) Publicly-Traded RLEC Proxies

23. The RHCs and the Mid-Size Proxies differ from rate-of-return incumbent LECs in that their operations are not substantially subject to rate-of-return regulation. Staff has identified seven publicly-traded U.S. incumbent LECs subject to rate-of-return regulation that could serve as proxies for the Commission's calculation of the WACC. These carriers are HickoryTech Corporation, Shenandoah Telecommunications Company, Telephone and Data Systems, Inc., Consolidated Communications, New Ulm, Lumos, and Alteva⁴⁹ (the "Publicly-Traded RLEC Proxies").

24. We do not, however, recommend using the Publicly-Traded RLEC Proxies as the sole proxy because their financial data is not as reliable for the types of calculations needed to determine the cost of equity. Some of the Publicly-Traded RLEC Proxies have a small number of analysts' growth estimates. It is these analyst growth estimates that are used in the DCF model to determine the cost of equity; if there are too few estimates, the reliability of the DCF estimate of the cost of equity is reduced. Similarly, some of these small carriers appear to also have thinly traded stock. Data from stock trades is used by in the Capital Asset Pricing Model (CAPM) to estimate the cost of equity; stock that is infrequently traded could result in a bias in the CAPM estimate of the cost of equity. Finally, there are only seven such carriers, a number that is probably not large enough for measurement errors reflected in the estimates to be expected to largely offset each other, especially given that these errors might not be totally random and the fact that any given error may be large.

(iv) Recommendation: the Staff Proposed Proxy

25. The staff recommends using all three groups, the Staff Proposed Proxy, to determine the composite WACC. Each of the companies in the Staff Proposed Proxy provides price-regulated interstate service as an incumbent LEC, and such service is estimated to exceed the ten percent threshold of the first prong in the Commission's test: Threshold of Incumbent LEC Operations. With regard to the second and third prongs, however, there appears to be an inverse relationship between the similarity to rate-of-return operations and the reliability of financial data. The RHC Proxy companies have frequently-traded equity and numerous analysts' growth estimates, making their financial data highly reliable for purposes of our CAPM and DCF analysis, but with their more urban service areas and price-cap or price-flexibility regulation, have operations least similar to those of rate-of-return carriers. Accordingly, we do not recommend relying exclusively on the RHCs despite the reliability of their financial data. Conversely, the Publicly-Traded RLEC Proxies, subject to rate-of-return regulation and serving rural and higher cost areas, are most similar to rate-of-return operations. However, their stock tends to be infrequently traded, and there are few analysts' growth estimates for use in our CAPM and DCF estimates. The Mid-Size Proxies, although subject to price cap regulation, have more rural and high-cost service areas than the RHC Proxies, and in that regard have greater similarity to rate-of-return operations. The Mid-Size Proxies' stock is more frequently traded than that of the Publicly-Traded RLEC Proxies, and there are more analysts' growth estimates for the Mid-Size Proxies than there are for the Publicly-Traded RLEC Proxies. However, the disproportionate capital structure (specifically with regard to the large share of debt) and non-investment-grade debt rating of many of these companies make their financial data less reliable than that of the RHC Proxies. Collectively, the three groups represent a wide spectrum of incumbent LEC operations, include both price cap and rate-of-return regulated operations, and

⁴⁹ Alteva was formerly Warwick Valley Telephone.

include those incumbent LECs with the most widely traded equity, allowing greater confidence in the calculations that rely on the public trading of stock, especially given that it is highly uncertain where within that spectrum non-publicly-traded RLECs lie.

b. Other Proxies Considered

26. Ad Hoc and NECA each submitted a proposal for data sources for calculating the WACC.⁵⁰ While we build on the Ad Hoc and NECA analyses in several other respects, for the reasons discussed below, we believe the Staff Proposed Proxy better reflects the risks faced by rate-of-return carriers, and would therefore enable the Commission to better estimate the rate of return those carriers require.

(i) Damodaran Telecom Utility Proxies

27. Ad Hoc proposes to use publicly available cost of capital data compiled by Professor Aswath Damodaran of the Stern School of Business at New York University, specifically the “telecom utility” sector of Prof. Damodaran’s Cost of Capital by Sector compilation (the “Damodaran Telecom Utility Proxies”).⁵¹

28. Although the Damodaran Telecom Utility Proxies data is readily available to the public and has the advantage of having been compiled by a source without an interest in this proceeding,⁵² we believe the Staff Proposed Proxy is preferable for determining the rate of return for U.S. rate of return incumbent LECs. Although the Damodaran Telecom Utility Proxies include several publicly-traded incumbent LECs included in the Staff Preferred Proxy (*i.e.*, Alaska Communications Services, Inc., CenturyLink Inc., Cincinnati Bell, Consolidated Communications, FairPoint Communications, Frontier Communications, HickoryTech Corp., New Ulm Telecom Inc., Alteva, and Windstream Corp.), the majority of the Damodaran Telecom Utility Proxies are either (primarily) foreign (*e.g.*, B Communications Ltd (Israel), BCE Inc. (Canada), BT Group ADR (United Kingdom), Deutsche Telekom ADR (Germany), Hellenic Telecom Org. SA (OTE) (Greece), Manitoba Telecom Services Inc. (Canada), Telefonica SA ADR (Spain), Telefonos de Mexico ADR (Mexico), and therefore not necessarily subject to the same market conditions or regulatory structure as U.S. rate-of-return incumbent LECs, or do not provide service as incumbent LECs (ERF Wireless Inc., IDT Corp., ITC Deltacom, Level 3 Communications, Spot Mobile International Ltd., tw telecom, XO Holdings Inc.) The Damodaran Telecom Utility Proxies may be more representative of the global telecommunications industry generally than is the Staff Preferred Proxy, but for the narrow purpose of determining the WACC for U.S. rate-of-return incumbent LECs, we believe the Staff Preferred Proxy is better suited than the Damodaran Telecom Utility Proxies.

⁵⁰ Ad Hoc Comments at 4-6; NECA et al. Comments at 56-57 and App. B at 8-11.

⁵¹ Aswath Damodaran, *Cost of Capital by Sector*, DAMODARAN ONLINE, http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/wacc.htm (last visited Oct. 2, 2012). For 2011 the Damodaran Telecom Utility Proxies were: Alaska Communications, Inc., B Communications Ltd, BCE Inc., BT Group ADR, CenturyLink Inc., Cincinnati Bell, Consolidated Communications, Deutsche Telekom ADR, ERF Wireless Inc., FairPoint Communications, Frontier Communications, Hellenic Telecom Org. SA (OTE), HickoryTech Corp., IDT Corp., ITC Deltacom, Level 3 Communications, Manitoba Telecom Services Inc., New Ulm Telecom Inc., Otelco Inc., Spot Mobile International Ltd., SureWest Communications, Telefonica SA ADR, Telefonos de Mexico ADR, tw telecom, Warwick Valley Tel Company (now Alteva), Windstream Corp., and XO Holdings Inc. *Id.*

⁵² Ad Hoc Comments at 5.

(ii) NECA Proxies

29. NECA proposes to use financial data from a group of twenty firms (the "NECA Proxies") that it describes as facing "comparable overall risk" to the universe of rate-of-return incumbent LECs. The NECA Proxies are: 3M Company, Abbott Labs, Advance Auto Pt., Albemarle Corporation, Autoliv, Inc., Bard C R, Inc., Baxter International, Church & Dwight, Coca Cola Company, Cooper Industries, Plc., Dentsply International, Ecolab, Inc., Flowers Foods, Flowserve Corporation, General Dynamics, IDEX Corporation, Johnson & Johnson, Raytheon Company, Sigma Aldrich, and V F Corporation. NECA selected its proxies by calculating a vector of variables chosen to measure financial risk for an "average RLEC."⁵³ NECA then conducted a cluster analysis of firms that had the appropriate data available in both the Zacks Investment Research data application Research Wizard and in the Value Line Investment Survey, selecting the cluster that was closest to the value of the "average RLEC." While this approach is not necessarily invalid, it should be used in conjunction with common sense analysis of business conditions.

30. The representativeness of proxy firms is particularly at issue when, as with the NECA Proxies, the proxy companies are facially quite dissimilar to the rate-of-return incumbent LECs. Unlike the Damodaran Telecom Utility Proxies, the NECA Proxies are not limited to the telecommunications field. Indeed, the portfolio does not include a single telecommunications company, and is instead based on companies – like Coca Cola, Johnson & Johnson, or Raytheon – that have little business resemblance to rate-of-return carriers. Like the Damodaran Telecom Utility Proxies, the NECA Proxies include foreign companies. As discussed above, we find this makes them less suitable proxies because foreign, non-incumbent LEC companies do not face the same market risks or regulatory structure that rate-of-return incumbent LECs face. Finally, even if we were to overcome these hurdles, NECA has not sufficiently demonstrated that the financial risk values it uses as an RLEC average are in fact representative. For all of these reasons, we do not recommend using the NECA Proxies in the calculation of the WACC.

B. Computing the WACC

31. As discussed above, the WACC estimates the rate of return that the incumbent LECs must earn on their investment in facilities used to provide regulated interstate services in order to attract sufficient capital investment. The Commission's rules specify that the composite WACC is the sum of the cost of debt, the cost of preferred stock, and the cost of equity, each weighted by its proportion in the capital structure of the telephone companies:⁵⁴

$$\text{WACC} = (\text{Equity}/(\text{Debt} + \text{Equity} + \text{Preferred})) \times \text{Cost of Equity} + (\text{Debt}/(\text{Debt} + \text{Equity} + \text{Preferred})) \times \text{Cost of Debt} + (\text{Preferred}/(\text{Debt} + \text{Equity} + \text{Preferred})) \times \text{Cost of Preferred}$$

32. In this part, we calculate these elements and determine the WACC for the recommended Staff Proposed Proxy. First, based upon the financial data of the companies in the Staff Proposed Proxy (the Proxy Firms), we determine the capital structure of the Proxy Firms, *i.e.*, the proportions of debt, equity, and preferred stock the Proxy Firms use to finance their operations. We then calculate how much that debt, equity, and preferred stock cost the Proxy Firms. Finally, we multiply the proportion of debt, equity, and preferred stock by their respective

⁵³ NECA et al. Comments at App. C, Statement of Prof. Randall S. Billingsley, Attach. 3. This vector contains normalized values of the following variables: equity-to-total capital ratio; cash flow-based interest coverage ratio; the standard deviation of the ratio of a firm's operating cash flows to total assets; and the firm's operating cash-flow-to-total assets.

⁵⁴ See 47 C.F.R. § 65.305(a).

costs; the sum of these products is the WACC.

33. The formulas for determining the cost of debt, cost of preferred stock, and capital structure are codified respectively in sections 65.302, 65.303, and 65.304 of the Commission's rules.⁵⁵ The rules do not, however, specify a formula for the cost of equity.⁵⁶

34. In the *Further Notice* portion of the *USF/ICC Transformation Order*, the Commission sought comment on whether it should augment or replace its WACC calculation with other analyses or approaches.⁵⁷ Noting that "many rate-of-return companies have diversified beyond regulated voice services, for example to offer broadband, video, or wireless services,"⁵⁸ the Commission sought comment on whether the WACC "should be computed for only the regulated portion of the company's business, or at the level of the entire company?"⁵⁹ Although there was little dispute regarding the WACC formula itself, there were differing views on how to measure the components of the WACC.⁶⁰

35. Having recommended the type of data the Commission should use, and the companies that would comprise the Staff Proposed Proxy, in this section, we now analyze the data to determine: (a) capital structure; (b) the cost of debt; (c) and the cost of equity. As discussed below, we do not have sufficient data to calculate the percentage of preferred stock in the capital structures or to calculate the cost of preferred stock. Accordingly, as discussed below, we have not included it in these calculations.

I. Capital Structure

36. The capital structure of a firm is the percentage of debt, preferred stock, and equity the firm uses to finance its operations. For example, if a firm had \$60 of debt, \$10 of preferred stock, and \$130 of equity, then its capital structure would be 30 percent debt ($60/(60+10+130)$), five percent preferred stock ($10/(60+10+130)$); and 65 percent equity ($130/(60+10+130)$).

37. The WACC can be calculated with the "observed" capital structure, which is based on book values or the market values at a moment in time, or a firm's "target" capital structure, which is the capital structure the firm wishes to obtain.⁶¹ The Commission's rules

⁵⁵ 47 C.F.R. §§ 65.302-65.304.

⁵⁶ 47 C.F.R. § 65.301.

⁵⁷ *USF/ICC Transformation Order* at 18052, para. 1049.

⁵⁸ *Id.*

⁵⁹ *Id.*

⁶⁰ See, e.g., NECA et al. Comments at App. C, Statement of Prof. Randall S. Billingsley.

⁶¹ To maximize its value, a firm will seek to minimize its cost of capital by targeting its optimal mix of debt and equity. This is not, however, a reference to a hypothetical capital structure, such as one that regulators sometimes use to develop WACC estimates. For example, an all-equity firm could lower its WACC by adding relatively low-risk, tax-deductible, low-cost debt to its capital structure. But it could only lower the WACC up to a point, after which the benefits of the additional debt would be more than offset by higher debt and equity costs, as the additional debt significantly increases the probability of financial distress, including default and bankruptcy, substantially increases agency costs and intangible costs, such as those of losing the flexibility of financing future project with debt. See Roger A. Morin, *Regulatory Finance: Utilities' Cost of Capital*, 413-429 (Public Utilities Reports 1994) (*Morin Regulatory Finance*). A firm's target capital structure can be difficult for firm outsiders to assess; there is "no universal theory of the debt-equity choice," Stewart C. Myers, *Capital Structure*, J. Econ. Persp. 81-102 (Spring 2001) (*Myers Capital Structure*).

specify that capital structure is to be calculated based upon book values.⁶² A discussion of the issues associated with target capital structure and with using book values and market values in calculating the capital structure is included in Appendix C. For the reasons given below, we recommend that the Commission use market values rather than book values when calculating capital structure, as we find market values to be a better indication of the firms target capital structures.

a. Book Value Capital Structure Results

38. The Commission's rules currently require that the capital structure be calculated using the observed book values of debt, preferred stock, and equity. "Book value" means the value on the company's balance sheet. Under the Commission's rules, capital structure is calculated as follows:⁶³

$$\text{Book Value of a Particular Component} / (\text{Book Value of Debt} + \text{Book Value of Preferred Stock} + \text{Book Value of Equity})$$

39. Appendix D1 shows the share of debt based on book values, in the capital structure for each carrier in the Staff Proposed Proxy from 2008 to 2012. The average share of debt for the Staff Proposed Proxy was 73 percent in 2012, based on book values. However, we question whether this average share of debt is representative. For instance, six of the 16 carriers in the sample have remarkably high debt shares both absolutely and relative to their debt shares based on market values.⁶⁴

Company	Book Value Share of Debt (as a percentage of total company book value)
ACS	107%
CBT	135%
Consolidated	90%
FairPoint	150%
Lumos	82%
Windstream	88%

40. By comparison, AT&T's debt percentage is 42 percent when based on book values, and Verizon's debt percentage is 36 percent.

41. Additionally, ACS's, CBT's, and FairPoint's book value capital structures are not representative of their target capital structures,⁶⁵ *i.e.*, the capital structures that the companies

⁶² 47 C.F.R. § 65.304.

⁶³ 47 C.F.R. § 65.304.

⁶⁴ Sometimes accounting losses, arising, for example, from large amounts of interest payments, depreciation, or amortization, result in debt levels that exceed the book value of the firm's assets. In these cases, a firm might have a book capital structure that has more than 100% debt and a negative equity percentage equaling the absolute value of the amount by which the debt percentage exceeds 100%.

⁶⁵ Excluding the six carriers that have remarkably high debt shares, *i.e.*, debt shares 82 percent or greater, in 2012, the average book value capital structure is 51 percent debt, and the average market value capital structure is 44 percent debt.

would strive to obtain over time. A book value of debt that exceeds 100 percent of debt plus equity is nonsensical. It is also at least unlikely that even a 100% debt capital structure is optimal.⁶⁶ As noted, a firm's capital structure is optimized by choosing the levels of debt and equity which minimize its over-all cost of capital necessary for its operations.⁶⁷ It is a widely held belief that there are tradeoffs between the benefits of debt financing versus those of equity financing,⁶⁸ which means that optimal capital structure will involve a mix of debt and equity. ACS, CBT, and FairPoint have non-investment-grade bond ratings. Consolidated, Windstream, and Lumos have book values unlikely to represent their target capital structures, as the high degree of leverage of Consolidated and Windstream is likely a reason that they also have lower debt ratings. (Lumos has no debt rating.) This suggests that even a 100% debt capital structure would not minimize these companies' WACC, as the penalty for a lower debt rating is high interest rates.

b. Comparison of Book Value and Market Value Capital Structure Results

42. Because several carriers have book value capital structures in excess of 100 percent debt, we are concerned that the book value calculations required by Section 65.304 of the Commission's rules⁶⁹ may not provide reasonable data as required by Section 65.300.⁷⁰ As discussed above, market value calculations reported on Appendix D2 are an alternative to book value calculations; here we compare the two calculations. Overall, as explained in more detail below, we believe that capital structures based on market values almost certainly provide a more accurate approximation of the carriers' target capital structures.⁷¹ We note that NECA and Ad Hoc arrive at results that are closer to our chosen market capital structure of 54 percent (see both Appendix D2 and Appendix I1) than to our book capital structure of 73 percent. In particular, Ad

⁶⁶ Indeed, if a firm's stock trades at a positive price, there is a strong presumption that the firm has a positive equity value and therefore its debt is less than 100% of debt plus equity.

⁶⁷ See, e.g., Giacchino and Lesser, *Principles of Utility Corporate Finance* at 80-82 (Public Utilities Reports 2011) (*Giacchino and Lesser*) noting the optimal debt/equity ratio for a regulated firm may be different from the debt/equity ratio for a non-regulated firm.

⁶⁸ While the exact nature of this tradeoff is an open question, theories addressing it include the "tradeoff," "pecking order," and "cash flow" theories. *Myers Capital Structure* at 81-102. They depart from the classic framework laid out by Modigliani and Miller, Franco Modigliani and Merton H. Miller, *The Cost of Capital, Corporation Finance and the Theory of Investment*, 48 A. Econ. Rev. 261-297 (June 1958), in which capital structure has no effect on the value of a firm.

⁶⁹ 47 C.F.R. § 65.304.

⁷⁰ 47 C.F.R. § 65.300. The target capital structure of a firm is difficult, if not impossible, to ascertain precisely. However, if a given firm has a poor bond rating and a capital structure that differs significantly from the capital structures of firms with solid bond ratings in the same industry—whether these differences show up in comparisons of book value or market value capital structures—we reasonably can conclude that the given firm's observed capital structure could not be its target capital structure. Where the capital structure of a firm is so exaggerated and so obviously out of line with such an industry benchmark, as with some of the firms in our sample, its use might render an estimate of the WACC for that firm meaningless, and a prescription based upon that estimate unreasonable.

⁷¹ "Your first choice should be to use the firm's target capital structure for the weights. However, if you are an outside analyst and do not know the target weights, it would probably be best to estimate weights based on the current market values of the capital components." Eugene F. Brigham, Phillip R. Daves, *Intermediate Financial Management*, 392 SW. C. (Feb. 23, 2012).

Hoc arrives at a share of debt of 46 percent,⁷² and NECA uses a share of debt of 21 percent.⁷³

Company	Book Value of Debt (as a percentage of total company book value)	Market Value of Debt (as a percentage of total company book value)
ACS	107%	86%
CBT	135%	71%
Consolidated	90%	66%
FairPoint	150%	82%
Lumos	82%	59%
Windstream	88%	62%

43. By comparison, AT&T's debt percentage based on book value is 42 percent, as compared to 26 percent based on market value; and Verizon's debt percentage is 36 percent based on book values, as compared to 28 percent based on market values. The share of debt that these two carriers have in their capital structures is much lower than the share of debt in the capital structures of the six carriers mentioned above, and both AT&T's and Verizon's book value and market value debt shares are relatively close, in contrast to the book value and market value debt shares of the six carriers. In addition, AT&T and Verizon have highly, but not the highest, rated investment grade debt,⁷⁴ which would suggest that the capital structure that we observe for these carriers likely better reflects their target capital structure than the same measure for the other six carriers.⁷⁵

⁷² Ad Hoc Comments at 18.

⁷³ NECA et al. Comments, App. C, Statement of Prof. Randall S. Billingsley at 8.

⁷⁴ Investment grade bonds have a relatively low risk of default and therefore a relatively low yield. These bonds are rated "Baa3" or higher by Moody's and "BBB-" or higher by Standard & Poor's and Fitch. Non-investment grade bonds have a relatively high risk of default. These bonds are rated "Ba1" or lower by Moody's and "BB+" or lower by Standard & Poor's and Fitch. See http://www.fitchratings.com/web_content/ratings/fitch_ratings_definitions_and_scales.pdf, http://img.en25.com/Web/StandardandPoors/Ratings_Definitions.pdf; <http://www.moodys.com/ratings-process/Ratings-Definitions/002002> (last visited Apr. 16, 2013).

⁷⁵ Calculating these carriers' average capital structures over the five-year period from 2008 to 2012 might make their target capital structure more evident. A large amount of debt financing or equity financing in a single year, or sharply negative earnings or a random economic occurrence during the last two or three years might produce a significant deviation from the target capital structure. Five years is likely to be long enough that the historical effects of any such individual developments would be lessened by the averaging; at the same time, the period likely is short and recent enough to be representative of the carriers' current financial situation. The exception to the usefulness of looking at the average would be FairPoint, which entered and exited bankruptcy during the five-year period. Accordingly, we do not give any weight to what the average for FairPoint might tell us. Based on book values, the average of the five-year average share of debt for the sample of carriers, excluding FairPoint, and also Hawaiian Telcom and Lumos, as capital structure data are not available for either of the latter two carriers for every year of the five-year period, is 63%, which is significantly greater than 46%, the average of the five-year average share for these carriers.

44. We notice similar trends across the different proxy groups. In book value calculations for 2012, the RHCs had an average of 43 percent debt, the Mid-Size Carriers had an average of 103 percent debt; and the Publicly-Traded RLECs averaged 60 percent. By contrast, in market value calculations the RHCs averaged 33 percent debt, the Mid-Size Carriers averaged 72 percent debt, and the Rate-of-Return Carriers averaged 47 percent debt.⁷⁶ We therefore recommend that, despite precedent to the contrary (when the proxy group was the RHCs),⁷⁷ market value capital structures should be used to calculate the WACC.⁷⁸

2. Cost of Debt

45. The Commission's rules provide that the cost of debt⁷⁹ is calculated as follows:

Excluding the six carriers that have remarkably high debt shares, the average of the five-year average book value capital structures is 44%, which is relatively close to 35%, the average of the five-year average market value capital structures.

Based on five-year average book values, the four carriers (listed in the table above, excluding FairPoint and Lumos) have remarkably high debt shares both absolutely and relative to their debt shares based on market values. Based on average book values, ACS's debt is 102% of its capital structure, as compared to 67%, based on market values; CBT's is 144%, as compared to 78%; Consolidated's is 92%, as compared to 66%; and Windstream's is 91%, as compared to 57%. Again, based on the averages, these carrier's book value capital structures are not likely to be representative of their target capital structures, as these structures exceed 91% or greater.

⁷⁶ See <http://www.sec.gov/edgar.shtml> (last visited Apr. 16, 2013) for individual firms' 10-K reports.

⁷⁷ See *1990 Represcription Order*, 5 FCC Rcd at 7510, para. 28.

⁷⁸ Having concluded that we should use market values to determine the capital structure, the question remains whether to use data for the most recent year, 2012, or whether to use market values averaged over a longer period of time, such as the five-year period discussed above. Based on market values, the average share of debt in 2012 for the 13 carriers, excluding FairPoint, Hawaiian Telcom, and Lumos, is 51%, while the average of the five-year average share for these carriers is 46%. We conclude that the analysis would not be significantly affected by the choice between these two values. We will use 2012 market values, however, because these values reflect investors' expectations, and the same expectations are reflected in our cost of equity estimates. In theory, if we were to use the five-year average market values, we would have to adjust the cost of equity downward slightly to reflect the slightly lower risk associated with the use of these market values in capital structures as opposed to the risk associated with the use of the 2012 market values. We note that there are financial formulas that can be used to make such an adjustment where one is warranted. Roger A. Morin, *New Regulatory Finance* (Public Utilities Reports 2006) at 220-23, 243, and 479-482 (*Morin New Regulatory Finance*).

While the capital structure adjustment to reflect relatively less debt and more equity by itself would increase the WACC, the downward adjustment to the cost of equity would reduce the WACC, partially offsetting the effect of the capital structure adjustment. The adjustment to the capital structure is relatively easy to make, but the adjustment to the cost of equity is relatively complex. As the two adjustments are offsetting, the net effect of choosing 2012, rather than five-year average, market value capital structures could be small.

⁷⁹ After-tax cost of debt is typically used in industry calculations of the WACC. In these cases, the WACC is used as the discount rate in calculating the net present value of future cash flows. The stream of future cash flows to be discounted assumes that the firm will finance these flows with equity; the recognition of debt financing is through the use of the after-tax cost of debt when developing the WACC. However, the rate-of-return carriers regulated by the FCC develop a revenue requirement used to set prices in part by: 1) calculating the total allowable return on rate base; 2) calculating the taxable fraction of the total return that is available to shareholders after paying the tax-deductible interest on the debt; and applying the federal and state corporate income tax rates to the equity holders' fraction of the total return to calculate the carrier's

Embedded Cost of Debt=Total Annual Interest Expense/Average Outstanding Debt⁸⁰

where "Total Annual Interest Expense" = "the total interest expense for the most recent two years for all local exchange carriers with annual revenues equal to or above the indexed revenue threshold as defined in § 32.9000" and "Average Outstanding Debt" = the average of the total debt for the most recent two years for all local exchange carriers with annual revenues equal to or above the indexed revenue threshold as defined in § 32.9000.⁸¹ These data are readily available from Staff Proposed Proxy carriers' Form 10-Ks.

46. As a threshold matter, we believe that this equation is incorrect: it uses two years' interest expense divided by an average of two years' total debt, resulting in an overstatement of the cost of debt. This would approximately double the true embedded cost of debt. We therefore recommend that the Commission instead use the following equation for calculating debt based on the most recent year's interest expense:

Embedded Cost of Debt=Previous Year's Interest Expense/Average of Debt Outstanding at the

income taxes. The total return and income taxes are part of the carrier's revenue requirement. Under this approach, the pre-tax cost of debt is used to calculate the WACC and that calculation enables the carrier fully to compensate its debt and equity holders and to pay the taxes on the return available to equity holders. Accordingly, the WACC estimates we develop in this Report reflect the pre-tax cost of debt. When the WACC is used outside of the context of calculating a revenue requirement in this manner the pre-tax cost of debt might have to be adjusted downward to account for the tax benefits of debt financing, the so-called "tax shield."

⁸⁰ 47 C.F.R. § 65.302. The Commission's rules require that embedded cost of debt be used to calculate the WACC, which is logically consistent with its rules requiring the use of an original cost (essentially a book value) rate base. There is an argument for use of current debt yields in place of the embedded cost of debt, as current yields better reflect the opportunity cost of debt capital invested in the firm. However, current debt yields multiplied by the debt holders' share of a book value rate base does not provide these investors with their opportunity cost. If the rate base instead were based on market value, current debt yields should be used in place of the embedded cost of debt, to better reflect opportunity cost. See *Morin New Regulatory Finance* at 26-27.

To illustrate why the use of current debt yields in calculating the WACC would not provide debt holders with their opportunity cost, assume that the embedded cost of debt is 5%, the current yield on equivalent debt is 2.5%, the cost of equity is 10%, and that the rate base is \$100 and is financed with \$50 of debt and \$50 in equity, each expressed in book value terms. The debt holder receives the embedded cost of debt, 5%, times the debt share of the book value rate base, \$50, or a return of \$2.50, which matches the contractual obligation of the firm to its debt holders. The debt holder receives a return of \$2.50, or five percent, on the book value share of the rate base, \$50, regardless of the current yield on equivalent debt, 2.5% in our example. Moreover, the WACC would be 6.25% if it were based on the current debt yield rather than the embedded cost of debt (2.5% current cost of debt times the debt holders' share of the rate base, 50%, plus the cost of equity, 10%, times the equity holders' share of the rate base, 50%). The 6.25% total rate of return applied to the rate base of \$100 yields a total return of \$6.25. Given that the fixed obligation on the debt is \$2.50, the return that remains to compensate equity holders after payment to the debt holders is \$3.75, which equates to a rate of return of only 7.5% on the book value of the equity holders' invested capital of \$50 (\$3.75 divided by \$50), much less than the rate of return equity holders require, 10% in our example.

If instead the embedded cost of debt is less than the current yield on equivalent debt, and the WACC is based on that current yield, debt holders again receive a return equal to the fixed amount of the contractual obligation on the outstanding debt, while equity holders this time receive a return that is greater than they require.

⁸¹ 47 C.F.R. § 65.302.

Beginning and at the End of the Previous Year

47. Alternatively, an estimate of the current cost of debt for a given company could be based on the current yield on bonds that have the same rating as and a maturity that is similar to the company's bonds. Such an estimate is likely to be imprecise in at least some cases, as it would be difficult using such a simple approach to account for the characteristics of debt that significantly affect the yields they pay. Such debt characteristics include the maturity, *e.g.*, 5, 10, or 20 years, fixed versus variable interest rates, seniority, and whether the debt is callable or convertible. A more precise calculation might also require knowledge of how much of each type of debt instrument each company uses. However, as interest rates have been declining for a number of years, and companies that are in good financial health typically are able to refinance, on average the embedded cost of debt and the current cost of debt for these companies should not differ significantly, provided there have not been substantial changes in the cost of debt since the last filing of the companies' 10-Ks. Thus, we recommend using the method specified in the Commission's rules, as corrected, to estimate the cost of debt, at least at this time. We note, however, that for companies not in good financial health, the embedded cost of debt may to some extent reflect low rates to which the companies no longer have access. Whether the WACC is to be based on the Commission's cost of debt formula or a current cost of debt calculation, the Commission should consider calculating the WACC based upon firms that have either investment-grade bond ratings, or times-interest-earned ratios roughly equal to the ratios of firms that have such a rating, given that the WACC estimates of such firms, firms that are not in financial distress, generally would be more reliable.

48. The embedded cost of debt calculated as described above, based upon data from the Staff Proxy Firms' SEC filings, is reported in Appendix E. The average embedded cost of debt for all 16 carriers is 6.19 percent. For the RHCs it is 5.17 percent, the lower rate likely reflecting, among other things, their financial stability in the eyes of lenders. The Mid-Size Proxies pay an average interest rate of 7.65 percent. The Publicly-Traded RLEC Proxies pay an average interest rate of 5.14 percent on their debt.

49. We note that it may be necessary to reduce, or cap, the embedded cost of debt due to the availability of government subsidized loans to most, if not all, rate-of-return carriers. When the interest rates carriers face are not market-based but rather subsidized by the government or by non-profit entities (*e.g.*, the Rural Utilities Service (RUS), CoBank, or the Rural Telephone Finance Cooperative (RTFC)), these subsidized rates must be taken into account in calculating carriers' cost of debt. This is because RLECs may have access to loans at below-market interest rates; for example, RUS currently offers loans with interest varying from current Treasury rates to no more than five percent.⁸² If such extensive funding is readily available to most RLECs from these sources, then even a generous estimate of the cost of debt should be no more than the current highest rate charged by RUS, CoBank, or RTFC. It is unclear, however, whether it would be feasible and/or unduly burdensome for a carrier to finance all of its assets with loans from these lenders, and to refinance older debt at current rates.

50. We point out that the staff estimate of the cost of debt, 6.19 percent, is higher than the estimates provided by NECA (4.42 percent) and Ad Hoc (3.63 percent). Of course, the NECA and Ad Hoc estimates were for very different groups of proxy firms. NECA uses the expected yield on corporate bonds rated A- by Standard and Poor's.⁸³ This is the average bond

⁸² See <http://www.rurdev.usda.gov/supportdocuments/telecomloansflyerfactsheet.pdf> (last visited Apr. 16, 2013).

⁸³ NECA et al. Comments, App. C, Statement of Prof. Randall S. Billingsley at 8.

rating of the firms in their portfolio. Ad Hoc relies on the information made publicly available by Prof. Damodaran to obtain its cost of debt estimates. Damodaran uses sector-by-sector debt estimates,⁸⁴ and Ad Hoc uses his reported after-tax cost of debt to calculate the WACC. As explained in this Report, the pertinent cost of debt in the context of how the FCC calculates revenue requirements is the pre-tax cost of debt. Using the pre-tax cost of debt provided by Ad Hoc,⁸⁵ the Ad Hoc cost of debt is 4.79 percent.⁸⁶

3. Cost of Equity

51. Equity is the value of a firm's assets, such as equipment, patents, and goodwill, after the firm's financial liabilities have been deducted. The Commission's rules do not specify how the cost of equity is to be calculated,⁸⁷ and there are several asset pricing methods that might be used to estimate the cost of equity. For its preliminary analysis in the *USF/ICC Transformation Order*, the Commission used CAPM, the most widely used method in commerce.⁸⁸ The Commission sought comment on using CAPM and on using the Discounted Cash Flow Model (DCF), on which it relied to calculate the cost of capital in the *1990 Represcription Order*.⁸⁹ Both models calculate the cost of equity based upon an analysis of firms' common stock. Parties offered little discussion regarding CAPM or the difference between CAPM and DCF. NECA provided analysis based upon both DCF and CAPM,⁹⁰ and Ad Hoc's comments are based on a study using CAPM.⁹¹ We discuss below both of these popular models for measuring the cost of equity. In this Report we use both models to determine the cost of equity, and to create a zone of reasonableness, because both models have different limitations.⁹²

52. *Background.* Equity derives its market value from the expected present discounted value of the profits it can generate. Because the market for the products and services sold by a firm and capital markets are not static, the expected flow of profits changes with new information, and the value of equity is always in flux. In publicly traded companies, ownership of the corporation is shared among stockholders according to their stockholdings. In the event of liquidation, stockholders are entitled to a share of the proceeds that remain from selling off the assets of the company and repaying the firm's creditors. If portions of the company's equity are traded on a regular basis on the stock market, there is a readily observable price for the entirety of the firm's equity: the price of a share multiplied by the number of shares outstanding.

⁸⁴ Ad Hoc comments at 18.

⁸⁵ *Id.*

⁸⁶ *Id.*

⁸⁷ 47 C.F.R. § 65.301. ("The cost of equity shall be determined in represcription proceedings after giving full consideration to the evidence in the record, including such evidence as the Commission may officially notice.").

⁸⁸ John R. Graham and Campbell R. Harvey, *The Theory and Practice of Corporate Finance: Evidence from the Field*, 60 J. FIN. ECON. at 187-243 (2001) (*Graham and Harvey*).

⁸⁹ *USF/ICC Transformation Order*, 26 FCC Rcd at 18054, para. 1055 (citing *1990 Represcription Order*, 5 FCC Rcd at 7527-29, paras. 174-189).

⁹⁰ NECA et al. Comments at 56-57 and App. C, Statement of Prof. Randall S. Billingsley at 6-7, 15-26.

⁹¹ Ad Hoc Comments at 5-7.

⁹² See, e.g., Phillips, Charles F. Jr., *The Regulation of Public Utilities*, Public Utilities Reports, Inc., (1993) at 394-97.

53. In privately held firms, including the overwhelming majority of RLECs, however, equity cannot be readily measured, even though an equity figure is reported in their balance sheets. Unlike in publicly traded firms, in private firms claims to the residual value of the assets of the company after repaying its creditors are not traded in a market. Therefore, there is no market price reflecting the consensus of investors as to the value of a private firm's equity; that value can only be inferred by looking at comparable publicly traded companies.

54. The cost of equity of a firm is the return that investors require given the perceived risk of the firm's expected stream of future profits. In the case of publicly traded companies, one can observe the stock market price of equity, and any dividends it pays, and can estimate the after-the-fact cost of equity based upon these data. But as explained above, in the case of privately held companies, the price of equity is not observed. Accordingly, the established practice in finance to estimate the cost of equity for private firms is to find publicly traded firms that have similar risk as the private firms. The cost of equity is estimated for these publicly traded companies, and that estimate is attributed to the private ones.⁹³

55. The effort to identify publicly traded firms with risks similar to those of privately held firms has two obvious limitations. First, there may be important, unobserved risk factors that drive a firm to become publicly traded in the first place. This makes it likely that even if the company appears to be identical in risk to the private firm whose cost of equity is being estimated, important though unobserved differences that could affect the cost of equity remain. Second, it is not likely that a publicly traded firm will be identical to a privately traded one even in the observable risk characteristics, making the choice of representative firms an ultimately imperfect and subjective method.

56. As the cost of equity reflects the uncertain expectations of investors, there is potential for introducing significant errors into the estimates, and no single model can be counted on exclusively to provide a precise estimate of the cost of equity. Each methodology has conceptual shortcomings, requires the use of informed judgment, and involves measurement error. We discuss these models, and their strengths and weaknesses, below.⁹⁴

⁹³ The Commission also sought comment on the importance of flotation costs, small costs associated with the issuance of stocks or bonds, for our cost of equity calculations, *USF/ICC Transformation Order*, 26 FCC Rcd at 18054, para. 1055, but received little comment. See, e.g., NECA et al. Comments, App. C, Statement of Randall S. Billingsley at 7. Of all carriers with at least one rate-of-return study area, we have identified fewer than twenty that are publicly traded. Because flotation costs tend to be proportionately small, and are primarily relevant for public companies issuing new securities, we believe that they are not significant for the vast majority of RLECs (which are not publicly traded) and have not been incorporated into calculations meant to be representative of RLECs in general.

