STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

IN THE MATTER OF THE COMMISSION'S	)	
TRIENNIEL REVIEW OF THE INDIANA	)	CAUSE NO. 45064
UNIVERSAL SERVICE FUND	)	

SUBMISSION OF DIRECT TESTIMONY AND EXHIBITS

The Indiana Exchange Carrier Association, Inc. ("INECA"), by counsel, hereby submits

in the above referenced Cause the Direct Testimony and exhibits of Larry S. Landis.

Respectfully submitted,

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CERTIFICATE OF SERVICE

   I hereby certify that a copy of the foregoing Direct Testimony of Chad Duval was served

upon the following via electronic mail this 24th day of May, 2018:

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PREFILED TESTIMONY OF LARRY S. LANDIS

ON BEHALF OF

INDIANA EXCHANGE CARRIER ASSOCIATION, INC.

IURC CAUSE NO. 45064
PREFILED TESTIMONY OF LARRY S. LANDIS

Q.   WHAT IS YOUR NAME, TITLE, AND BUSINESS ADDRESS?

A.   I am Larry S. Landis.   I was appointed to the Indiana Utility Regulatory Commission (the "Commission") in 2003 to fill an unexpired term, by the late Governor Frank O'Bannon. I was reappointed to a full term by former Governor Joe Kernan, and twice by former Governor Mitch Daniels. I also served during the administration of former Governor Mike Pence, before retiring in 2014.   I was active with the National Association of Regulatory Utility Commissioners (NARUC), serving on the Board for six years and also serving as Co-Chair of the Washington Action Committee, NARUC's liaison to the Federal legislative and executive branches of government. I served in numerous capacities while on NARUC's Telecommunications Committee, including service on both of the FCC-State Joint Boards and the FCC-State Joint Conference (the 706 Joint Conference) on Advanced Telecommunications ("broadband") of which I was State Chair. A complete background may be found as Attachment 1 to this testimony.

Q.   FOR WHOM ARE YOU APPEARING IN THIS PROCEEDING?

A.   I am appearing on behalf of Indiana Exchange Carrier Association, Inc. ("INECA"). INECA, on behalf of its enumerated members,[1] is a party to the Settlement Agreement

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[1] INECA's membership includes: Bloomingdale Home Telephone Company, Inc.; Citizens Telephone Corporation; Clay County Rural Telephone Cooperative, Inc. d/b/a/ Endeavor Communications; Craigville Telephone Company Inc.; Daviess-Martin Rural Telephone Corporation d/b/a RTC Communications; Geetingsville Telephone Company Inc.; Hancock Rural Telephone Corporation d/b/a NineStar Connect; Ligonier Telephone Co., Inc.; Monon Telephone Company Inc.; Miles Communications, Inc. d/b/a Enhanced Telecommunications Corp.; Mulberry Cooperative Telephone Company, Incorporated d/b/a Mulberry Telephone Company; New Lisbon Telephone Company Inc.; New Paris Telephone Inc.; Northwestern Indiana Telephone Company Inc. d/b/a Nitco; Perry-Spencer Rural Telephone Cooperative Inc. d/b/a PSC; Pulaski White Communications, Inc. d/b/a Lightstream; Rochester Telephone Company Inc.; Southeastern Indiana Rural Telephone Cooperative Inc. d/b/a SEI Communications; Smithville Telephone Company, Incorporated d/b/a Smithville Communications; Swayzee Telephone Company, Inc. d/b/a Swayzee Communications Corp.; Sweetser Rural Telephone Company Inc.; TDS Telecom Companies (Camden Telephone Company Inc., Communications Corporation of Indiana, Communications Corporation of Southern Indiana**,** Home Telephone Company Inc., Home Telephone Company of Pittsboro Inc.,

("Settlement Agreement") on the Indiana Universal Service Fund ("IUSF") filed on May 24, 2018, in this Cause.

Q.   PLEASE PROVIDE THE BACKGROUND PROMPTING INECA TO FILE DIRECT TESTIMONY IN THIS CAUSE.

A.   The Commission's March 17, 2004 Order in Cause No. 42144 approved a settlement agreement that created the IUSF. The IUSF settlement agreement included a periodic review of the IUSF on a triennial basis.

On March 21, 2018, in furtherance of the aforementioned review process, the Commission issued an Order in Cause No. 45064, scheduling a prehearing conference and defining a preliminary, but non-exhaustive issues list to be addressed in the context of the 2018 Triennial Review.

Q.   WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A.   The purpose of my testimony is to respond to the questions posed in the Commission's order dated March 21, 2018.

Q.   COULD YOU PLEASE PROVIDE A BRIEF OVERVIEW OF DEVELOPMENTS IN THE TELECOMMUNICATIONS SECTOR OVER THE PAST QUARTER CENTURY SINCE DIVESTITURE OF AT&T IN 1984?

A.   In order to address the questions posed from the Commission in this proceeding, it is useful to briefly review the recent history of state and federal regulation regarding the obligation to achieve universal telecommunications service and to understand the

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Merchants and Farmers Telephone Company d/b/a TDS Telecom-Hillsboro., S & W Telephone Company, Inc., Tipton Telephone Company Inc., Tri-County Telephone Company Inc., West Point Telephone Company, Incorporated); Washington County Rural Electric Telephone Cooperative Inc. d/b/a Tele-Media Solutions; and Yeoman Telephone Company Inc.

obligations that remain despite dramatic (and some would suggest radical) changes at the Federal level.

The Telecommunications Act of 1996 (TA96)[2] laid the framework for support necessary to assure that all consumers, including "*low-income consumers and those in rural, insular and high cost areas, should have access* to telecommunications and information services, including interexchange services and advanced telecommunications and information services (i.e., broadband), that are *reasonably comparable to those services that are provided in urban areas and that are available at rates that are reasonably comparable to rates charged for similar services in urban areas.*"[3]

In today's contentious political environment, it is important to note that there was not only strong bipartisan support for the legislation, but there was near-unanimous support among all segments of the telecommunications industry and allied sectors, with initiation at the state level being primarily responsible for opening the door to support other communication providers such as cable(notably here in Indiana). An important part of that consensus was a recognition that true universal service required what might almost be dubbed a covenant with the small rural companies and (to a lesser but significant extent) with the larger (price cap) companies which likewise served rural areas.

For rural customers served by small, independent co-ops and investor-owned companies, a construct was devised for the singular purpose of serving customers and prospects, and for the networks that serve those customers, not for the benefit of the companies.
"Industry experts point to a distinction related to the *concept of support rather than subsidies*. 'Subsidies' are, in the strictest sense, assistance to a troubled business or to an economic sector to help the producer. [Universal Service Fund (IUSF)] is not fundamentally an 'assistance' to help a struggling carrier or sector. In fact, wireline carriers can often have successful businesses if they are able to concentrate their

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[2] Pub. LA. No. 104-104, 110 Stat. 56 (1996).
[3] 47 U.S.C. § 254(b)(3) (emphasis added).

operations on profitable services and customer clusters. However, state and federal governments have chosen to 'purchase' another 'product set' in high cost regions, which is customer service that otherwise would not be provided in those regions."[4]

In order to meet the need for support to maintain and sustain service to the high cost, truly rural, and uneconomic areas served by the rural local exchange carriers (RLECs), policy makers devised a revenue system with three components, much like a three-legged stool. The first source was earned revenue from customers for services provided. The second source was USF funding, generated from a levy on long distance revenues. And the third source was intercarrier compensation (ICC), payments made by the originating carriers for long distance calls placed to customers of the rural local exchange carriers (RLECs) and others, for delivering those calls to their customers.

While this construct was not perfect (for example, competition and other factors led to long distance, originally viewed as a cash cow, increasingly becoming a commodity characterized by decreasing margins), and while it became increasingly urgent to address its problems, the challenge to reformers was to find a solution which generated relatively stable funding to cover the total operation of those who served customers that were uneconomic to serve, and to do so year in and year out.

The order of magnitude related to customers that are uneconomic to serve, which can be seen clearly by the fact that while "...*small rural carriers account for about 5% of the U.S. telephone access lines but serve more than 40% of the land mass.*"[5] Even at the most intuitive level, there is a glaring need to cover costs of service, given the decades-long commitment to universal service.