⁹⁴ NECA has provided an estimate of the cost of equity based upon another model, a Free Cash Flow (FCF) model analysis in which current free cash flow is divided by the value of the firm. See NECA et al. Comments at 57-60. Based upon its analysis, NECA concludes that the average value for cost of capital is between 11.75% and 23.49%. *Id.* at 59-60. NECA does not provide sufficient information regarding its analysis to allow meaningful assessment of its calculations. NECA's analysis is based upon unsubstantiated assumptions about the value of RLEC lines instead of demonstrated market values (see NECA et al. Comments at 58 ("RLEC lines may be more valuable than price cap companies' rural lines for at least two reasons. First, RLEC lines are in better shape because these companies have heretofore focused their full attention, investment and maintenance upon their rural exchanges,"); arbitrarily reduces price-per-line data (see NECA et al. Comments at 59 ("Since 2008, sale prices for RLECs and price cap exchanges suggest a range between \$3200 and \$1500 per line. [footnote omitted]. Sales prices in prior years were considerably higher, and the likelihood of continued decline in P is not unreasonable. Therefore, it appears reasonable to use a \$2500 to \$1200 price-per-line range to produce cost of capital estimates,");

57. *Limitations of Models Used to Estimate the Cost of Equity.* Outside of the regulatory context, CAPM is the most widely used model for determining the cost of equity.⁹⁵ DCF, however, is the most widely used in regulation, and was used in the Commission's 1990 *Represcription*.⁹⁶ At that time the Commission chose DCF over CAPM for determining the cost of equity, but stated that "[w]e continue to believe that the CAPM approach has the potential to provide estimates of the cost of equity capital with the same reliability as the DCF approach."⁹⁷ We use both methods in this Staff Report to estimate the cost of equity

58. Unlike DCF, CAPM does not require analysts' predictions regarding changes in dividends, and so eliminates that particular element of speculation from the equation. By the same token, however, the inputs required to implement the CAPM, in particular, the expected beta⁹⁸ and the expected risk premium, are prone to measurement error because these estimates involve speculation as to investor expectations.⁹⁹ The true value of each of the inputs required to implement the CAPM is unknown, and each is difficult to measure precisely. In formulation, the constant-growth DCF, the variant of the general DCF model used in the past by the Commission and in this Report, also assumes that a firm's dividends grow at the same rate in perpetuity, which is unlikely. However, it can be argued that in fact it allows for fluctuations around a long-run average growth rate, and error as to expected dividend payments in the more distant future have a limited impact on the accuracy of the approach, for example, because investors reasonably could be expected to largely if not completely discount the value of the dividends they might expect to receive beyond the foreseeable future.¹⁰⁰

relies on a non-random sample of cost companies that chose to respond to a NECA data request (NECA et al. Comments at 59); and relies on unweighted median data without providing mean data. *Id.* For these reasons, we find NECA's FCF analysis unpersuasive with regard to the issues discussed in this Report.

⁹⁵ See, e.g., William F. Sharpe, *Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk*, J. FIN. at 425-442 (1964). Methods such as the Gordon Growth Model or Dividend Discount Model (DDM) popularized by Gordon and Shapiro in 1959. (See Myron J. Gordon & Eli Shapiro, *Capital Equipment Analysis: The Required Rate of Profit*, MGMT. SCI. at 102-110 (1956)) were widely used in practice prior to this time. ("In the 1940s and 1950s, prior to the development of the Capital Asset Pricing Model... the cost of equity capital was backed out from the cash flows that investors could expect to receive on their shares in relation to the current price of the shares. A popular method of estimating the cost of equity this way was the Gordon and Shapiro (1956) model, in which a company's dividends are assumed to grow in perpetuity at a constant rate *g*." André F. Perold, *The Capital Asset Pricing Model*, J. ECON. PERSP. at 3-24 (2004).

⁹⁶ *1990 Represcription Order*, 5 FCC Rcd at 7528, para. 178.

⁹⁷ *Id.* at 7523, para. 139. The Commission found that the CAPM estimates submitted in that proceeding used unrealistically high betas and risk premiums. *Id.*

⁹⁸ As discussed in greater detail below, beta is a measurement of the volatility of a company's stock relative to the volatility of the market.

⁹⁹ Eugene F. Fama and Kenneth R. French, *The Capital Asset Pricing Model: Theory and Evidence*, J. ECON. PERSP. at 44 n.7 (2004) (*Fama and French*).

¹⁰⁰ To understand why, consider that the general DCF model assumes that the stock price is equal to the present value of all future dividends, and that the discount rate exceeds the dividend growth rate. As the discount rate is greater than the growth rate, dividends after some period of time, albeit possibly a long period, become insignificant. Thus, the constant-growth DCF model is valid as long as a firm is able to grow at constant growth rate for a sufficiently long period, not forever. For example, assuming a discount rate of 10% per year, a dividend growth rate of five percent per year, and a current dividend of \$1.00 per

59. While in a constant-growth DCF analysis, companies with high dividend growth rates (relative to the expected long-run growth rate of the economy as a whole) may be judged to have high costs of equity, the incumbent LECs in our sample are forecast to have modest growth rates. Accordingly, the DCF model is suitable for estimating their cost of equity. Furthermore, to the extent that any of the firms in our sample have growth estimates that might be judged high, we note that firms have in the past (and can in the future) grow at above average rates for long periods of time, periods long enough that investors might place little or no weight on the returns that might be expected to be available at the time that growth starts to slow significantly. To estimate future dividends, it is standard practice to rely on the consensus estimates of industry analysts.¹⁰¹ We consider this reasonable, since investors, particularly institutional investors that routinely buy and sell significant quantities of stocks, rely on these analysts' estimates when making such decisions.¹⁰² The analysts' estimates are expensive to produce, and the services that collect the available range of estimates have substantial prices, indicating that the purchasing investors significantly value such services. Moreover, even if analysts' growth estimates turn out to be too high or too low in hindsight, arguably such error is largely irrelevant. As long as investors base their expectations on the analysts' estimates, these are the estimates, regardless of whether they are too optimistic or too pessimistic, that are reflected in the market price of equity.¹⁰³

60. The DCF model cannot be used to estimate the cost of equity for companies that do not pay dividends on a regular basis, however, such as Cincinnati Bell. For these companies, we cannot calculate the cost of equity using the DCF model and thus will lack a second estimate to corroborate the company-specific results of the CAPM.

61. As for the CAPM, there is compelling evidence that it does not accurately predict equity returns, which is the ultimate test for a model used specifically for the purpose of estimating the cost of equity, as we do here.¹⁰⁴ Moreover, a substantial fraction of investors are not significantly diversified, and face company specific-risk, contrary to a key assumption of the CAPM.¹⁰⁵ Also, beta, the lone risk factor in the CAPM, arguably needs to be supplemented with other risk variables, such as dividend yield, firm size, and skewness, to explain security returns.¹⁰⁶ And there are real-world constraints on investor borrowing, such as on short selling, contrary to

year that is paid annually, the present value of the dividend payment in year 50 is approximately 10 cents, and in year 115 this value is approximately zero.

¹⁰¹ See, e.g., *1990 Represcription Order*, 5 FCC Rcd at 7515, para. 67; *Morin New Regulatory Finance* at 297-303; *Giacchino and Lesser* at 253.

¹⁰² *1990 Represcription Order* at 7529, para. 188. The Commission previously found the use of consensus forecasts of industry analysts to be a reasonable approach to estimating dividend growth rates, and relied on them in the *1990 Represcription Order*.

¹⁰³ Some argue that earnings growth rate estimates of analysts that work for investment banking and stock brokerage firms tend to be overstated, and use of these estimates in the DCF model tends to bias cost of equity estimates upward. See Peter D. Easton and Gregory A. Sommers, *Effect of Analysts' Optimism on Estimates of the Expected Rate of Return Implied by Earnings Forecasts*, J. ACCT. RES., 983-1015 (2007); *Morin New Regulatory Finance* at 299-302.

¹⁰⁴ See, generally, *Fama and French*; *Morin Regulatory Finance* at 338; *Morin New Regulatory Finance* at 175-89.

¹⁰⁵ *Morin New Regulatory Finance* at 175.

¹⁰⁶ *Morin Regulatory Finance* at 338; *Morin New Regulatory Finance* at 175-89.

one of the CAPM assumptions.¹⁰⁷

a. **Capital Asset Pricing Model (CAPM)**

62. The Capital Asset Pricing Model is widely used by financial practitioners in industry to calculate the cost of equity of publicly traded firms.¹⁰⁸ For example, a survey of 392 Chief Executive Officers in the United States found that “CAPM is by far the most popular method of estimating the cost of equity capital: 73.5 percent of respondents always or almost always use the CAPM.”¹⁰⁹ It is the benchmark for academic research in finance.¹¹⁰ Using the CAPM estimates of the cost of equity for a representative firm to calculate the WACC for regulated industries is also standard procedure.¹¹¹ CAPM starts out with the assumption that investors face a tradeoff between assets with high returns and high volatility and assets with low returns and low volatility, with volatility understood as the standard deviation of returns. Investors then create a diversified portfolio of assets that give them the highest rate of return possible for their chosen level of risk. The model then further assumes that all investors have the same expectations about the behavior of the market, an assumption that is sufficient to derive the market equilibrium rate of return for any given asset.

63. The required rate of return in CAPM is:

$$\text{Asset rate of return} = \text{Risk free interest rate} + \text{Asset Beta} * \text{Market Premium}$$

The risk free interest rate is the return that investors can get on their money having the certainty that there will be no default. U.S. government securities are considered to fulfill this role, as there are few alternative assets, if any, which have a higher probability of full repayment than U.S. government debt.¹¹²

64. Long-term Treasury yields should be used in the CAPM as the risk-free-rate because common stock is a long-term investment.¹¹³ As a long-term investment, the expected rate of return on common stock depends on long-term cash flows. Moreover, RLEC assets have

¹⁰⁷ *Morin New Regulatory Finance* at 175, 177.

¹⁰⁸ ¹⁰⁸ The efficient market hypothesis is the foundation upon which the CAPM (and the DCF model) is based, and there are no real alternatives to estimating the cost of equity that are not based on it. See *Giacchino and Lesser* at 250-251. The hypothesis has sharp critics. *Id.*; see also Robert J. Shiller, From Efficient Markets Theory to Behavioral Finance, *J. ECON. PERSP.* 83-104 (2003).

¹⁰⁹ *Graham and Harvey* at 187-243.

¹¹⁰ See, e.g., *Fama and French* at 25-46; *Giacchino and Lesser* at 185.

¹¹¹ “Regulators use the CAPM to establish a “fair” rate of return on invested capital for public utilities and other firms subject to price regulation. For example, a commission regulating an electric power company may have to establish a price that the company is allowed to charge its customers for electricity. The commission will do so by computing the cost of producing the electricity, including an allowance for the cost of capital.... In computing the cost of capital, a regulatory commission must compensate the providers of capital for the risk they bear by investing in the electric utility. Because the investors are able to diversify their investment portfolios, the only risk the regulators need to compensate them for is market risk, as measured by beta.” Zvi Bodie and Robert C. Merton, *Finance* at 352 (Prentice Hall 2000)

¹¹² For example, *Forbes* reports the thoughts of former Federal Reserve Chairman Alan Greenspan on this issue: “The United States can pay any debt it has because we can always print money to do that. So there is zero probability of default.” <http://www.forbes.com/sites/johntharvey/2012/09/10/impossible-to-default/> (last visited Apr. 15, 2013).

¹¹³ See *Morin New Regulatory Finance* at 151-152.

long useful lives that typically are financed with long-term securities.¹¹⁴ Thus, the appropriate risk free rate is the one reflected in long-term (e.g., 10- or 20-year) U.S. Treasury bonds rather than shorter-term U.S. Treasury notes or bills (e.g., five-year notes, or 90 or 30 day bills).¹¹⁵ Short-term investors would face reinvestment risk at the end of every 90 day period, for example, because they do not currently know what the rates will be in 90 days, 180, 270, and so on, while the value of the underlying asset depends on the present value of its long-term future cash flows, regardless of investors' investment horizons. Whether a 10-, 20-, or 30-year Treasury bond rate should be used is an open question. In our detailed analysis below, we take the interest rate on the 10-year Treasury note as the risk free rate because the standard deviation of the mean historical equity premium measured relative to returns on 10-year Treasury securities is readily available. This rate was 1.92 percent as of March 26, 2013.¹¹⁶ Ad Hoc does not specify how it computed the risk free rate. NECA uses a 20-year Treasury note rate.¹¹⁷ This choice does not have a major impact on NECA's cost of equity calculations, which are higher than ours primarily because of their choice of market premium.

65. Because we believe the interest rate that is the best predictor of the future interest rate on government securities is the current interest rate (which is consistent with the hypothesis that interest rates follow a random walk), we use the current rate as the risk-free interest rate. This rate incorporates an accurate reflection of investors' current expectations about the future rate. The staff recommends using this estimate of the risk free interest rate, which is forward-looking, because CAPM requires the use of forward-looking values.

(i) Primary Variables in CAPM

66. There are a number of variables needed to determine the cost of equity using CAPM: 1) the choice of which market index is to be used for this analysis; 2) the time period over which to measure risk; 3) the market premium, which is the market's return above the return that would be offered for a risk-free investment; 4) additional risk premiums; and 5) betas, which measure the volatility of a company's stock relative to the market. We discuss our analysis of these variables below.

67. *Choice of Market Index.* To calculate the cost of equity using CAPM, the returns on an individual company's equity are compared to the returns on equity generally. In theory, this comparison should be to a comprehensive market portfolio;¹¹⁸ in practice, it is necessary to select a market index for this comparison. The choice of which market index is to be used has been debated.¹¹⁹ The S&P 500 is considered a sufficient market index because it includes enough securities to be broadly representative of the entire market. It is widely used by regulators,¹²⁰ was

¹¹⁴ *Id.*; *Giacchino and Lesser* at 234–35.

¹¹⁵ See generally Tom Copeland, Tim Koller, and Jack Murrin, *Valuation: Measuring and Managing the Value of Companies* at 217 (McKinsey & Company, Inc. (2000)) (*Copeland*).

¹²¹ <http://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/TextView.aspx?data=yield> (Last accessed May 2, 2013).

¹¹⁷ NECA et al. Comments, App. C, Statement of Prof. Randall S. Billingsley at 23.

¹¹⁸ See generally, *Fama and French*.

¹¹⁹ *Giacchino and Lesser* at 225 (Noting that this point was made in “[s]tudies by Fama [showing] that when a portfolio has 50 or more assets, the influence of the covariance terms swamps the influence of the individual variance terms.”).

¹²⁰ *Id.*

used by NECA in its comments,¹²¹ and we use the S&P 500 in this Report. Ad Hoc's source does not specify the market index used in its WACC calculations.¹²²

68. *Choice of Time Period.* There is general consensus that a long historical time period is most appropriate in producing risk premium estimates based on historical data.¹²³ Even unusual events can be repeated in the long run. For this reason, unusual market events should not be dropped from the sample simply on the basis that they were outliers, a point reinforced by the recent financial crisis. We use the time period 1928-2012. NECA does not use a historical market premium, and Ad Hoc does not specify how its market premium is calculated.¹²⁴

69. *Market Premium.* The market premium is defined in the CAPM as the difference between the return one can expect to earn holding a market portfolio and the risk-free interest rate. Here we find calculating the historical market premium to be the best approach available to us, and for the data available to us, we find the reasonable range for market premium ranges from 1.22-10.54 percent.

70. A survey of 150 finance textbooks found that 129 textbooks consider the *expected* market premium to be the relevant variable for estimating the cost of equity, and 82 took the view that investors consider the average historical market premium to be the best forecast of the expected market premium.¹²⁵ It is common to rely on as long a time series as possible when calculating the average historical market premium.¹²⁶

71. A commonly used source, Ibbotson,¹²⁷ estimates the expected market premium to be 6.7 percent based on the historical market premium over the twenty-year U.S. government bond rate.¹²⁸ The calculation is the arithmetic average difference between the S&P 500 company stock total annual returns and the government bond *income* returns (*i.e.*, excluding capital gains on the bonds)¹²⁹ over the period 1926-2010.¹³⁰ Unfortunately, we did not have access to the

¹²¹ NECA et al. Comments at 5, App. C, Statement of Prof. Randall S. Billingsley at 22.

¹²² See the definition of "Cost of Equity" at http://people.stern.nyu.edu/adamodar/New_Home_Page/datafile/variable.htm (Last accessed 05/01/2013)

¹²³ *Giacchino and Lesser* at 225.

¹²⁴ See the definition of "Cost of Equity" at http://people.stern.nyu.edu/adamodar/New_Home_Page/datafile/variable.htm (Last accessed 05/01/2013)

¹²⁵ Pablo Fernandez, *The Equity Premium in 150 Textbooks*, J. FIN. TRANSFORMATION, Capco Inst. at 14-18 (2009) (*Fernandez*), which reports that of 150 textbooks, "129 claim the REP [required (by investors) equity premium] = EEP [Expected equity premium]" and that "82 books use the HEP [Historical equity premium] as the best estimation of the EEP."

¹²⁶ *Morin New Regulatory Finance* at 157; *Giacchino and Lesser* at 235-236.

¹²⁷ Ibbotson SBBI 2011 Classic Yearbook; Market Results for Stocks, Bonds, Bills, and Inflation, 1926-2010 (Ibbotson Associates 2011) (*Ibbotson*). On common use of *Ibbotson*, see *Morin New Regulatory Finance* at 157-158.

¹²⁸ *Ibbotson* at 124, Table 10-1.

¹²⁹ The income portion of total bond return (*i.e.*, the coupon rate), not the total return, is used on grounds that the income return better reflects the risk-free portion of the bond return, as realized capital gains or losses are largely unanticipated by investors. See generally, *Ibbotson*; see also *Giacchino and Lesser* at 234. *Ibbotson's* 20-year market premium from 1926 to 2010, based on total returns from holding government bonds, is 5.7 %, a full percentage point less than the rate determined by focusing on income

underlying data for the Ibbotson calculation to provide a confidence interval around the reported estimated means. We recommend that the Commission obtain these or similar data.

72. The average historical market premium above the 10-year risk free rate for the longest period readily available to us (1928-2012) was 5.88 percent and came from data supplied by Prof. Damodaran.¹³¹ The calculation is the arithmetic average of the difference between the annual return on the S&P 500, and return on the 10-year U.S. government bond including capital returns. The interval defined by two standard deviations¹³² around the 10-year government bond historical market premium was 1.22-10.54 percent. Statistically, we are approximately 95 percent confident that the true mean value of the market premium lies within these ranges.¹³³ However, there is substantial variation in observed market premiums over this period (for example, for the 10-year market premium, the lowest market premium in any year was -56.65 percent, and the highest 49.27 percent). Ideally, we would have considered the 10- and 20-year historical premium on government bonds, over both the total bond return and the bond income return.

73. Surveys are another source for expected market premiums. There are risks associated with using surveys.¹³⁴ We considered three surveys, but the range each survey reports mixes estimates made under differing assumptions, such as the purpose of the survey, the specified market portfolio, and the specific risk free rate. Consequently, they cannot be formally compared with each other or any other estimates, but perhaps provide rough sanity test ranges. The first survey, from 2009, reported an average from 150 finance textbooks of 6.5 percent from a range from three to ten percent.¹³⁵ The second, a survey of over 1500 finance and economics professors conducted during 2010 found that the average market premium estimated by the 462 U.S. based academics in the sample was 6.0 percent, with a range of two to twelve percent. The third, the January 2013 results of the quarterly poll of American CFOs regularly conducted by Duke University, found that the surveyed CFOs expect the market premium of the S&P 500 over the ten-year government bond to be, on average, 3.83 percent, with the surprising range of -32 to

returns only. *Ibbotson* at 32, Table 2-1. *See also*, Roger G. Ibbotson, *The Equity Risk Premium*, RES. FOUND. CFA INST. at 19 (2011).

¹³⁰ The reliability of U.S. stock market data prior to 1926 is questionable. *Morin New Regulatory Finance* at 158-159.

¹³¹ The standard deviation of the market premium was 2.33%. (Aswath Damodaran, Professor of Finance at the Stern School of Business at New York University, http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/histretSP.html) (last visited Apr. 15, 2013).

¹³² Here we refer to the estimated standard deviation of the estimated mean market premium. In other words, we refer to the sample standard deviation of the observed distribution of market premiums, divided by the square root of the number of years (minus 1) for which we have data, *i.e.*, the square root of $84 - 1 = 83$. Because the distribution of the estimated mean approaches a normal distribution as the sample size grows, for a sample of this size, we can expect that around 95% of the time the mean market premium will be within two standard deviations of the estimated mean of 5.88%.

¹³³ The range defined by two standard deviations of the estimated mean above and below the estimated mean is an approximate 95% confidence interval for the mean. This means that there is a 95% chance that the true mean is within this range. Setting the confidence coefficient at 95% is common. *See, e.g.*, *Statistical Methods in Discrimination Litigation* at 168 (Marcel Dekker 1986); *Confidence Limits*, HANDBOOK OF BIOLOGICAL STATISTICS, available at <http://udel.edu/~mcdonald/statconf.html> (last visited Apr. 16, 2013).

¹³⁴ *See, e.g.*, *Morin New Regulatory Finance* at 161-62.

¹³⁵ *Fernandez* at 14-18.

98 percent.¹³⁶ The Ibbotson and Damodaran historical averages lie well within these ranges.

74. Another approach that makes use of expectations is to estimate the average DCF return to equity for the components of the S&P 500, and obtain the implied market premium by subtracting the risk-free rate. NECA applied this analysis and found an implied market premium of 11.2 percent, substantially higher than any other estimate we are aware of (excluding the obviously very high estimates of some CFOs).¹³⁷

75. *The Effect of Size on Market Premium.* NECA asserts that “[e]xtensive research documents that small capitalization firms such as the average RLEC also require an additional risk premium of about 1.53 percent.” However, recent research indicates that the size effect “seems to vary over time or even disappears,”¹³⁸ with smaller firms in the United States not performing significantly better than large ones from 1980 onward. Therefore, we do not recommend adding a risk premium based on size to the cost of equity.¹³⁹

76. *Beta.* A company’s beta is the coefficient on market returns resulting from a simple regression of the security’s returns on market returns, *i.e.*, it is a measurement of the volatility of a company’s stock compared to the volatility of the market. If a company has a beta of one, changes in the return on a company’s stock are the same as those in the market generally. If a company’s beta is zero, changes in its returns do not correlate with changes in the market generally. A beta greater than zero but less than one means a company’s stock generally moves in the same direction as the market, but not as much as the market. A beta greater than one means a company’s stock moves in the same direction as the market, but the changes are of greater magnitude. The returns on stocks with very low betas will fall less when the market goes down than returns on those stocks with high betas, allowing investors to be less susceptible to market

¹³⁶ *Graham and Harvey.* The range of the survey can be found in “March 2013 United States Topline Tables.” *cfosurvey.org*. Duke/CFO. Web. 10 Apr. 2013. <http://cfosurvey.org/13q2/Q1-13-US-Topline-Updated.rtf>, at 39 (last visited Apr. 16 2013). Since the poll was started in June of 2000, the quarterly average has never gone below 2.12% or above 4.78%.

¹³⁷ NECA presents an analysis by Prof. Billingsley that applies the DCF methodology to calculate the required return for the S&P 500. See NECA et al. Comments, App. C, Statement of Prof. Randall S. Billingsley at 7; Prof. Billingsley considers that, in a time of economic crisis, and “in the wake of the recent financial crisis in the U.S.,” investors are pessimistic and demand higher returns than they historically have. *Id.* at 22. The DCF approach to estimating the market premium is not without its critics. See *Copeland* at 222 (Analysts “have shown limited skill in forecasting price changes in the S&P 500. In addition, the formula that provides the basis for this approach assumes perpetual growth at a constant rate. This is a particularly stringent assumption.”).

¹³⁸ Crain, Michael A., *A Literature Review of the Size Effect* (October 29, 2011), available at SSRN: <http://ssrn.com/abstract=1710076> (last visited Apr. 16, 2013) or <http://dx.doi.org/10.2139/ssrn.1710076> (last visited Apr. 16, 2013).

¹³⁹ But see *Giacchino and Lesser* at 239 (“Empirical studies have typically found that small firms typically have higher returns over the long run than larger firms.”). These authors report on the findings published in the Morningstar 2009 SBB Valuation Yearbook as to the implied size premiums, measured by subtracting the estimated CAPM return above the risk-free rate from the actual return above the risk-free rate, for the period 1926 to 2008, for 10 different firm sizes, based on market capitalization. These premiums, which would be added to the cost of equity estimates obtained using the CAPM, ranged from 5.81 percent for the smallest group of firms (the smallest firm in this group had a market capitalization of \$1.6 million), to 1.54 percent for the fifth largest group (the smallest firm in this group had a market capitalization of \$1.85 billion), to minus .36 percent for the largest group (the smallest firm in this group had a market capitalization of \$18.628 billion), the only group that had a negative size premium. It is unclear whether Ad Hoc adds a size effect, but their 5.5 percent market premium suggests that they do not.

risk. This feature makes them particularly attractive, and investors require lower returns from them. Conversely, assets with high betas will substantially increase their returns only when the market goes up. Because returns on these stocks tend to improve noticeably only when the market as a whole is improving, investors require high returns from assets with high betas. Betas for the RHCs, the Mid-Size Proxies, and the Publicly-Traded RLEC Proxies are included in Appendix F.¹⁴⁰ These betas are based upon a regression analysis of each company's returns on stock compared to the returns on the S&P 500 for the 5-year period ending September 18, 2012.¹⁴¹ These estimates are forward-looking inasmuch as recent historical values predict future ones.

77. Some additional methodological choices must be made when obtaining betas. These include the periodicity of returns used in the regression, and whether to adjust the value of beta towards one.

78. *Periodicity of Data.* Data on stock returns are available on a daily basis, and the SNL Kagan financial service to which the Commission subscribes uses daily data for its beta regressions. However, weekly data and monthly data are used most frequently both in the financial academic literature and in practice.¹⁴² Appendix F reports betas using daily, weekly, and monthly data. We note that Ad Hoc uses weekly data¹⁴³ and NECA uses betas provided by Value Line, but does not document the underlying methodology. As shown in Appendix F, however, the variations are inconsequential: our average beta is 0.89, whereas the average Value Line beta for the companies in our portfolio is 0.85.

79. Using higher frequency data, such as daily observations, creates certain problems, but using lower frequency data creates different problems. On one hand, the stocks of the smallest companies in our portfolio are not traded very frequently, which can lead to statistical bias in beta calculations based on higher frequency, such as daily, data. On the other hand, betas calculated with monthly data use fewer observations, and several of them lose statistical significance in our sample. The betas in this Report have been calculated using daily, weekly, and monthly data.

80. *Adjustment Towards One.* Betas provided by financial services other than SNL Kagan, such as Bloomberg and Value Line, frequently give a weight of 2/3 to the beta obtained from simple regression and then add 1/3 to the result.¹⁴⁴ This has the effect of making all betas closer to one. It is meant to account for the empirically observed tendency of betas to move over time towards the market beta of one.¹⁴⁵ Appendix F reports betas with and without this

¹⁴⁰ T-statistics and R-squared values associated with these betas are provided in Appendix G.

¹⁴¹ Practitioners very often obtain betas from financial services providers. The staff did not have full access to any financial information service other than SNL Kagan that would provide methodological details about their beta calculations. Betas that are publicly available on the Internet rarely include a discussion of their methodology.

¹⁴² *Giacchino and Lesser* at 225.

¹⁴³ See the definition of betas at http://people.stern.nyu.edu/adamodar/New_Home_Page/datafile/variable.htm (Last accessed 05/01/2013).

¹⁴⁴ *Id.*

¹⁴⁵ Marshall E. Blume, *On the Assessment of Risk*, J. FIN. at 1-10 (1971).

adjustment.¹⁴⁶

81. Appendix F shows the betas of the 16 representative firms in our portfolio.¹⁴⁷ When betas are calculated using daily data on returns, the average beta is 0.81; when weekly data are used, 0.84; with monthly data, the average becomes 0.75. Adjusting weekly betas for the empirically observed tendency to revert towards the market beta of one, the average beta is 0.89. Compared to the market, these are relatively low values. It must be understood that they do not mean that the U.S. telecommunications utility sector has a low level of risk for investors. They do mean, however, that much of the risk borne by utility investors can be easily diversified away by investing elsewhere in the market. In turn, this implies that the required returns on equity for telecom should not exceed the overall market return on equity. This conclusion does not change if we focus our attention on the companies that are primarily under rate-of-return regulation. The average betas using the methods described above become 0.69 (daily), 0.77 (weekly), 0.61 (monthly), and 0.85 (weekly, adjusted toward one), implying even lower required returns on equity than the overall telecom utility portfolio. While the precision of beta estimates falls as the portfolio becomes smaller, there is no indication that the smaller RLECs require higher returns on equity than the rest of the telecom utility portfolio.

82. To ensure statistical significance, our preferred betas use weekly data. We adjusted for the tendency to revert toward the market mean of one over time. These betas are highly statistically significant,¹⁴⁸ and are close to those reported by Value Line as of March 27, 2013. Where our Publicly-Traded RLEC Proxies portfolio has an average beta of 0.85, Value Line has 0.88; with midsize carriers, the difference is between 0.99 and 0.93; for the RBOCs, it is 0.81 versus 0.70; and the averages for the entire portfolio are 0.89 and 0.85, respectively. These differences are small and changing the set of betas used does not have a significant effect on our WACC calculations.

(ii) CAPM Cost of Equity Results

83. We calculated the cost of equity using CAPM based upon various betas and the arithmetic mean of the market premium. The results are shown in Appendix H. With our preferred weekly data adjusted betas, the average cost of equity for the 16 company portfolio is 7.18 percent; for the RBOCs 6.70 percent; for the midsize carriers 7.75 percent; and for the rate-of-return carriers, 6.90 percent.

84. As shown in Appendix I1, the CAPM estimates are low compared to the cost of debt. This is anomalous; because equity is subordinate to debt with regard to a company's profits and assets, equity should command a higher return. The arithmetic means of total returns on large company stocks (those in the S&P 500 index), small company stocks, and long-term corporate bonds for the period from 1926 to 2010, respectively were 11.90, 16.70, and 6.20

¹⁴⁶ Ad Hoc does not use such an adjustment. See the definition of betas at http://people.stern.nyu.edu/adamodar/New_Home_Page/datafile/variable.htm (Last accessed 05/01/2013). NECA uses Value Line betas. Removing the adjustment would change our average beta from 0.89 to 0.84 and would increase the CAPM cost of equity by .31 percent.

¹⁴⁷ Some proxy firms have been part of a merger during the last five years. In those cases, we used data from the acquiring company. Because FairPoint emerged from bankruptcy in 2011, data are only available for the 19 months preceding our analysis.

¹⁴⁸ Both our daily and weekly data based betas are highly statistically significant. HickoryTech has the lowest t-statistic, 3.93, and a p-value of 0.000 (i.e., the probability of incorrectly rejecting the null hypothesis that beta equals zero is 0.000.) On the other hand, our estimates using monthly data are not statistically significant (even at the 10% level) for FairPoint or Shenandoah.

percent. The differences between the large company stock return and the long-term bond return and the small company stock return and the long-term bond return were 5.7 and 10.5 percent, respectively.¹⁴⁹ As shown in Appendix II, the average cost of debt for the 16 company portfolio is 6.19 percent (versus a 7.18 percent cost of equity); 5.71 percent (versus 6.70 percent) for the RBOCs; 7.65 percent (versus 7.75 percent) for the mid-size carriers; and 5.15 percent (versus 6.90 percent) for the various rate-of-return carriers. We note that the CAPM estimates of the cost of debt for six of the sixteen carriers - New Ulm, Alteva, Alaska, Hawaiian, and Frontier - are actually higher than the cost of equity. For New Ulm: the cost of debt is 5.41 percent (versus 4.83 percent cost of equity); for Alteva: 5.89 percent (versus 5.0 percent); for Alaska: 7.38 (versus 6.84 percent); for Hawaiian: 7.52 (versus 6.30 percent); and for Frontier, 8.27 (versus 7.56 percent). Cost of debt estimates that are higher than the cost of equity for some companies are likely largely the result of measurement error. By averaging the estimates for the entire sample of 16 companies, and emphasizing that average in our analysis, however, the effect of at least some, though not necessarily all, of any such measurement error might be removed. These anomalies also could reflect in part a higher embedded cost of debt than the cost of debt that would be issued today. In particular, the cost of debt could have fallen since the 10-K forms upon which our embedded debt calculations are based were last filed.

85. While the difference between the cost of debt and the cost of equity would vary over time and across carriers, the current authorized rate of return was based on an 8.8 percent cost of debt estimate and a 13.19 percent cost of equity estimate at the time of the 1990 prescription, representing a 4.39 percent difference between the cost of debt and the cost of equity. That difference is significantly higher than the .99 percent average difference between the estimates of the cost of debt and the cost of equity for the 16 incumbent LECs that comprise the Staff Proposed Proxy based on the CAPM estimates in this Report. While both the current and the 1990 estimates are subject to error, the 0.99 percent difference in the current estimate seems, as discussed below, to be low, a result that could arise from an overestimate of the cost of debt, an underestimate of the cost of equity, or a combination of the two. As discussed below, we address this issue in determining the reasonable CAPM WACC Range.

(iii) CAPM WACC Range

86. In this section we establish a range for the cost of equity based on the CAPM, and a resulting CAPM range for an estimate of the WACC. Variation in our estimates of the CAPM WACC comes primarily from the choice of the market premium, including choices made to deal with situations where the cost of equity is found to be too close to, or lower than, the cost of debt, and so we focus on these.¹⁵⁰ Requiring a minimum return to equity necessary to ensure all carriers' cost of equity is not less than their cost of debt, we conclude that the CAPM analysis suggests the WACC most likely lies between 7.39 and 8.58 percent.

87. Any equity premium less than 7.57 percent results in a cost of equity that is less than the cost of debt for some of our firms, which violates a fundamental precept of financial

¹⁴⁹ Ibbotson, Roger G., *The Equity Risk Premium*, RES. FOUND. CFA INST. at 19, Tbl 1 (2011).

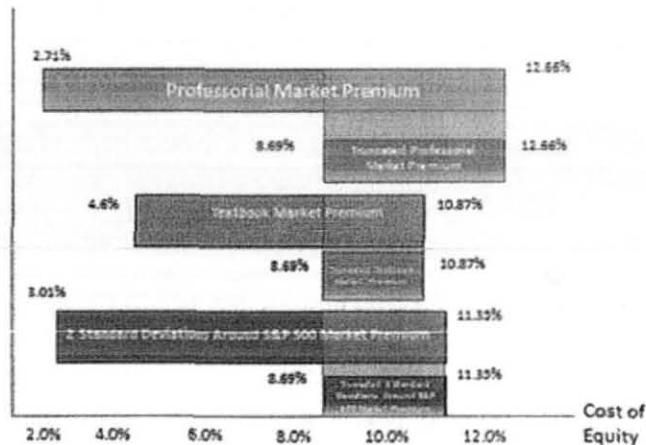
¹⁵⁰ The assumptions behind the various beta estimates of our set of representative companies do not lead to substantial changes in the average WACC of our portfolio. For example, if we fixed the market premium at the average historic market rate of 5.88% and looked at the upper and lower CAPM bounds created by using different beta estimation methods (that is, our four versions of the betas plus betas provided by external analyst services; see Appendix I2, the resulting WACC range runs from 6.28% to 6.82%. In contrast, using our preferred betas (weekly data and adjusted towards one), and allowing the market premium to vary across the range reported in financial textbooks of 3-10% which is narrower than the historical range we also consider, gives a WACC range of 5.56% to 8.36%.

economics, strongly implying error in our estimates.¹⁵¹ As an approximation designed to remove this anomaly, we performed the cost of equity calculation using 7.57 percent as the lower bound of the market premium, obtaining cost of equity ranges of 8.69-11.35 percent.¹⁵²

88. This adjustment is not without its own problems. On one hand, to the extent our estimates of the cost of debt are too high, this choice would bias upward our estimates of the return on equity. On the other hand, since the cost of equity typically would materially exceed the cost of debt, assuming a cost of equity that equals the cost of debt tends to bias our estimates downwards. It is not clear which of these two offsetting biases is likely to be larger.

89. The cost of equity ranges that arise from the 16 examined carriers using the textbook and professorial market premium ranges, the historical confidence interval, and the same ranges with the truncated market premium range, are illustrated in the chart below. As discussed, we prefer the historical confidence interval.

Alternative Estimates of CAPM Cost of Equity

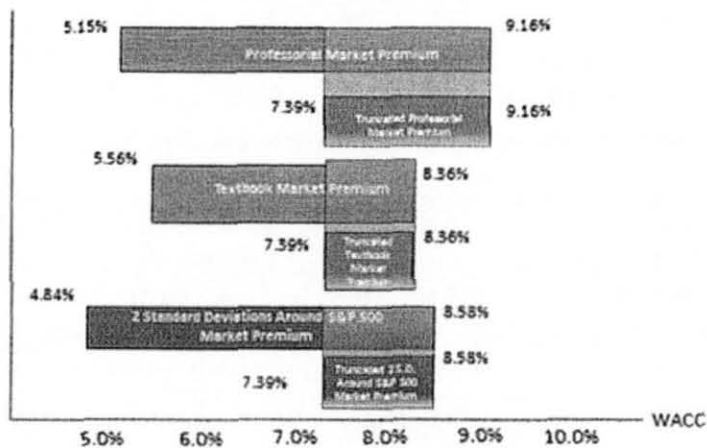


90. *CAPM WACC*. The CAPM WACCs that result from the CAPM costs of equity just outlined are reproduced in the chart below. Again, focusing on the cases where no carrier's cost of equity is less than its cost of debt, our recommended CAPM WACC range is 7.39-8.58 percent.

¹⁵¹ In the event that a company must be wound up, debt holders are paid ahead of equity holders, and hence, by definition, equity holders bear more risk than debt holders. To compensate for that risk, equity holders require a greater return.

¹⁵² Using Ibbotson's long-term risk premium, 6.7 percent, the 20-year government bond yield on March 26, 2013 of 2.75 percent, and the adjusted betas in the CAPM, results in an overall average cost of equity estimate of 8.74 percent, and a cost of equity estimate for each carrier in the sample that exceeds its cost of debt estimate. However, if it were available to us, we would still likely have to truncate the 95 percent confidence interval around this mean.

Alternative CAPM Estimates of the WACC



91. *Cost of Equity for Different Proxy Groups.* Analysis of the CAPM cost of equity for different proxy groups, as shown in Appendix H, does not demonstrate substantial variation across subgroups. The variations across these subgroups are not statistically significant.¹⁵³

92. In summary, we prefer the two standard deviation spread around the historical mean market premium observed in the S&P 500 index, but we place a lower bound on the market premium range that ensures a cost of equity that is no less than the cost of debt for all 16 companies examined. The result is a CAPM WACC range of 7.39-8.58 percent. We note that this range is between the WACCs based on CAPM analysis provided by Ad Hoc, 6.24 percent, and by NECA, 12.1 percent.

b. Discounted Cash Flow

93. The general discounted cash flow model¹⁵⁴ assumes that the price of a share of stock is equal to the discounted present value of all its expected future dividend payments extending to infinity.¹⁵⁵ Using projections of the firm's future dividends,¹⁵⁶ the general DCF

¹⁵³ A two-sided statistical test showed none of these averages were statistically different from the other at the 0.05% confidence level.

¹⁵⁴ The general discounted cash flow model is expressed as follows:

$$P_0 = D_1/(1+K_e) + D_2/(1+K_e)^2 + D_3/(1+K_e)^3 \text{ and so on continuously}$$

where:

D_1, D_2, \dots, D_n = expected dividends in each year;

P_0 = current stock price;

K_e = required return on, or cost of, equity.