[4] Balhoff & Williams, LLC, *White Paper: State USF New Rural Investment Challenges*, 7 (June 2013), https://c.ymcdn.com/sites/www.wyotelassn.org/resource/resmgr/imported/State%20USF%20White%20Paper%20June%202013.pdf (emphasis added).
[5] *Id*.

The same economic considerations which have discouraged Indiana's RLECs from building out broadband to the "truly rural" areas have provided a hefty disincentive to competitive local exchange carriers (CLECs) from overbuilding in those areas, also dissuading cable and wireless providers from building out on their own. Dispersion of population (i.e., low population density), frequently combined with challenging terrain, are equal opportunity disincentives to buildout and to competitive entry. It is not the responsibility of any carrier or provider to deliberately undertake buildout for the sake of universal service when there is a high likelihood of incurring serial losses, starting with the cost of buildout and continuing with the annual cost of operation.

TA96 provided the first explicit legislation of a national universal service policy, with significant reforms of universal service and intercarrier compensation following in 2000 and 2001.[6]

Recalling the significance of the three legs of the stool to the business model of the RLECs, the "reforms" initiated by the FCC in October, 2011, as established in its *Connect America Fund, A National Broadband Plan for Our Future,*[7] dramatically changed and some would argue, eviscerated the existing model.[8]

Buried in the *2011 USF/ICC Transformation Order* establishing the Connect America Fund (CAF) in the short term is a retreat from a core principle that all consumers, including low-income consumers and those in rural, insular and high cost areas, should have access to telecommunications and information services, including advanced telecommunications and information services (i.e., broadband), that are reasonably comparable to those services that are provided in urban areas and that are available at rates that are reasonably comparable to rates charged for similar services in urban areas. The FCC's restatement of this basic principle without referencing a commitment to

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[6] *See id.* at 10-16.
[7] *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 (2011) (*2011 USF/ICC Transformation Order and/or FNPRM*), *aff'd sub nom*, *In re: FCC 11-161*, 753 F.3d 1015 (10th Cir. 2014).
[8] *See id*. at 12-16.

reasonably comparable rates indicates a repudiation of one of the two basic principles underlying universal service.

Still less obvious but no less serious is the dramatic step back from "reasonably comparable services." In the *2011 USF/ICC Transformation Order*, the FCC defines broadband as 4/1 (that is 4 megabits "down," or to the user, and 1 megabits "up"),[9] only to subsequently redefine broadband as 25 megabits down and 3 megabits up at the national level, an action which resulted in much of the early broadband buildout being defined out of existence.[10] Moreover, what constituted "broadband" was sector-dependent; given relative capabilities at the time, differing speeds were required of differing technologies.

Q. SHOULD THE COMMISSION CONFORM TO THE FCC'S CURRENT DEFINITION OF SUPPORTED SERVICES, AS THE COMMISSION'S MARCH 21, 2018 ORDER SUGGESTS?

A. To do so would be premature, and quite possibly mean the abandonment of universal service, and ultimately to cutoff of service to the truly rural. It is worth stating:

> "State legislators and commissioners should assess the costs, benefits, risks and alternative mechanisms of providing universal telecommunications service in their states. Notably, *where broadband does not exist at present and will not be supported sufficiently, all terrestrial universal service funding – for voice and broadband – will cease.*"[11]

Moreover, because the ultimate goal of the *2011 USF/ICC Transformation Order* is to move to a single, seamless IP network, any customers who cannot be migrated to an IP

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[9] *2011 USF/ICC Transformation Order* at 94.
[10] Federal Communications Commission, Archive of Released Broadband Progress Notices of Inquiry, available at https://www.fcc.gov/general/ archive-released-broadband-progress-notices-inquiry.
[11] *Id.*

platform may well be denied all services, including voice, services to the disabled, 911 service, other numbering services…even basic dial tone.

"USF/ICC support benefitting rural customers served by larger price-cap carriers under the Transformation Order could be reduced by an estimated 85-90% during the period 2012-2020, and by approximately 35% on average for those served by the RLECs."[12]

In effect, the FCC has taken a Federal-state partnership in support of the urban-rural covenant and converted it into yet another unfunded liability thrust upon the states, leaving the states with a Hobson's Choice of increasing support (and therefore appropriations) for rural customers, or forcing the companies which have served them for decades to cut off the truly rural among us.

Moreover, the FCC's "solution" to broadband buildout has proven to be ill-conceived and ill-informed. Scale and scope contribute to efficiency in major markets, which is why the light regulatory touch worked well in urban areas. Such is not the case in "truly rural" Indiana or America. This, coupled with a deeply flawed pricing strategy, is why nearly two-thirds of the CAF one-time broadband buildout funding (with accompanying further requirements) released by the FCC in 2012 was rejected by the carriers,[13]

Q. **YOU MAINTAIN THAT THE FCC HAS ADOPTED POLICIES WHICH HAVE CRIPPLED RURAL BUILDOUT OF BROADBAND THROUGH UNIVERSAL SERVICE. ARE THERE OTHER EXAMPLES WHICH WOULD SUGGEST THE FCC HAS CRIPPLED BROADBAND PROPAGATION SINCE ADOPTION OF THE *2011 USF/ICC TRANSFORMATION ORDER*?**

A. Fundamentally, given alternative investment options, a rational investor will choose to invest first in those options which best meet the investment objectives of the investor and

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[12] *Id*. at 1.
[13] *Id*. at 3.

conventionally, in those options which produce the highest return consistent with the risk of the investment.

Translated into network investments, the RLECs (and for that matter, all broadband providers) will build out first in those areas which are easiest to serve and which will produce the highest return. They will reserve for later those areas which are more costly to build out.

In the wake of the issuance of the Transformation Order, AT&T Chairman Randall Stephenson announced that going forward, his company – the largest wireline carrier in the US – can no longer justify investing in 25% of its landline network because of high costs, presumably without USF support.

Mr. Stephenson's announcement is a mixed bag. It suggests a retreat from the goal of universal service, with the 25% of AT&T's customers' needs being met with lesser service, a step back from delivering comparable services at comparable prices, but note that it does indicate that in an IP world at least some form of service will be continued. Apart from corporate assurances such as those of AT&T, the Transformation Order provides no such assurance. The reality is that Mr. Stephenson's action is a rational response to the deeply flawed Transformation Order.

Verizon, on the other hand, has dramatically stepped back from service to rural, insular and high cost areas, through several sales of its land lines, each involving one or more states, for the most part outside Verizon's RBOC territory. With the sole exception of the package sale of several states to Frontier, primarily consisting of former GTE territory, every other acquiring company either wound up in bankruptcy reorganization or being acquired, at least in part due to issues of deferred maintenance and investment. While one can take umbrage at this behavior and whether the necessary investment needs were fully disclosed, Verizon's action can be defended as an earlier recognition of the burden of

maintaining and enhancing service to the "truly rural," and to the diminished likelihood of continued funding under the legacy USF and intercarrier compensation structure.

Q. FROM 1996 THROUGH 2010, WE SAW EXTENSIVE INVESTMENTS IN THE BUILDOUT OF BROADBAND UNDER THE "LIGHT REGULATORY TOUCH" THEN IN PLACE, WHICH RECEIVED STRONG BIPARTISAN SUPPORT. THIS OCCURRED THROUGHOUT THE STATE IN ALL BUT THE MOST RURAL, MOST DIFFICULT TO REACH AREAS. WHAT IS THE OUTLOOK FOR COMPLETING THE PROCESS?

A. Candidly, the outlook is not good. The recent policies of the FCC have hurt rather than facilitated broadband buildout. In 2010, then-FCC Chair Julius Genachowski proposed a dramatic reformulation of "net neutrality," including a retrograde reclassification of broadband under Title II (of TA96) common carrier telecommunications service. That policy was ultimately implemented as the FCC's 2015 Open Internet Order[14] under subsequent FCC Chair Tom Wheeler, thereby abrogating a 20-year bipartisan regulatory framework known as "light touch." This action set off a firestorm of debate over, among other things, whether the result would be to stifle capital expenditures on broadband. Several studies purported to examine whether such expenditures had risen or fallen. Only two studies, both by the same author,[15] address the *"...relevant question...<u>not</u>* [emphasis in original] *whether capital expenditures rise or fall, but rather whether such expenditures are below the level [where] they would have been "<u>but for</u>"* [emphasis in original] *the regulatory intervention.*"

"...[R]esults indicate that *investment in total fixed assets would have been about $30 billion more annually "but for" reclassification. Investment in equipment and property*

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[14] Federal Communications Commission, FCC-15-24, In re Protecting And Promoting the Open Internet (Mar. 12, 2015) (*2015 Open Internet Order*).