¹⁵⁵ Thus, the value of common stock is expressed as the value of its stream of dividends to infinity. This is justified by assuming that the investor has an infinite investment horizon, or by assuming that the expected

model calculates the implicit return on equity required by investors as reflected in the current price of the stock. The assumption that the price of a share of stock is equal to the expected present discounted value of the firm's future dividends is reasonable, as it is a statement of the efficient market hypothesis. The general DCF model can be modified to accommodate different dividend growth patterns.

94. The most widely used modified version of the general DCF model, the constant-growth, or standard, DCF model,¹⁵⁷ calculates the cost of equity as:

$$\text{Cost of Equity} = (\text{Dividends per Share}_1 / \text{Price per Share}_0) + g$$

where Cost of Equity = cost of common stock equity; Dividends per Share₁ = annual dividends per share in period 1; Price per Share₀ = price per share in period 0; g = constant growth rate in dividends per share in the future; and D₁ = (1 + g) times D₀, the annual dividends per share in period 0.¹⁵⁸ The Commission used this approach in 1990.¹⁵⁹ NECA uses the quarterly version of the constant growth DCF model.¹⁶⁰ That version of the model assumes that dividends are paid quarterly, while the version we use assumes that dividends are paid once a year at the end of the year.¹⁶¹

(i) DCF Variables

95. Historical dividends and share prices are public information. While dividend per share (DPS) growth forecasts are not generally available, industry analysts routinely make earnings per share (EPS) growth forecasts, and dividends tend to grow as earnings grow.¹⁶² EPS growth forecasts are commonly used by investors.¹⁶³ The Commission used EPS growth in the

resale price at the end of a limited horizon is itself a present value of the expected dividends following the end of that horizon to the new purchaser. See *Morin New Regulatory Finance* at 250-253.

¹⁵⁶ The general DCF model cannot be used to calculate the cost of equity for a firm that does not pay dividends.

¹⁵⁷ The constant-growth DCF model assumes that the stock's price and expected earnings per share grow at the same rate as expected dividends. If the stock's price is expected to grow significantly faster or slower than dividends, estimates of the cost of equity obtained using the standard DCF model might be significantly less reliable. See *Morin New Regulatory Finance* at 256-258.

¹⁵⁸ Data from <http://finance.yahoo.com/> on Mar. 27, 2013. The dividend in the DCF model is an annualized dividend reflecting the most recent dividend payment prior to Mar. 27, 2013. We did not multiply g by .5 to calculate D₁, as the Commission did the last time it last prescribed the rate of return for incumbent LECs. *1990 Rescription Order*, 5 FCC Rcd at 7511, para. 36. It did so then because all of the carriers in its sample had increased their dividends per share within the prior six months. *Id.* In contrast, only TDS, AT&T, and CenturyLink, among the carriers studied here, have done so in the six months prior to March 27, 2013.

¹⁵⁹ *1990 Rescription Order*, 5 FCC Rcd at 7515, para. 67.

¹⁶⁰ NECA et al. Comments, App. C, Statement of Prof. Randall S. Billingsley at 15-16.

¹⁶¹ The Commission rejected use of the quarterly version of the constant growth DCF model in 1990 proceeding. See *1990 Rescription Order*, 5 FCC Rcd, 7507, at pp. 7515, paras. 70-72.

¹⁶² Earnings create the capacity to pay dividends. See *Morin New Regulatory Finance* at 250-253.

¹⁶³ The databases that contain EPS forecasts are expensive, but widely used by institutional investors, indicating that the information contained in them is of considerable value.

DCF model in the *1990 Represcription Order*.¹⁶⁴

96. We obtained long-term EPS growth forecasts online from Yahoo Finance,¹⁶⁵ CNN Money,¹⁶⁶ Zack's Investment Research,¹⁶⁷ and Reuters,¹⁶⁸ to use as estimates of g .¹⁶⁹ The growth forecasts published by these four entities reflect the consensus of analysts that study the incumbent LEC industry. Yahoo Finance obtains its data from Thomson Financial network, which is owned by Thomson Reuters.¹⁷⁰ Thompson Reuters owns the Institutional Brokers' Estimate System (IBES), the system from which the Commission obtained its data to estimate g in the *1990 Represcription Order*.¹⁷¹ That database is perhaps the most respected of its kind in the industry.¹⁷² Zack's is a well-respected firm that has been in business developing consensus forecasts for many years.¹⁷³ Reuters is owned by Thompson Reuters. We do not know the source of the forecast data published by CNN Money. To ensure the quality of future DCF analyses, the staff recommends that the Commission purchase access to a financial information service including analyst forecasts of EPS and/or DPS growth, such as IBES. NECA uses the consensus of the analysts' earnings-per-share grow rates reported by Zacks.¹⁷⁴

97. The consensus forecast for the large incumbent LECs, such as AT&T, reflects a relatively large number of analysts' views, while the consensus forecast for the RLECs, such as Shenandoah, reflects a relatively small number. Accordingly, the forecasts for smaller incumbent LECs should be expected to have greater uncertainty.

98. We used the current stock price (at the close of markets on March 26, 2013), not an average price, in the DCF model. The use of the current stock price is consistent with the semi-strong form of the efficient market hypothesis, which holds that all publicly available information is fully reflected in current stock prices. Thus, the current price is a better estimate of the fundamental value of the stock than any other price, and should be used to estimate the cost of equity, based on this hypothesis.¹⁷⁵ NECA uses the average of the three most recent monthly

¹⁶⁴ *1990 Represcription Order*, 5 FCC Rcd at 7519, para. 99.

¹⁶⁵ <http://finance.yahoo.com> (last visited Nov. 9, 2012).

¹⁶⁶ <http://money.cnn.com> (last visited Mar. 27, 2013).

¹⁶⁷ <http://www.zacks.com> (last visited Mar. 27, 2013).

¹⁶⁸ <http://www.reuters.com/finance> (last visited Mar. 27, 2013).

¹⁶⁹ Each source other than Reuters describes its long-term forecast as a five-year forecast. Reuters describes its forecast as a long-term forecast, without specifying how far into the future this forecast extends. Zacks' growth estimates also can be obtained online from MSN Money, available at <http://money.cnn.com>; and NASDAQ.com, available at <http://www.nasdaq.com>.

¹⁷⁰ See <http://finance.yahoo.com> (last visited Mar. 27, 2013).

¹⁷¹ *1990 Represcription Order*, 5 FCC Rcd at 7511, para. 36

¹⁷² See *Morin New Regulatory Finance* at 301-303; *Giacchino and Lesser* at 253; *1990 Represcription Order*, 5 FCC Rcd at 7515, para 67.

¹⁷³ See *Morin Regulatory Finance* at 155-156; *Morin New Regulatory Finance* at 301-303; *Giacchino and Lesser* at 253.

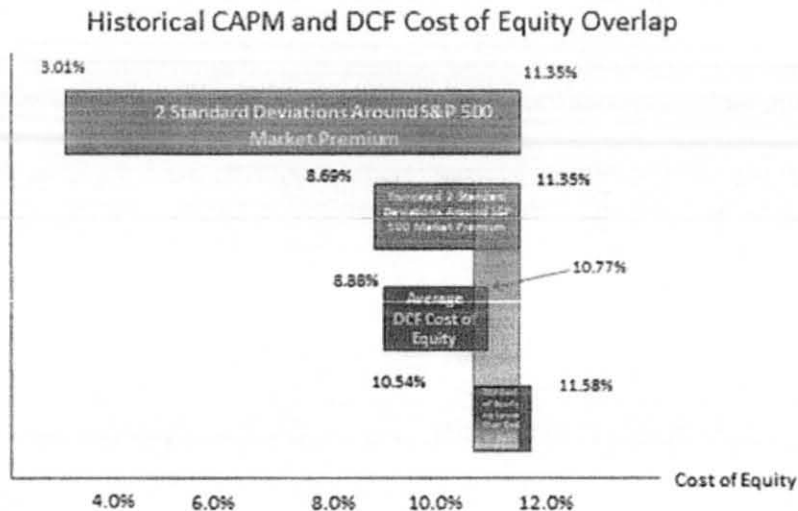
¹⁷⁴ NECA et al. Comments, App. C, Statement of Prof. Randall S. Billingsley at 15.

¹⁷⁵ See *Morin New Regulatory Finance* at 279-280; Edwin J. Elton and Martin J. Gruber, *Modern Portfolio Theory and Investment Analysis* at 361 (Wiley 2006).

closing prices.¹⁷⁶

(ii) DCF Cost of Equity Results

99. We calculated the cost of equity using the constant-growth DCF model based upon the four different data sources. The results are shown in Appendix J, and a concise summary of these results is set out in the table at the end of this section. The average DCF cost of equity estimates obtained using growth rates from these four different data sources range from 8.88 percent to 10.77 percent. The consensus forecasts from the four sources likely reflect, to some extent, surveys of the same analysts. In some cases, however, the forecasts differ significantly and so do the DCF estimates. These DCF estimates have a substantially higher lower bound than the lower bound on our CAPM estimates of the cost of equity that use the full range of textbook market premium (8.88 percent compared with 4.60 percent). When the textbook and DCF ranges are chosen to ensure all of the carriers in our sample have a cost of equity that is no lower than their cost of debt, the DCF range lies above the CAPM range. These four cases are illustrated in the chart that follows. Our preferred DCF cost of equity range (as explained below) is the last of these, 10.54 to 11.58 percent.



100. While no single source of publicly-available, non-subscription fee-based analyst projections allows us to produce estimates for all of the dividend-paying carriers in our sample, given that the magnitude of the forecasts used is relatively modest, and that we are relying on a sample of companies and forecasts from a number of different and reputable sources, we believe the constant-growth DCF model provides reasonable estimates of the DCF-based cost of equity.

101. DCF does not appear to produce reliable estimates for Windstream and ACS based upon published consensus growth rates. The published growth rates are low, and use of

¹⁷⁶ The Commission used the average of the monthly high and low stock prices in the 1990 proceeding. See 1990 *Represcription Order*, 5 FCC Red, 7507, at pp. 7514, paras. 61-63.

these rates in most cases results in cost of equity estimates that are less than the cost of debt estimates for these two firms, and in one case a negative cost of equity estimate for Windstream.¹⁷⁷ These results make no economic sense, even though it is plausible for analysts to project low and even negative growth in earnings per share. As equity is more risky than debt, no rational investor would ever purchase any firm's common stock if that firm's debt is expected to provide a higher rate of return. And no investor would ever pay a positive price for a common stock on which the expected rate of return is less than zero. These anomalously low cost of equity estimates reflect a limitation of the constant-growth DCF model: it is unlikely to produce a reasonable cost of equity estimate when the growth rate is very low or high. Indeed, when developing the cost of equity in the *1990 Rescription Order*, the Commission applied a screen designed to remove from consideration those firms for which the cost of debt exceeded the cost of equity.¹⁷⁸

102. However, depending on the source, excluding Windstream and ACS, the average of the growth forecasts ranged from 3.45 to 5.78 percent.¹⁷⁹ No DCF estimate is made for New Ulm Telecom or Alteva because none of the sources that we used publish a long-run growth rate forecast for these carriers. No DCF estimate is made for FairPoint, Cincinnati Bell, or Hawaiian Telcom because these carriers do not pay common stock dividends. Depending on the source used, the average cost of equity for as many carriers that pay dividends and for which a growth rate was published online, including Windstream and ACS, ranges between 8.88 percent and 10.77 percent. The average cost of equity estimates range between 9.38 and 10.94 percent for the RBOCs, 8.28 and 11.72 percent for the rate-of-return carriers, and 5.85 and 14.27 percent for percent for the mid-size carriers. For the reasons given above, we remove Windstream and ACS from the sample we use to estimate the cost of equity. Excluding Windstream and ACS, the average cost of equity for the entire sample of dividend-paying carriers ranges from 10.40 to 11.44 percent, while the average cost of equity for the remaining midsize carrier, Frontier, ranges from 11.83 to 16.79 percent.¹⁸⁰

¹⁷⁷ These growth rates for Windstream vary from minus 11.25 percent to positive 0.01 percent, depending on the source. The growth rate estimates that Zacks (1%) and CNN Money (-2%) provide for Windstream result in cost of equity estimates of 13.41% and 10.04%, respectively. These equity cost estimates are greater than the debt cost estimates for Windstream, 7.33%. In contrast, the growth rate estimates that Yahoo Finance (-11.25%) and Reuters (-6.83%) provide for Windstream result in cost of equity estimates of negative .35% and 4.62%, respectively. These equity cost estimates are less than the debt cost estimate.

Only two of the four sources provide a growth estimate for ACS. The growth rate estimates that Yahoo Finance and CNN Money provide are the same (negative 10%), and this estimate results in a cost of equity estimate of 1.11%. This equity cost estimate is less than the debt cost estimate for ACS, 7.38%.

¹⁷⁸ Some parties in the 1990 prescription proceeding argued that companies whose cost of equity estimates did not exceed their cost of debt should be excluded from the equity analysis. In response, the Commission removed from consideration companies whose cost of equity estimates were below the yield on single A corporate bond ratings. See *1990 Rescription Order*, 5 FCC Rcd at 7513-14, paras. 55-58.

¹⁷⁹ Excluding Windstream and ACS, the average of the growth rate forecasts is from 1.74 to 3.91%.

¹⁸⁰ Neither the cost of equity estimates that are greater than the cost of debt for Windstream nor the estimates that are less than the cost of debt for Windstream and ACS are reflected in these ranges. Use of the CNN Money growth rates does result in a cost of equity estimate that is greater than the cost of debt estimate for Windstream. If we do not remove Windstream's equity estimate from the estimates that are based on CNN Money growth rates, the average equity estimate based on this source decreases from 11.44 percent, which is the top of the this range, to 11.30 percent. Use of the Zacks growth rates also does result in a cost of equity estimate that is greater than the cost of debt estimate for Windstream. If we do not

103. To minimize the extent to which we rely on a range of equity cost estimates that is affected by the number of firms for which each source provides estimates, and to maximize the extent to which the available growth rate information informs these estimates, we develop a single cost of equity estimate for each of the 11 firms using all of the growth estimates available for that firm, and then calculate the average of these cost of equity estimates.¹⁸¹ To do this, we identify the low and the high estimates among the available estimates for each firm, determine the midpoint between these two estimates, and use this value as the growth rate in the DCF model for each firm. We use the midpoint of the high and the low growth rates, rather an average of all of the growth rates, to avoid applying too much weight to estimates of analysts that might be reflected in the consensus estimate of more than one source.

Constant-Growth DCF Average Cost of Equity Estimates						
Group	Four g sources, including Windstream and ACS	Four g sources, excluding Windstream and ACS	g midpoint, including Windstream and ACS	g midpoint, min. debt cost = equity cost	g midpoint, excluding Windstream and ACS	g midpoint, min. debt cost = avg. debt - equity cost diff., if equity cost < debt cost
RoR carriers	8.28-11.72	8.28-11.72	11.06	11.06	11.06	11.06
Mid-size carriers	5.85-14.27	11.83-16.79	7.32	9.67	14.31	13.47
RBOCs	9.38-10.94	9.38-10.94	10.55	10.55	10.55	10.55
All carriers	8.88-10.77	10.40-11.44	9.90	10.54	11.25	11.58

104. The cost of equity estimates based on this midpoint growth rate analysis are in Appendix J. Based on this analysis, the overall cost of equity estimate for the 11 firms is 9.90 percent. These cost of equity estimates for the rate-of-return incumbent LECs, mid-size

remove Windstream's equity estimate from the estimates that are based on Zacks' growth rates, the average equity estimate based on this source increases from 10.40 percent to 10.77 percent.

¹⁸¹ The number of firms for which each source provides analysts' estimates varies: Yahoo Finance and CNN Money provide estimates for 11 firms, Zacks for eight; and Reuters for six. The cost of equity estimates we developed using growth estimates from these sources vary because the growth estimates are sometimes significantly different for the same firms. For example, the low growth rate estimate for Frontier is 1.5 percent (based on CNN Money growth rates), while the high estimate for this firm is 6 percent (Yahoo Finance). For that reason, the cost of equity estimate for Frontier varies from 11.83 percent to 16.79 percent. The cost of equity estimates also are likely to vary because the number of firms for which each source provides estimates varies. The common subset of firms for which each source does provide estimates comprises the following six firms: Consolidated, Windstream, Frontier, AT&T, Verizon, and Century Link. The average estimate of the cost of equity for these six firms ranges from 9.24 (Yahoo Finance) to 12.09 percent (Zacks). The low average cost of equity estimate for these six firms is higher than the low average estimate for all of the firms for which any source provides growth rates, as reported above, 8.88 percent (again, Yahoo Finance), and the high estimate based on the six is higher than the high estimate for all of the firms, 10.77 percent (again, Zacks').

incumbent LECs, and the RBOCs are 11.06, 7.32, and 10.55 percent, respectively. Excluding Windstream and ACS from the sample, for the reasons given above, the overall cost of equity estimate using midpoint growth rates for the nine remaining firms is 11.25 percent. The cost of equity estimate for midsize incumbent LECs is 14.31 percent, which is the estimate for Frontier, the only remaining midsize firm in the sample, and the estimates for the rate-of-return incumbent LECs and the RBOCs are unaffected by the exclusion of Windstream and ACS.

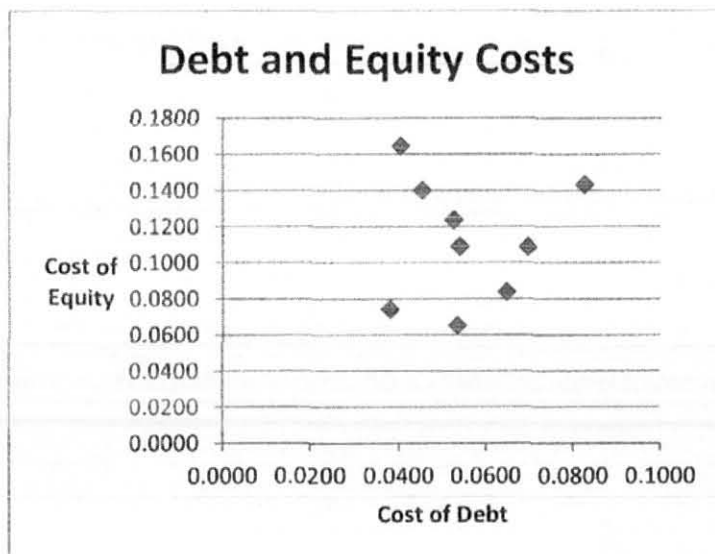
105. There are ways to evaluate the sensitivity of excluding Windstream and ACS from the sample, other than simply removing these carriers from the sample. One way is to set the cost of equity estimate for each of these two firms equal to its cost of debt estimate, and then to recalculate the average of the cost of equity estimates for all of the 11 firms. Setting the cost of equity estimate equal to the cost of debt estimate for the two firms, while also using the midpoint growth rates to estimate the cost of equity for the other nine firms, produces an overall average cost of equity estimate of 10.54 percent. All else the same, this approach would understate the overall cost of equity for Windstream and ACS and thus the overall average estimate for the 11 firms, because equity is riskier than debt, and investors would expect to receive a higher return on equity as compared to debt, not the same return. However, if the embedded cost of debt were greater than the current cost of debt, as of the measurement date for our analysis, then this overstatement would be at least partially offset.

106. Another way to evaluate the sensitivity of excluding Windstream and ACS is to set the cost of equity estimate for each of the two firms equal to the debt cost estimate of each firm plus the average difference between the cost of equity estimates and the cost of debt estimates for the other nine firms. Calculating the average difference between the cost of equity estimates and the cost of debt estimates for the other nine firms, adding this increment to the cost of debt estimate for Windstream and ACS, and using the midpoint growth rates to estimate the cost of equity for the other nine firms, produces an average cost of equity estimate of 11.58 percent. All else the same, this approach might also tend to understate the overall cost of equity for Windstream and ACS. These two firms' debt cost estimates, 7.33 and 7.38 percent, respectively, are higher than the average of the debt cost estimates for the other nine firms, 5.64 percent, suggesting that these two firms' equity would be riskier than average and have a greater than average cost. If that is so, then the increment that we add to their debt costs to estimate their cost of equity would be too small. The table below summarizes our constant-growth DCF model estimates.

107. We believe that we should give the most weight to the equity cost estimates that incorporate the midpoint growth rates, and the least weight to the estimates that incorporate only growth rates from a single source, because the former estimates simultaneously reflect the larger body of information reflected in the growth rate estimates from all the sources. We also believe that to the extent that use of these growth rates produces cost of equity estimates that have no economic meaning, such estimates should be omitted. Or, at the very least, the impact of including such meaningless equity cost estimates on the overall estimate has to be taken into account. In this regard, there is no dispute that equity is riskier than debt and has a greater cost. Accordingly, cost of equity estimates that are significantly less than cost of debt estimates is strong evidence of clear error that, if unaccounted for, is likely to impair the results of an equity cost analysis. Here the inclusion of Windstream and Alaska, both of which have debt cost estimates that are greater than their cost of equity estimates based on midpoint growth rates, significantly reduce the overall cost of equity estimate based on the midpoint growth rate estimates.

108. We therefore find that the lower bound of a reasonable range for the cost of equity, based on midpoint growth rates, is, at the very least, 10.54 percent. This lower bound figure incorporates cost of equity estimates for Windstream and ACS set equal to their cost of

debt, which, all else the same, is a conservative adjustment. We also find that the upper bound of this range is 11.58 percent. This upper bound figure incorporates cost of equity estimates for Windstream and ACS set equal to their cost of debt, plus the average of the differences between the cost of equity and cost of debt estimates for the other nine firms, which, all else the same, is also a conservative adjustment. However, the results we obtain, as displayed in the chart below, do not suggest the existence of any strong positive relationship between the cost of debt and the cost of equity in the estimates for the nine other firms in our sample. We do not find a reasonable range to be higher than 11.58 percent, given the data for our sample of firms.



109. As a rough test of the reasonableness of the lower and upper bound of this range of cost of equity estimates, we calculate the difference between the average cost of debt estimate for the sample of the 11 firms and the lower bound cost of equity estimate, on the one hand, and difference between the average cost of debt estimate and the upper bound cost of equity estimate, on the other. We then compare these two differences to three benchmarks. The difference between the average cost of debt for the 11 firms, 5.89 percent, and the lower bound cost of equity estimate, 10.54 percent, is 4.65 percentage points (or 465 basis points). The difference between the average cost of debt for these firms and the upper bound cost of equity estimate, 11.58 percent, is 5.69 percentage points (or 569 basis points).

110. We have three readily-available benchmarks for evaluating the reasonableness of the debt-equity differences reflected in our lower and upper bound cost of equity estimates. The first benchmark is 4.39 percentage points (439 basis points). This is the difference between the cost of debt, 8.8 percent, and the cost of equity, 13.19 percent, on which the Commission's current 11.25 percent authorized rate of return is based. This rate of return was developed in 1990 based on the debt and equity costs at that time. The difference between the lower bound cost of equity estimate and the average of the cost of debt estimates exceeds the debt-equity cost difference reflected in the Commission's currently authorized rate of return, but by only 26 basis points. Thus, these two cost differences are roughly equal. The difference between the upper bound cost of equity estimate and the average of the cost of debt estimates exceeds the debt-equity cost difference reflected in the Commission's current authorized rate by 150 basis points. Thus, there is a more material difference between the debt-equity cost difference reflected in our upper bound cost of equity estimate and the debt-equity cost difference reflected in the authorized

rate of return (which was based on analysis of a different set of firms and is now more than two decades old).

111. The second benchmark is the average difference between the large company stock return, *i.e.*, S&P 500 companies, and the long-term corporate bond return, from 1926-2010, 5.7 percent.¹⁸² We use this historical difference as a benchmark to judge the debt-equity cost difference reflected in our estimates because the returns on debt and equity that investors actually realize over a long period of time must reflect their expectations; otherwise, they would not invest. To the extent that the S&P 500 represents the broad portfolio of assets available to investors (as assumed for the CAPM analysis in this Report), the average S&P 500 company would have a beta of one. The average beta for the sample of firms in this Report, adjusted for the tendency of beta to move toward one over time, and estimated using weekly data, is .89. So the average firm in our sample has a somewhat lower beta, or a lesser amount of non-diversifiable risk, than the average S&P 500 company. Equity investors in the average S&P 500 company might therefore require a higher return on the stock of such a company, relative to the return they would require on that company's debt, than the return investors might require on an investment in the stock of the average firm in our sample, relative to that firm's debt. Keeping that in mind, the debt-equity cost differences reflected in our lower bound and upper bound cost of equity estimates, 465 and 569 basis points, respectively, are both less than the historical debt-equity return differences for S&P 500 firms, 570 basis points. This suggests our DCF cost of equity range is reasonable.

112. The third benchmark is the difference between small company stock returns and the long-term corporate bond returns, from 1926-2010, 10.5 percent.¹⁸³ This benchmark might be pertinent to our sample of firms because only four of these firms are S&P 500 firms; the other firms are much smaller than S&P 500 firms. The debt-equity cost differences reflected in our lower bound and upper bound cost of equity estimates, 465 and 569 basis points, respectively, are both significantly less than the historical difference between equity and debt returns for small company stocks, 1005 basis points. This suggests our DCF cost of equity range might be too low. However, if it is true that, as other analysis suggests,¹⁸⁴ returns to small companies are no longer statistically different from those of larger companies, then this benchmark does not provide any insights.

113. In summary, none of these three benchmarks suggest in a compelling way that our lower and upper bound estimates for the cost of equity are unreasonable.

(iii) DCF WACC Range

114. We recommend that a reasonable DCF WACC Range be established by using the lower and the upper bound for the reasonable range of cost of equity estimates, *i.e.*, from 10.54 to 11.58 percent, along with the cost of debt and capital structure estimates developed above for each firm in our sample. When the lower and the upper bound DCF cost of equity estimates are used to determine the WACC, the DCF WACC Range is 8.45 percent to 8.72 percent. By comparison, NECA's WACC estimate based upon a DCF analysis of the cost of capital was 10.85 percent.

¹⁸² Ibbotson, Roger G., *The Equity Risk Premium*, Res. Found. CFA Inst. At 19, Tbl 1 (2011).

¹⁸³ *Id.*

¹⁸⁴ Crain, Michael A., *A Literature Review of the Size Effect* (Oct. 29, 2011), available at SSRN: <http://ssrn.com/abstract=1710076> (last visited Apr. 16, 2013) or <http://dx.doi.org/10.2139/ssrn.1710076> (last visited Apr. 16, 2013).

c. Cost of Preferred Stock

115. The Commission's rules specify that the WACC calculations incorporate the cost of preferred stock.¹⁸⁵ Preferred stock is stock that entitles its holders to receive a share of the assets of the corporation before common stockholders do, and offers other benefits, such as priority when dividends are paid, that vary across firms. Of the carriers in our representative firm portfolio, CenturyLink, Cincinnati Bell Telephone Company, TDS and Alteva have issued preferred stock. Our main source for financial data in this re prescription, SNL Kagan, reports that none of these companies has issued preferred stock since at least January 1, 2000.¹⁸⁶ The data called for by our rules to calculate the cost of preferred stock are either not available to us or not publicly reported, so we are unable to include the cost of preferred stock in the calculation of the WACC. We expect that including the cost of preferred stock from the WACC, if we were able to do so, would not significantly alter our results for the following reasons. The representative firms do not typically raise capital through the issuance of preferred stock, as indicated by the prolonged period of time in which they have not done so; most of them do not issue preferred stock at all. Further, preferred stock is only a small share of the capital structure for the proxy firms that have such stock. In the case of Cincinnati Bell, for example, on a book value basis, preferred stock is around three percent of the firm's capital (debt plus preferred stock plus common stock), and for Alteva it is roughly a half of a percent. The preferred stock of both CenturyLink and TDS is not traded frequently and as a result we cannot observe its market price, which keeps us from being able to calculate the precise share, on a market value basis, of the preferred stock in the capital structure of these companies. However, the reasons listed above give us confidence that both these carriers and the companies for which we use them as proxies follow the same pattern – inclusion of preferred stock in the WACC calculation would not significantly alter the WACC. Accordingly, we recommend that the Commission waive or eliminate the requirement to include the cost of preferred stock in the WACC calculation.

4. WACC Results

116. Appendix K shows the WACCs resulting from using both CAPM and DCF, together with the component values of each model and the estimates of the cost of debt and capital structure.

5. Establishing the Zone of Reasonableness

117. As discussed above, in determining the authorized rate of return the Commission establishes a zone of reasonable estimates of the overall WACC. After identifying this "zone of reasonableness," the Commission should determine, based on policy considerations, where to prescribe the unitary rate of return.¹⁸⁷ To determine a zone of reasonableness, we compare the range of WACCs produced when the cost of equity is determined using CAPM with varying market premiums,¹⁸⁸ and the range produced when the cost of equity is determined using DCF with varying analysts' forecasts. These two ranges are illustrated in the chart below.

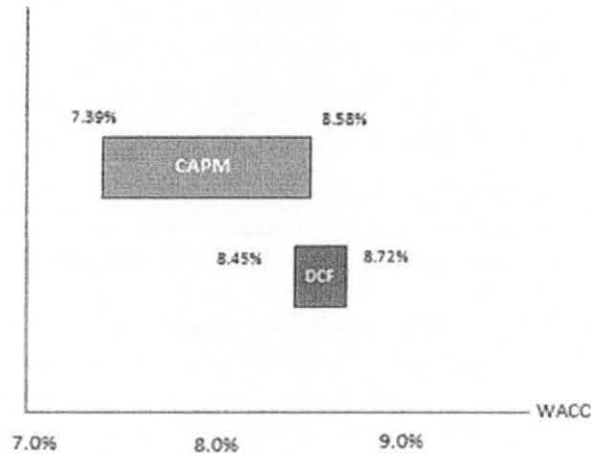
¹⁸⁵ 47 C.F.R. § 65.303.

¹⁸⁶ See, generally, <http://www.snl.com/Sectors/Media/Default.aspx> (last visited Apr. 16, 2013).

¹⁸⁷ 1990 Re prescription Order, 5 FCC Rcd at 7508, para. 7.

¹⁸⁸ We use weekly adjusted betas for CAPM because we find them optimal for methodological reasons.

Preferred CAPM and DCF WACCs



118. Without strong reasons for preferring one of these sources over another, given the data available to us, we recommend a zone of reasonableness that runs from 7.39 percent, the lower bound of the WACC CAPM 95 percent confidence interval, to 8.72 percent, the upper bound of the DCF WACC range. We note that the zone of reasonableness is between the WACC estimates provided by Ad Hoc, 6.24 percent, and by NECA, 10.85 percent (using DCF to estimate the cost of capital)/12.1 percent (Using CAPM to estimate the cost of capital).

a. Selecting the Unitary Rate of Return: Times Interest Earned Analysis

119. As one approach to choosing a unitary rate of return within the zone of reasonableness, as well as to assess the reasonableness of this range, we provide a Times-Interest-Earned (TIE) ratio analysis. The TIE ratio shows the number of times that a firm's earnings cover its interest obligations¹⁸⁹ for a given WACC, and hence is indicative of what various rates of return mean for the ability of a firm to pay its debts. Consequently, TIE ratio analysis provides a check on our cost of equity estimates. Based upon this analysis, we recommend that the Commission select a unitary rate of return near the upper end of the zone of reasonableness.

120. The TIE analysis is not a substitute for the determination of a zone of reasonableness; it does not attempt to determine the cost of capital. Rather, it is one of the key measures that bond rating agencies use to assess a firm's creditworthiness and to assign corporate credit ratings.¹⁹⁰ Firms often are expected to maintain adequate TIE or similar coverage ratios under their contractual obligations to debt holders, and lenders evaluate creditworthiness in part based on the TIE ratio. The ratio can be calculated a number of ways;¹⁹¹ the TIE ratio often used

¹⁸⁹ See *Morin Regulatory Finance* at 240-243.

¹⁹⁰ See *Morin Regulatory Finance* at 241-242; *Morin New Regulatory Finance* at 445-446; *Giacchino and Lesser* at 63-64, 107-108.

¹⁹¹ For example, some lenders use after-tax operating income in the numerator of this ratio.

by bond rating agencies is:

$$\text{TIE} = \text{Earnings Before Interest and Taxes/Interest Charges}$$

121. To assess the effects of prescribing a rate of return based upon a particular WACC estimate, we calculate a *pro forma* TIE ratio for each incumbent LEC in our sample and compare these ratios to a range of TIE ratios. That is, we calculate the number of times that each incumbent LEC's earnings would cover its interest payments, assuming that each earns the same given rate of return, which in turn equals a particular WACC, and then compare these numbers to criteria often used by analysts to determine whether a firm's interest coverage is adequate.

122. We note that, just as our WACC estimates reflect holding-company cost of debt and capital structure data, so too do these *pro forma* ratios. Neither the WACC estimates nor the *pro forma* ratios would precisely represent regulated interstate special access or common line services, even if the holding company WACC and *pro forma* ratios are precise. Given that the WACC estimates are based on holding company data, it is logically consistent to evaluate these estimates by analyzing TIE ratios developed from holding company data.

123. The TIE ratio analysis is particularly helpful in weighing the impact of a unitary rate of return on carriers that have WACCs that might differ significantly from the average WACC. In addition, there are a number of firms in our sample that are highly leveraged and have a *high cost of debt*, meaning that these firms have relatively large interest expenses. As the TIE ratio is specifically designed to determine the ability of a firm to cover its interest payments, it is especially useful for evaluating WACC estimates relating to a sample that has a number of highly-leveraged firms, such as ours.

b. Calculating the TIE Ratio

124. We calculate for each incumbent LEC in our sample a *pro forma* TIE ratio for a number of different WACCs. To calculate these ratios, we assume that each such LEC will earn a rate of return equal to these various WACCs and use our estimates of each incumbent LEC's cost of debt and capital structure,¹⁹² the current federal and state corporate income tax rate, and the implied cost of equity for each WACC estimate.¹⁹³ The current federal income tax rate is 35 percent,¹⁹⁴ and we assume that the current state income tax rate is 5 percent.¹⁹⁵ We also assume

¹⁹² We note that the value of the *pro forma* ratio depends only on the percentages of debt and equity; it is not affected by the absolute amounts debt and equity reflected in these percentages.

¹⁹³ The return to equity holders is what remains of the total return after the incumbent LEC pays the fixed amount of the interest obligations on the debt. Thus, there is an implied cost of equity for each WACC, assuming that the prescribed rate of return is set equal to that WACC. Given D , E , K_d , K_{ie} , and T , as defined above, and a series of WACC estimates, we calculate the implied cost of equity by rearranging the WACC equation and by substituting values for these variables into that equation. The rearranged equation is as follows:

$$K_{ie} = (\text{WACC} - (D/(D+E))K_d)/(E/(D+E)).$$

¹⁹⁴ 26 U.S.C. § 11(b)(D). This is the current statutory maximum corporate federal income tax rate. The revenue requirement on which a rate of return carrier's interstate rates are based includes an allowance for recovery of federal income taxes based on this statutory maximum rate. The rate base is net of the amount of any deferred taxes arising from timing differences between the actual payment of taxes to the government and the recognition of these taxes in the revenue requirement, which in turn result from differences between tax depreciation and regulatory depreciation expense schedules.

¹⁹⁵ If the state corporate income tax rate is less than 5 percent, then the *pro forma* TIE ratio is higher than it should be as the amount in the denominator of this ratio assumes that the carrier is able to recover state

that all income is available to meet coverage requirements, interest expense is the only fixed charge, and that the book value of a carrier's assets, net of depreciation, *i.e.*, the equivalent of regulated firm's rate base, equals invested capital.¹⁹⁶ The equation that we use to calculate the *pro forma* TIE ratios is equivalent to the one above (earnings before interest and taxes divided by fixed interest charges) and is as follows:

$$\text{TIE} = \frac{((D/(D+E))K_d) + ((E/(D+E))(K_{ic}/(1-T)))}{((D/(D+E))K_d)}$$

where:

D = debt outstanding;

E = equity outstanding;

K_d = cost of debt;

K_{ic} = implied cost of equity;

T = composite federal and state corporate income tax rate.¹⁹⁷

(i) *Pro Forma TIE Ratios*

125. Appendix L1 shows the incumbent LEC's *pro forma* TIE ratios for WACC estimates ranging from six percent to 11.25 percent. The capital structure used in calculating these particular sets of ratios reflects the use of market value capital structures (as used in our WACC estimates). These ratios vary significantly among the incumbent LECs for a given WACC estimate. For example, given a six percent WACC estimate, ACS's *pro forma* TIE ratio is .95, while AT&T's ratio is 6.29. ACS has a relatively large share of debt in its capital structure and a high cost of debt, so its *pro forma* TIE ratio is relatively low. Conversely, AT&T has a relatively low share of debt in its capital structure and a relatively low cost of debt, so its *pro forma* TIE ratio is relatively high. The *pro forma* TIE ratio also varies significantly for all of the incumbent LECs over the range of WACC estimates. For example, TDS's *pro forma* TIE ratio is 3.73, given a six percent WACC estimate, while its *pro forma* ratio is 7.54, given an 11.25 percent WACC estimate.

income taxes assuming that the tax rate is 5 percent. The opposite is true if the state income tax rate is higher than 5 percent.

¹⁹⁶ If not all of a carrier's earnings are available to meet coverage requirements, the *pro forma* ratio would be lower because the numerator of this ratio would be lower. If interest expense is not the only fixed charge, this ratio would be lower if these fixed charges require payment before or at the same time as the required interest payments because the numerator would then be lower. If a regulated carrier's rate base is less than the amount of invested capital, the *pro forma* ratio would be affected. The most obvious reason why the two amounts might not be equal is that a regulator might make a disallowance to a firm's rate base if an asset that is purchased by the firm and financed by investors is not a prudent investment, or if an asset is not used and useful in providing service. In this case, the *pro forma* TIE ratio would be lower as the numerator would be lower than otherwise because earnings are lower as the authorized rate of return is applied to a rate base that is net of the disallowance. In addition, if investors finance deferred charges, deferred pension expenses, or construction work in progress, for example, the amount of invested capital will exceed the rate base if an allowance for each item is not included in the rate base. If such allowances are excluded from the rate base, the *pro forma* TIE ratio again would be lower than otherwise (as the WACCs in this analysis are not adjusted upward to account for these exclusions from the rate base). See *Morin New Regulatory Finance*, at pp. 15-17, 31-32, 495-97.

¹⁹⁷ The composite federal and state corporate income tax rate is .3825, given a federal income tax rate of .35 and a state income tax rate of .05.