[15] George S Ford Ph.D., Chief Economist of the Phoenix Center for Advanced Legal and Economic Public Policy Studies, *Net Neutrality, Reclassification and Investment: A Counterfactual Analysis*, Phoenix Center Policy Perspective No. 17-02 (April 2017) and *A Further Analysis*, Phoenix Center Policy Perspective No.17-03 (May 2017) *available at* http://phoenix-center.org/perspectives.

would have been $20 billion more "but for" reclassification. Over the five-years since 2010 [for which data is available] total investment is down $150 billion and investment in equipment and property, which excludes intellectual property, is down $100 million."[16]

Q. SHOULD WE USE IUSF FUNDING TO UNDERWRITE BROADBAND BUILDOUT?

A. As has already been indicated, the cost of operation in the service areas of the RLECs is a multiple of the cost of delivering service in urban, suburban and even exurban areas. Within the total service area, in the cities and towns served by the RLECs costs are significantly less than in the truly rural areas. But offsetting that advantage of lower costs in the cities and towns is the fact that the RLECs generally have at least one competitor (cable) in those "less rural" areas. As has been the case in larger markets, margins have been competed away, to the benefit of ratepayers. But for the rurals, that means that earned income is declining as customers are lost to competition in their core markets and revenues per customer decline due to competitively-driven lower prices.

The revenue provided by USF, IUSF and intercarrier compensation is necessary if the rural providers are to remain solvent, let alone profitable. Funding to build out in those truly rural areas is meaningless if it is essentially a matter of taking money out of one pocket and putting it into the other...it does no good to build out those last miles if the company is slipping into bankruptcy because the FCC is starving it of the funds established to sustain the network that is the backbone of the urban/rural covenant. And in some of the very rural areas, there are no other viable options for broadband.

Most of INECA's members are currently operating at significantly below their nominally authorized rate of return; some are currently losing money, as demonstrated in Attachment 4.

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[16] *Id.* at 4.

Because of this (1) it cannot be expected that the FCC re-evaluate its broadband policies, and (2) the State of Indiana needs to find an alternate mechanism other than IUSF to fund the capital expenditures to complete broadband buildout.

Q.   SHOULD THE METHOD OF DIRECTING SUPPORT BE MODIFIED, SO THAT "HIGH COST AREAS" ARE DEFINED AT THE CENSUS BLOCK LEVEL RATHER THAN ON THE BASIS OF THE INCUMBENT LOCAL EXCHANGE CARRIER'S (ILEC'S) SERVICE TERRITORY?

A.   It is possible that IUSF could be distributed on a more granular basis than the total service territory, but that should be done based on network logic rather than arbitrary political designations (census tracts). Keep in mind that high-cost support was specifically designed to support a universally-available network. Any unserved areas are going to be built out, regardless of the technology employed, with the existing network in mind, so that connections are as efficient as possible.

Since the FCC has abandoned its commitment to support of efficient networks in favor of piecemeal support, and it falls to the State of Indiana to take up the unfunded liability pushed on the states by the FCC, it makes sense to allocate our resources based on the architecture of efficient networks built over several decades.

Q.   SHOULD THE IUSF EMULATE THE FCC IN DISBURSEMENT OF FUNDS TO SUPPORT BUILDOUT BY WILLING PROVIDERS – I.E., RURAL ELECTRIC COOPERATIVES, CABLE COMPANIES, CLECS?

A.   In a word, no. Over the last several years, the FCC has repeatedly demonstrated its ineptitude at estimating the cost of buildout to unserved areas. The census tract is not a particularly useful geographic variable.

Given the collective expertise of the parties to this Cause, the Commission could create a subdocket or a separate docket to design a simpler and less costly approach for selecting participants, in the event the Commission chooses to emulate the FCC's practice. Given

the FCC's challenges in the CAF-1 proceeding, the track record is not encouraging. IUSF should focus on assuring a reasonable return to RLECs that meet qualifying test requirements.

Q. **SHOULD THE IURC ADOPT THE RATEMAKING PROCESS OUTLINED IN THE FCC'S RATE OF RETURN ORDER (FCC 16-37 RELEASED MARCH 30, 2016) TRANSITIONING THE RATE OF RETURN TO 9.75%?**

A. No. The action of the FCC, measured against virtually universal procedures for establishing a rate of return, is suspect. The roots of the Rate-of-Return Reform Order are to be found in the FCC's action capping funds available for the high cost fund shortly prior to the issuance of the Transformation Order. This action was taken without effort to determine whether the capped amount was "…sufficient to support networks and services in rural regions."[17]

The Rate of Return Reform Order was actually driven by the cap on funding. Since there were not sufficient funds available to meet the demonstrable needs, the FCC acted to cut the rate of return.

The FCC's contention that the cost of capital has fallen is not even remotely defensible. Assuming, arguendo, that 11.25% (the prevailing Federal rate) was correct when the ILECs' costs were spread over the entirety of communications users (as with water, natural gas and electric utilities), enjoyed monopoly status with no competitive risk or exposure to revenue being competed away, when volatility was markedly lower, the regulatory environment was stable-to-evolutionary and predictable… to suggest that today's environment warrants a lower rate of return is quite simply disingenuous.

Should the IURC adopt the FCC's approach and rate of return? At a minimum, the current 11.5% rate should stand.

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[17] Michael J Balhoff, CFA, *Testimony Before the Senate Committee on Commerce, Science and Transportation, Subvommittee on Communications, Technology, Innovation and the Internet, 2* (June 20, 2017).

It would be difficult to overstate the importance of this issue. For this reason, with his permission, I have appended Attachment 2, inclusive of the Balhoff's education and business background, prefiled opening testimony, and rebuttal testimony, representing testimony before the Senate and in a similar California proceeding, prepared by Michael Balhoff, CFA. Mr. Balhoff is perhaps the pre-eminent analyst and student of rural finance. Mr. Balhoff is associated with two entities, Balhoff & Williams, a consultancy; and Charlesmead Advisors, LLC, an investment banking firm.

In addition to examining the rate of return issue through rate-setting models, Mr. Balhoff brings a confirming perspective as an investment banker intimately involved with M&A in the communications sector. In his Senate testimony, he notes that "…valuations of rural telephone companies have demonstrably collapsed from ten years ago when rural-carrier sales were valued at approximately eight times each dollar of operating cash flow [EBITDA]. Since then, the valuations have settled generally between 4.5 and 5.5 times operating cash flow….investors perceive new risks that have caused a startling contraction of 30%-40% in value."[18] As Mr. Balhoff persuasively argues, the best indicator of value is the price agreed to by a willing buyer and willing seller.

But it gets worse. Many, probably most, RLECs are earning significantly below the authorized rate of return…not, as is often the case with other utility sectors, by 50 to 150 basis points, but by half or more of their FCC-set rate of return.

At a time when the remaining unserved areas will be the most difficult and costly to build out, and when actions of the FCC in the last 5 years have created a climate of greater instability and uncertainty than at any time in a generation, it makes little sense to reduce the proposed rate of return solely based on the FCC's actions. Reducing the rate-of-return would compound the damage done by the FCC. The rate-of-return should not be adjusted below the authorized rate of return set in simpler, more stable and more predictable times.

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[18] *Id.* at 5.
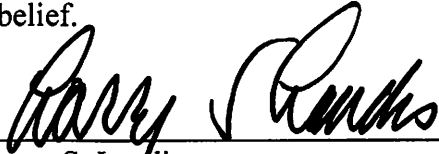
In conclusion, in addition to his Senate testimony (Attachment 2), I would direct your attention to Mr. Balhoff's prefiled testimony dated September 1, 2015, at pages 49-71, for those interested in a detailed dissection of the FCC order, attached hereto as Attachment 3.

Q.   DOES THIS CONCLUDE YOUR TESTIMONY?

A.   Yes

VERIFICATION

The undersigned affirms under the penalties of perjury that the facts stated in the foregoing testimony are true to his best information and belief.