(ii) Historical TIE Ratios

126. Appendix M shows the historical TIE ratio measured at the holding company level for each of the incumbent LECs in the sample, for the period 2010 to 2012, and the average ratios for that three-year period.¹⁹⁸

127. The average, historical TIE ratio for AT&T, Verizon, and TDS in 2012 is 3.99. The average of the three-year average TIE ratios for these incumbent LECs is 4.43.¹⁹⁹ AT&T and Verizon have high (but not the highest) debt ratings from Moody's (A2 and Baa2 depending on the security, and A2, A3, and Baa1, respectively), Standard & Poor's (A- for both), and Fitch (A for both). AT&T's 2012 TIE ratio is 4.0, while its three-year average ratio is 4.63. Verizon's 2012 TIE ratio is 4.83, while its three-year average ratio is 5.17. TDS has ratings near the low end for investment grade debt from Moody's (Baa2), Standard & Poor's (BBB-), and Fitch (BBB). TDS's 2012 TIE ratio is 3.16, while its three-year average ratio is 3.50.

128. Appendix N shows the bond ratings for each incumbent LEC in the sample. AT&T, Verizon, and TDS currently have investment grade debt ratings from all three of the major debt rating agencies. Each of the other incumbent LECs does not have investment grade debt ratings for all of its debt from as many rating agencies as rated its debt, or does not have a bond rating.

(iii) TIE Ratio Benchmarks

129. To assess the affect changes in the authorized rate of return will have on carriers, we compare carriers' TIE ratios at different WACCs to three TIE ratio benchmarks.²⁰⁰ We have chosen the following benchmarks

- 1) RUS standards for hardship loans, after-tax TIE Ratio = 1
- 2) Federal Financing Bank loans standards, TIE Ratio = 1.25
- 3) CoBank loans standards, TIE Ratio = 1.5.²⁰¹

130. For purposes of comparison, we also include a comparison of *pro forma* TIE ratios to a TIE ratio of 4.5, which is the average of the TIE ratios from 2010 to 2012 of carriers

¹⁹⁸ Fairpoint is omitted from the actual, historical averages and medians for carriers that have below investment grade debt set forth in Appendix 11-13 because the relationship between TIE ratios and bond ratings reflected in these summary statistics otherwise would be skewed by this carrier's entry into and exit from bankruptcy.

¹⁹⁹ ACS, CBT, Consolidated Communications, FairPoint, Frontier, and Hawaiian Telcom do not have investment grade stock. CenturyLink's debt is rated investment grade by Moody's and Fitch, while Standard & Poor's rates its debt speculative grade. Some of Windstream's debt is rated investment grade by Moody's, while Standard & Poor's and Fitch rate all of its debt speculative. We regard CenturyLink and Windstream as having speculative grade debt for purposes of this analysis. The actual, historical average TIE ratio for this category of incumbent LECs in 2012, excluding FairPoint, is 1.48. The average of the three-year average TIE ratios for these incumbent LECs is 1.94.

²⁰⁰ We note that the RUS analysis is conducted using after-tax earnings. A TIE ratio based on after-tax earnings is equal to a TIE ratio based on pre-tax earnings if zero earnings are available to equityholders in the form of dividends or retained earnings after the firm pays its debtholders, creditors, suppliers, etc., because in this case the firm would pay no corporate income taxes. If there are positive earnings available to equityholders, then the pre-tax TIE ratio is greater than the after-tax TIE ratio because in this case the firm would pay corporate income taxes.

²⁰¹ See generally, 7 C.F.R. § 1714.

that have investment grade bond ratings rounded up to the nearest tenth of a percent (the Investment Grade TIE Ratio). A firm that issues investment grade debt, a grade assigned by the major bond rating agencies, is unlikely to default on its interest obligations and therefore is able to issue debt at a relatively low rate of interest. Bond ratings significantly affect investors' perception of risk, and therefore affect the rate of return that both debt and equity investors require.²⁰²

131. For this comparison, we compare the *pro forma* TIE ratios for each carrier in the Staff Proposed Proxy, calculated in accordance with the procedure described above, to actual, historical ratios calculated for carriers that have investment grade debt. We calculate actual, historical ratios for each carrier that has investment grade bond ratings by dividing actual, historical earnings before interest and taxes by actual, historical interest expense.

(iv) **Analysis of Carrier TIE Ratios at Various WACCs**

(a) **Carrier TIE Ratios: *Pro Forma*, Pre-Tax, Market Value Capital Structures**

132. A rate of return of eight percent, a figure that lies roughly in the middle of the WACC zone of reasonableness, results in an average *pro forma* TIE ratio of 4.46, which is almost equal to the investment grade TIE ratio of 4.5. All carriers have *pro forma* TIE ratios that exceed 1.25, and 15 out of 16 have TIE ratios that exceed 1.5.²⁰³ By comparison, a rate of return of nine percent, a figure roughly at the top of our WACC zone of reasonableness, results in an average *pro forma* TIE ratio of 5.10, and all carriers have a *pro forma* TIE ratio exceeding 1.5. A significantly higher rate of return, for example, 10 percent, would produce an average *pro forma* TIE ratio of 5.74. All carriers exceed a 1.9 ratio, and three exceed 10.0.

(b) **Carrier TIE Ratios: *Pro Forma*, Pre-Tax, Book Value Capital Structures**

133. To be cautious, we also calculate *pro forma* ratios based on book value capital structures, instead of the market value capital structures reflected in the *pro forma* ratios discussed above. Appendix L2 also shows the incumbent LEC's *pro forma* TIE ratios for WACC estimates ranging from six percent to 11.25 percent, calculated as explained above (except using book value capital structures). As explained above, a number of the firms in our sample have high shares of debt in their book value capital structures. And the share of debt for these firms based on book value capital structures is much higher than the share based on market value capital structures. On the one hand, the use of market value capital structures to calculate the WACC benefits the incumbent LECs because the WACC is higher than if book value capital structures were used. On the other hand, if book value capital structures are representative of how incumbent LECs finance regulated incumbent LEC services, then the incumbent LECs would have higher interest payments than the payments implicit in the *pro forma* ratios based on

²⁰² We use a three-year average ratio, not the most recent year's average, because the ratio will fluctuate over time without there necessarily being a change in the debt rating at the same time. None of the firms that currently have the investment grade debt rating had a rating below that at any point during these three years. We do not use an average calculated over a longer period than three years because bond ratings are supposed to be forward-looking.

²⁰³ The *pro forma* TIE ratios reported in this paragraph are calculated based on before-tax earnings. These ratios would be lower if they were based on after-tax earnings if positive earnings are available to equityholders, as these earnings would be subject to corporate income taxes. Thus, these *pro forma* ratios are not directly comparable to the RUS benchmarks. We make the more precise comparison to the RUS benchmarks below.

market value capital structures. Therefore, a given level of earnings would cover interest payments fewer times than indicated by the *pro forma* ratios based on market value capital structures. Another reason to use book values to calculate *pro forma* TIE ratios is that the TIE ratios that bond ratings agencies and industry analysts examine typically are based on book value data.

134. Based on this second *pro forma* TIE calculation, and given a rate of return of 8 percent, the average *pro forma* TIE ratio is 3.37. Two carriers, FairPoint and CBT, have a TIE ratio below one, three carriers have a ratio below 1.25, and six below 1.5.²⁰⁴ A rate of return of 9 percent would produce an average TIE ratio of 3.86. Two carriers still have a TIE ratio less than one, one carrier has a TIE ratio of 1.23, all other carriers have a TIE ratio exceeding 1.25, and 13 of 16 exceed 1.5.

(c) Carrier TIE Ratios: Pro Forma, After-Tax, Book Value Capital Structures

135. RUS examines after-tax TIE ratios based on book value data. We calculate the *pro forma* TIE ratio a third way, this time on an after-tax basis using book value capital structures, so that these ratios are comparable to the RUS benchmarks, using the following equation:²⁰⁵

$$\text{TIE} = (((D/(D+E))K_d) + ((E/(D+E))K_e))/((D/(D+E))K_d)$$

Appendix L3 also shows the incumbent LEC's after-tax, book value *pro forma* TIE ratios for WACC estimates ranging from six percent to 11.25 percent.

136. A rate of return of 8 percent produces an average after-tax, *pro forma* TIE ratio of 2.45. At this rate of return, all but two carriers, FairPoint and CBT, have TIE ratios exceeding one. Five carriers have TIE ratios less than 1.25, and seven have TIE ratios less than 1.5. A rate of return of 9 percent produces an average after-tax *pro forma* TIE ratio of 2.76. At this rate of return two carriers still have TIE ratios less than one, three carriers have TIE ratios less than 1.25, and six carriers have TIE ratios less than 1.5. A rate of return of 11.40 percent is required to produce an after-tax *pro forma* TIE ratio that equals or exceeds one for every carrier. At that rate of return, three incumbent LECs still would have after-tax *pro forma* ratios that are less than 1.50, and two would have ratios that are less than 1.25. At the same time, a rate of return that high would produce an average after-tax *pro forma* TIE ratio of 3.50, a ratio that is much higher than all of the RUS benchmarks.

c. TIE Ratio Analysis Conclusion

137. Based on these analyses, we conclude that an authorized rate of return in the top half of the zone of reasonableness would strike a reasonable balance between providing highly leveraged firms with adequate interest payment coverage and providing less leveraged firms with too much coverage.

²⁰⁴ *Id.*

²⁰⁵ The numerator of this equation excludes an allowance for corporate income taxes. This equation is otherwise identical to the TIE equation used to above to calculate *pro forma* TIE ratios based on before-tax earnings.

C. Grants

138. Substantial telecommunications infrastructure grants in recent years²⁰⁶ raise the issue of how such grants might affect carriers' WACC. Regulated companies should not be receiving any rate of return on grants. When the grants are received directly by the regulated company, the grants must be credited to the appropriate plant account.²⁰⁷ This will exclude the grant from earning the rate of return and exclude the plant getting depreciation expenses. Crediting the grant to plant account protects the rate payers from paying rate of return on the plant and also paying for depreciation expenses on the plant that gets included in the cost of service. However, given the current freeze of cost category relationships for some rate-of-return carriers,²⁰⁸ plant accounts credited may not be representative and related expenses, for example, may be allocated unreasonably.

139. When an affiliated company receives a grant, the grant should be transferred to the regulated company in accordance with Part 32 of the Commission's rules.²⁰⁹ Specifically, the Commission's rules require that for all assets outside of tariff transactions sold by or transferred to a carrier from its affiliate, the asset shall be recorded at no more than the lower of fair market value and net book cost.²¹⁰ In this case, only the net book value of the investment in excess of that paid for by the grant would be recorded in the plant account. As above, if the grant is large, this treatment categorization (separations) may not be representative.

140. In the case of large grants, the accounting rules may need to be strengthened and/or modified so that the categorization is more representative and that the investment paid for by grants, whether directly to the regulated company or transferred to the regulated company by an affiliate, does not receive depreciation or return treatment.

IV. CONCLUSION

141. Developments in the telecommunications industry, regulation, and the marketplace since the Commission last established a rate-of-return have significantly changed how the Commission should analyze the rate-of-return carriers should earn. In its last prescription, the Commission could rely primarily on ARMIS reports. Those reports came from companies with investment-grade bond ratings—companies engaged in substantially the same wireline operations as the small incumbent LECs also subject to rate-of-return regulation. Analyst estimates of the expected growth rates of those companies were plentiful and the companies' equity was widely traded.

142. Today, with those ARMIS reports a thing of the past, and with the largest telephone companies increasingly dissimilar from the smaller rate-of-return companies, the Commission must expand its analysis to include smaller carriers to ensure its analysis reasonably

²⁰⁶ See, e.g., Broadband Technology Opportunities Program (BTOP) Quarterly Program Status Report, National Telecommunications and Information Administration, Sept. 2012 ("In 2009 and 2010, NTIA invested approximately \$4 billion in 233 BTOP projects benefitting every state, as well as five territories and the District of Columbia."), available at http://www.ntia.doc.gov/files/ntia/publications/btop_14th_quarterly_report.pdf (last visited Nov. 16, 2012).

²⁰⁷ 47 C.F.R. § 32.2000.

²⁰⁸ *Jurisdictional Separations and Referral to the Federal-State Joint Board*, CC Docket No. 80-286, Report and Order, 27 FCC Rcd 5593 (2012) (extending the separations freeze until June 30, 2014).

²⁰⁹ 47 C.F.R. § 32.01 *et seq.*

²¹⁰ 47 C.F.R. § 32.27.

reflects the circumstances of those smaller incumbent LECs. Doing so raises a number of other issues. *Firms not frequently traded provide less-reliable data from which to determine cost.* Firms in financial distress do not provide meaningful data for some of the essential calculations necessary to determine a reasonable rate of return.

143. Based upon the analysis in this Report, we believe the Commission can address these concerns by using a broad range of publicly-traded incumbent LECs, including the RHCs as well as mid-size carriers and smaller carriers. Using the data from these carriers, the Commission can determine zones of reasonableness based upon two different means of calculating the cost of capital: DCF and CAPM. Based upon the analysis described in this Report, we believe that the range of 7.39 percent to 8.72 percent represents a robust zone of reasonableness from within which to select the authorized rate of return. Analyzing the effects of a new rate of return with a TIE analysis, and given current historically low interest rates and the infrequency of represcription, we conclude that the rate of return should be at the upper half of that zone of reasonableness, from 8.06 percent to 8.72 percent.

144. The data and observations set forth in this Report should provide valuable assistance to the Commission as it moves forward with prescribing an authorized rate of return that ensures just and reasonable rates for customers and helps ensure the stability and sufficiency of the universal service fund while allowing incumbent LECs to continue to maintain their credit and to attract capital.

APPENDIX A

List of USF/ICC Transformation Further Notice Commenters and Reply Commenters

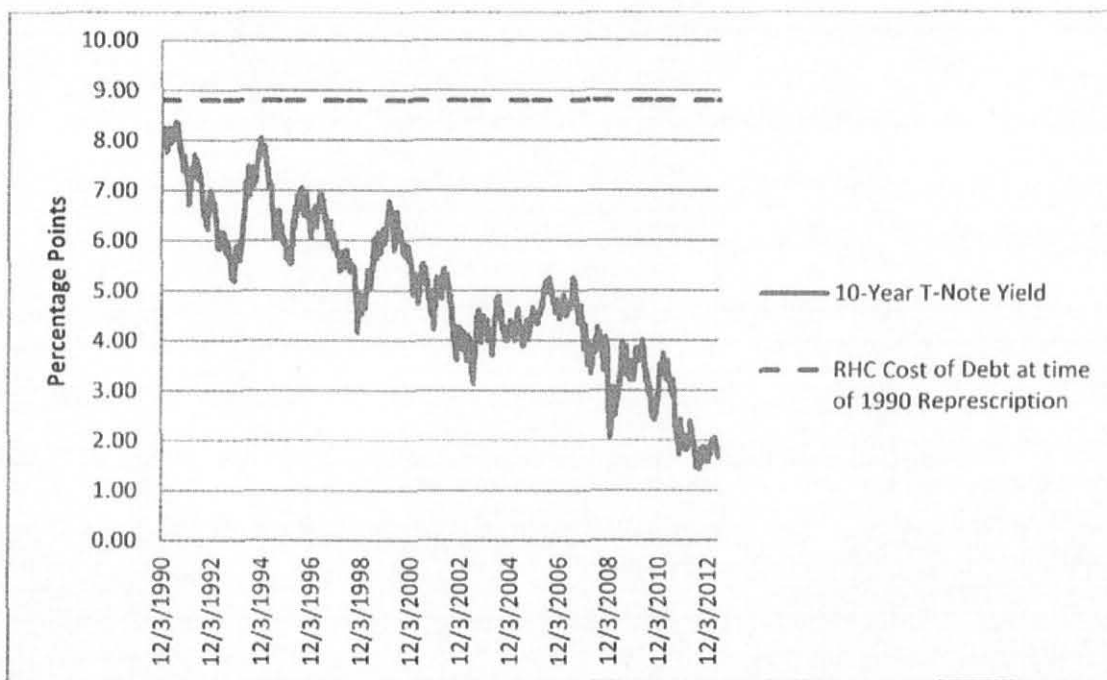
<u>Commenter</u>	<u>Abbreviation</u>
Ad Hoc Telecommunications Users Committee	Ad Hoc
Alaska Regulatory Commission	Alaska Commission
Alaska Rural Coalition	ARC
C Spire Wireless	C Spire
CTIA – The Wireless Association	CTIA
Gila River Telecommunications	Gila River
GVNW Consulting	GVNW
Hopi Telecommunications	Hopi
Mescalero Apache Telecom Inc.	MATI
Moss Adams	Moss Adams
National Association of State Utility Consumer Advocates, Maine Office of the Public Advocate, New Jersey Division of Rate Counsel and Utility Reform Network	NASUCA et al.
National Cable & Telecommunications Association	NCTA
Nebraska Rural Independent Companies	Nebraska Rural
NECA, NTCA, OPASTCO and WTA	NECA et al.
Parrish, Blessing & Associates	Parrish
RCA – The Competitive Carriers Association	RCA
Time Warner Cable	Time Warner Cable
T-Mobile USA	T-Mobile
United States Telecom Association	U.S. Telecom
Universal Service for America Coalition	USA Coalition
Windstream Communications	Windstream
Washington Independent Telecommunications Association, Oregon Telecommunications Association, Idaho Telecom Alliance, Montana Telecommunications Association and Colorado Telecommunications Association	Western Associations
<u>Reply Commenter</u>	<u>Abbreviation</u>
Alaska Regulatory Commission	Alaska Commission
Cellular South	Cellular South
GTA Telecom	GTA
GVNW Consulting	GVNW
Louisiana Telecommunications Association Small Company Committee	Louisiana Small Committee
Montana Telecommunications Association	Montana Association
National Association of State Utility Consumer Advocates, Maine Office of the Public Advocate and New Jersey Division of Rate Counsel	NASUCA et al.
NECA, NTCA, OPASTCO and WTA	Rural Associations
New Mexico Exchange Carrier Group and Mescalero Apache Telecom Inc.	NMECG and MATI
Pennsylvania Public Utility Commission	PA PUC
RCA – The Competitive Carriers Association	RCA

Rural Iowa Independent Telephone Association
Texas Statewide Telephone Cooperative, Inc.
Universal Service for America Coalition

RIITA
TSTCI
USA Coalition

Appendix B

Comparison of RHC Embedded Cost of Debt Found in 1990 Represcription with 10-Year Treasury Note Yield



Annualized daily yields on 10 year Treasury Notes. Source: SNL Kagan

APPENDIX C

Discussion of Book Values and Market Values in Calculation of Capital Structure

1. This appendix discusses the strengths and weaknesses of using book and market values to estimate the capital structure of a firm. The book value of a firm is the book value of its equity plus the book value of its liabilities. The market value of a firm is the amount that would have to be paid in a competitive market to purchase the company and fulfill all of its financial obligations, *i.e.*, it is equal to the sum of the market values of the firms' equity and debt. Regulators, including the FCC, typically use book values to determine the capital structure of firms, while academics and financial analysts favor target values or in their defect market values, while advising against book values.¹

2. While the book and market values of debt are often similar, the book and market values of equity are not. This difference will lead to different capital structure and WACC estimates depending on which one is used.

A. Book Value

3. Book equity records the *nominal value of the financial investments* made in a company at the time those investments were made. The book value of equity is the sum of the nominal dollar value at which funds were invested in the company by the owner(s), plus the nominal value of earnings retained throughout the history of the firm. Book equity can be split into two components, neither of which will reflect market valuation: the historical market value of a company's shares at the time they were issued (share capital plus additional paid-in capital), and aggregate retained earnings, recorded in nominal values. When new business opportunities open up for a company and new future profits seem likely, book values of equity will not immediately reflect this, even though market values automatically will; and when past investments are demonstrated to have been unwise, book values are not revised downward as market values are.

4. There are a number of arguments that support the use of book values when determining a firm's WACC. Some rate-of-return practitioners argue that the target capital structure is reflected in the book values, not the market values, of debt and equity.² If a firm over

¹ See, e.g., H. Kent Baker, J. Clay Singleton, and E. Theodore Veit, *Survey Research in Corporate Finance: Bridging the Gap between Theory and Practice* at 142 (Oxford University Press 2011) ("Finance theory specifies that the weights used to calculate WACC should reflect a firm's target capital structure Clearly, the weights used to calculate WACC should not be book-value weights appearing on the firm's balance sheet, unless, by coincidence, they also happen to be the capital structure weights that maximize the firm's stock price. Book-value weights of debt and equity ignore current market conditions Some experts advocate using market-value weights based on the number of shares of common stock, the market price per share, and the market value of a firm's outstanding debt. [This] is clearly better than using book-value weights.")

² See *Morin New Regulatory Finance* at 452. See also John R. Graham and Campbell R. Harvey, *How Do CFOs Make Capital Budgeting and Capital Structure Decisions?* J. APP. CORP. FIN. at 12-13 (2002). The authors found from a survey of 392 CFOs that 19% of firms do not have a target debt ratio; 37% have a flexible target; 34% have a somewhat tight target or range; and 10% have a strict target. Among regulated firms, 67% were found to have tight or somewhat strict targets. The authors also found that only 16.4% of firms say that changes in the market value of equity are important or very important to their debt decisions. In the Virginia Arbitration, the parties debated the merits of using book or market values to estimate a firm's target capital structure. See also *Petition of WorldCom, Inc.* Pursuant to Section 252(e)(5) of the

time issues debt and equity in increments so as to maintain a long-run target capital structure that is based on book values, then the return needed to cover the costs of debt and equity has to be based on book value proportions because these are the actual proportions in which these funds are issued. In fact, regulators conventionally allow a rate of return on the actual equity and debt issued, which is what book value reflects.³ In that case, it is (obviously) logically consistent to use book value weights (along with the embedded cost of debt) to determine the WACC because the rate of return (which is based upon the WACC) is applied to an original cost rate base⁴ (essentially a book value rate base). Such ratemaking also is easy to understand and is administratively efficient.⁵

5. Use of book value weights (along with the embedded cost of debt and a book value rate base) is consistent with the belief that investors' right to a fair and reasonable rate of return on the capital applies to what they have actually invested in the firm.⁶ Moreover, as the contractual obligation as to the amount of interest payments on existing debt is fixed, regulators prevent equity holders from realizing "windfall" gains or losses when the market rate of interest increases or decreases by allowing the firm to earn a return equal to the embedded cost of debt times the book value of debt, plus the cost of equity times the book value of equity.⁷ Further, if investors expect a regulated firm actually to earn a return on a book value rate base that, on average, over a long period of time, is equal to its cost of capital, then the market value of the firm will (approximately) equal its book value.⁸ Regulation could then be viewed as successful if

Communication Act for Preemption of the Jurisdiction of the Virginia State Corporation Commission Regarding Interconnection Disputes with Verizon Virginia Inc., and for Expedited Arbitration, CC Docket Nos. 00-218, 00-251 (*Virginia Arbitration*), Rebuttal Testimony of Dr. James H. Vanderweide on behalf of Verizon Virginia, Inc. at 24-37, dated Aug. 27, 2001; and Surrebuttal Testimony of John I. Hirshleifer on behalf of AT&T and Worldcom, Inc., at 53-59, dated Sept. 21, 2001.

³ The one instance where the Commission used market values of debt and equity to estimate the capital structure was in the Virginia Arbitration, where the rate base to which the rate of return was applied was a market value rate base consistent with the Commission's Total Element Long Run Incremental Cost or TELRIC rules that governed in that proceeding. Petition of WorldCom, Inc. Pursuant to Section 252(e)(5) of the Communication Act for Preemption of the Jurisdiction of the Virginia State Corporation Commission Regarding Interconnection Disputes with Verizon Virginia Inc., and for Expedited Arbitration, CC Docket Nos. 00-218, 00-251, Memorandum Opinion and Order, 18 FCC Rcd 17722, 17753-58, paras. 65-76 (WCB 2003).

⁴ For example, assume that a regulated firm has an embedded cost of debt of 5% (that is, the firm is contractually obligated to pay debt holders a coupon rate of 5%), a cost of equity of 10%, and book value rate base equal to \$100, \$50 of which is financed by debt holders and \$50 dollars of which is financed by equity holders. The book value weights of debt and equity are thus both 50% (\$50/\$100). The WACC is 7.5%, given these assumptions $((.5 \times .05) + (.5 \times .1))$, and the total required return on rate base is \$7.50 $(.075 \times \$100)$. Of that total return, the debt holders receive \$2.50, or a 5% rate of return $(\$2.50/\$50)$, which is precisely equal the cost of debt. And equity holders receive a return of \$5.00, or a 10% rate of return $(\$5.00/\$50)$, which is precisely equal to the cost of equity.

⁵ Conversely, such ratemaking does not perform well in terms of rationing customer demand or inciting managerial efficiency. See, James Bonbright, Albert Danielsen, and David Kamerschen, *Principles of Public Utility Rates* at 300 (Public Utility Reports, 2d ed. 2008).

⁶ *U.S. v. FCC*, 707 F.2d 610, 612 (D.C. Cir. 1983).

⁷ *Morin New Regulatory Finance* at 452.

⁸ For example, consider a firm that has a zero long-term growth rate and no debt. These assumptions require that the firm pays a dividend, otherwise the firm must grow, at least if it is being operated efficiently. Assume that the firm's rate base equals net book value.

the book values and the market values of equity are (approximately) equal to each other.⁹

6. Book values also provide investors with stability and therefore protect the rate-of-return calculation against the vagaries reflected in the variability of the market's valuation of the firm's debt and equity.¹⁰ Such market variation can be substantial.

7. Finally, the use of book values avoids the circularity problem associated with use of market values. Specifically, unlike book values, market values reflect investors' expectations as to the current or anticipated *authorized* rate of return, while the regulator is trying to determine what the authorized rate of return should be independent of market expectations about the current or anticipated authorized rate of return.¹¹

8. Despite this, book values have a fundamental difficulty: accounting processes do not effectively capture changes in prices, technology, demand and other circumstances, and consequently, book values become increasingly disconnected from the underlying assets they are intended to represent. In some cases, this disconnection can be so severe as to render book values meaningless.

B. Market Value

9. The basic critique of book values, just foreshadowed, is that they are not *economically* meaningful. As a result, it is a standard practice in applied corporate finance to infer the target capital structure of a firm on the basis of the market value of its equity, debt, and other sources of capital.¹² The basic argument in favor of this is that market values reflect exactly the underlying net value of the firm and its assets (at least as presently priced by the market). However, whether this reflects the target capital structure, rather than merely the current capital

A rate-of-return carrier's expected earnings, E , are equal to the allowable rate of return, r , times rate base, assumed to equal book value, B . Thus, $E = r \times B$. The easiest way to identify the firm's dividend stream is to assume it pays a constant steady-state dividend, D , consistent with the zero growth assumption, that is, D equals earnings (assuming zero growth), or $D = r \times B$. The present value of such a stream is $r \times B / k$, where k is the market-determined cost of capital for the firm. Alternative dividend streams that would satisfy investors and the zero growth assumption must have the same present value as this dividend stream; otherwise they would either affect growth assumptions or fail to satisfy investors.

The market value, M , of a firm's stock is the present value of the future dividends investors expect to receive, discounted at the risk-adjusted cost of capital, k : $M = D/k = (r \times B)/k$. Thus, $M/B = r/k$. The simplest and really only plausible case for which this formula is true is where $M = B$ and $r = k$.

See A. Lawrence Kolbe, James A. Read, Jr., and George R. Hall, *The Cost of Capital, Estimating the Rate of Return for Public Utilities* at 25-33 (The MIT Press 1984).

⁹ *Morin New Regulatory Finance* at 452. This argument should be understood in the narrow sense of evaluating the outcome, i.e., the end result, of the rate-setting process; it should not be construed as endorsing as a starting point an approach by which regulators would set rates so as to produce a market equity-to-book equity ratio of 1. We note that economic theory suggests that in the long-run in a competitive industry the market value of a firm's common equity should equal the replacement cost of its assets, which will not necessarily be the case when the market and book values of equity are equal. See *Morin New Regulatory Finance* at 376-378.

¹⁰ See, e.g., Charles F. Phillips, Jr., *The Regulation of Public Utilities* at 336-38 (Public Utilities Reports, Inc. 1993); *Morin New Regulatory Finance* at 452.

¹¹ *Morin New Regulatory Finance* at 452-53.

¹² See generally Tom Copeland, Tim Koller, and Jack Murrin, *Valuation: Measuring and Managing the Value of Companies*, Chapter 10 (McKinsey & Company, Inc. 2000).

structure of the firm, remains an open question. There is evidence that financial managers very often ignore the market value of equity when deciding on how much debt firms should issue.¹³

10. Market values have the additional advantage of being readily and objectively observable, at least in the case of publicly listed companies.

11. Using market values, however, presents a regulatory difficulty: market forces determine the value of a firm's debt and equity based on expectation of that firm's earning capacity, which is exactly what the regulator is trying to control in setting a regulated rate of return. This introduces circularity in the reasoning. To see this problem, consider a rate of return that inadvertently allows monopoly pricing. Investors, seeing an attractive asset in the form of the regulated firm, will seek to buy it, driving its price up until the expected return on the investment exactly compensates the marginal investor for the risk associated with holding that asset. This means that if the regulator checks whether they set the right rate of return, it will appear that they in fact have, because the market price of the asset adjusted to bring expected returns to investors in line with all other investment opportunities. Thus, to know what the right rate of return is, the regulator must be careful in treating market valuations as given.

¹³ See John R. Graham and Campbell R. Harvey, How Do CFOs Make Capital Budgeting and Capital Structure Decisions? *J. APP. CORP. FIN.* at 12-13 (2002).

Appendix D1

Historical Book Value Shares of Debt

Company	2012	2011	2010	2009	2008	Average
Alaska Communications Systems Group (ACS)	1.07	1.10	1.04	0.95	0.95	1.02
AT&T Inc. (T)	0.42	0.37	0.35	0.39	0.39	0.38
CenturyLink (CTL)	0.50	0.51	0.43	0.43	0.51	0.48
Cincinnati Bell Inc. (CBB)	1.35	1.40	1.36	1.50	1.57	1.44
Consolidated Communications Holdings (CNSL)	0.90	0.95	0.92	0.92	0.92	0.92
FairPoint (FRP)	1.50	1.12	-0.01	0.00	0.99	NA
Frontier Communications Corporation (FTR)	0.67	0.65	0.61	0.93	0.90	0.75
Hawaiian Telecom (HCOM)	0.69	0.63	NA	NA	NA	NA
HickoryTech Corp (HTCO)	0.73	0.73	0.73	0.78	0.81	0.76
Lumos (LMOS)	0.82	0.86	0.40	0.00	NA	NA
New Ulm (NULM)	0.43	0.43	0.45	0.47	0.50	0.46
Shenandoah Telecommunications Company (SHEN)	0.53	0.45	0.49	0.14	0.18	0.36
Telephone and Data Systems (TDS)	0.27	0.25	0.25	0.25	0.27	0.26
Verizon (VZ)	0.36	0.37	0.34	0.40	0.37	0.37
Alteva (ALTV)	0.49	0.00	0.03	0.07	0.11	0.14
Windstream (WIN)	0.88	0.86	0.90	0.96	0.96	0.91
	0.73	0.67	0.55	0.55	0.67	0.63
Group	Average					
RHCs	0.43	0.41	0.37	0.41	0.42	0.41
Mid-Size	1.03	0.96	0.78	0.87	1.07	1.03
Publicly-Traded RLECs	0.60	0.52	0.47	0.37	0.46	0.48

Appendix D2

Historical Market Value Shares of Debt

Company	2012	2011	2010	2009	2008	Average
Alaska Communications Systems Group	0.86	0.80	0.52	0.60	0.57	0.67
AT&T Inc.	0.26	0.25	0.25	0.28	0.27	0.26
CenturyLink	0.44	0.48	0.34	0.40	0.55	0.44
Cincinnati Bell Inc.	0.71	0.81	0.82	0.74	0.82	0.78
Consolidated Communications Holdings	0.66	0.61	0.61	0.63	0.72	0.64
FairPoint	0.82	0.90	1.00	0.00	0.89	NA
Frontier Communications Corporation	0.66	0.62	0.45	0.66	0.63	0.61
Hawaiian Telcom	0.65	0.51	NA	NA	NA	NA
HickoryTech Corp	0.51	0.44	0.47	0.51	0.64	0.51
Lumos	0.59	0.50	1.00	1.00	NA	NA
New Ulm	0.58	0.53	0.61	0.60	0.56	0.58
Shenandoah Telecommunications Company	0.39	0.39	0.29	0.06	0.05	0.23
Telephone and Data Systems	0.42	0.35	0.28	0.29	0.31	0.33
Verizon	0.28	0.31	0.31	0.37	0.33	0.32
Alteva	0.19	0.00	0.01	0.04	0.08	0.06
Windstream	0.62	0.56	0.51	0.57	0.57	0.57
Average	0.54	0.50	0.50	0.45	0.50	0.46
Group	Average					
RHCs	0.33	0.35	0.30	0.35	0.38	0.34
Mid-Size	0.72	0.70	0.66	0.51	0.70	0.66
Publicly-Traded RLECs	0.47	0.40	0.47	0.45	0.39	0.39

Appendix E

Embedded Cost of Debt

Carrier	2011 Non-current Long-term Debt	2012 Debt Non-current Long-term Debt	2012 Interest Expense	Embedded Cost of Debt
HTCO	\$118,828,000	\$135,133,000	\$5,749,000	4.53%
TDS	\$1,529,857,000	\$1,721,571,000	\$86,745,000	5.34%
NULM	\$39,809,000	\$42,494,000	\$2,227,000	5.41%
SHEN	\$158,662,000	\$230,200,000	\$7,850,000	4.04%
CNSL	\$875,719,000	\$1,208,248,000	\$72,604,000	6.97%
LMOS	\$323,897,000	\$304,325,000	\$11,921,000	3.80%
ALTV	\$0	\$14,095,000	\$415,000	5.89%
RoR Average	\$435,253,143	\$522,295,143	\$26,787,286	5.14%
WIN	\$8,936,700,000	\$8,114,900,000	\$625,100,000	7.33%
ALSK	\$538,624,000	\$533,772,000	\$39,570,000	7.38%
HCOM	\$297,400,000	\$292,410,000	\$22,183,000	7.52%
FIR	\$8,224,392,000	\$8,405,488,000	\$687,985,000	8.27%
FRP	\$992,690,000	\$948,470,000	\$67,610,000	6.97%
CBB	\$2,520,600,000	\$2,676,000,000	\$218,900,000	8.42%
Midsize Average	\$3,585,067,667	\$3,495,173,333	\$276,891,333	7.65%
CTL	\$21,355,259,000	\$19,399,644,000	\$1,319,000,000	6.47%
VZ	\$50,303,000,000	\$47,618,000,000	\$2,571,000,000	5.25%
T	\$61,299,737,000	\$66,358,483,000	\$3,444,000,000	5.40%
RBOC Average	\$44,319,332,000	\$44,458,709,000	\$2,444,666,667	5.71%
Average for All Carriers	\$9,844,698,375	\$9,875,202,063	\$573,928,688	6.19%

Appendix F

Betas

Carrier	Betas (Daily Data)	Betas (Weekly Data)	Betas (Monthly Data)	Betas (Weekly Data, Adjusted Towards 1)	Value Line Beta
HTCO	0.49	0.67	0.88	0.78	NA
TDS	1.08	1.12	1.03	1.08	0.95
NULM	-0.14	0.24	-0.28	0.50	NA
SHEN	1.53	1.31	0.85	1.21	0.85
CNSL	0.94	1.03	1.08	1.02	0.85
LMOS	0.73	0.73	0.33	0.82	NA
ALTV	0.18	0.29	0.42	0.52	NA
RoR Average	0.69	0.77	0.61	0.85	0.88
WIN	0.82	0.91	1.04	0.94	0.95
ALSK	0.85	0.76	0.66	0.84	0.75
HCOM	0.42	0.62	0.79	0.74	NA
FTR	0.84	0.94	0.77	0.96	0.95
FRP	1.83	1.25	1.22	1.16	NA
CBB	1.10	1.46	1.19	1.30	1.05
Midsized Average	0.98	0.99	0.95	0.99	0.93
CTL	0.73	0.70	0.74	0.80	0.75
VZ	0.70	0.74	0.56	0.83	0.65
T	0.77	0.72	0.68	0.81	0.70
RBOC Average	0.73	0.72	0.66	0.81	0.70
Average for All Carriers	0.81	0.84	0.75	0.89	0.85

Appendix G

T-statistics and R-squared Values of Monthly, Weekly, and Daily Betas Used in CAPM

Carrier	betas using monthly data		betas using weekly data		betas using daily data	
	t-statistic	r-squared	t-statistic	r-squared	t-statistic	r-squared
HCOM	4.23	0.0305	3.03	0.0733	1.77	0.1108
HTCO	4.95	0.2968	7.83	0.1922	11.03	0.0883
TDS	5.45	0.3388	14.07	0.4341	31.75	0.4451
NULM	-1.33	0.0295	1.9	0.0137	-1.99	0.0032
SHEN	3.63	0.1851	11.05	0.3212	32.19	0.4519
CNSL	8.09	0.5305	14.34	0.4434	30.71	0.4286
LMOS	0.32	0.0072	1.92	0.0501	3.49	0.0338
ALTV	3.3	0.158	4.82	0.0827	5.31	0.022
WIN	7.91	0.5192	13.21	0.4035	32.21	0.4521
ALSK	2.55	0.1012	6.63	0.1455	18.52	0.2143
FTR	5.19	0.317	11.58	0.3418	26.01	0.3498
FRP	1.82	0.121	3.51	0.1009	11.36	0.1917
CBB	5.12	0.3114	13.73	0.4223	24.6	0.3251
CTL	6.27	0.4039	10.35	0.2935	26.77	0.3632
VZ	5.71	0.3599	15.4	0.4789	36.12	0.5093
T	8.19	0.5366	17.63	0.5465	43.6	0.6019

Appendix H

Cost of Equity: Capital Asset Pricing Model

Carrier	Cost of Equity (Daily Betas)	Cost of Equity (Weekly Betas)	Cost of Equity (Monthly Betas)	Cost of Equity (Weekly, Adjusted Betas)	Cost of Equity (Value Line Betas)
HTCO	4.79%	5.85%	7.07%	6.50%	NA
TDS	8.30%	8.53%	7.95%	8.29%	7.51%
NULM	1.12%	3.35%	0.28%	4.83%	NA
SHEN	10.90%	9.61%	6.89%	9.01%	6.92%
CNSL	7.45%	7.96%	8.26%	7.91%	6.92%
LMOS	6.22%	6.19%	3.84%	6.73%	NA
ALTV	2.99%	3.61%	4.40%	5.00%	NA
RoR Average	5.97%	6.44%	5.53%	6.90%	7.11%
WIN	6.76%	7.29%	8.03%	7.46%	7.51%
ALSK	6.92%	6.37%	5.82%	6.84%	6.33%
HCOM	4.37%	5.54%	6.55%	6.30%	NA
FTR	6.89%	7.44%	6.46%	7.56%	7.51%
FRP	12.67%	9.25%	9.10%	8.77%	NA
CBB	8.42%	10.48%	8.92%	9.59%	8.09%
Midsize Average	7.67%	7.73%	7.48%	7.75%	7.36%
CTL	6.22%	6.04%	6.26%	6.63%	6.33%
VZ	6.02%	6.28%	5.19%	6.78%	5.74%
T	6.43%	6.14%	5.93%	6.69%	6.04%
RBOC Average	6.23%	6.15%	5.80%	6.70%	6.04%
Average for All Carriers	6.65%	6.87%	6.31%	7.18%	6.89%

Appendix II

Weighted Average Cost of Capital

Carrier	Debt/ (Debt+ Equity)	Embedded Cost of Debt	Cost of Equity (CAPM Using Weekly, Adjusted Betas)	Cost of Equity (DCF Using Zacks EPS growth estimates)	CAPM WACC	DCF WACC
HTCO	50.67%	4.53%	6.50%	NA	5.50%	NA
TDS	41.85%	5.34%	8.29%	6.52%	7.05%	6.03%
NULM	58.12%	5.41%	4.83%	NA	5.17%	NA
SHEN	38.56%	4.04%	9.01%	NA	7.09%	NA
CNSL	65.57%	6.97%	7.91%	10.88%	7.29%	8.31%
LMOS	58.55%	3.80%	6.73%	7.43%	5.01%	5.30%
ALTV	18.99%	5.89%	5.00%	NA	5.17%	NA
RoR Average	47.47%	5.14%	6.90%	8.28%	6.04%	6.55%
WIN	62.49%	7.33%	7.46%	13.41%	7.38%	9.61%
ALSK	85.74%	7.38%	6.84%	NA	7.30%	NA
HCOM	59.30%	7.52%	6.30%	NA	7.02%	NA
FTR	66.30%	8.27%	7.56%	15.14%	8.03%	10.59%
FRP	81.95%	6.97%	8.77%	NA	7.29%	NA
CBB	70.69%	8.42%	9.59%	NA	8.77%	NA
Midsized Average	71.08%	7.65%	7.75%	14.27%	7.63%	10.10%
CTL	44.22%	6.47%	6.63%	10.06%	6.56%	8.48%
VZ	27.80%	5.25%	6.78%	11.77%	6.36%	9.96%
T	26.07%	5.40%	6.69%	10.98%	6.36%	9.53%
RBOC Average	32.70%	5.71%	6.70%	10.94%	6.42%	9.32%
Average for All Carriers	53.55%	6.19%	7.18%	10.77%	6.71%	8.47%

Appendix I2

Weighted Average Cost of Capital: Alternative Specifications of CAPM Betas

Carrier	Daily Beta WACC	Weekly Beta WACC	Monthly Beta WACC	Adjusted Weekly Beta WACC	Value Line Beta WACC
HTCO	4.66%	5.18%	5.78%	5.50%	NA
TDS	7.06%	7.19%	6.85%	7.05%	6.60%
NULM	3.62%	4.55%	3.26%	5.17%	NA
SHEN	8.25%	7.46%	5.79%	7.09%	5.81%
CNSL	7.14%	7.31%	7.41%	7.29%	6.95%
LMOS	4.80%	4.79%	3.81%	5.01%	NA
ALTV	3.54%	4.04%	4.69%	5.17%	NA
RoR Average	5.58%	5.79%	5.37%	6.04%	6.45%
WIN	7.12%	7.32%	7.59%	7.38%	7.40%
ALSK	7.31%	7.24%	7.16%	7.30%	7.23%
HCOM	6.24%	6.72%	7.13%	7.02%	NA
FTR	7.81%	7.99%	7.66%	8.03%	8.02%
FRP	8.00%	7.38%	7.35%	7.29%	NA
CBB	8.42%	9.03%	8.57%	8.77%	8.33%
Midsized Average	7.48%	7.61%	7.58%	7.63%	7.74%
CTL	6.33%	6.23%	6.35%	6.56%	6.39%
VZ	5.81%	5.99%	5.21%	6.36%	5.61%
T	6.16%	5.95%	5.79%	6.36%	5.87%
RBOC Average	6.10%	6.06%	5.79%	6.42%	5.96%
Average for All Carriers	6.39%	6.52%	6.28%	6.71%	6.82%

Appendix I3

Weighted Average Cost of Capital: Alternative Sources of Analyst Projections for DCF

Carrier	Yahoo DCF WACC	CNN Money DCF WACC	Reuters DCF WACC	Zacks DCF WACC	Midpoint WACC
HTCO	7.07%	11.34%	NA	NA	9.21%
TDS	6.03%	6.03%	NA	6.03%	6.03%
NULM	NA	NA	NA	NA	NA
SHEN	12.29%	11.04%	NA	NA	11.66%
CNSL	8.31%	8.31%	8.31%	8.31%	8.31%
LMOS	5.30%	5.30%	NA	5.30%	5.30%
ALTV	NA	NA	NA	NA	NA
RoR Average	7.80%	8.40%	8.31%	6.55%	8.10%
WIN	4.45%	8.35%	6.31%	9.61%	7.03%
ALSK	6.49%	6.49%	NA	NA	6.49%
HCOM	NA	NA	NA	NA	NA
FTR	11.14%	9.47%	9.78%	10.59%	10.31%
FRP	NA	NA	NA	NA	NA
CBB	NA	NA	NA	NA	NA
Midsized Average	7.36%	8.10%	8.05%	10.10%	7.94%
CTL	6.61%	6.64%	7.10%	8.48%	7.54%
VZ	9.23%	11.99%	8.79%	9.96%	10.39%
T	9.29%	9.64%	9.53%	9.53%	9.46%
RBOC Average	8.38%	9.42%	8.47%	9.32%	9.13%
Average for All Carriers	7.84%	8.60%	8.30%	8.47%	8.34%

Appendix J

Cost of Equity Using Discounted Cash Flow Model

Carrier	Cost of Equity (Yahoo DCF Estimates)	Cost of Equity (CNNMoney DCF Estimates)	Cost of Equity (Reuters DCF Estimates)	Cost of Equity (Zacks DCF Estimates)	Cost of Equity (DCF Midpoint)
HTCO	9.68%	18.34%	NA	NA	14.01%
TDS	6.52%	6.52%	NA	6.52%	6.52%
NULM	NA	NA	NA	NA	NA
SHEN	17.47%	15.43%	NA	NA	16.45%
CNSL	10.88%	10.88%	10.88%	10.88%	10.88%
LMOS	7.43%	7.43%	NA	7.43%	7.43%
ALTV	NA	NA	NA	NA	NA
RoR Average	10.40%	11.72%	10.88%	8.28%	11.06%
WIN	-0.35%	10.04%	4.62%	13.41%	6.53%
ALSK	1.11%	1.11%	NA	NA	1.11%
HCOM	NA	NA	NA	NA	NA
FTR	16.79%	11.83%	12.75%	15.14%	14.31%
FRP	NA	NA	NA	NA	NA
CBB	NA	NA	NA	NA	NA
Midsize Average	5.85%	7.66%	8.68%	14.27%	7.32%
CTL	6.72%	6.77%	7.59%	10.06%	8.39%
VZ	10.76%	14.58%	10.15%	11.77%	12.37%
T	10.67%	11.13%	10.98%	10.98%	10.90%
RBOC Average	9.38%	10.83%	9.58%	10.94%	10.55%
Average for All Carriers	8.88%	10.37%	9.49%	10.77%	9.90%

Appendix K

CAPM and DCF WACC Ranges

Carrier	CAPM Cost of Equity Lower Bound	CAPM Cost of Equity Upper Bound	DCF Cost of Equity Lower Bound	DCF Cost of Equity Upper Bound	CAPM WACC Lower Bound	CAPM WACC Upper Bound	DCF WACC Lower Bound	DCF WACC Upper Bound
HTCO	7.82%	10.13%	14.01%	14.01%	6.15%	7.29%	9.21%	9.21%
TDS	10.12%	13.34%	6.52%	6.52%	8.12%	9.99%	6.03%	6.03%
NULM	5.67%	7.14%	NA	NA	5.52%	6.13%	NA	NA
SHEN	11.05%	14.63%	16.45%	16.45%	8.34%	10.55%	11.66%	11.66%
CNSL	9.63%	12.66%	10.88%	10.88%	7.88%	8.93%	8.31%	8.31%
LMOS	8.11%	10.54%	7.43%	7.43%	5.58%	6.59%	5.30%	5.30%
ALTV	5.89%	7.45%	NA	NA	5.89%	7.15%	NA	NA
RoR Average	8.33%	10.84%	11.06%	11.06%	6.78%	8.09%	8.10%	8.10%
WIN	9.05%	11.85%	7.33%	13.02%	7.98%	9.03%	7.33%	9.47%
ALSK	8.26%	10.75%	7.38%	13.07%	7.51%	7.86%	7.38%	8.19%
HCOM	7.55%	9.77%	NA	NA	7.54%	8.43%	NA	NA
FTR	9.18%	12.03%	14.31%	14.31%	8.58%	9.54%	10.31%	10.31%
FRP	10.74%	14.20%	NA	NA	7.65%	8.27%	NA	NA
CBB	11.79%	15.67%	NA	NA	9.41%	10.55%	NA	NA
Midsize Average	9.43%	12.38%	9.67%	13.47%	8.11%	8.95%	8.34%	9.32%
CTL	7.98%	10.36%	8.39%	8.39%	7.31%	8.64%	7.54%	7.54%
VZ	8.18%	10.64%	12.37%	12.37%	7.37%	9.14%	10.39%	10.39%
T	8.07%	10.48%	10.90%	10.90%	7.37%	9.15%	9.46%	9.46%
RBOC Average	8.08%	10.49%	10.55%	10.55%	7.35%	8.98%	9.13%	9.13%
Average for All Carriers	8.69%	11.35%	10.54%	11.58%	7.39%	8.58%	8.45%	8.72%

Appendix L1

Pro Forma Pre-Tax Times-Interest-Earned Ratios
(Market Value Capital Structures)

Carrier	If WACC = 0.06 then TIE =	If WACC = 0.07 then TIE =	If WACC = 0.08 then TIE =	If WACC = 0.09 then TIE =	If WACC = 0.10 then TIE =	If WACC = 0.1125 then TIE =
HickoryTech Corp.	3.62	4.32	5.03	5.73	6.44	7.32
Telephone and Data Systems, Inc.	3.73	4.46	5.18	5.91	6.63	7.54
New Ulm Telecom Inc.	2.47	2.98	3.50	4.01	4.53	5.17
Shenandoah Telecommunications	5.62	6.66	7.70	8.74	9.78	11.08
Consolidated Communications	1.51	1.86	2.22	2.57	2.93	3.37
Lumos Networks Corp.	3.75	4.48	5.21	5.94	6.67	7.58
Alteva	8.07	9.52	10.97	12.41	13.86	15.67
RoR Average	4.11	4.90	5.69	6.47	7.26	8.25
Windstream Corporation	1.50	1.85	2.21	2.56	2.91	3.36
Alaska Communications Systems	0.95	1.17	1.43	1.68	1.94	2.26
Hawaiian Telcom.	1.56	1.92	2.28	2.65	3.01	3.46
Frontier Communications	1.15	1.45	1.74	2.04	2.33	2.70
FairPoint Communications, Inc.	1.08	1.37	1.65	1.93	2.22	2.57
Cincinnati Bell	1.01	1.28	1.56	1.83	2.10	2.44
Midsize Average	1.21	1.51	1.81	2.12	2.42	2.80
CenturyLink	2.78	3.34	3.91	4.47	5.04	5.75
Verizon	6.04	7.15	8.26	9.37	10.48	11.86
ATT	6.29	7.44	8.59	9.74	10.89	12.33
RBOC Average	5.03	5.98	6.92	7.86	8.80	9.98
Average for All Carriers	3.20	3.83	4.46	5.10	5.74	6.53

Appendix L2

Pro Forma Pre-Tax Times-Interest-Earned Ratios
(Book Value Capital Structures)

Carrier	If WACC = 0.06 then TIE =	If WACC = 0.07 then TIE =	If WACC = 0.08 then TIE =	If WACC = 0.09 then TIE =	If WACC = 0.10 then TIE =	If WACC = 0.1125 then TIE =
HickoryTech Corp.	2.30	2.79	3.28	3.76	4.25	4.86
Telephone and Data Systems.	6.13	7.25	8.38	9.50	10.62	12.03
New Ulm Telecom Inc.	3.53	4.22	4.91	5.61	6.30	7.16
Shenandoah Telecom	3.96	4.72	5.49	6.25	7.01	7.97
Consolidated.	0.96	1.19	1.45	1.71	1.97	2.29
Lumos Networks Corp.	2.48	3.00	3.52	4.04	4.55	5.20
Alteva	2.73	3.29	3.85	4.41	4.97	5.66
RoR Average	3.16	3.78	4.41	5.04	5.67	6.45
Windstream Corporation	0.93	1.14	1.39	1.64	1.89	2.20
Alaska Communications	0.76	0.82	1.02	1.23	1.43	1.69
Hawaiian Telecom	1.90	2.31	2.73	3.15	3.57	4.10
Frontier Communications	1.13	1.42	1.71	2.01	2.30	2.66
FairPoint Communications	0.57	0.67	0.76	0.86	0.95	1.12
Cincinnati Bell	0.53	0.61	0.70	0.79	0.88	0.99
Midsize Average	0.97	1.16	1.39	1.61	1.84	2.13
Century Link	2.37	2.87	3.37	3.87	4.37	4.99
Verizon	4.55	5.42	6.28	7.14	8.00	9.08
ATT	3.70	4.42	5.14	5.86	6.57	7.47
RBOC Average	3.54	4.24	4.93	5.62	6.32	7.18
Average for All Carriers	2.41	2.88	3.37	3.86	4.35	4.97

Appendix L3

Pro Forma After-Tax Times-Interest-Earned Ratios
(Book Value Capital Structures)

Carrier	If WACC = 0.06 then TIE =	If WACC = 0.07 then TIE =	If WACC = 0.08 then TIE =	If WACC = 0.09 then TIE =	If WACC = 0.10 then TIE =	If WACC = 0.1125 then TIE =
HickoryTech Corp.	1.80	2.11	2.41	2.71	3.01	3.38
Telephone and Data Systems, Inc.	4.17	4.86	5.55	6.25	6.94	7.81
New Ulm Telecom Inc.	2.56	2.99	3.42	3.84	4.27	4.81
Shenandoah Telecom	2.83	3.30	3.77	4.24	4.71	5.30
Consolidated Communications	0.96	1.12	1.28	1.44	1.60	1.80
Lumos Networks Corp.	1.92	2.24	2.56	2.87	3.19	3.59
Alteva	2.07	2.41	2.76	3.10	3.45	3.88
RoR Average	2.33	2.72	3.11	3.49	3.88	4.37
Windstream Corporation	0.93	1.08	1.24	1.39	1.55	1.74
Alaska Communications Systems	0.76	0.89	1.01	1.14	1.27	1.43
Hawaiian Telcom	1.55	1.81	2.07	2.33	2.59	2.91
Frontier Communications	1.08	1.26	1.44	1.62	1.80	2.03
FairPoint Communications, Inc.	0.57	0.67	0.76	0.86	0.95	1.07
Cincinnati Bell	0.53	0.61	0.70	0.79	0.88	0.99
Midsized Average	0.90	1.05	1.20	1.36	1.51	1.69
Century Link	1.85	2.16	2.46	2.77	3.08	3.47
Verizon	3.19	3.73	4.26	4.79	5.32	5.99
ATT	2.67	3.11	3.55	4.00	4.44	5.00
RBOC Average	2.57	3.00	3.43	3.85	4.28	4.82
Average for All Carriers	1.84	2.15	2.45	2.76	3.07	3.45

Appendix M

Historical Times-Interest-Earned Ratios

Company	2012	2011	2010	Average	Rating
AT&T Inc.	4.00	2.86	7.05	4.63	I
Telephone and Data Systems	3.16	4.00	3.36	3.50	I
Verizon	4.83	4.68	5.99	5.17	I
Alaska Communications Systems Group	1.59	1.32	0.97	1.29	S
Cincinnati Bell Inc.	1.16	1.20	1.36	1.24	S
CenturyLink	1.95	1.88	3.81	2.55	S
Consolidated Communications Holdings	1.10	1.84	1.83	3.47	S
Frontier Communications Corporation	1.33	1.37	1.51	1.40	S
Hawaiian Telecom	1.84	1.98	7.80	3.87	S
Windstream	1.43	1.49	1.96	1.63	S
FairPoint	-2.68	6.45	-1.05	0.91	S
HickoryTech Corp	3.37	3.13	5.13	3.88	NA
New Ulm Telecom	2.01	2.20	1.90	2.04	NA
Shenandoah Telecommunications Company	4.64	3.92	7.82	5.46	NA
Alteva	-32.57	-58.47	NA	-45.52	NA
Lumos	3.30	-3.02	7.16	2.48	NA
Averages					
Investment Grade Carrier	3.99	3.85	5.46	4.43	
Speculative Grade Carrier (excluding FairPoint)	1.48	1.58	2.75	1.94	
Source: SNL Kagan, EBIT and Interest Expense figures.					

Appendix N

Long-Term Bond Ratings

Company	Moody's Long Term	S&P Long Term	ST	Fitch Long Term
AT&T Inc.	A2	A-	F1	A
AT&T Corp	A2	-	-	A
Indiana Bell Telephone Company, Inc.	Baa2	-	-	A
BellSouth Corporation	A2	-	WD	A
Pacific Bell	A2	-	-	A
Southwestern Bell Telephone Company	A2	-	-	A
Verizon	A3	A-	F1	A
Verizon Global Funding Corp	A3	-	-	-
GTE Corporation	Baa1	A-	-	A
Cellco Partnership	A2	A-	-	A
Verizon Wireless Capital LLC	A2	-	-	A
Qwest	Baa3	-	-	BBB-
Qwest Capital Funding	Baa3	-	-	BBB-
Qwest Corporation	Baa3	-	-	BBB-
Mountain States Telephone and Telegraph Co	Baa3	-	-	-
Northwestern Bell Telephone Company	Baa3	-	-	-
Telephone and Data Systems	Baa2	BBB-	-	BBB
United States Cellular Corporation	Baa2	BBB-	-	BBB
Windstream	Ba2	BB-	-	BB+
Windstream Holding of the Midwest	Baa3	BB-	-	BB+
Windstream Georgia Communications	Baa2	BB-	-	BB+
Alaska Communications Systems Group	B1	B+	-	-
Consolidated Communications Holdings	-	B+	-	-
Consolidated Communications Inc.	B1	-	-	-
Consolidated Communications Finance Co	B3	-	-	-
FairPoint	B2	B	-	-
Frontier Communications Corporation	Ba2	BB	-	BB+
New Communications Holdings Inc.	Ba2	-	-	-
Cincinnati Bell Inc.	B1	B	-	B
Cincinnati Bell Telephone Company	Ba1	B	-	B
CenturyLink	Baa3	BB	-	BBB-
Embarq Corporation	Baa3	-	-	BBB-
Centel Capital Corp	Baa2	-	-	-
Carolina Telephone & Telegraph Company	Baa1	-	-	BBB-
Embarq Florida, Inc.	Baa1	-	-	BBB-
United Telephone Co. of Pennsylvania	Baa1	-	-	-
Hawaiian Telcom Inc.	-	B	-	-
Hawaiian Telcom Communications	B1	-	-	-
HickoryTech Corp	-	-	-	-
New Ulm	-	-	-	-
Shenandoah Telecommunications Company	-	-	-	-
Alteva	-	-	-	-
Lumos	-	-	-	-

APPENDIX O

Proposed Correction of Rule 47 C.F.R. § 65.302 (Cost of Debt)

The Federal Communications Commission amends 47

CFR part 65 to read as follows:

**PART 65—INTERSTATE RATE OR RETURN PRESCRIPTION PROCEDURES AND
METHODOLOGIES**

§65.302 Cost of Debt

The formula for determining the cost of debt is equal to:

$$\text{Embedded Cost of Debt} = \frac{\text{Total Annual Interest Expense}}{\text{Average Outstanding Debt}}$$

Where:

“Total Annual Interest Expense” is the total interest expense for the most recent year for all local exchange carriers with annual revenues equal to or above the indexed revenue threshold as defined in §32.9000.

“Average Outstanding Debt” is the average of the total debt outstanding at the beginning and at the end of the most recent year-for all local exchange carriers with annual revenues equal to or above the indexed revenue threshold as defined in §32.9000.

[60 FR 28545, June 1, 1995, as amended at 67 FR 5702, Feb. 6, 2002]

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of

Connect America Fund

)
)
)
)

WC Docket No. 10-90

COMMENTS OF ALEXICON CONSULTING ON BEHALF OF
THE RURAL BROADBAND ALLIANCE,
THE SMALL COMPANY COALITION AND
THE ALEXICON COMPANIES

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July 25, 2013



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APPENDIX 1: Size Comparison

APPENDIX 2: Calculation of Rate of Return Incumbent Local Exchange Carrier Size Characteristics

APPENDIX 3: Empirical Evidence Supporting Discounts for Lack of Marketability

Summary

The Rural Broadband Alliance, the Small Company Coalition and the Alexicon Companies (collectively, "Rural Company Group") submit that while the *Staff Report* provides a useful framework to estimate a reasonable rate of return, the analysis requires significant adjustments in order to be applicable to Rate of Return Incumbent Local Exchange Carriers ("RoR ILECs").

The cost of capital is a function of risk. In cases where differences in risk characteristics between guideline or proxy companies and the valuation subject exist, adjustments to the cost of equity are required. RoR ILECs have significantly more risk than the proxy group composed of Regional Bell Holding Companies, Mid-Size Price Cap Carriers, and Publicly Traded RLECs. The increased risk to RoR ILECs is caused by smaller scale and scope of operations, higher levels of regulation, greater risk to revenues, and the lack of liquidity and marketability of ownership interests. Therefore, the rate indicated by analysis of the proxy companies should be adjusted upward to recognize the higher level of investment risk in RoR ILECs.

The higher level of investment risk in RoR ILECs can be quantified as (1) a size premium and (2) a premium due to lack of liquidity and marketability of ownership interests. Professional valuation standards, a preponderance of academic findings, government agency guidance, established legal precedence and common analytical practices demand the inclusion of risk premiums for size and lack of marketability in the calculation of the cost of equity. An annually updated investment risk premium report by Duff & Phelps indicates a size premium ranging from 6.02% to 6.54% is warranted. In 1977 the Internal Revenue Service issued

Revenue Ruling 77-287, which recognized the restricted stock studies as empirical data useful for guidance in quantifying discounts for lack of marketability. Restricted stock and private placement studies indicate an average discount for lack of marketability of approximately 21.70%. These studies have been used extensively in U.S. Tax Courts to determine the value of closely-held businesses.

Since the cost of capital is a function of risk, a reasonableness test regarding the represcription of the rate of return must include a comparison of the current and past risks to investment. The RoR ILECs market space has changed significantly due to technological advancements as well as changes in regulation stemming from the 1996 Telecom Act. The following market and regulatory changes have resulted in significantly more risk to investments in Rate of Return Incumbent Local Exchange Carriers in 2013 than in 1990:

Risk	1990	2013
Wireless	Limited voice usage (5 million subscribers)	Ubiquitous voice, data and video (>300 million subs)
Text Messaging	Non-existent	Preferred communication method of ages 13-25
Internet	World Wide Web non-existent	E-mail, social media messaging, and computer-based video calling have become significant replacements to telephone calls
CLEC & VoIP	Non-existent	36% of wireline connections provided by interconnected CLEC & VoIP; millions more use "over-the-top" VoIP services
Competitive Entry	Monopoly local service areas enjoyed by RoR ILECs; local and long distance providers split	No barriers to competition; RoR ILEC areas open to wireless, CLEC, VoIP and others
Revenue Instability	Majority of revenues derived from network users via local and access rates. Functioning rate-of-return economic model.	Majority of revenues from limited and unpredictable universal service funds; access rates transitioning to zero. Rate-of-return mechanism effectively abandoned.

Due to the obvious and significant increased risk to RoR ILECs, the required return on equity in 2013 must be higher than the 13.19% cost of equity used in 1990 in order to allow carriers to maintain their credit-worthiness and attract capital. When the Federal Reserve's monetary policies, which have artificially deflated the market cost of debt, are taken into consideration, it is reasonable to conclude that the rate of return in 2013 should be higher than that prescribed in 1990.

The Capital Asset Pricing Model and Discounted Cash Flow analyses of the proxy group (with necessary and appropriate adjustments for size and lack of liquidity/marketability), the *Staff Report* recommended cost of debt, and a 60% equity-40% debt capital structure result in a required rate of return for RoR ILECs in the range of 13.75% to 16.36%.

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)
)
Connect America Fund) WC Docket No. 10-90
)

**COMMENTS OF ALEXICON CONSULTING ON BEHALF OF
THE RURAL BROADBAND ALLIANCE,
THE SMALL COMPANY COALITION AND
THE ALEXICON COMPANIES**

Alexicon Consulting respectfully submits the following Comments on behalf of the Rural Broadband Alliance, the Small Company Coalition and the Alexicon Companies (collectively, "Rural Company Group") in response to the Public Notice released May 16, 2013 in the above-referenced proceeding. These Comments specifically focus on the issues set forth in the *USF/ICC Transformation Order*¹ and the subsequent *Staff Report*² regarding the represcription of the authorized rate of return used to determine certain rates and support of rate-of-return incumbent Local Exchange Carriers.

The Rural Broadband Alliance is a telecommunications policy think-tank and grassroots educational organization whose members include over 120 rural local exchange carriers subject

¹ *Connect America Fund et al.*, WC Docket No. 10-90 et al., Report and Order and Further Notice of Proposed Rulemaking, FCC 11-161, (rel. Nov. 18, 2011) ("*USF/ICC Transformation Order*"), *pets. for review pending sub nom. In re: FCC 11-161*, No. 11-9900 (10th Cir. Filed Dec.8, 2011).

² *Prescribing the Authorized Rate of Return: Analysis of Methods for Establishing Just and Reasonable Rates for Local Exchange Carriers*, WC Docket No. 10-90, Staff Report, DA 13-1111 (wireline Comp. Bur. Rel. May 16, 2013) ("*Staff Report*").

to rate-of-return regulation. The Small Company Coalition is an initiative led by small company executives that strives to ensure that the voice of small companies is heard by those who have a genuine interest in protecting and enhancing the communication service needs of rural Americans. The Alexicon Companies consist of private, municipal, co-operative, and Tribal small, rural telecommunications carriers in eleven states. Collectively, the Rural Broadband Alliance, the Small Company Coalition and the Alexicon Companies represent over 150 rate-of-return incumbent local exchange carriers.

The Rural Broadband Alliance and the Small Company Coalition asked Alexicon Consulting for assistance in preparing comments because their members realize that regardless of the debt/equity ratio employed, it is not possible in the real world to obtain investment financing to deploy broadband infrastructure when the overall earning opportunity is limited to between 8.02% and 8.76% as recommended in the *Staff Report*. Fearing that the business sense and experience of its members would not be, by itself, sufficient to attract the attention of the Federal Communications Commission ("Commission") to reject the *Staff Report* proposal, the Rural Broadband Alliance and the Small Company Coalition sought Alexicon Consulting's economic expertise to provide the analysis and assessment that provides the basis for rejecting the *Staff Report* proposal.

I. Introduction: A Fair Analysis of Required Rate of Return for Incumbent Local Exchange Carriers Requires A Complete Risk Assessment And The Application of Necessary Risk Premiums.

The Rural Company Group has the same goal as expressed in the *Staff Report*, which is “to inform the Commission as it moves to resolve this proceeding and set a rate of return that better reflects market realities.”³ The *Staff Report* provides a useful framework for analysis of an appropriate rate of return for Rate-of-Return Incumbent Local Exchange Carriers (“RoR ILECs”). The Rural Company Group generally agrees with the use of the Capital Asset Pricing Model and Discounted Cash Flow method for valuation purposes, the selection of the proxy group, and the use of the market value of debt for capital structure purposes.

The Commission must set a rate of return high enough to allow carriers to maintain their credit-worthiness and attract capital in order to meet its statutory obligation.⁴ The *International Glossary of Business Valuation Terms*⁵ defines required rate of return as “the minimum rate of return acceptable by investors before they will commit money to an investment at a given level of risk.” By definition then, a required rate of return must account for the risks of a given investment in order to attract capital. The *Staff Report* recommendation fails in this regard because the analysis does not include the necessary risk premiums to account for the differences between the proxy group and the subject group of RoR ILECs.

³ *Staff Report*, Executive Summary, p. i.

⁴ *U.S. v. FCC*, 707 F.2d 610, 612 (D.C. Cir. 1983) (quoting *Federal Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591, 603 (1944)).

⁵ Adopted by the American Institute of Certified Public Accountants, the American Society of Appraisers, The Canadian Institute of Chartered Business Valuators, the National Association of Certified Valuation Analysts, and the Institute of Business Appraisers.

Indeed, the *Staff Report* notes “the cost of capital is a function of risk”⁶ and also “the reliability of the Commission’s analysis depends in large part on the representativeness of the proxy group it uses.”⁷ The importance of proxy group selection cannot be overstated when using a guideline portfolio in valuation. In cases where differences in risk characteristics between guideline or proxy companies and the valuation subject exist, adjustments to the cost of equity are required.⁸

The proxy group companies and the RoR ILECs differ significantly in scale and scope of operations, level of regulation, source of and risk to revenues, liquidity and marketability of ownership interests, and other observable risk characteristics. Despite mentioning a few of these differences,⁹ the *Staff Report* analysis fails to recognize necessary risk premiums for the observable additional risk characteristic in its calculation of a required rate of return.

The Rural Company Group recommends the recognition of a size premium and a premium due to lack of liquidity and marketability in the calculation of the cost of equity of RoR ILECs. Cost of equity adjustments for size and lack of marketability are supported by business valuation standards, the preponderance of academic texts, numerous empirical studies, and authoritative guidance of the Internal Revenue Service and U.S. Tax Courts. Failure to incorporate necessary risk premiums in the cost of equity would result in a rate of return insufficient to attract capital and maintain the credit-worthiness of RoR ILECs.

⁶ *Staff Report* at p.6, para 12.

⁷ *Id* at p. 6, para 11.

⁸ *American Society of Appraisers Business Valuation Standard VII-Valuation Discounts and Premiums*: “A discount or premium is warranted when characteristics affecting the value of the subject interest differ sufficiently from those inherent in the base value to which the discount or premium is applied.”

⁹ *Staff Report* at p.8, para 16 (re: differences with Regional Bell Holding Companies); at p. 9, para 22 (re: differences between price cap and rate-of-return regulation); at p. 21, paras 55-56 (re: the differences between publicly traded and privately owned equity).

II. The Staff Report Provides A Useful Framework To Estimate A Required Rate Of Return.

The *Staff Report* properly recognizes the importance of using the weighted average cost of capital (“WACC”) formula in determining the interstate authorized Rate of Return (“RoR”), and proceeds from there to estimate the capital structure, cost of debt, and cost of equity of a selected proxy group. The methodologies used in the *Staff Report*, including the constant growth Discounted Cash Flow model (“DCF”) and the Capital Asset Pricing Model (“CAPM”), have been used in numerous jurisdictions for many regulated utilities and, if used correctly, are able to estimate a reasonable RoR.

A. The Capital Asset Pricing Model and Discounted Cash Flow methods are appropriate valuation methodologies.

One of the key pieces of information necessary to determine the WACC is an estimate of the cost of equity (return on equity or “ROE”). The determination of a reasonable ROE is the most complicated portion of the WACC and by extension carries with it no small amount of controversy. The *Staff Report* utilizes two valuation models in estimating a reasonable ROE - the CAPM and the DCF. Both of these methods in various forms, as stated in the *Staff Report*, are widely used by financial professionals in estimating ROEs - both within and outside the regulated telecommunications industry segment.¹⁰

The CAPM focuses on the positive and largely linear relationship between risk and rates of return required by prudent investors. While there are different versions of the CAPM equation, in general it provides a reasonable basis upon which to estimate the ROE input to the WACC calculation. The key is using the industry standard modern version of the CAPM,

¹⁰ *Id.*, at p.22, para 57.

accounting for differences in risks characteristics between the proxy and subject interest, and using a rational and data-driven process. The Rural Company Group will provide further comment on the use of the CAPM below.

The DCF, as stated in the *Staff Report*, “assumes that the price of a share of stock is equal to the discounted present value of all its expected future dividend payments extending to infinity.”¹¹ It is known as the most widely-used methodology for regulatory bodies in setting allowed returns, and it recognizes that an investor’s required return is risk sensitive. In simple terms, the DCF equation, isolating the required return variable, can be stated as [required rate of return = dividend yield + dividend growth rate]. Similar to the CAPM, the challenge with using the DCF is in using the proper variables to account for the investment risk.

Overall, the use of the CAPM and DCF provides a useful framework to estimate ROE. However, and as will be discussed further below, these models must properly account for the differences in risks between the proxy group and RoR ILECs to comply with common analytical practice, professional valuation standards, academic theory, legal precedence and other authoritative guidance.

B. The proxy group should be selected from within the domestic wireline telecommunications industry.

The *Staff Report* is correct in stating that the “reliability of the Commission’s analysis depends on large part on the representativeness of the proxy group it uses.”¹² The most important use of the group of proxy companies is to obtain data to populate the DCF and CAPM models in order to estimate a reasonable ROE, which is then used in the WACC equation. The ROE to be used in the determination of the authorized RoR cannot, paradoxically, be based on

¹¹ *Id.*, at p.33, para 93

¹² *Id.*, at p.6, para 11

(for the most part) the companies who will be impacted by the new RoR - small, rural LECs. Only companies with publicly traded equity (shares of stock) generate the data necessary to determine company-specific ROEs using CAPM and DCF. For small, privately-held companies such as RoR ILECs, a group of representative proxy companies is used to accomplish this task.

It is then vital that the group of proxy companies is chosen with the utmost of care, and, to the greatest extent possible, resembles the target group of companies (those to which the resultant RoR will be applied). Staff applied a three-part test in determining the best representative proxy group, the features of which are (1) threshold of incumbent LEC operations, (2) similarity to rate-of-return operations, and (3) reliability of financial data.¹³ Obviously, there can be differences of opinion as to the test to undertake, such as described by the Rural Associations' comments.¹⁴ However, the Rural Company Group strongly believes that the selected proxy group must at least consist of companies in the same industry, or hazard that any results using a different type of group will need to be so heavily adjusted so as to be meaningless. Therefore, and while the Rural Company Group may have criticisms of the application of the three-part test as described in the *Staff Report*, we agree with the overall outcome - that the proxy group consists only of members of the domestic wireline telecommunications industry.

C. Market debt data is a better guide for capital structure purposes.

The Rural Company Group agrees with the approach described in the *Staff Report* to determine the proxy group capital structure based on market values. This method is superior to

¹³ *Id.*, at p.6, para 12

¹⁴ See Comments of NECA, NTCA, OPASTCO, and WTA (filed January 18, 2012) in WC Docket No. 10-90, , et al., at Appendix C. Professor Randal Billingsley uses a comparable risk basis for selecting a proxy group, and arrives at a group that contains no wireline telecommunications firms. The Rural Company Group does not believe such a group, with very little apparent similarities to RLECs, is a reasonable basis for estimating a reasonable ROE.

the alternative - book debt amounts - because using long term debt recorded on company books reflects decisions made in the past, where the goal in setting the WACC in this proceeding is to arrive at a forward-looking RoR.¹⁵

The Rural Company Group agrees that the cost of debt equation currently codified in the Commission's rules¹⁶ is in need of correction. The *Staff Report* details the problem with the current equation and recommends a solution.¹⁷ Obviously, to arrive at a cost of debt by dividing two years' worth of interest expense by a two-year average long term debt balance will result in an inaccurate answer. Thus, the Rural Company Group agrees with the revised formula proposed in the *Staff Report*.

The *Staff Report* arrives at an average cost of debt based on (1) data from the sixteen proxy companies, and (2) the corrected cost of debt equation discussed herein.¹⁸ The cost, 6.19%, is derived from the average of the proxy group's interest expense for 2012 and the balance of long term debt at 12/31/2012.¹⁹ The Rural Company Group, with the caveat discussed below, agrees with the *Staff Report's* approach in using the embedded cost of debt in arriving at the 6.19% used in the WACC equation.

One issue with calculating the cost of debt using embedded, or historical, data is that it carries into the calculation decisions made in the past by the companies incurring the debt. One of the many factors surrounding these decisions is the state of the economy at the time the debt is

¹⁵ The RoR adopted as a result of this proceeding is necessarily "forward-looking", as it will be applied from the adoption date going forward, and due to the historical reality of how often the Commission has revised the RoR (the last time being 23 years ago).

¹⁶ 47 CFR § 65.302

¹⁷ *Staff Report* at p. 18, para 46

¹⁸ *Id.* at pp.17-20, para 45-50, Appendix E

¹⁹ *Id.*, Appendix E

incurred, and the federal monetary policy in place. In response to the 2008 recession, the Federal Reserve adopted a monetary policy designed, in part, to keep longer term interest rates down.²⁰ This monetary policy, in turn, has had the general effect of keeping the cost of long term debt, such as that incurred by the proxy companies, artificially low.²¹ Given this fact, the cost of debt determined in the *Staff Report* may be understated. The Commission should take this into consideration when arriving at the overall WACC to be applied to RoR ILECs.

III. Adjustments To The Staff Report Analysis Are Necessary to Ensure a Rate of Return High Enough to Allow Carriers to Maintain Their Credit-Worthiness and Attract Capital.

While the Rural Company Group agrees in principle with the approach to determining the WACC as detailed in the *Staff Report*, there are a number of adjustments needed before the Commission can arrive at a reasonable RoR for small, rural ILECs. While the Rural Company Group does not believe there are any systemic problems with Staff's approach, there are nevertheless crucial deficiencies in the execution of the analysis that must be addressed, including (1) the proper capital structure, and (2) risk premium adjustments to recognize materially different risk characteristics in the average RoR ILEC and the proxy group.

A. The Capital Structure should be 40% debt and 60% equity.

According to the *Staff Report*, the Commission should utilize a market-based capital structure that based on Staff's proxy group, results in a capital structure that is 46% equity and

²⁰ See *e.g.*, Federal Reserve Board press release June 19, 2013 available at <http://www.federalreserve.gov/newsevents/press/monetary/20130619a.htm>

²¹ See *e.g.*, Moody's Yield on Seasoned Corporate Bonds - All Industries, AAA, accessed at www.federalreserve.gov/releases/h15/data.htm. This data shows the trend in Corporate AAA bond yields from 1976 through 2012. The average from 1990 through 2012 is approximately 6.53%, while the yield reported for 2012 was 3.67%.

54% debt, utilizing all companies in Staff's proxy group.²² However, in a footnote in the *Staff Report*, the debt ratio resulting from excluding FairPoint, Hawaiian Telcom, and Lumos is presented as 51% for 2012, and decreases to 46% using an average over the past five years.²³ The exclusion of FairPoint, Hawaiian Telcom, and Lumos was presumably done due to the outlying nature of some of these companies' statistics.²⁴ The Rural Company Group believes the Commission should utilize a capital structure that better reflects the operating and financial characteristics of small, rural ILECs.

One of the key characteristics of small, rural ILECs is their inherent lack of easy access to capital markets. While many rural ILECs may have access to additional debt through sources such as the Rural Utilities Service ("RUS") and CoBank, the fact remains that small rural ILECs must have a ready source of capital from which to finance current and long term operations. For a non-publicly traded company, allowable debt burdens are limited as a matter of practicality, and thus most capital needs come from equity. Furthermore, when uncertainties facing small rural ILECs are increasing in the post-USF/ICC Transformation Order environment, reliance on debt will naturally, and rationally, decrease.

Lower reliance on debt by RoR ILECs is already in evidence. The two major lenders to rural carriers, CoBank and the Rural Utilities Service, report sharply lower lending for network infrastructure over the last year. CoBank reports that it is making no new infrastructure loans in

²² *Staff Report*, at p. 17, para 44 ("We therefore recommend...market value capital structures should be used to calculate the WACC"); footnote 78 ("We will use 2012 market values..."); Appendix II

²³ *Id.*, footnote 78

²⁴ See e.g., *Staff Report* at p. 15, para 41 ("...FairPoint ha[s] non-investment bond ratings"); and footnote 75 ("...excluding FairPoint, and also Hawaiian Telcom and Lumos, as capital structure data was not available for either of the latter two carriers for every year of the five-year period...").

light of the challenging and uncertain investment environment in the wake of the FCC's recent reforms. In a letter to the Commission, Robert F. West, CoBank Senior Vice President, stated:

*"CoBank is concerned about the negative impact the USF/ICC Transformation Order (the Order) is having on investment in rural broadband. The various caps and limitations on universal service funding and inter-carrier compensation, especially for rate-of-return carriers, are making it increasingly difficult for us to extend credit for the purpose of deploying ubiquitous rural broadband networks."*²⁵

The U.S. Department of Agriculture's Rural Utilities Service ("RUS") has annually loaned its entire capacity of available funds until 2012, when it was able to lend only 11.6% of the \$690 million that was available to rural RoR ILECs. Further, of another \$736 million available for RUS broadband loans, only 9.4% (\$68.9 million) was borrowed in 2012.²⁶

As a result of the realities of operating a small, non-publicly traded rural ILEC in today's environment, the Commission must reflect a higher equity ratio in its calculation of the WACC. The Rural Company Group therefore recommends the Commission utilize a capital structure that

²⁵ Letter of Robert F. West to FCC, Marlene H. Dortch, May 18, 2012, available at <https://prodnet.www.neca.org/publicationsdocs/wwpdf/0511cobank.pdf>.

²⁶ The United States Department of Agriculture / Rural Development, "The Telecommunications Program," presentation by RUS Deputy Administrator Jessica Zufolo to the National Association of Regulatory Utility Commissioners, Washington, DC, February 2, 2013, slide 5. See, also, "Vilsack, RUS Meet With Genachowski To Discuss The Need For More Changes In Implementation Of USF-ICC Transformation Order: Warn Of Unintended Consequences And Need For USF-ICC Support To Be Sufficient and Predictable," Independent Telecom Report, Volume 12, Issue 3 (February 18, 2013), pp. 3-5); "In the meeting [with FCC Chairman Julius Genachowski and his staff], [Secretary Vilsack and] USDA officials noted that demands for RUS loans dropped dramatically in 2012. RUS reported "demand" for only 37 percent of the funds that were actually appropriated by Congress. USDA cited the reductions in USF and ICC that will result from the implementation of the FCC's Transformation Order as the reason for the decline in loan applications. Rural carrier advocates have noted that the reduced loan activity reflects the adverse impact of the FCC Order on infrastructure investment and rural community economic development." The figures were also reported in an ex parte filed at the FCC on February 15, 2013. The reconciliation is that the "demand" for loans was reported as 37% according to Secretary Vilsack, but the RUS actually "obligated" the amounts reported by Ms. Zufolo.

is 60% equity and 40% debt, based on the average capital structures for Staff's proxy group, excluding the midsize carriers.²⁷

B. The Staff Report has misrepresented the availability and cost of debt for rate-of-return Local Exchange Carriers.

The *Staff Report* mischaracterizes the availability and cost of debt for RoR ILECs when it claims that loans made by CoBank do not carry market-based interest rates, and when it claims that low-interest rate loans are widely available from the Rural Utility Service.²⁸ Loans made available by RUS are limited as to who can borrow and to what use borrowed funds can be put. As to the CoBank fallacy, CoBank itself filed early comments requesting the Bureau correct its report.

RUS offers debt financing under a number of programs of which the Telecommunications Infrastructure Program is the most relevant to this proceeding.²⁹ According to RUS, proceeds from Telecommunications Infrastructure Program loans can be used for new construction, improvements, expansions, and for acquisitions and refinancing (with certain restrictions). The *Staff Report* claims that "it may be necessary to reduce, or cap, the embedded cost of debt due to the availability of government subsidized loans to most, if not all, rate-of-return carriers."³⁰ However, the facts support a different conclusion. A plain reading of the allowed use of the RUS funds demonstrates that (1) not all uses of funds are allowed, and are thus restricted by regulation, and (2) not all carriers would be reasonably able to avail themselves

²⁷ This average equals 40.08%. Midsize carriers can reasonably be excluded for several factors, including (1) the relatively high level of debt resulting from acquisition activity (FairPoint, Windstream), and (2) non-investment grade bond ratings, which reflect higher risk and higher interest costs, and are noted for some of the carriers (FairPoint, Cincinnati Bell)

²⁸ *Staff Report* at p.19, para 49

²⁹ See in general 7 CFR § 1735

³⁰ *Staff Report* at p.19, para 49

of these funds. For example, a company needing operating capital cannot simply expect to receive an RUS Telecommunications Infrastructure Program loan; as “operating capital” is not one of the allowed uses of the funds. In addition, some companies may have current loan covenants that, for example, restrict the company’s ability to provide the RUS with a first lien on all of the borrower’s property – a requirement for RUS loans.³¹ Thus, the Commission cannot reduce or otherwise adjust the cost of debt for inclusion in the WACC based on this fallacious reasoning.

Staff’s implication that CoBank offers loans with government-subsidized interest rates is clearly incorrect. Fortunately, CoBank filed early comments pointing out this error:

“We ask that the Staff Report be corrected to reflect accurately CoBank’s requirement to charge a market interest rate to all telecommunications company borrowers and to remove any comments that suggest in any way that CoBank provides subsidized interest rate loans to telecommunications companies.”³²

CoBank goes further, however, and attacks the entire statement made in the *Staff Report* suggesting that the cost of debt be capped or reduced due to the existence of loans containing government subsidized interest rates:

“We further ask the [sic] paragraph 49 of the Staff Report be removed in its entirety given it is misleading with respect to the availability of funding to RLECs.”³³

The Rural Company Group agrees with CoBank’s comments, and recommends the Commission utilize a cost of debt no less than that documented herein.

³¹ 7 CFR § 1735.22(b)

³² CoBank, ACB Comments, filed June 21, 2013 in WC Docket No. 10-90 at 5

³³ *Id.*

C. Professional standards and authoritative guidance demand inclusion of necessary cost of equity adjustments for the differences in risk characteristics between the proxy group and rate-of-return Incumbent Local Exchange Carriers.

The *Staff Report* cost of equity analysis does not comply with professional valuation standards or common analytical practices because it does not make necessary adjustments to account for the differences in risks between the proxy group and RoR ILECs.

For purposes of this discussion, the terms “discount” and “premium” are interchangeable; they both refer to adjustments made to the rate of return. Shannon Pratt, one of the world’s leading authorities on business valuation, states:

*“The purpose of a discount or premium is to make an adjustment from some base value. The adjustment should reflect the differences between the characteristics of the subject interest (the interest being valued) and those of the base group on which indications of value exist.”*³⁴

In fact, the application of necessary value discounts/premiums is required by professional valuation standards. The American Society of Appraisers Standards state:

*“A discount or premium is warranted when characteristics affecting the value of the subject interest differ sufficiently from those inherent in the base value to which the discount or premium is applied.”*³⁵

The National Association of Certified Valuation Analysts Professional Standards also requires the application of risk premiums for marketability, liquidity, control and other similar factors.³⁶

³⁴ Shannon Pratt, “Overview of Business Valuation Discounts and Premiums and the Bases to Which They are Applied”, p. 2. (http://www.shannonpratt.com/article/overview_business_valuation_discounts_premiums.pdf).

³⁵ American Society of Appraisers *Business Valuation Standard VII - Valuation Discounts and Premiums* (<http://www.appraisers.org/Files/Professional%20Standards/bvstandards.pdf>).

³⁶ *NACVA Professional Standards, Development Standards 3.11 and 3.12.* (http://www.nacva.com/PDF/NACVA_Standards.pdf)

The American Institute of Certified Public Accountants has a similar standard which states:

*“During the course of a valuation engagement, the valuation analyst should consider whether valuation adjustments (discounts or premiums) should be made to a pre-adjustment value. Examples of valuation adjustments for valuation of a business, business ownership interest, or security include a discount for lack of marketability or liquidity and a discount for lack of control.”*³⁷ [emphasis in the original]

Furthermore, the application of risk premiums to the value of small and closely-held businesses is supported by governmental authority and legal precedent. Internal Revenue Rulings 59-60 and 77-287 recognize the valuation differences and considerations for small and closely-held companies. Numerous United States Tax Court and Court of Federal Claims cases have found significant discounts/premiums due to lack of marketability, lack of control and industry risk. While the sheer volume of case data makes a complete list of cases and discussion of findings unwieldy, the vast majority of cases focus on the level of risk adjustment since the necessity of such additional risk adjustments is a well-established precedent.³⁸

Based on the weight of professional standards, preponderance of academic findings, government agency guidance, and established legal precedence, one can only conclude that risk premiums must be applied to the base value in cases with significant differences in risk

³⁷ AICPA *Statement on Standards for Valuation Services*, para 40.
(http://www.aicpa.org/InterestAreas/ForensicAndValuation/DownloadableDocuments/SSVS_Full_Version.pdf)

³⁸ See: *Mandelbaum v. Commissioner*, T.C. Memo 1995-255 (June 12, 1995).
Huber v. Commissioner, T.C. Memo 2006-96; 2006 Tax Ct. Memo LEXIS 97 (May 9, 2006).
Estate of Frazier Jelke III v. Commissioner, T.C. Memo 2005-131 (May 31, 2005).
Clarissa W. Lappo v. Commissioner, T.C. Memo 2003-258 (Sep. 3, 2003).
Estate of Webster E. Kelly v. Commissioner, T.C. Memo 2005-235 (Oct. 11, 2005).
Estate of Helen A. Deputy v. Commissioner, T.C. Memo 2003-176 (June 13, 2003).
Estate of Mildred Green v. Commissioner, T.C. Memo 2003-348 (Dec. 29, 2003).
Okerlund v. United States, 53 Fed. Cl 341 (Fed. Ct. 2002), *motion for new trial denied*, 2003 U.S. Claims LEXIS 42 (Fed Cl. 2003), *aff'd*, 365 F.3D 1004 (Fed. Cir. 2004).

characteristics between the subject group (RoR ILECs) and the proxy group upon which the value is based.

1. Significant characteristics affecting value differ between the proxy group and Rate of Return Incumbent Local Exchange Carriers.

The *Staff Report* selected domestic telecommunications carriers with some wireline service as surrogates for RoR ILECs. The proxy group consists of Regional Bell Holding Companies ("RHCs"): AT&T, CenturyLink, Verizon; Mid-Size Price Cap Companies ("Mid-Size"): Alaska Communications Systems, Cincinnati Bell, FairPoint Communications, Frontier Communications Corporation, Hawaiian Telcom, Lumos, Windstream; and Publicly Traded RLECs ("RLECs"): Alteva, Consolidated Communications Holdings³⁹, HickoryTech Corp, New Ulm Telephone, Shenandoah Telecommunications, Telephone and Data Systems.⁴⁰

In the *USF/ICC Transformation Order*, the Commission lists factors that should be considered in determining a reasonable required rate of return for RoR ILECs including (1) their unique competitive and market conditions; (2) differences in diversification of offerings; and (3) infrastructure deployment; among other possible considerations.⁴¹ Additionally, the professional guidance of the National Association of Certified Valuation Analysts, American Society of Appraisers, and Internal Revenue Service Rulings dictate that financial strength, competitive position, government regulation, market conditions, control and marketability factors must be considered in the valuation of closely-held businesses.

³⁹ We would note that Consolidated is miscategorized as a rate-of-return company in the *Staff Report*. Consolidated consists of five local exchange carriers only one of which (Surewest) is rate-of-return. The other four companies operate under price cap regulation.

⁴⁰ *Staff Report*, page 7.

⁴¹ *USF/ICC Transformation Order*, para 1056.

The Rural Company Group agrees with the *Staff Report* that “the cost of capital is a function of risk”⁴² and also “the reliability of the Commission’s analysis depends in large part on the representativeness of the proxy group it uses.”⁴³ The *Staff Report* notes that (1) RHCs differ significantly from other ILECs in size and diversity of operations as well as regulation;⁴⁴ and (2) Mid-Size proxies are subject to price cap regulation rather than rate-of-return, are much larger, and have a capital structure with more debt than RoR ILECs.⁴⁵ In addition, the Publicly-traded RLECs are also significantly larger and have scales and scopes of operations that are not comparable to the average RoR ILEC. In sum, the proxy group companies and the RoR ILECs differ significantly in scale and scope of operations, level of regulation, source of and risk to revenues, liquidity and marketability of ownership interests, and other observable risk characteristics. Each of these differences results in greater risk to the RoR ILECs than to the proxy group companies.

While the Rural Company Group recognizes that an imperfect proxy group is unavoidable, that limitation can be overcome by the application of necessary adjustments to quantify the differences in investment specific risk. However, the *Staff Report* fails to provide a comparative risk assessment between RoR ILECs and the proxy group despite the fact that such a failure is contrary to professional valuation standards, common industry practice, and the Commission’s instructions in the *USF/ICC Transformation Order*.⁴⁶ Consequently, the required

⁴² *Staff Report* at p.6, para 12.

⁴³ *Id* at p. 6, para 11.

⁴⁴ *Id* at p. 8, para 16.

⁴⁵ *Id* at p. 9, para 22.

⁴⁶ *USF/ICC Transformation Order*, para 1056.

rate-of-return calculated in the *Staff Report* is insufficient and will not allow RoR ILECs to attract capital from investors considering similar risk investments.

2. A size premium must be applied to properly recognize the differences between the subject companies and the proxy group.

Regardless of how size is measured – revenues, assets, number of customers, number of employees, etc. – the difference between the proxy group companies and the average RoR ILEC is vast. The Rural Company Group used the NECA 2012-1 High Cost Loop data submission and 2011 tariff filing to calculate the average regulated revenues, telephone plant in service, and number of access lines for 675 cost RoR ILEC study areas.⁴⁷ We obtained equivalent data for the proxy group companies from the individual company 2012 SEC Form 10-Ks.

Proxy Group and Company	Annual Regulated Revenues - 2012*	Telephone Plant in Service @12/31/2012	Access Lines @12/31/2012
Averages of Proxy Groups:			
Regional Bell Holding Companies (RHCs)	\$ 38,889,000,000	\$ 170,856,000,000	22,712,667
Mid-Size Companies	\$ 1,960,464,857	\$ 5,263,123,000	1,105,698
Publicly Traded RLECs	\$ 251,072,498	\$ 1,191,158,821	248,033
Average of All Proxy Companies	\$ 8,243,543,062	\$ 34,784,800,871	4,835,380
Average Cost RoR ILEC (675 study areas)	\$ 7,455,236	\$ 34,292,002	4,391
Difference as an Order of Magnitude			
Regional Bell Holding Companies (RHCs)	5216 X	4982 X	5172 X
Mid-Size Companies	263 X	153 X	252 X
Publicly Traded RLECs	34 X	35 X	56 X
Average of All Proxy Companies	1106 X	1014 X	1101 X

The differences are so large that we chose to express them as an order of magnitude. The average proxy company is over **one thousand times larger** than the average RoR ILEC in terms

⁴⁷ The NECA HCL data submission is available at <https://www.neca.org/PublicInterior.aspx?id=1190>. We removed the 91 study areas belonging to the Publicly Traded RLEC proxy group from the calculation leaving 675 cost RoR ILEC study areas. Access Lines and Telephone Plant in Service are the average of the DL 060-Total Loops and DL 160-Total TPIS, respectively.

of revenues, telecommunications plant assets and customers. Even the smallest proxy group, the Publicly Traded RLECs, is over thirty times larger than the average RoR ILEC. A full size comparison and details of the calculation of averages is provided in Appendices 1 and 2.

Since the Rural Company Group represents a significant number of the RoR ILECs we also compiled the actual 2012 data of the represented companies for comparison. The survey represents 157 RoR ILEC study areas which include both cost-based and average schedule recovery companies. The results are similar:

	Annual Regulated Revenues - 2012*	Telephone Plant in Service @12/31/2012	Access lines @12/31/2012
Average of All Proxy Companies	\$ 8,243,543,062	\$ 34,784,800,871	4,835,380
Rural Company Group (157 study areas)	\$ 8,251,467	\$ 40,433,362	4,887
Difference as an Order of Magnitude	999 X	860 X	989 X

The differences in size between the proxy group and RoR ILECs should be obvious to even the most casual observer.

a) Smaller size results in greater risk, and the “Size Effect” is greatest in the smallest companies.

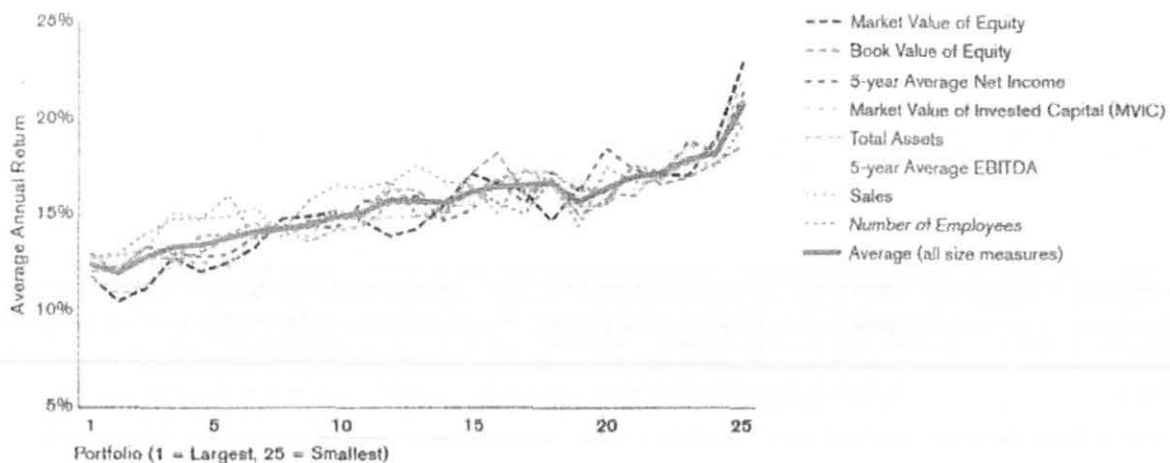
The *Staff Report* dismisses the idea of a size premium in three brief sentences based on a single inconclusive study.⁴⁸ However, it is a well-established, empirical fact that smaller sized firms experience higher risks and therefore require greater returns. An extensive amount of research has shown that a great deal of a company’s risk can be attributed to its size.⁴⁹ The total

⁴⁸ *Staff Report*, p. 28, para. 75.

⁴⁹ Shannon P. Pratt, Robert F. Reilly, and Robert P. Schweihs, *Valuing Small Businesses and Professional Practices*, Third Edition, (McGraw-Hill 1998) at p. 210.

risk also increases with decreasing company size.⁵⁰ The Duff & Phelps Risk Premium Report shows a clear inverse relationship between size and historical rates of return, regardless of how size is measured. In Graph 1, as size decreases (from left to right), the average annual return over the time study horizon tends to increase for each of the eight size measures.

Graph 1: Average Annual Return, 8 Alternative Measures of Company Size (1963-2012)



Source: Duff & Phelps Risk Premium Report 2013

Staff suggests that the size premium varies or even disappears (although this assertion appears to be contradicted by their own footnote on the subject) and therefore, should not be considered in the cost of equity estimate.⁵¹ Staff's statement is misleading and contrary to the empirical evidence and market realities. In their study of small company stock performance, Annin and Falaschetti found that regardless of any rolling 20-year time frame from 1926, there is no single period in which small company stocks did not outperform large company stocks.⁵² In all but a few periods examined, the stocks of small public companies have realized returns substantially in excess of those of larger companies. Furthermore, Staff's statement that smaller

⁵⁰ Ibbotson Associates, *Stocks, Bonds, Bills and Inflation (SBBI) Valuation Edition 2005 Yearbook*, p. 129.

⁵¹ *Staff Report*, p. 28, para. 75.

⁵² Michael Annin and Dominic Falaschetti, "Is There Still a Size Premium?" *CPA Expert* (Winter 1998).

firms in the United States have not performed significantly better than large ones from 1980 onward is demonstrably untrue. Morningstar/Ibbotson produces a *Risk Premia Over Time Report* which shows the size premium for micro-capitalization stocks for time periods beginning in every year from 1926 to 2008 and ending in 2012. In other words, the report shows the annual size premium returned for every length of investment holding time from 86 years to 4 years. Examination of the results shows a positive size premium for micro-capitalization stocks for **every investment holding time period** ending in 2012.⁵³ In fact, since the last rate of return represcription in 1990 micro-capitalization stocks have outperformed larger stocks by 4.1%.⁵⁴

It is not surprising that there will be short periods of higher volatility in the returns of smaller firms; that is, after all, the logical outcome of increased risk. Short periods of underperformance by micro-capitalization firms are expected due to the long-term trends (serial correlation) observed in the historic size premium.⁵⁵ However, these fluctuations do not indicate a fundamental shift in the markets that would eliminate the size premium.

Academic studies and theory aside, it is important to consider the common sense aspect of the issue and ask “is it reasonable to expect small companies to be more risky than large ones?” Most small companies have very real aspects of risk that are not present (at least not to the same degree) in larger companies. Smaller firms such as RoR ILECs have greater risks due to greater reliance on key persons, reduced market reach, customer and supplier concentrations, fewer financial resources, non-diversified product/service offerings, differences in regulation, limited information systems, and a host of other issues. Does the small three-store retail chain in

⁵³ 2013 Ibbotson SBBi Risk Premia Over Time Report, Appendix A, Table A-6.

⁵⁴ *Id.*

⁵⁵ Michael Annin and Dominic Falaschetti, “Is There Still a Size Premium?” *CPA Expert* (Winter 1998).

one community have more risk than Wal-Mart? The answer is a resounding a “yes”. Yet the *Staff Report* recommendation makes no such distinction. This failure results in a cost of equity estimate for RoR ILECs that is insufficient and unreasonable.

b) The size premium has been reliably quantified.

In fact, size premiums are quantified annually by leading investment resources such as the Morningstar/Ibbotson SBBi Valuation Yearbook and The Duff & Phelps Risk Premium Report. Both the Morningstar/Ibbotson and Duff & Phelps reports provide size premiums that are intended for use as additives in either buildup or CAPM models using guideline portfolios. Duff & Phelps uses eight alternative size measures to rank companies into 25 size portfolios: market value of equity; book value of equity; 5-year average net income; market value of invested capital; total assets; 5-year average EBITDA; sales; and number of employees.

RoR ILEC data for three of the eight size measures is available and yields the following results from *The Duff & Phelps Risk Premium Report 2013*:

Size Measure	Table	Average RoR ILEC	Portfolio Rank	Size Premium
Book Value of Equity ⁵⁶	B-2	\$ 12,532,382	25	6.02%
Sales (Revenues) ⁵⁷	B-7	\$ 7,455,236	25	6.17%
Number of Employees ⁵⁸	B-8	52.2	25	6.54%

⁵⁶ Book Value of Equity is estimated as equal to net assets from the 2012-1 NECA High Cost Loop data submission as discussed in Appendices 1 and 2. This estimate is obviously high since it assumes a capital structure of 100% equity / 0% debt, however it still places the average RoR ILEC well within the smallest size category.

⁵⁷ See Appendix 2 for calculation of average revenues.

⁵⁸ *NTCA 2013 Survey of Compensation and Benefits in the Independent Telecommunications Industry*. The survey represents 312 RoR ILEC members of NTCA.

Based on the empirical evidence, one can only conclude that a cost of equity size premium in excess of 6% is warranted for RoR ILECs.

3. An additional adjustment to the cost of equity for lack of liquidity and marketability is warranted.

Barron's Dictionary of Business Terms defines marketability and liquidity as follows:

Marketability: Speed and ease with which a particular product or investment may be bought or sold. In common use, *marketability* is interchangeable with *liquidity*, but *liquidity* implies the preservation of value when a security is bought or sold.⁵⁹ [emphasis in the original]

All investors prefer marketable, liquid investments to unmarketable, illiquid ones. The market for securities in the United States is considered the most liquid market for any kind of property anywhere in the world.⁶⁰ Empirical evidence indicates that investors extract a heavy price discount relative to actively traded securities for ownership interests that lack this high degree of liquidity and marketability. The vast majority of RoR ILECs are not publicly traded; therefore, an adjustment for illiquidity is warranted.

a) The Internal Revenue Service, U.S. Tax Courts, and international appraiser organizations recognize the need for valuation adjustments due to lack of marketability.

As discussed previously, numerous United States Tax Court and Court of Federal Claims cases have found significant discounts/premiums due to lack of marketability. Internal Revenue Ruling 77-287 specifically mentions the use of restricted stock studies to recognize the valuation differences and considerations for small and closely-held companies. The Internal Revenue Service published a 116-page *Discount for Lack of Marketability Job Aid for IRS Valuation*

⁵⁹ Jack P. Friedman, ed., *Barron's Dictionary of Business Terms*, 2nd ed. (Barron's, 1994), p.363.

⁶⁰ Shannon P. Pratt with Alina V. Niculita, *Valuing A Business – The Analysis and Appraisal of Closely Held Companies*, Fifth Edition, (McGraw-Hill 2008) at p. 418.

Professionals in 2009 which reviews the empirical studies and court findings regarding the subject ⁶¹. Additionally and as previously discussed, the professional guidance of the National Association of Certified Valuation Analysts, American Society of Appraisers, and Internal Revenue Service Rulings dictate that marketability factors must be considered and accounted for in the valuation of business ownership interests.

b) The size effect is not a proxy for lack of marketability.

Some parties may contend that lack of liquidity and marketability is already accounted for in the size premium. However, the previously discussed size effect is not a proxy for illiquidity or unmarketability. The Duff & Phelps and Morningstar/Ibbotson size premium calculations each use stocks (both small and large) that are offered for daily trading on major stock exchanges. The size premium only represents liquid investments. Therefore, it is impossible for the size premium to include the valuation differences between readily-sold, marketable public stocks with known prices and low transaction costs and the ownership interests of much smaller, closely-held businesses such as RoR ILECs. An additional premium must be used to capture the investment risk difference for liquidity/marketability.

c) Many empirical studies quantify the lack of marketability discount.

There is an abundance of empirical data that quantify the discount for lack of marketability (“DLOM”). The studies may be grouped in three categories for discussion purposes: securities-based approaches, restricted stock studies, and private placement studies. The securities-based approaches use theoretical option pricing models and observations of illiquidity demonstrated by traded stock prices and option prices. Due to the nature of these

⁶¹ Available at <http://www.irs.gov/pub/irs-utl/dlom.pdf>.

studies, securities-based approaches are not considered appropriate for use with privately-held companies.

The restricted stock studies compare the price of publicly traded shares to the sale of restricted shares of the same company that are identical in rights and powers except for the ability to be freely marketed. Private placement studies compare the sale price for blocks of publicly-traded stock sold through private placements, generally to various institutional entity buyers, to the sale price of the same stock as traded on their primary listed market.

The restricted stock studies indicate an average DLOM of approximately 33%; while examination of over two dozen restricted stock and private placement studies combined yields an average DLOM of 21.70% (see Appendix 3 for more details). Several of the restricted stock and private placement studies have been used in many cases before United States Tax Courts and the Court of Federal Claims to determine appropriate DLOM for privately-held business ownership interests.

IV. Reasonableness Test: Rate of return ILECs have greater risks in 2013 than in 1990 so the required cost of equity should be higher.

Since the cost of capital is a function of risk, any reasonableness test regarding the represcription of the rate of return must include a comparison of the current and past risks to investment. The RoR ILECs market space has changed significantly due to technological advancements as well as changes in regulation stemming from the 1996 Telecom Act. The following market and regulatory changes have resulted in significantly more risk to investments in Rate of Return Incumbent Local Exchange Carriers in 2013 than in 1990:

- **Wireless Telephony:** In 1990 wireless telephony was a limited, complimentary voice-only service. According to CTIA, there were less than 5.3 million wireless

subscribers in 1990 with no wireless-only households. In 2012, there were over 326.4 million wireless subscriber connections featuring voice, data and video services and almost 36% of U.S. households are wireless-only.⁶²

- **Internet:** Although the Internet existed in 1990, there was no World Wide Web (which would be launched in August 1991).⁶³ Today the Internet is used by 85% of adults and 95% of teenagers⁶⁴, and 94% of the U.S. population has access to broadband⁶⁵. E-mail, social media messaging, and computer-based video calling have become significant replacements to telephone calls.
- **Text Messaging:** Text messaging did not exist in 1990. By 2010 text messaging had become the most popular form of communication, surpassing email and voice calls.⁶⁶
- **CLEC and VoIP:** Competitive Local Exchange Carriers (“CLECs”) and Voice-over-Internet Protocol (“VoIP”) carriers did not exist in 1990. According to the Wireline Competition Bureau as of June 2011, 36% of wireline connections are now provided by interconnected CLEC and VoIP providers.⁶⁷
- **Competitive Entry:** In 1990, RoR ILECs operated in monopoly local service areas. By 2013, virtually all barriers to competitive entry had been eliminated and

⁶² Data from CTIA – The Wireless Association available at <http://www.ctia.org/advocacy/research/>

⁶³ “The World Wide Web, Not the Internet, Turns 20 Today”, *PCMag.com*, August 6, 2011.

⁶⁴ Data from May 2013 and September 2012 surveys by the Pew Research Center (www.pewinternet.org)

⁶⁵ *FCC’s Eighth Broadband Progress Report*

⁶⁶ <http://www.redoxygen.com/desktop-texting/?tag=text-message-statistics-2012>

⁶⁷ *Local Telephone Competition: Status as of June 30, 2011*, Industry Analysis and Technology Division, Wireline Competition Bureau (June 2012).

RoR ILECs compete for voice and data services with wireless, CLEC, VoIP, social media, cable TV companies, satellite and other service providers.

Competitors have fewer regulatory requirements creating an uneven playing field.

- **Revenue Instability:** In 1990, RoR ILECs received most of their revenues directly from the users of their networks via local rates and access rates set by a functioning rate-of-return mechanism. High Cost Loop Support and Long Term Support were available to carriers. By 2013, the rate-of-return economic model had been effectively abandoned. Interstate common line costs are recovered via a limited universal service fund. High Cost Loop funds have been reduced and rendered unpredictable due to a flawed benchmarking process. Intrastate and interstate switched access revenues have been frozen and are subject to annual 5% reductions as access rates are transitioned to zero.

While the Commission has inarguably increased the risk on small RoR ILECs by its regulatory actions since 1990, it has not led to fewer obligations. When local service areas were opened to competition by virtue of the 1996 Act, small RoR ILECs were still expected to serve all customers who requested service, even though competitors typically operate under significantly reduced regulation. This obligation, known as carrier of last resort, was part of a regulatory compact between incumbent LECs and the regulators. One of the purposes of this compact was to recognize the continuing need for a carrier of last resort, even in the post-1996 Act environment, through the universal service support programs. The *USF/ICC Transformation Order* increased obligations on small RoR ILECs at the same time it reduced universal service support and, perhaps more importantly, cast a shadow on the future of the program in total. All of this happened without the small RoR ILECs side of the regulatory compact changing. The

situation of more obligations with fewer resources leads to increased risk for small RoR ILECs as compared to the larger carriers.

The Commission has further exacerbated the risk situation for RoR ILECs by instituting reforms that are retroactive in effect. Retroactive changes to investment recovery rules are a profound concern to rational debt and equity investors. Indeed, the Commission appears to be sending mixed messages to investors. On one hand, the Commission states a goal of incenting investment in broadband infrastructure and IP-switching, yet on the other hand, they seek to reduce the rate-of-return and recovery mechanisms upon which these investors rely.

The argument that the cost of equity in 2013 should be lower than in 1990 can only be based on differences in the risk-free rate of equity (the cost of capital is generally defined as the sum of a risk-free rate and a risk premium). The current risk-free rate is significantly lower than in the past, but this is due to Federal Reserve monetary policy enacted to buoy the U.S. economy in the wake of the Great Recession. As a part of their quantitative easing program, the Federal Reserve has purchased over \$3 trillion dollars of government bonds in the last four years producing a benchmark interest rate of 0.00% to 0.25%. As previously discussed, the Federal Reserve recently announced a tapering plan to increase interest rates that may begin as soon as next year. For ratemaking purposes, the temporary and artificial depression of long-term interest rates should be adjusted when setting a prospective required rate of return.

Any objective observer can plainly see that RoR ILECs have significantly more risk in 2013 than in 1990. The Commission itself has introduced significant equity risk to RoR ILECs over the last fifteen years via decisions on competition, universal service funding, and intercarrier compensation. Failure to account for the noted increases in risk to RoR ILECs

amounts to a failure of the Commission's statutory obligation to provide a reasonable rate of return. Consequently, in order to attract and maintain investment capital the required return on equity in 2013 should be greater than the 13.19% cost of equity on which the Commission's current 11.25% authorized rate of return is based.

V. Calculation of the Weighted Average Cost of Capital

The *Staff Report* utilized the basic form of the Capital Asset Pricing Model ("CAPM"). However, the generally accepted industry valuation method is the "modified CAPM" which includes adjustments for size and company specific risks.⁶⁸

Similarly, the *Staff Report* uses the constant growth model in its Discounted Cash Flow ("DCF") analysis which is used to estimate the return on equity of the proxy group. Once again, no adjustment is made to differentiate the required returns of the proxy group with the required rate of return for RoR ILECs, an investment group with significantly higher risk characteristics. The *Staff Report* should have used the DCF as the basis for a build-up model. The cost of capital is generally defined as the sum of a risk-free rate and a risk premium. The build-up model divides the risk premium into its three main subcomponents and estimates the cost of capital as the sum of (1) a risk-free rate, (2) an equity risk premium, (3) a size premium, and (4) a company-specific risk premium (e.g., illiquidity/unmarketability).⁶⁹

⁶⁸ Shannon P. Pratt with Alina V. Niculita, *Valuing A Business – The Analysis and Appraisal of Closely Held Companies*, Fifth Edition, (McGraw-Hill 2008) at p. 193.

⁶⁹ Shannon Pratt and Roger Grabowski, *Cost of Capital: Application and Examples*, 3rd Edition (John Wiley & Sons, 2008). See Chapter 7.

Consequently, the Cost of Equity should be calculated in the following manner to properly account for the documented differences in risk between the proxy group and RoR ILECs:

COST OF EQUITY ESTIMATE	DCF Build-up		Modified CAPM	
	Lower Range	Upper Range	Lower Range	Upper Range
Proxy Group Cost of Equity	10.54%	11.58%	8.69%	11.35%
Size Premium	6.02%	6.54%	6.02%	6.54%
	16.56%	18.12%	14.71%	17.89%
Premium for Lack of Marketability	1.277139	1.277139	1.277139	1.277139
RoR ILEC Cost of Equity	21.15%	23.14%	18.79%	22.85%

The Proxy Group Cost of Equity ranges are those recommended in the *Staff Report*. As previously documented, the size premium range is based on three measures of size from *The Duff & Phelps Risk Premium Report 2013*. The premium for lack of marketability is based on the 21.70% average DLOM from the two dozen restricted stock and private placement studies listed in Appendix 3. Impounding the discount rate into a rate of return is a matter of simple arithmetic: the rate before the discount is multiplied by one divided by one minus the DLOM [$1 / (1 - .2170) = 1.277139$].⁷⁰ The resulting cost of equity ranges for RoR ILECS are 21.15% to 23.14% from the DCF Build-up model and 18.79% to 22.85% from the Modified CAPM, respectively.

The WACC is calculated in the following manner based on the estimated cost of equity, the cost of debt from the *Staff Report*, and the Rural Company Group recommended capital structure as previously discussed:

⁷⁰ Shannon P. Pratt, Robert F. Reilly, and Robert P. Schweihs, *Valuing Small Businesses and Professional Practices*, Third Edition, (McGraw-Hill 1998) at p. 223.

WEIGHTED AVERAGE COST OF CAPITAL

	DCF Build-up		Modified CAPM	
	Lower Range	Upper Range	Lower Range	Upper Range
<u>EQUITY:</u>				
Cost of Equity	21.15%	to 23.14%	18.79%	to 22.85%
Percentage of Capital Structure	60.00%		60.00%	60.00%
Weighted Cost of Equity	12.69%	to 13.89%	11.27%	to 13.71%
<u>DEBT:</u>				
Cost of Debt	6.19%	6.19%	6.19%	6.19%
Percentage of Capital Structure	40.00%	40.00%	40.00%	40.00%
Weighted Cost of Debt	2.48%	2.48%	2.48%	2.48%
Weighted Cost of Capital	15.17%	to 16.36%	13.75%	to 16.18%

The resulting required rate of return ranges for RoR ILECS are 15.17% to 16.36% from the DCF Build-up model and 13.75% to 16.18% from the Modified CAPM, respectively.

VI. Conclusion – A Reasonable Range for the Rate-of-Return of Local Exchange Carriers is 13.75% to 16.36%.

The *Staff Report* provides a useful framework to begin the estimation of a required rate of return for RoR ILECs. The Rural Company Group generally agrees with the use of a Capital Asset Pricing Model and Discounted Cash Flow analysis to estimate the cost of equity; the selection of domestic wireline carriers as a proxy group; and market-based debt data. However, the *Staff Report* analysis requires significant adjustments in order to be applicable to RoR ILECs.

The cost of capital is a function of risk. In cases where differences in risk characteristics between guideline or proxy companies and the valuation subject exist, adjustments to the cost of equity are required. RoR ILECs have significantly more risk than the proxy group composed of Regional Bell Holding Companies, Mid-Size Price Cap Carriers, and Publicly Traded RLECs

due to greater reliance on key persons, reduced market reach, customer and supplier concentrations, fewer financial resources, non-diversified product/service offerings, limited information systems, and a host of other issues.

A reasonableness test regarding the represcription of the rate of return must include a comparison of the current and past risks to investment. Significant technological and regulatory changes have resulted in significantly more risk to the RoR ILEC market. The rise of wireless telephony and text messaging; web-based communications such as e-mail, social media messaging, and computer-based video calling; as well as regulatory changes that have introduced unpredictability and uncertainty of revenue streams have created a risk profile for RoR ILECs that is much higher than the risks in 1990. Consequently, in order to attract and maintain investment capital the required return on equity in 2013 should be greater than the 13.19% cost of equity on which the Commission's current 11.25% authorized rate of return is based.

The Rural Company Group submits that the preponderance of academic theory, professional valuation standards, empirical data, legal precedence and common industry practice require the application of premiums for size and lack of marketability in estimating the cost of equity for RoR ILECs due to the differences in risk compared to the proxy group. Application of such premiums to the DCF and CAPM framework provided by the *Staff Report* analysis results in a cost of equity range of 18.79% to 23.14%.

The Weighted Average Cost of Capital calculated with (1) this cost of equity, (2) the *Staff Report* recommended 6.19% cost of debt, and (3) a 60% equity - 40% debt capital structure yields a required rate of return range of 13.75% to 16.36% for RoR ILECs.

For all the reasons set forth herein, The Rural Company Group respectfully urges the Commission to fulfill its statutory obligation to set a rate of return sufficient to allow carriers to maintain their credit-worthiness and attract capital by authorizing a rate of return in the range of 13.75% to 16.36%.

Respectfully submitted by,

ALEXICON CONSULTING ON BEHALF OF
THE RURAL BROADBAND ALLIANCE,
THE SMALL COMPANY COALITION, AND
THE ALEXICON COMPANIES

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APPENDIX 1: Size Comparison

Proxy Group and Company	Ref	Annual Regulated Revenues - 2012*	Telephone Plant in Service @12/31/2012	Net Telephone Plant in Service	Access Lines @12/31/2012
Regional Bell Holding Companies (RHCs):					
AT&T	1	\$ 59,567,000,000	\$ 270,907,000,000	\$ 109,767,000,000	31,887,000
CenturyLink	1	\$ 17,320,000,000	\$ 32,086,000,000	\$ 19,032,000,000	13,748,000
Verizon	1	\$ 39,780,000,000	\$ 209,575,000,000	\$ 88,642,000,000	22,503,000
Average of Proxy Group		\$ 38,889,000,000	\$ 170,856,000,000	\$ 72,480,333,333	22,712,667
Mid-Size Companies:					
Alaska Communications Systems	1	\$ 258,583,000	\$ 1,463,320,000	\$ 410,861,000	136,675
Cincinnati Bell	1	\$ 730,500,000	\$ 4,016,400,000	\$ 1,587,400,000	573,900
FairPoint Communications	1	\$ 973,649,000	\$ 2,080,400,000	\$ 1,438,309,000	952,067
Frontier Communications Corporation	1	\$ 5,011,853,000	\$ 14,353,763,000	\$ 7,504,896,000	3,173,169
Hawaiian Telcom	1	\$ 385,498,000	\$ 639,343,000	\$ 507,197,000	392,877
Lumos	1	\$ 206,871,000	\$ 460,735,000	\$ 316,825,000	31,200
Windstream	1	\$ 6,156,300,000	\$ 13,827,900,000	\$ 5,862,700,000	2,480,000
Average of Proxy Group		\$ 1,960,464,857	\$ 5,263,123,000	\$ 2,518,312,571	1,105,698
Publicly Traded RLECs:					
Alteva	2	\$ 27,942,000	\$ 79,799,000	\$ 16,446,000	15,024
Consolidated Communications Holdings	1	\$ 472,100,000	\$ 1,670,432,000	\$ 884,930,000	398,326
HickoryTech Corp	1	\$ 64,746,000	\$ 437,623,000	\$ 182,959,000	42,396
New Ulm Telephone	1	\$ 32,482,988	\$ 125,290,928	\$ 44,824,025	30,252
Shenandoah Telecommunications	1	\$ 54,658,000	\$ 611,685,000	\$ 365,474,000	22,297
Telephone and Data Systems	1	\$ 854,506,000	\$ 4,222,123,000	\$ 1,569,418,000	979,900
Average of Proxy Group		\$ 251,072,498	\$ 1,191,158,821	\$ 510,675,171	248,033
Averages of Proxy Groups:					
Regional Bell Holding Companies (RHCs)		\$ 38,889,000,000	\$ 170,856,000,000	\$ 72,480,333,333	22,712,667
Mid-Size Companies		\$ 1,960,464,857	\$ 5,263,123,000	\$ 2,518,312,571	1,105,698
Publicly Traded RLECs		\$ 251,072,498	\$ 1,191,158,821	\$ 510,675,171	248,033
Average of All Proxy Companies		\$ 8,243,543,062	\$ 34,784,800,871	\$ 14,883,327,439	4,835,380
Rate of Return ILECs:					
Rural Company Group (157 study areas)	3	\$ 8,251,467	\$ 40,433,362	\$ 13,817,233	4,887
Average Cost RoR ILEC (675 study areas)	4	\$ 7,455,236	\$ 34,292,002	\$ 12,532,382	4,391

Notes:

*Regulated Revenues are wireline or equivalent segment operations

1 - source 2012 SEC Form 10-K

2 - source: Revenues and Telephone Plant in Service from 2012 SEC Form 10-K; Access lines from USAC report

3 - Actual TPIS, net TPIS and access line amounts as of December 31, 2012. Annual 2012 regulated operating revenues.

4 - see Appendix 2 for source and calculation details

The actual 2012 size characteristics for the Rural Company Group Study area were compiled for 157 study areas which include both cost-based and average settlement RoR ILECs.

APPENDIX 2: Calculation of Rate of Return Incumbent Local Exchange Carrier Size Characteristics

The National Exchange Carrier Association High Cost Loop 2012 -1 data submission was used to estimate the size characteristics of the average Rate of Return Incumbent Local Exchange Carrier.⁷¹ The HCL data submission for cost settlement carriers contains a significant amount of operating and financial data for the carriers including access lines, telephone plant in service, accumulated depreciation and many operating expenses.

The HCL data submission for average schedule settlement carriers does not have asset or expense data so these carriers were not included. We also removed 91 study areas belonging to members of the Publicly Traded RLEC proxy group from the calculation (see list at end of Appendix). The amounts of Telephone Plant in Service and Access Lines are listed in Data Lines 160 and 060, respectively. A simple average of these amounts was calculated for the 675 RoR ILEC study areas.

The calculation of average revenues was not as straightforward because revenue figures are not reported in the HCL data submission or in any single publicly-available data base. However, due to the nature of rate-of-return regulation we can make a reasonable estimate of the average RoR ILECs revenues by following the basic revenue requirement formula:

$$\text{Telephone Plant in Service} - \text{Accumulated Depreciation} = \text{Rate Base} \times \text{Rate-of-Return} = \text{Return on Rate Base} + \text{Operating Expenses and Taxes} = \text{Revenue Requirement}$$

⁷¹ Available for download at <https://www.neca.org/PublicInterior.aspx?id=1190>

The HCL data submission contains the telephone plant and accumulated depreciation balances as well as most of the operating expense amounts.⁷² However, customer operations expense and total depreciation expense is not included.⁷³ Fortunately, there is another source of data for these expenses, namely the NECA interstate access tariff filings. We calculated (1) total customer operations expense as a percentage of total operating expenses and other taxes and (2) total depreciation expense as a percentage of telephone plant in service.⁷⁴

Estimate of Average RoR ILEC Regulated Revenue Requirement:

Total Plant in Service	\$	34,292,002	
Accumulated Depreciation	\$	(21,759,620)	
Rate Base	\$	12,532,382	
Rate of Return		11.25%	
Return on Rate Base	\$	1,409,893	
Operating Expenses:			
Plant Specific Expenses	\$	1,565,238	
Network Operations Expense		461,001	
Depreciation Expense		1,871,238	5.46% of TPIS
Customer Operations Expense		622,912	11.49% of Total Other Expenses
Corporate Operations Expense		1,164,226	
Operating Taxes		360,728	
Estimated Revenue Requirement	\$	7,455,236	

NECA Historical Data Period 2010	Total Subject to Separations	
260 - Total Expenses & Other Taxes	4,297,015	
200 - Customer Operations Expense	442,764	11.49%
Total Expense less Customer Operations	3,854,251	100.00%
190 - Depreciation/Amortization Expense	1,351,083	5.46%
370 - Total Plant in Service	24,759,729	100.00%

⁷² See the following HCL Data Lines: 160-Telephone Plant in Service; 190-Accumulated Depreciation; 445-Total Plant Specific Expenses; 450-Network Operations Expense; 565-Corporate Operations Expense; and 650-Operating Taxes.

⁷³ Note that depreciation expense of central office equipment and cable and wire facilities is included (DL 525 and DL 530) but depreciation of expense of general support facilities is not.

⁷⁴ See *NECA Transmittal No. 1314*, Volume 2, Exhibit 2, page 5 of 8 (July 2011). Data is derived from lines 260, 200, 190 and 370.

Publicly Traded RLEC proxy group study areas removed from calculations:

SA Number	Parent Company	Study Area Name	State	SA Number	Parent Company	Study Area Name	State
542334	Consolidated Communications, Inc.	SUREWEST TEL	CA	432010	Telephone And Data Systems, Inc.	MID-AMERICATEL INC	OK
351096	Hickory Tech	HEARTLAND-HICKORYTECH	IA	330909	Telephone And Data Systems, Inc.	MIDWAYTEL CO	W
190217	Telephone And Data Systems, Inc.	AMELIA TEL CORP	VA	330917	Telephone And Data Systems, Inc.	MT VERNON TEL CO	W
452171	Telephone And Data Systems, Inc.	ARIZONA TELEPHONE CO	AZ	220375	Telephone And Data Systems, Inc.	NELSON-BALL GROUND	GA
361350	Telephone And Data Systems, Inc.	ARMG TEL CO	MIN	193029	Telephone And Data Systems, Inc.	NEWCASTLE TEL CO	VA
532404	Telephone And Data Systems, Inc.	ASOTIN TEL - OR	OR	421928	Telephone And Data Systems, Inc.	NEWLONDON TEL CO	MO
522404	Telephone And Data Systems, Inc.	ASOTIN TEL - VA	VA	140061	Telephone And Data Systems, Inc.	NORTHFIELD TEL CO	VT
330844	Telephone And Data Systems, Inc.	BADGER TELECOM, INC.	W	431984	Telephone And Data Systems, Inc.	OKLAHOMA COMM SYSTEM	OK
230469	Telephone And Data Systems, Inc.	BARFORDSVILLE TEL CO	NC	421934	Telephone And Data Systems, Inc.	ORCHARD FARM TEL CO	MO
330849	Telephone And Data Systems, Inc.	BLACK EARTH TEL CO	W	150114	Telephone And Data Systems, Inc.	ORISKANY FALLS TEL	NY
220346	Telephone And Data Systems, Inc.	BLUE RIDGE TEL CO	GA	250314	Telephone And Data Systems, Inc.	PEOPLES TEL CO	AL
361362	Telephone And Data Systems, Inc.	BRIDGEWATER TEL CO	MIN	140062	Telephone And Data Systems, Inc.	PERKINSVILLE TEL CO	VT
250284	Telephone And Data Systems, Inc.	BUTLER TEL CO	AL	150118	Telephone And Data Systems, Inc.	PORT BYRON TEL CO	NY
260448	Telephone And Data Systems, Inc.	CAUHOUN CITY TEL CO	MS	472230	Telephone And Data Systems, Inc.	POTLATCH TEL CO INC	ID
220351	Telephone And Data Systems, Inc.	CAMDEN TEL & TEL CO	GA	210338	Telephone And Data Systems, Inc.	QUINCY TEL CO-FL DIV	FL
330859	Telephone And Data Systems, Inc.	CENTRAL STATE TEL CO	W	220338	Telephone And Data Systems, Inc.	QUINCY TEL CO-GADIV	GA
310685	Telephone And Data Systems, Inc.	CHATHAM TEL CO - MI	MI	230498	Telephone And Data Systems, Inc.	SAUDAMOUNTAIN TEL	NC
401608	Telephone And Data Systems, Inc.	CLEVELAND COUNTY TEL	AR	330952	Telephone And Data Systems, Inc.	SE TEL OF WISCONSIN	W
320776	Telephone And Data Systems, Inc.	COMM CORP OF INDIANA	IN	310726	Telephone And Data Systems, Inc.	SHAWASSEE TEL CO	MI
310672	Telephone And Data Systems, Inc.	COMM CORP OF MI	MI	100024	Telephone And Data Systems, Inc.	SOMERSET TEL CO	ME
290559	Telephone And Data Systems, Inc.	CONCORD TEL EXCHANGE	TN	283301	Telephone And Data Systems, Inc.	SOUTH-EAST MS TEL CO	MS
300507	Telephone And Data Systems, Inc.	CONTINENTAL OF OHIO	OH	452174	Telephone And Data Systems, Inc.	SOUTH-WESTERN TEL CO	AZ
401699	Telephone And Data Systems, Inc.	DECATUR TEL CO INC	AR	240544	Telephone And Data Systems, Inc.	ST STEPHEN TEL CO	SC
462184	Telephone And Data Systems, Inc.	DELTA COUNTY TEL CO	CO	330954	Telephone And Data Systems, Inc.	STOCKBRIDGE & SHERWD	W
150089	Telephone And Data Systems, Inc.	DEPOSIT TEL CO	NY	421951	Telephone And Data Systems, Inc.	STOUTLAND TEL CO	MO
150092	Telephone And Data Systems, Inc.	EDWARDS TEL CO	NY	462207	Telephone And Data Systems, Inc.	STRASBURG TEL CO	CO
100010	Telephone And Data Systems, Inc.	HAMPDEN TEL CO	ME	170205	Telephone And Data Systems, Inc.	SUGAR VALLEY TEL CO	PA
542321	Telephone And Data Systems, Inc.	HAPPY VALLEY TEL CO	CA	290678	Telephone And Data Systems, Inc.	TELLICO TEL CO	TN
100011	Telephone And Data Systems, Inc.	HARTLAND & ST ALBANS	ME	290575	Telephone And Data Systems, Inc.	TENNESSEE TEL CO	TN
532377	Telephone And Data Systems, Inc.	HOME TELEPHONE CO	OR	330968	Telephone And Data Systems, Inc.	TENNEY TEL CO	W
542322	Telephone And Data Systems, Inc.	HORNITOS TEL CO	CA	150129	Telephone And Data Systems, Inc.	TOWNSHIP TEL CO	NY
290566	Telephone And Data Systems, Inc.	HUMPHREYS COUNTY	TN	120049	Telephone And Data Systems, Inc.	UNION TEL CO	NH
100007	Telephone And Data Systems, Inc.	ISLAND TEL CO	ME	330963	Telephone And Data Systems, Inc.	UTEL CO, INC	W
310577	Telephone And Data Systems, Inc.	ISLAND TEL CO	MI	150133	Telephone And Data Systems, Inc.	VERNON TEL CO	NY
120045	Telephone And Data Systems, Inc.	KEARSARGE TEL CO	NH	100031	Telephone And Data Systems, Inc.	WARREN TEL CO	ME
260411	Telephone And Data Systems, Inc.	LESLIE COUNTY TEL CO	KY	330968	Telephone And Data Systems, Inc.	WAUNAKEE TEL CO	W
522427	Telephone And Data Systems, Inc.	LEWIS RIVER TEL CO	VA	100034	Telephone And Data Systems, Inc.	WEST PENOBSCOT TEL	ME
300613	Telephone And Data Systems, Inc.	LITTLE MIAMI COMM	OH	240551	Telephone And Data Systems, Inc.	WILLISTON TEL CO	SC
140058	Telephone And Data Systems, Inc.	LUDLOW TEL CO	VT	120050	Telephone And Data Systems, Inc.	WILTON TEL CO - NH	NH
170183	Telephone And Data Systems, Inc.	MAHANOY & MAHANTANGO	PA	542323	Telephone And Data Systems, Inc.	WINTERHAVEN TEL CO	CA
240533	Telephone And Data Systems, Inc.	MCLELLANVILLE TEL	SC	310738	Telephone And Data Systems, Inc.	WOLVERINE TEL CO	MI
123321	Telephone And Data Systems, Inc.	MCTA, INC.	NH	432034	Telephone And Data Systems, Inc.	WANDOTTE TEL CO	OK
320788	Telephone And Data Systems, Inc.	MERCHANTS & FARMERS	IN	160135	Ativa	WARWICK VALLEY-NJ	NJ
120047	Telephone And Data Systems, Inc.	MERRIMACK COUNTY TEL	NH	150135	Ativa	WARWICK VALLEY-NY	NY
361433	Telephone And Data Systems, Inc.	MID STATE TEL CO	MIN	361442	NewUrm	NEWUM TELECOM, INC	MIN
				361483	NewUrm	SLEEPY EYE TEL CO	MIN

APPENDIX 3: Empirical Evidence Supporting Discounts for Lack of Marketability

Summary of Restricted Stock and Private Placement Studies^{75 76}

Study	Date	Period covered	# of companies	Discount	
				Mean	Median
SEC Institutional Investor Study Report, 1971	1971	66-69	398	24.00%	
Gelman restricted stock, 1972	1972	68-70	89	33.00%	33.00%
Moroney, 1973	1973	68-70	145	35.60%	33.00%
Maher, 1976	1976	69-73	34	35.50%	33.30%
Trout	1977	68-70	60	33.50%	
Standard Research Consultants	1981	78-82	28		45.00%
Johnson & Racette	1981	67-73	86	34.00%	
Willamette Management Associates	1989	81-84	33		31.20%
Wruck, Karen H.	1989	79-84			
Registered			36	-4.10%	1.80%
Unregistered			37	13.50%	12.20%
Silber	1991	81-88	69	33.80%	
Hertzel & Smith	1993	80-87	106	20.10%	13.30%
Management Planning, Inc.	1997	80-95	49	27.70%	28.80%
Johnson, 1999	1999	91-95	72	20.20%	
Columbia Financial Advisors	2000	96-97	23	21.00%	14.00%
Columbia Financial Advisors	2000	97-98	15	13.00%	9.00%
Bajaj, Denis, Ferris, Sarin 2001	2001	90-95			
All			88	22.20%	20.70%
Registered			37	14.00%	9.90%
Unregistered			51	28.10%	26.50%
FMV Database, 1980 - 4/1997	2010	80-97	243	22.80%	20.80%
FMV Database, 5/1997 - 10/2007	2010	97-07	311	20.80%	16.00%
FMV Database, 11/2007 - 10/2008	2010	07-08	43	8.60%	6.00%
Finnerty	2003	91-97	101	20.10%	15.50%
				18.40%	16.70%
Wu	2004	86-97	301	8.70%	19.80%
Barclay/Holderness/Sheehan	2006	79-97	594	18.70%	17.40%
Harris-Trugman Valuation Associates	2009	07-08	80	18.10%	14.40%
Average				21.70%	19.20%

⁷⁵ Discounts for Lack of Marketability – Theory, Evidence and Technique by John J. Stockdale, Sr. was used as a reference material for some of the statistics included here. This publication is available at www.bvresources.com.

⁷⁶ Information from Valuation Advisors, LLC was used as a reference material for some of the statistics included here. Data is available at www.bvmarketdata.com.

Announce	Close	Property	Buyer	EV (\$m)	Access Lines (k)
2/4/15	Pending	Verizon Properties (CA, FL, TX)	Frontier Communications	10,540.0	3,700.0
1/13/15	Pending	Service Telephone Company	Wilkes Telephone Membership Corporation	n.a.	0.7
1/13/15	Pending	Saluda Mountain Telephone Company	Wilkes Telephone Membership Corporation	n.a.	1.3
1/13/15	Pending	Barnardsville Telephone Company	Wilkes Telephone Membership Corporation	n.a.	0.9
1/29/15	Pending	Chugwater Telephone Company	Mountain West Telephone Company	n.a.	0.6
9/19/14	12/31/14	Tri County Telephone Association	BHT Holdings	46.0	6.0
8/1/2014	Pending	Pine Telephone	North State Telephone (OR)	n.a.	0.9
7/16/2014	Pending	Goldfield Telephone, Inc.	BYC Communications	n.a.	0.5
6/30/2014	Pending	Dunnell Telephone Company	KCL Enterprises	n.a.	0.2
6/30/14	10/16/14	Enventis	Consolidated Communications	350.0	39.1
5/29/2014	Pending	TDS Subsidiaries (MD)	New Florence Telephone Company	n.a.	2.5
5/29/2014	Pending	Home Telephone Company	North State Telephone (OR)	n.a.	0.6
1/15/14	6/12/14	Oxford Networks	Novacap	50.0	4.3
12/17/13	10/24/14	AT&T CT Wireline Ops	Frontier Communications	2,000.0	900.0
11/27/13	1/31/14	Lakefield Telephone Company	Nsight (Cellcom)	n.a.	1.3
11/20/13	1/29/14	Niagra Telephone Company	Nsight (Cellcom)	n.a.	3.2
11/18/13	2/5/14	Dillon Telephone Company & Elsie Communications	USConnect	n.a.	n.a.
11/5/13	11/5/13	South Canon Telephone Co.	Laural Highland Total Communications, Inc	n.a.	n.a.
11/4/13	1/1/14	Keystone-Arthur Telephone Company	Glenwood Telephone Membership Corp.	n.a.	0.4
10/31/13	2/5/14	S&A & Waverly Hill Telephone Companies	USConnect	n.a.	n.a.
10/1/13	2/5/14	Rye Telephone & South Park Telephone	USConnect	n.a.	n.a.
7/1/13	1/1/14	Livingston Telephone	USConnect	n.a.	n.a.
1/8/13	3/9/13	Middle Point Home Telephone Company	Telephone Service Company	n.a.	0.5
11/28/12	1/31/2013	FairPoint Idaho Operations	Blackfoot Telecommunications	30.0	4.2
11/21/12	12/20/2012	ICTC Group, Inc.	CIBL, Inc.	n.a.	n.a.
9/25/12	12/11/2012	Millington Telephone Company	Ritter Communications	n.a.	19.0
8/24/12	12/31/12	Dixville Telephone Company	Balsams View, LLC	n.a.	0.4
6/1/12	3/31/13	UniTel	Unitek	n.a.	n.a.
2/6/12	7/2/2012	SureWest	Consolidated Communications	547.2	176.4
9/20/11	1/6/2012	Vision Communications	EATEL	n.a.	10.2
8/9/11	1/1/2012	Andrew Telephone	La Motte Telephone	n.a.	0.7
6/30/11	8/23/2011	United Telephone Company	Msouth Equity Partners	n.a.	12.5
4/18/11	11/10/2011	Westphalia Telephone	Great Lakes Connet	n.a.	n.a.
4/4/11	10/14/2011	Shoreham Telephone	Oteko	5.3	5.0
1/9/11	12/31/2011	KPU Telecom	Matanuska Telephone	n.a.	n.a.
12/8/10	11/1/2011	NTELOS Wireline Business	Spin-off	n.a.	n.a.
11/15/10	6/13/2011	GTA TeleGuam	Advantage Partners	n.a.	55.0
11/9/10	12/31/2010	Rice Belt Telephone	Smithville Telephone	n.a.	0.9
10/26/10	12/31/2010	Timberline Telecom	North State Telephone	n.a.	0.2
10/7/10	12/20/2010	Villisca Farmers Telephone	Farmers Mutual Telephone	n.a.	0.8
9/27/10	12/31/2010	Peninsula Telephone	Ace Communications	n.a.	0.9
9/10/10	12/29/2010	Diversicom	Arvig Enterprises	n.a.	9.8
9/9/10	12/17/2010	Redwood County Telephone	Arvig Enterprises	n.a.	5.2
8/16/10	8/12/2010	ITS Telecom	Jeff Leslie	n.a.	n.a.
7/23/10	9/8/2010	Community Telephone Company	Hilliary Communications	n.a.	n.a.
6/24/10	11/4/2010	Nova Telephone Company	VNC Enterprises	n.a.	1.0
5/21/10	9/15/2010	Cameron Communications	American Broadband	n.a.	11.0
5/21/10	1/1/2010	Tri-County Telecom	McCook Cooperative Telephone	n.a.	n.a.
5/20/10	4/29/2010	Southern Kansas Telephone	Mikesell	n.a.	n.a.
4/22/10	4/1/2011	Qwest	CenturyLink	22,300.0	n.a.
3/16/10	4/7/2010	Inter-Community Telephone	Sunshine PCS	n.a.	n.a.

EXHIBIT
tabular CE-4.5R

12/14/09	9/2/2010	Totecom Communications	TOTE Holdings	n.a.	n.a.
11/24/09	6/1/2010	Iowa Telecom	Windstream	956.0	255.6
11/17/09	6/30/2010	Prairie Telephone (35 Access Lines)	Panora Communications	n.a.	0.0
10/26/09	1/31/2010	Skyline Telephone Company	Beaver Creek Telephone Company	n.a.	0.1
10/26/09	12/31/2009	Midvale's Juntura & Harper Exchanges	Oregon Telephone	n.a.	0.2
10/16/09	12/10/2009	Iowa Telecom Access Line	Wellman Cooperative Telephone	n.a.	0.0
10/9/09	1/31/2010	Lowry Telephone Company	Runestone Telephone Association	n.a.	0.8
9/25/09	10/28/2009	Miller Telephone Company	Winnabago Cooperative	n.a.	0.1
9/16/09	10/26/2009	Midvale Telephone Exchange	Midvale ESOP	n.a.	3.0
9/8/09	12/1/2009	Lexcom	Windstream	141.0	23.0
8/12/09	12/31/2009	Ardmore Telephone Company	Synergy Technology Partners	n.a.	8.4
8/4/09	12/1/2009	Union Telephone	Telephone & Data Systems	13.2	6.5
7/16/09	7/1/2009	Allendale Communications	Ace Communications	n.a.	6.5
7/15/09	9/15/2009	Home Telephone	Arvig Enterprises	n.a.	0.6
6/25/09	9/1/2009	Pymatuning Independent Telephone	Townes Tele-communications	n.a.	2.1
5/20/09	10/30/2009	Bruce Telephone Company	Fail Communications	n.a.	2.6
5/14/09	8/31/2009	Delavan Telephone Company	Blue Earth Valley Communications	n.a.	0.3
5/13/09	7/1/2010	Verizon (rural lines in 14 states)	Frontier Communications	8,579.8	4,800.0
5/11/09	11/10/2009	D&E Communications	Windstream	330.0	164.6
3/26/09	11/1/2009	North River Telephone Cooperative	Shenandoah Telecommunications	0.6	1.0
1/12/09	3/31/2009	Richmond Telephone Company	CornerStone Telephone Company	n.a.	1.1
1/12/09	5/1/2009	Midvale's Connor Creek Exchange	Eagle Telephone System	n.a.	0.0
11/21/08	7/1/2009	Sherburne Tele Systems	Iowa Telecommunications	73.9	25.7
10/30/08	10/30/2008	Piedmont Telephone Membership Corp.	Surry Telephone Membership Corp.	n.a.	3.0
10/27/08	7/1/2009	EMBARQ	CenturyTel	13,200.0	5,853.0
10/24/08	12/11/2008	State Long Distance	Telephone & Data Systems	27.0	9.3
8/7/08	11/4/2008	Country Road Communications	Ofelco	101.3	18.7
7/16/08	Terminated	Margaretville Telephone Company	American Broadband	n.a.	4.2
5/22/08	8/1/2008	Western Telephone Company	Venture Communications Cooperative	n.a.	1.1
5/21/08	8/15/2008	Lincolnton Telephone Company	Shepard Hill	n.a.	12.5
3/13/08	12/31/2008	Tukon-Walsh Telephone Company	Laurel Highland Total Communications	n.a.	0.9
3/10/08	5/31/2008	Mosinee Telephone Company	Telephone & Data Systems	17.3	4.9
3/6/08	10/31/2008	Swisher Telephone Company (TAC)	South Slope Communications	n.a.	0.9
3/6/08	5/15/2008	Swisher Telephone Company	Telephone Acquisition Company	n.a.	0.9
2/24/08	8/4/2008	Blackduck Telephone	Paul Banyan Rural Telephone Coop.	7.0	1.9
2/7/08	7/18/2008	Bishop Communications	Iowa Telecommunications	43.9	12.0
1/3/08	12/1/2008	Citizens Telephone of Brevard N.C.	Comporium	n.a.	20.8
12/21/07	2/13/2008	West Point Telephone	Telephone & Data Systems	6.6	0.8
11/9/07	1/4/2008	Graceba Total Communications	Knology	75.0	4.5
10/17/07	12/31/2007	Shell Rock Telephone	Butler-Bremer Mutual Telephone	n.a.	1.0
10/17/07	1/31/2008	Mount Angel Telephone	Conby Telcom	n.a.	1.9
10/15/07	6/3/2008	United Companies	GCI	77.0	6.0
10/8/07	11/30/2007	Bayland Telephone	Nsight	n.a.	n.a.
9/19/07	11/30/2007	Lafourche Telephone	Boston Ventures	60.0	13.3
9/12/07	10/15/2007	Reserve Telephone	Sean and Kevin Reilly	n.a.	5.0
8/17/07	11/30/2007	Cannon Valley Communications	Blue Earth Valley Communications	n.a.	n.a.
8/6/07	1/4/2008	Hutchinson Telephone	New Ulm Telecom	57.0	14.8
7/19/07	7/4/2008	TelAlaska	American Broadband	n.a.	12.5
7/5/07	11/1/2007	Global Valley Networks	Citizens Communications	62.0	15.0
7/1/07	12/31/2007	North Pittsburgh Systems	Consolidated Communications	309.9	101.6
5/29/07	8/31/2007	CT Communications	Windstream	470.0	157.0
5/9/07	6/9/2007	Clarks Telecom	Northeast Nebraska Telephone	n.a.	0.9

4/12/07	8/1/2007	Yates City Telephone Exchange	Mid-Century Telephone	2.5	0.5
3/12/07	6/29/2007	Telephone Service Company	Hanson Communications	n.a.	n.a.
3/2/07	4/1/2007	New Florence Telephone	Direct Communications - Reckland	n.a.	0.5
1/24/07	3/1/2007	Mountain View Telephone	Yelco	n.a.	7.2
1/16/07	3/31/2008	Verizon Northern New England	FairPoint Communications	1,962.4	1,378.1
1/9/07	4/3/2007	PrairieWave Communications	Knology	255.0	69.8
1/5/07	6/29/2007	Hargray Communications	Quadrangle Capital Partners	n.a.	n.a.
12/18/06	4/30/2007	Madison River Communications	CenturyTel	830.0	185.6
12/2/06	3/30/2007	Curtis Telephone	Consolidated Companies (NE)	n.a.	0.8
11/29/06	10/6/2010	Innovative Communications	CFC	n.a.	66.0
11/10/06	5/1/2007	North Dakota Telephone Exchange	SRT Communications	n.a.	0.7
10/16/06	11/15/2006	Germontown Independent Telephone	FairPoint Communications	9.4	4.4
9/18/06	3/8/2007	Commonwealth Telephone	Citizens Communications	1,160.0	454.3
6/27/06	11/3/2006	Hector Communications	Hector Acquisition Corporation	119.8	29.3
5/31/06	7/27/2006	Rural Telephone Service Exchanges	Garham Telephone	0.9	0.3
4/11/06	6/30/2006	Yorkville Telephone Cooperative	West Kentucky Telephone Cooperative	n.a.	1.8
4/10/06	7/5/2006	Mid-Maine Communications	Otelco	18.8	18.5
4/3/06	3/31/2007	YZ's 52% Interest in Puerto Rico Tel	Movil S.A. de C.V.	n.a.	n.a.
3/22/06	12/19/2006	Gwest - New Mexico Territory	Sacred Wind Communications	n.a.	2.4
3/5/06	12/30/2006	BellSouth	AT&T	53,827.0	20,037.0
3/3/06	7/27/2006	12 Kansas Emborg Exchanges	Rural Telephone Service	17.0	5.4
1/27/06	6/30/2006	Rye Telephone & South Park Telephone	American Broadband	n.a.	n.a.
1/25/06	7/26/2006	Cass County Telephone	FairPoint Communications	33.0	7.8
12/12/05	7/5/2006	Montezuma Mutual Telephone	Iowa Telecommunications	9.6	2.2
12/9/05	7/17/2006	Alltel Wireline	Valor Communications Group	9,130.0	2,919.0
12/1/05	7/7/2006	Dalton & Elsie Communications	American Broadband	n.a.	1.41
11/28/05	2/1/2006	Stockholm-Strandburg Telephone	Interstate Telecommunications Coop	n.a.	0.7
11/22/05	2/1/2006	Laurel Telephone	Heart of Iowa Communications Coop	n.a.	n.a.
11/17/05	5/9/2006	HunTel Systems	American Broadband	n.a.	n.a.
10/31/05	5/1/2006	CenturyTel Arizona Exchanges	Hopi Telecommunications	6.0	2.0
10/21/05	2/1/2006	Iowa Telecom Exchange	Lost Nation-Elwood Telephone	0.3	n.a.
8/1/05	12/1/2005	Gwest - New Mexico Exchanges	MATI	n.a.	n.a.
7/29/05	11/15/2005	Waverly Hall Telephone	American Broadband	n.a.	n.a.
7/27/05	1/1/2006	Gridley Telephone	American Broadband	n.a.	n.a.
6/22/05	3/1/2006	13 Kansas Sprint Exchanges	Twin Valley Telephone	18.0	5.2
4/22/05	9/1/2005	Bentleyville Communications	FairPoint Communications	9.3	3.2
3/28/05	6/20/2005	Mid-South Telecommunications	American Broadband	n.a.	n.a.
3/8/05	9/1/2005	Foresthill Telephone	Sebastian Enterprises	14.5	3.3
3/3/05	7/1/2005	Otter Tail Corporation	Arvig Enterprises	30.2	6.9
3/1/05	5/31/2006	Harmony Telephone	MSG Telephone	n.a.	n.a.
1/27/05	4/30/2005	BellSouth Exchanges	Madison River Communications	6.3	3.6
12/20/04	5/5/2005	Sully Telephone Exchange	Reasoner Telephone	n.a.	n.a.
12/15/04	12/31/2004	Drenthe Telephone & Communications	Allendale Communications	n.a.	n.a.
12/15/04	5/26/2005	Pymatuning Independent Telephone	American Broadband	n.a.	n.a.
9/29/04	1/26/2005	Tri-County Telcom	McCook Cooperative Telephone	n.a.	n.a.
9/9/04	12/31/2004	Guam Telephone Authority	Teleguam Holdings	147.0	65.0
8/20/04	4/14/2005	Golden West Exchange	Alliance Communications Cooperative	2.9	0.6
8/20/04	10/8/2004	United Telephone	Blue Valley Tele-Communications	n.a.	n.a.
8/6/04	5/6/2005	Noonan Farmers Telephone	Northwest Communications Cooperative	n.a.	n.a.
6/14/04	8/12/2004	Iowa Telecom Exchanges	Partner Communications	2.8	2.0
5/21/04	5/3/2005	Verizon Exchange	Carlyle Group	1,600.0	690.0
5/10/04	12/15/2004	Mid-Missouri Telephone Company	Otelco	37.5	4.1

4/30/04	4/30/2004	PBT Telecom	Comporium	n.a.	19.3
4/16/04	4/16/2004	Grandby Telephone	Country Road Communications	n.a.	3.0
3/24/04	8/30/2005	Cal-Ore Telecommunications	Lynch Interactive	13.8	2.5
1/19/04	5/2/2005	NTELOS	Project Holdings	350.0	51.9
1/16/04	9/5/2004	Oregon Farmers Mutual Telephone	American Broadband	n.a.	n.a.
1/16/04	4/15/2004	TXU Communications	Consolidated Communications	527.0	168.0
11/26/03	4/28/2006	Iowa Telecom Exchanges	Heart of Iowa Communications Coop	4.8	0.6
9/12/03	9/12/2003	Searsboro Telephone	Killduff Telephone	n.a.	0.1
8/11/03	1/2/2004	Nehalem Telephone & Telegraph	Rural Telephone Company	n.a.	3.2
7/10/03	7/10/2003	Hills Telephone	Alliance Communications Cooperative	n.a.	3.3
7/10/03	7/10/2003	Sioux Valley Telephone	Golden West Telecommunications	n.a.	5.3
6/20/03	5/2/2005	Berkshire Telephone	FairPoint Communications	16.4	7.3
5/12/03	9/30/2003	FairPoint's SD properties	Golden West Telecommunications	24.0	4.1
5/2/03	6/30/2003	Blountsville Telephone	Seoport Capital	n.a.	3.8
4/30/03	4/30/2003	Georgetown Telephone Company	American Broadband	n.a.	0.3
4/18/03	12/1/2003	Community Service Telephone	FairPoint Communications	31.1	12.6
1/27/03	4/1/2003	Citizens Communications	Missouri Valley Communications	n.a.	n.a.
12/6/02	4/1/2003	Citizens Communications ND Exchange	Missouri Valley Communications	n.a.	9.4
12/6/02	4/1/2003	Citizens Communications ND Exchanges	Reservation Telephone Coop	n.a.	1.3
11/1/02	2/1/2006	EMC	Direct Communications - Rockland	n.a.	n.a.
9/18/02	1/1/2003	Baltic Telecom Cooperative	Alliance Communications Cooperative	n.a.	3.0
8/31/02	8/31/2002	Verizon - Missouri Lines	CenturyTel	1,180.4	354.0
7/17/02	12/31/2002	Illinois Consolidated	Homebase Acquisition Corp	271.0	90.0
5/15/02	9/30/2002	Dakota Telecommunications Group	PrairieWave Communications	n.a.	7.0
3/31/02	3/31/2002	Oregon Telephone/ North State Tel	Direct Communications - Rockland	n.a.	2.5
3/12/02	3/31/2002	Iowa Telecom Exchanges	Norway Rural Telephone Company	n.a.	0.7
2/14/02	7/1/2002	Telecommunications Systems of NH	Telephone & Data Systems	n.a.	7.5
1/15/02	1/15/2002	Accucom Telecommunications	Alltel	n.a.	4.8
12/21/01	10/31/2002	Citizens Communications ND Exchanges	Dickey Rural Telephone Cooperative	n.a.	2.5
12/21/01	10/31/2002	Citizens Communications ND Exchange	Polar Communications	n.a.	0.7
12/21/01	10/31/2002	Citizens Communications ND Exchanges	Red River Rural Telephone Association	n.a.	1.1
12/1/01	3/1/2002	Defiance and Manila Telephone	Farmers Mutual Cooperative	n.a.	0.9
11/21/01	5/24/2002	Conestogo Enterprises	D&E Communications	n.a.	85.0
11/16/01	6/1/2002	MCT, Inc	Telephone & Data Systems	n.a.	18.7
11/14/01	11/14/2001	Allendale Telephone Company	Allendale Telecom Ventures, LLC	n.a.	8.0
11/9/01	11/9/2001	Miller Telephone Company	TelAtlantic Communications	n.a.	1.1
10/31/01	7/31/2002	Verizon - Kentucky Lines	Alltel	1,906.0	600.0
10/22/01	7/1/2002	Verizon - Alabama Lines	CenturyTel	978.9	306.0
9/21/01	2/1/2002	Kerrville Communications	Yaler Telecommunications LLC	n.a.	29.9
9/1/01	9/1/2001	Cobbseerontee Telephone	Telephone & Data Systems	n.a.	0.8
5/21/01	10/2/2001	Soco River Telegraph and Telephone	Country Road Communications	n.a.	10.5
5/8/01	9/4/2001	Marianne and Scenery Hill Telephone	FairPoint Communications	n.a.	2.9
5/1/01	9/4/2001	McLeodUSA - Consolidated IL Lines	FairPoint Communications	n.a.	2.7
3/13/01	5/1/2001	Chippewa County Telephone	Hawatha Communications	n.a.	1.7
2/23/01	1/29/2001	West Side Telecom (49.9% Interest)	TelAtlantic Communications	n.a.	2.8
2/23/01	8/1/2001	Zenda Telephone Company	TelAtlantic Communications	n.a.	0.2
12/27/00	7/26/2001	Madison River Tel - IL Exchanges	Madison Telephone Company	n.a.	4.2
11/27/00	9/4/2001	Chorus Communications	Telephone & Data Systems	n.a.	45.0
11/6/00	11/6/2000	Camden Telephone Company (48.7%)	Telephone & Data Systems	52.5	12.1
10/17/00	6/25/2001	Central Utah Telephone Company	Lynch Interactive	n.a.	7.7
10/1/00	3/1/2001	Vista United Telecommunications	Smart City Networks	n.a.	17.0
9/12/00	8/1/2001	Evans Telephone Company	Country Road Communications	n.a.	13.0

9/12/00	5/18/2001	Valor - Apache Reservation Assets	Mescalero Tribe	n.a.	0.9
7/21/00	8/6/2001	Amana Colonies Telephone	South Slope Cooperative	n.a.	1.5
7/19/00	7/19/2000	Bridlee Mountain Telephone Company	CEA Capital - Seaport Capital	n.a.	13.0
7/12/00	6/30/2001	Global Crossing - Frontier Comm.	Citizens Communications	n.a.	1,100.0
7/3/00	7/3/2000	Comarco - Yelm Telephone Company	FairPoint Communications	72.3	12.7
6/21/00	1/2/2001	Saco River Telegraph and Telephone	Rural Cellular Communications	190.0	10.0
5/18/00	2/13/2001	R&B Communications	NTELOS	77.6	12.5
5/16/00	6/9/2000	Hager Telecom	Alliance Telecommunications	9.1	2.0
4/25/00	6/1/2000	Fremont Telecom	FairPoint Communications	n.a.	6.3
3/13/00	5/31/2000	Fort Bend Communications Companies	TXU Communications	n.a.	41.0
12/29/99	4/3/2000	Peoples Mutual Telephone Company	FairPoint Communications	n.a.	7.6
12/29/99	4/3/2000	TPG Communications	FairPoint Communications	n.a.	52.0
12/23/99	4/30/2000	Southeast Telephone Co. of WI	Telephone & Data Systems	n.a.	10.0
12/16/99	11/30/2000	Verizon (GTE) - Illinois	Citizens Communications	303.0	113.0
11/23/99	3/30/2000	Coastal Utilities	Madison River Telephone Company	n.a.	38.0
10/26/99	6/30/2000	Verizon (GTE) - Oklahoma	Valor Telecommunications Southwest	360.0	120.0
10/1/99	10/1/1999	Mid-Missouri Telephone Company	CEA Capital Partners	n.a.	6.1
10/1/99	10/1/1999	Orwell Telephone	MJD Communications	n.a.	6.8
9/21/99	6/30/2000	Verizon (GTE) - Nebraska	Citizens Communications	204.0	61.0
9/7/99	9/1/2000	Verizon (GTE) - New Mexico	Valor Telecommunications Southwest	322.0	95.0
9/7/99	9/1/2000	Verizon (GTE) - Texas	Valor Telecommunications Southwest	1,074.5	325.0
8/19/99	9/29/2000	Verizon (GTE) - Wisconsin	CenturyTel	186.6	70.5
8/19/99	9/29/2000	Verizon (GTE) - Wisconsin	CenturyTel/ Telephone USA Investments	177.4	62.9
8/10/99	4/6/2001	Qwest - Utah Lines	Manti/Contr. Utah/UBTA/Emory/All West	90.0	35.0
8/10/99	12/1/2000	Qwest - South Dakota Lines	Sully Buttes/ Venture Communications	n.a.	2.4
7/8/99	7/31/2000	Verizon (GTE) - Missouri	Spectra Communications - CenturyTel	290.0	127.0
7/1/99	7/1/1999	Aliant Communications	Alltel	n.a.	285.0
7/1/99	7/1/1999	Hopper Telephone	CEA Capital Partners	n.a.	3.6
7/1/99	6/30/2000	Verizon (GTE) - Iowa	Iowa Telecommunications	952.0	280.0
7/1/99	7/1/1999	Central Scott Telephone Company	Lynch Interactive	n.a.	6.0
7/1/99	7/1/1999	Gulf Telephone	Madison River Telephone Company	n.a.	48.0
7/1/99	7/1/1999	Yates City Telephone	MJD Communications	n.a.	1.1
6/29/99	7/31/2000	Verizon (GTE) - Arkansas	CenturyTel	824.0	231.0
6/15/99	10/31/2000	Qwest - North Dakota Lines	Citizens Communications	n.a.	17.3
5/27/99	8/31/2000	Verizon (GTE) - Alaska	ATEAC	50.0	21.0
5/27/99	8/31/2000	Verizon (GTE) - Minnesota	Citizens Communications	454.4	133.0
5/15/99	1/19/2000	Pine Tree Telephone and Telegraph Co.	Country Road Communications	n.a.	7.0
4/1/99	4/1/1999	Anchorage Telephone Utilities	Alaska Communications Systems	n.a.	168.0
4/1/99	4/1/1999	CenturyTel - Alaska Operations	Alaska Communications Systems	n.a.	131.0
4/1/99	4/1/1999	Union Telephone	MJD Communications	n.a.	2.6
1/1/99	1/1/1999	Standard Telephone	Alltel	n.a.	68.0
1/1/99	1/1/1999	Oneonta Telephone	CEA Capital Partners	n.a.	7.0
1/1/99	1/1/1999	Dakota Telecommunications Group	McLeodUSA	n.a.	7.3
1/1/99	1/1/1999	Columbus Grove Telephone	MJD Communications	n.a.	1.9
1/1/99	1/1/1999	Ravenswood	MJD Communications	n.a.	2.1

Notes: Information obtained from FCC, PUC and SEC filings as well as other publicly available information. Some amounts estimated. Terminated = previously announced deal terminated or withdrawn operations. A/L = includes ILEC and CLEC lines. Conn = connections including ILEC and CLEC access lines, DSL and high-speed data subscribers and video subscribers. T_OIBDA = reported or amortization. P_OIBDA = Projected or normalized annual operating income before depreciation and amortization.

Conn (k)	S/conn	REV	T_OIBDA	P_OIBDA	Year Announced	Year Closed
7,100.0	1,484.5	1.8x	4.5x	3.5x	2015	pending
n.o.	n.o.	n.o.	n.o.	n.o.	2015	pending
n.o.	n.o.	n.o.	n.o.	n.o.	2015	pending
n.o.	n.o.	n.o.	n.o.	n.o.	2015	pending
n.o.	n.o.	n.o.	n.o.	n.o.	2015	pending
n.o.	n.o.	n.o.	n.o.	n.o.	2014	2014
n.o.	n.o.	n.o.	n.o.	n.o.	2014	pending
n.o.	n.o.	n.o.	n.o.	n.o.	2014	pending
n.o.	n.o.	n.o.	n.o.	n.o.	2014	pending
72.0	4,859.7	1.9x	7.3x	5.6x	2014	2014
n.o.	n.o.	n.o.	n.o.	n.o.	2014	pending
n.o.	n.o.	n.o.	n.o.	n.o.	2014	pending
n.o.	n.o.	n.o.	n.o.	n.o.	2014	2014
1,495.0	1,338.0	1.7x	5.9x	4.8x	2013	2014
n.o.	n.o.	n.o.	n.o.	n.o.	2013	2014
n.o.	n.o.	n.o.	n.o.	n.o.	2013	2014
n.o.	n.o.	n.o.	n.o.	n.o.	2013	2014
n.o.	n.o.	n.o.	n.o.	n.o.	2013	2013
n.o.	n.o.	n.o.	n.o.	n.o.	2013	2014
n.o.	n.o.	n.o.	n.o.	n.o.	2013	2014
n.o.	n.o.	n.o.	n.o.	n.o.	2013	2014
9.5	n.o.	n.o.	n.o.	n.o.	2013	2014
n.o.	n.o.	n.o.	n.o.	n.o.	2013	2013
n.o.	n.o.	3.7x	6.0x	n.o.	2012	2013
n.o.	n.o.	n.o.	n.o.	n.o.	2012	2012
n.o.	n.o.	n.o.	n.o.	n.o.	2012	2012
n.o.	n.o.	n.o.	n.o.	n.o.	2012	2013
n.o.	n.o.	n.o.	n.o.	n.o.	2012	2013
344.8	1,538	2.1x	6.3x	4.8x	2012	2012
n.o.	n.o.	n.o.	n.o.	n.o.	2011	2012
n.o.	n.o.	n.o.	n.o.	n.o.	2011	2012
n.o.	n.o.	n.o.	n.o.	n.o.	2011	2011
n.o.	n.o.	n.o.	n.o.	n.o.	2011	2011
5.0	1,053	2.2x	6.1x	n.o.	2011	2011
n.o.	n.o.	n.o.	n.o.	n.o.	2011	2011
n.o.	n.o.	n.o.	n.o.	n.o.	2010	2011
n.o.	n.o.	n.o.	n.o.	n.o.	2010	2011
n.o.	n.o.	n.o.	n.o.	n.o.	2010	2010
n.o.	n.o.	n.o.	n.o.	n.o.	2010	2010
n.o.	n.o.	n.o.	n.o.	n.o.	2010	2010
n.o.	n.o.	n.o.	n.o.	n.o.	2010	2010
n.o.	n.o.	n.o.	n.o.	n.o.	2010	2010
n.o.	n.o.	n.o.	n.o.	n.o.	2010	2010
n.o.	n.o.	n.o.	n.o.	n.o.	2010	2010
n.o.	n.o.	n.o.	n.o.	n.o.	2010	2010
25.4	n.o.	n.o.	n.o.	n.o.	2010	2010
n.o.	n.o.	n.o.	n.o.	n.o.	2010	2010
n.o.	n.o.	n.o.	n.o.	n.o.	2010	2010
12,515.0	1,782	1.9x	5.0x	4.4x	2010	2011
n.o.	n.o.	n.o.	n.o.	n.o.	2010	2010

n.o.	n.o.	n.o.	n.o.	n.o.	2009	2010
359.61	2,6581	3.5x1	7.4x1	5.8x	2009	2010
n.o.	n.o.	n.o.	n.o.	n.o.	2009	2010
n.o.	n.o.	n.o.	n.o.	n.o.	2009	2010
n.o.	n.o.	n.o.	n.o.	n.o.	2009	2009
n.o.	n.o.	n.o.	n.o.	n.o.	2009	2009
n.o.	n.o.	n.o.	n.o.	n.o.	2009	2010
n.o.	n.o.	n.o.	n.o.	n.o.	2009	2009
n.o.	n.o.	n.o.	n.o.	n.o.	2009	2009
44.01	3,2051	3.2x1	5.9x1	4.9x	2009	2009
n.o.	n.o.	n.o.	n.o.	n.o.	2009	2009
8.51	1,5531	2.2x1	8.6x1	4.9x	2009	2009
n.o.	n.o.	n.o.	n.o.	n.o.	2009	2009
2.7	n.o.	n.o.	n.o.	n.o.	2009	2009
n.o.	n.o.	n.o.	n.o.	n.o.	2009	2009
n.o.	n.o.	n.o.	n.o.	n.o.	2009	2009
n.o.	n.o.	n.o.	n.o.	n.o.	2009	2009
5,869.01	1,4621	2.0x1	4.5x1	3.5x	2009	2010
217.4	1,518	2.2x1	5.1x1	3.7x	2009	2009
n.o.	600	n.o.	n.o.	n.o.	2009	2009
n.o.	n.o.	n.o.	n.o.	n.o.	2009	2009
n.o.	n.o.	n.o.	n.o.	n.o.	2009	2009
42.91	1,7231	2.5x1	6.5x1	n.o.	2008	2009
n.o.	n.o.	n.o.	n.o.	n.o.	2008	2008
7,241.0	1,823	2.1x1	5.1x1	4.6x	2008	2009
11.51	2,3481	2.9x1	6.5x1	6.4x	2008	2008
111.6	n.o.	3.2x1	8.1x1	7.0x	2008	2008
5.31	n.o.	n.o.	n.o.	n.o.	2008	
n.o.	n.o.	n.o.	n.o.	n.o.	2008	2008
n.o.	n.o.	n.o.	n.o.	n.o.	2008	2008
5.91	2,9231	2.9x1	9.7x1	6.8x	2008	2008
n.o.	n.o.	n.o.	n.o.	n.o.	2008	2008
n.o.	n.o.	n.o.	n.o.	n.o.	2008	2008
n.o.	n.o.	n.o.	n.o.	n.o.	2008	2008
25.01	1,7561	2.3x1	7.6x1	n.o.	2008	2008
27.31	n.o.	n.o.	n.o.	n.o.	2008	2008
n.o.	3,307	n.o.	n.o.	n.o.	2007	2008
25.71	2,9171	3.8x1	9.0x1	7.5x	2007	2008
n.o.	n.o.	n.o.	n.o.	n.o.	2007	2007
n.o.	n.o.	n.o.	n.o.	n.o.	2007	2008
n.o.	n.o.	3.0x1	10.1x1	6.8x	2007	2008
n.o.	n.o.	n.o.	n.o.	n.o.	2007	2007
16.41	3,6631	3.0x1	7.5x1	6.6x	2007	2007
n.o.	n.o.	n.o.	n.o.	n.o.	2007	2007
n.o.	n.o.	n.o.	n.o.	n.o.	2007	2007
18.51	3,0821	3.4x1	11.0x1	7.7x	2007	2008
n.o.	n.o.	n.o.	n.o.	n.o.	2007	2008
18.81	3,3071	2.9x1	7.3x1	6.4x	2007	2007
118.51	2,6161	3.2x1	8.8x1	6.7x	2007	2007
186.0	2,527	3.3x1	9.1x1	6.4x	2007	2007
n.o.	n.o.	n.o.	n.o.	n.o.	2007	2007

n.o.	5,319	n.o.	n.o.	n.o.	2007	2007
n.o.	n.o.	n.o.	n.o.	n.o.	2007	2007
n.o.	n.o.	n.o.	n.o.	n.o.	2007	2007
n.o.	n.o.	n.o.	n.o.	n.o.	2007	2007
1,401.0	1,226	1.6x	5.6x	3.6x	2007	2008
156.3	1,631	2.9x	7.5x	6.7x	2007	2007
n.o.	n.o.	n.o.	n.o.	n.o.	2007	2007
239.2	3,156	4.0x	7.7x	6.6x	2006	2007
n.o.	n.o.	n.o.	n.o.	n.o.	2006	2007
n.o.	n.o.	n.o.	n.o.	n.o.	2006	2010
n.o.	n.o.	n.o.	n.o.	n.o.	2006	2007
n.o.	2,140	2.8x	6.9x	n.o.	2006	2006
491.4	2,553	3.5x	7.1x	6.0x	2006	2007
37.3	4,091	3.7x	8.1x	n.o.	2006	2006
n.o.	3,147	3.5x	7.8x	n.o.	2006	2006
n.o.	n.o.	n.o.	n.o.	n.o.	2006	2006
n.o.	1,013	3.1x	6.9x	n.o.	2006	2006
n.o.	n.o.	n.o.	n.o.	n.o.	2006	2007
n.o.	n.o.	n.o.	n.o.	n.o.	2006	2006
22,919.0	2,686	2.9x	7.0x	n.o.	2006	2006
n.o.	3,148	3.5x	8.7x	n.o.	2006	2006
n.o.	n.o.	n.o.	n.o.	n.o.	2006	2006
n.o.	4,231	3.1x	6.1x	n.o.	2006	2006
3.9	4,356	3.8x	7.0x	n.o.	2005	2006
3,279.0	3,127	3.1x	6.4x	n.o.	2005	2006
n.o.	n.o.	n.o.	n.o.	n.o.	2005	2006
0.9	n.o.	n.o.	n.o.	n.o.	2005	2006
n.o.	n.o.	n.o.	n.o.	n.o.	2005	2006
n.o.	n.o.	n.o.	n.o.	n.o.	2005	2006
n.o.	3,000	2.5x	7.1x	n.o.	2005	2006
n.o.	n.o.	n.o.	n.o.	n.o.	2005	2006
n.o.	n.o.	n.o.	n.o.	n.o.	2005	2005
n.o.	n.o.	n.o.	n.o.	n.o.	2005	2005
n.o.	n.o.	n.o.	n.o.	n.o.	2005	2006
n.o.	3,461	3.9x	8.5x	n.o.	2005	2006
n.o.	2,906	2.6x	7.4x	n.o.	2005	2005
n.o.	n.o.	n.o.	n.o.	n.o.	2005	2005
n.o.	4,461	3.6x	7.1x	n.o.	2005	2005
n.o.	4,359	4.0x	7.6x	n.o.	2005	2005
n.o.	n.o.	n.o.	n.o.	n.o.	2005	2006
n.o.	1,756	2.4x	4.8x	n.o.	2005	2005
n.o.	n.o.	n.o.	n.o.	n.o.	2004	2005
n.o.	n.o.	n.o.	n.o.	n.o.	2004	2004
n.o.	n.o.	n.o.	n.o.	n.o.	2004	2005
n.o.	n.o.	n.o.	n.o.	n.o.	2004	2005
n.o.	n.o.	n.o.	n.o.	n.o.	2004	2004
n.o.	5,249	3.5x	7.0x	n.o.	2004	2005
n.o.	n.o.	n.o.	n.o.	n.o.	2004	2004
n.o.	n.o.	n.o.	n.o.	n.o.	2004	2005
n.o.	1,379	n.o.	n.o.	n.o.	2004	2004
n.o.	2,318	2.7x	6.9x	n.o.	2004	2005
n.o.	n.o.	n.o.	n.o.	n.o.	2004	2004

n.o.	n.o.	n.o.	n.o.	n.o.	2004	2004
n.o.	n.o.	n.o.	n.o.	n.o.	2004	2004
n.o.	5,520	2.4x	7.5x	n.o.	2004	2005
n.o.	6,743	3.0x	6.6x	n.o.	2004	2005
n.o.	n.o.	n.o.	n.o.	n.o.	2004	2004
n.o.	3,137	3.1x	9.1x	6.9x	2004	2004
n.o.	8,000	n.o.	n.o.	n.o.	2003	2006
n.o.	n.o.	n.o.	n.o.	n.o.	2003	2003
n.o.	n.o.	n.o.	n.o.	n.o.	2003	2004
3.3	n.o.	n.o.	n.o.	n.o.	2003	2003
n.o.	n.o.	n.o.	n.o.	n.o.	2003	2003
n.o.	2,246	2.7x	6.8x	n.o.	2003	2005
n.o.	5,420	5.6x	8.5x	n.o.	2003	2003
n.o.	n.o.	n.o.	n.o.	n.o.	2003	2003
n.o.	n.o.	n.o.	n.o.	n.o.	2003	2003
n.o.	2,552	3.8x	9.5x	n.o.	2003	2003
n.o.	n.o.	n.o.	n.o.	n.o.	2003	2003
n.o.	n.o.	n.o.	n.o.	n.o.	2002	2003
n.o.	n.o.	n.o.	n.o.	n.o.	2002	2003
n.o.	n.o.	n.o.	n.o.	n.o.	2002	2006
n.o.	n.o.	n.o.	n.o.	n.o.	2002	2003
n.o.	3,199	4.0x	8.0x	n.o.	2002	2002
n.o.	n.o.	n.o.	n.o.	n.o.	2002	2002
n.o.	n.o.	n.o.	n.o.	n.o.	2002	2002
n.o.	n.o.	n.o.	n.o.	n.o.	2002	2002
n.o.	n.o.	n.o.	n.o.	n.o.	2002	2002
n.o.	n.o.	n.o.	n.o.	n.o.	2002	2002
n.o.	n.o.	n.o.	n.o.	n.o.	2002	2002
n.o.	n.o.	n.o.	n.o.	n.o.	2002	2002
n.o.	n.o.	n.o.	n.o.	n.o.	2002	2002
n.o.	n.o.	n.o.	n.o.	n.o.	2002	2002
n.o.	n.o.	n.o.	n.o.	n.o.	2001	2002
n.o.	n.o.	n.o.	n.o.	n.o.	2001	2002
n.o.	n.o.	n.o.	n.o.	n.o.	2001	2002
n.o.	n.o.	n.o.	n.o.	n.o.	2001	2002
n.o.	n.o.	n.o.	n.o.	n.o.	2001	2002
n.o.	n.o.	n.o.	n.o.	n.o.	2001	2002
n.o.	n.o.	n.o.	n.o.	n.o.	2001	2001
n.o.	n.o.	n.o.	n.o.	n.o.	2001	2001
n.o.	3,192	4.1x	7.6x	n.o.	2001	2002
n.o.	3,199	4.0x	8.0x	n.o.	2001	2002
n.o.	n.o.	n.o.	n.o.	n.o.	2001	2002
0.8	n.o.	n.o.	n.o.	n.o.	2001	2001
n.o.	n.o.	n.o.	n.o.	n.o.	2001	2001
n.o.	n.o.	n.o.	n.o.	n.o.	2001	2001
n.o.	n.o.	n.o.	n.o.	n.o.	2001	2001
n.o.	n.o.	n.o.	n.o.	n.o.	2001	2001
n.o.	n.o.	n.o.	n.o.	n.o.	2001	2001
n.o.	n.o.	n.o.	n.o.	n.o.	2001	2001
n.o.	n.o.	n.o.	n.o.	n.o.	2001	2001
n.o.	n.o.	n.o.	n.o.	n.o.	2001	2001
n.o.	n.o.	n.o.	n.o.	n.o.	2001	2001
n.o.	n.o.	n.o.	n.o.	n.o.	2001	2001
n.o.	n.o.	n.o.	n.o.	n.o.	2000	2001
n.o.	n.o.	n.o.	n.o.	n.o.	2000	2001
n.o.	n.o.	n.o.	n.o.	n.o.	2000	2000
n.o.	n.o.	n.o.	n.o.	n.o.	2000	2001
n.o.	n.o.	n.o.	n.o.	n.o.	2000	2001
n.o.	n.o.	n.o.	n.o.	n.o.	2000	2001

2003	11	11
2004	17	10
2005	18	16
2006	16	23
2007	22	20
2008	15	19
2009	22	18
2010	16	20
2011	6	7
2012	6	5
2013	10	5
2014	8	11
2015	5	0

BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

IN THE MATTER OF CARBON/EMERY)
TELCOM, INC. APPLICATION FOR AN) DOCKET NO. 15-2302-01
INCREASE IN UTAH UNIVERSAL)
SERVICE FUND SUPPORT)

SURREBUTTAL TESTIMONY OF DOUGLAS DUNCAN MEREDITH

ON BEHALF OF

CARBON/EMERY TELCOM, INC.

September 18, 2015

BLACKBURN & STOLL, LC
Kira M. Slawson
Attorneys for Carbon/Emery Telcom, Inc.
257 East 200 South, Suite 800
Salt Lake City, UT 84111
Tel: 801-578-3578
kslawson@blackburn-stoll.com



1 RATE OF RETURN FOR INTERSTATE SERVICES

2 Q. Please state your full name for the record.

3 A. Douglas Duncan Meredith.

4
5 Q. Are you the same Douglas Meredith that filed Rebuttal Testimony in this Docket?

6 A. Yes.

7
8 Q: In Mr. Brevitz' Rebuttal Testimony (Lines 16-102), he propounds the idea that the
9 interstate rate used for Carbon/Emery from NECA's FCC Forms 492 should be 9.4
10 percent. What observations do you have regarding this proposal?

11 A: I recommend the Commission reject this proposal. My recommendation is based on
12 several facts. First, Public Service Commission rule R746-360-8(A)(1)(a)(i) requires the
13 Commission to use the prior year return reported by NECA to the FCC on FCC Form 492
14 for incumbent telephone corporations. The relevant rate of return for Carbon/Emery is
15 11.45 percent. The NECA Form 492 reported to the FCC and to be used in this
16 proceeding is attached to a NECA transmittal letter received by the FCC on September
17 30, 2014. (Surrebuttal Testimony of D Meredith Exhibit 1) In the transmittal letter, Ms.
18 Patricia Chirico, explains that "NECA has provided two Form 492 reports. The first
19 applies to companies that participate in NECA's Common Line pool. The second applies
20 to the smaller subset of companies that participate in both NECA's Common Line and
21 Traffic Sensitive pools." It is incumbent on the Commission to select the Form 492 that
22 applies to Carbon/Emery. Carbon/Emery does not participate in NECA's Traffic
23 Sensitive pool and consequently the Form 492 that applies to Carbon/Emery reports a

24 rate of return of 11.45 percent. The Form 492 that Mr. Brevitz references does not apply
25 to Carbon/Emery because it is used for carriers that participate in both NECA pools.

26
27 **Q: What about the concept of a blended interstate rate and using the second Form 492**
28 **as a proxy for Carbon/Emery?**

29 A: The PSC rules don't suggest using another interstate rate as a proxy. Furthermore, the
30 proxy idea fails due to the fact that Carbon/Emery left the Traffic Sensitive pool in part
31 because it felt the pool wasn't properly representing its interests. Consider the Special
32 Access component of the Traffic Sensitive pool. The 2013 NECA rate of return for this
33 component of interstate service is 6.05 percent. The authorized rate or return for this
34 component is 11.25 percent but due to a number of factors, NECA incorrectly set its tariff
35 prices too low or incorrectly predicted a higher level of demand and the realized rate of
36 return was almost half of what it is authorized to yield. Because Carbon/Emery left the
37 pool and arranges its prices to yield a rate that is closer to the FCC authorized 11.25
38 percent for interstate services, the proxy is not appropriate. There isn't any sound
39 rationale to force a *de facto* incorrect proxy onto Carbon/Emery in this proceeding.

40
41 **Q: If the Commission were to use a proxy rate—contrary to its own rule—what should**
42 **the proxy rate be for interstate services?**

43 A: The prescribed authorized rate of return for interstate services is 11.25 percent. I have
44 already described the fact that while the FCC has had ample opportunity to change this
45 rate, it has chosen not to change it. Thus, if the Commission wanted to modify its rule I

46 would recommend it apply the FCC prescribed rate of return. However, this change
47 shouldn't happen in this proceeding.

48

49 **Q: When did the FCC last review the 11.25 percent rate of return?**

50 A: The FCC confirmed continued use of the 11.25 percent rate of return in the MAG Order
51 released in 2001. (*FCC 01-304: Multi-Association Group (MAG) Plan for Regulation of*
52 *Interstate Services of Non-Price Cap Incumbent Local Exchange Carriers and*
53 *Interexchange Carriers Federal-State Joint Board on Universal Service Access Charge*
54 *Reform for Incumbent Local Exchange Carriers Subject to Rate-of-Return Regulation*
55 *Prescribing the Authorized Rate of Return for Interstate Services of Local Exchange*
56 *Carriers -- Issued: 11/08/2001*) Mr. Brevitz stated that this rate was established in 1984
57 (Line 98), leaving the reader to infer the FCC hasn't examined this issue for over 30
58 years. Moreover, as I previously discussed in my rebuttal testimony, the FCC created a
59 record in 2013 regarding its authorized rate and has not revised the 11.25 percentage.

60

61 **Q: Does this conclude your surrebuttal testimony?**

62 A: Yes.



NECA

80 South Jefferson Road • Whippany, NJ 07981

Patricia A. Chirico
Executive Director
Tariffs, Rates, Costs & Average Schedules

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Fax: 973-884-8469
E-mail: pchirico@neca.org

September 30, 2014

Mr. Steven Steckler
Federal Communications Commission
Industry Analysis & Technology Division
Wireline Competition Bureau
445 12th Street, SW
Washington, DC 20554

RECEIVED - FCC

SEP 30 2014

Federal Communications Commission
Bureau / Office

Dear Mr. Steckler:

Attached please find, in accordance with Part 65.600 of the Commission's Rules, the Rate of Return Report covering the cumulative period of January 1, 2013 through December 31, 2013 for common line and traffic sensitive pools administered by NECA. The attached reports contain Rates of Return calculated from data reported to NECA pools.

NECA has provided two Form 492 reports. The first applies to companies that participate in NECA's Common Line pool. The second applies to the smaller subset of companies that participate in both NECA's Common Line and Traffic Sensitive pools. Because all Common Line pool participants receive a uniform return on investment, the Common Line rate of return reported on both forms is identical.

In addition, the current version of Form 492 requests data separately for the End Office, Information and Local Transport elements. NECA only has switched access data available at the category level and consequently is unable to provide separate information for these elements. Information on aggregate switched access results is provided as an attachment to the Form 492 report applicable to companies that participate in NECA's Common Line and Traffic Sensitive pools.

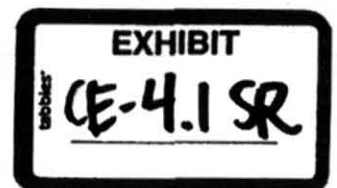
If there are any questions regarding the enclosed, please call me.

Sincerely,



Enclosures

cc: FCC Secretary



National Exchange Carrier Association, Inc.
80 South Jefferson Road
Whippany, NJ 07981

Cumulative Period Covered
from: 01/13 to 12/13

Common Line Pool Form
Additional Statements

Pursuant to Section 65.600 of the Commission's Rules, NECA is submitting cumulative period Rate of Return information for the Common Line Pool for the period January 2013 through December 2013, as of the August 2014 settlement view.

All of the individual line items on the Form include estimates and are subject to further adjustments, as Exchange Carriers revise data. The amounts in this report require the following additional explanations:

1. This Common Line-only pool report supplements data contained in NECA's combined Common Line/Traffic Sensitive pool Form 492 Report. Common Line data contained herein is duplicative of the data contained in NECA's combined report and the combined reports of individual exchange carriers that participate in NECA's Common Line pool but not its Traffic Sensitive pool.
2. Six companies converted from average schedule settlements to cost-based settlements during the cumulative period. These conversions affect the levels of expenses and investment associated with the Common Line Pool during the reporting periods.
3. The 2012 Second Further Modification of Average Schedules was effective beginning July 1, 2012. The 2013 Modification of Average Schedules was effective beginning July 1, 2013. These formulas are the basis for total payments to average schedule companies in the current period that are included, along with Category I.B NECA administrative expenses, in line 2 of NECA's Form 492.
4. As of August 2014, cost study data representing 100.0% of the Common Line cost company revenue requirement are reflected in the attached report. This is expected to materially reduce, but not eliminate, changes to the reported pooling data and earnings levels as errors and omissions are discovered. Also, pursuant to FCC rules, Interstate Common Line Support payments for calendar year 2013 are subject to true-up in 2015.
5. The report includes cumulative period rate of return data reported to NECA for 1,121 study areas that participated in NECA's Common Line tariffs pursuant to Commission rules. Reported cost and average schedule settlements information is used for the study areas in the report.

FEDERAL COMMUNICATIONS COMMISSION
 Washington, D.C. 20554

See reverse side for information
 regarding public burden estimate.

1. Name and Address of Reporting Company National Exchange Carrier Association 80 South Jefferson Road Whippany, NJ 07981	2. Reporting Period (a) Annual Period Covered From: 01/13 To: 12/13 (b) Cumulative Period Covered: From: 01/13 To: 12/13
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FCC 492 RATE OF RETURN REPORT
 NECA Common Line Pool Participants
 (Read Instructions on Reverse Before Completing)
 Dollar Amounts Shown in Thousands

3. Particulars	(A) Interstate Access		(B) Common Line		(C) Special Access	
	Current Year	Cumulative	Current Year	Cumulative	Current Year	Cumulative
1. Total Revenues	NA	NA	\$1,345,442	\$1,345,442	NA	NA
2. Total Expenses and Taxes	NA	NA	\$1,141,679	\$1,141,679	NA	NA
3. Oper. Inc. (Net Return) (1-2)	NA	NA	\$203,763	\$203,763	NA	NA
4. Rate Base-(Avg. Net Invest.)	NA	NA	\$1,778,846	\$1,778,846	NA	NA
5. Rate of Return (%) Annualized	NA	NA	11.45%	11.45%	NA	NA
6. FCC Ordered Refund- Amortized for Current Period (see Line 6 Instr.)	NA	NA	\$0	\$0	NA	NA
7. Net Return (incl. effect of FCC Order Refund) (3+6)	NA	NA	\$203,763	\$203,763	NA	NA
8. Rate of Return (incl. effect of FCC Order Refund) (7/4) Annualized	NA	NA	11.45%	11.45%	NA	NA

3. Particulars	Switched Traffic Sensitive					
	(D) End Office		(E) Information		(F) Local Transport	
	Current Year	Cumulative	Current Year	Cumulative	Current Year	Cumulative
1. Total Revenues	NA	NA	NA	NA	NA	NA
2. Total Expenses and Taxes	NA	NA	NA	NA	NA	NA
3. Oper. Inc. (Net Return) (1-2)	NA	NA	NA	NA	NA	NA
4. Rate Base-(Avg. Net Invest.)	NA	NA	NA	NA	NA	NA
5. Rate of Return (%) Annualized	NA	NA	NA	NA	NA	NA
6. FCC Ordered Refund- Amortized for Current Period (see Line 6 Instr.)	NA	NA	NA	NA	NA	NA
7. Net Return (incl. effect of FCC Order Refund) (3+6)	NA	NA	NA	NA	NA	NA
8. Rate of Return (incl. effect of FCC Order Refund) (7/4) Annualized	NA	NA	NA	NA	NA	NA

4. Rates of Return for the Switched Traffic Sensitive Category		5. Multiplicative Factor Used for Annualizing Rate of Return for Cumulative Measurement Period		1.0000
(a) Current Year	(b) Cumulative	6. Total Out-of-Period Adjustment (see instruction K)		\$ 0
NA	NA			

7. Certification: I certify that I am the chief financial officer or the duly assigned accounting officer; that I have examined the foregoing report; that to the best of my knowledge, information, and belief, all statements of fact contained in this report are true and this report is a correct statement of the business and affairs of the above-named respondent in respect to each and every matter set forth therein during the specified period.

Date	Typed Name of Person Signing	Title of Person Signing	Tel. No.	Signature
09/30/2014	Peter Dunbar	Chief Financial Officer	973-884-8190	

National Exchange Carrier Association, Inc.
80 South Jefferson Road
Whippany, NJ 07981

Cumulative Period Covered
From: 01/13 to 12/13

NECA Tariff Participants Form 492
Additional Statements

Pursuant to Section 65.600 of the Commission's Rules, NECA is submitting cumulative period Rate of Return information for the Common Line and Traffic Sensitive categories for the period January 2013 through December 2013, as of the August 2014 settlement view.

All of the individual line items on Form 492 include estimates and are subject to further adjustments, as Exchange Carriers revise data. The amounts in this report require the following additional explanations:

1. NECA does not collect pooled data for Switched End Office, Information, and Local Transport. It collects data for total Switched Access only. Attachment 1 provides particulars for total Switched Access.
2. Beginning July 2012, switched access revenue requirement amounts in "Switched Traffic Sensitive" column and included in the "Interstate Access" column are frozen and adjust yearly pursuant to USF/ICC Transformation Order. They do not represent actual revenue requirement for NECA pool participants.
3. Beginning July 2012, "Switched Traffic Sensitive" and "Interstate Access" columns include intrastate terminating switched access revenue and intrastate switched revenue requirement that were frozen and adjust yearly pursuant to rules promulgated in the USF/ICC Transformation Order. Also beginning July 2012, total revenues reported in those columns include CAF ICC support and ARC amounts.
4. Six companies converted from average schedule settlements to cost-based settlements during the cumulative period. These conversions affect the levels of expenses and investment associated with the Common Line and Traffic Sensitive pools during the reporting periods.
5. The 2012 Second Further Modification of Average Schedules was effective July 1, 2012. The 2013 Modification of Average Schedules was effective July 1, 2013. These formulas are the basis for total payments to average schedule companies in the current period that are included, along with Category I.B and I.C NECA administrative expenses, in line 2 of NECA's Form 492.
6. As of August 2014, cost study data representing 100.0% of the Traffic Sensitive cost company revenue requirement are reflected in the attached report. This is expected to materially reduce, but not eliminate, changes to reported pooling data and earnings levels as errors and omissions are discovered. Also, pursuant to FCC rules, Interstate Common Line Support and CAF ICC Support payments for calendar year 2013 are subject to true-up through 2016.
7. The report includes cumulative period rate of return data reported to NECA for 1,071 study areas that have participated in both NECA's common line and traffic sensitive tariffs pursuant to Commission rules. Reported cost and average schedule settlements information is used for the study areas in the report. Revenues for these study areas are derived using the pool realized rate of return. The Total Interstate Access columns consist of data summed

from the Common Line and Traffic Sensitive categories. Exchange carriers not included in NECA's Form 492 filed an interstate access tariff during the monitoring period and file their own Form 492 pursuant to Commission rules.

8. NECA reports the Rate of Return as an aggregate for the Traffic Sensitive category for monitoring purposes per Authorized Rates of Return for Interstate Services of AT&T Communications and Exchange Telephone Carriers, CC Docket No. 84-800 Phase I, Memorandum Opinion and Order, FCC 86-14 (released March 24, 1986) at n. 51.