_____
Larry S. Landis

Larry S. Landis, Commissioner Emeritus
Indiana Utility Regulatory Commission

Narrative Biography

Larry S. Landis was founder and President of Marketrends, Inc., a marketing/communications company in Indianapolis; and co-founder of American Grassroots, LLC, prior to being appointed to the Indiana Utility Regulatory Commission in January 2003 by Indiana's late Governor Frank O'Bannon (D-IN), and reappointed to a full term by former Governor Joe Kernan (D-IN) in July of 2004. In December of 2007 and 2011, he was appointed to consecutive full terms by former Governor Mitch Daniels (R-IN). He retired from the Commission in 2014.

In August, 2003, he was named to the National Association of Regulatory Utility Commissioners' (NARUC) Telecommunications Committee, and was active in a number of roles on that Committee. Landis served on NARUC's Legislative Task Force, charged with developing recommendations for a rewrite of the nation's telecommunications laws; he was Vice Chair of NARUC's Intercarrier Compensation Task Force.

In January of 2005, Landis was named to the Federal-State Joint Conference on Advanced Telecommunications Services. In November of 2005 he was also appointed to the Federal-State Joint Board on Universal Service, serving two terms (2005-2011). In 2012, he was appointed to the Federal-State Joint Board on Jurisdictional Separations. In May of 2008, Commissioner Landis was appointed to the NARUC Board of Directors, and to a second term in 2010. In 2013, he was appointed Co-Chair of NARUC's Washington Action Committee (WAC).

Landis was also a member of the Advisory Board of the Financial Research Institute at the Trulaske College of Business, University of Missouri/Columbia of which he was Vice Chair in 2009-2010 and Chair in 2010-11; and is a member of the Society of Utility and Regulatory Financial Analysts (SURFA).

He worked on the campaigns of former Indianapolis Mayor and Indiana's longest serving Senator, Richard G. Lugar (1967); former Senate candidate from Indiana and first Administrator of the U.S. Environmental Protection Agency William D. Ruckelshaus (1968); the late former Indiana Governor and former U.S. Health and Human Services Department Secretary Dr. Otis R. Bowen; and former Indiana Secretary of State and Congressional candidate William N. Salin (both in 1972). He also served as Assistant to the Mayor in the Lugar administration from 1969-71.

Other career highlights include 15 years of service with three separate Indianapolis advertising agencies. Landis also served four years as Vice President of Corporate Advertising for American Fletcher National Bank, now part of JP Morgan Chase. In 1999 he co-founded American Grassroots LLC, established to introduce new "grassroots" communications technologies to member organizations (such as trade associations), public policy organizations, political campaigns and utilities. These solutions empowered users to engage, notify, mobilize, and activate members and/or customers through more cost-effective, more efficient grassroots telecommunications tools. In all, he spent 30 years in the private sector prior to being named to the IURC.

A *cum laude* graduate of Wabash College (1967) with a double major in political science and economics, Landis also pursued graduate work in organizational theory and political behavior at the University of North Carolina/Chapel Hill and at Indiana University. Born in Princeton, NJ, Landis grew up in Goshen, Indiana. He and his wife Carol L. (Butz) Landis are the parents of an adult son, Christopher, who resides with his wife Heather and their daughters Lauren, Anna and Emily in nearby Carmel.

STATEMENT OF MICHAEL J. BALHOFF, CFA

CHARLESMEAD ADVISORS, LLC

SENIOR PARTNER AND COFOUNDER

BEFORE THE

SENATE COMMITTEE ON COMMERCE, SCIENCE AND
TRANSPORTATION

SUBCOMMITTEE ON COMMUNICATIONS, TECHNOLOGY,
INNOVATION, AND THE INTERNET

JUNE 20, 2017

Charlesmead

HEARING

UNIVERSAL SERVICE FUND AND RURAL BROADBAND INVESTMENT

Chairman Wicker, Ranking Member Schatz, and distinguished Members of the Commerce Committee. Thank you for inviting me to testify today regarding the "Universal Service Fund and Rural Broadband Investment."

My name is Michael J. Balhoff. I am a senior partner at Charlesmead Advisors, LLC, which is a Baltimore-based investment banking firm that I co-founded with two partners in June 2011. We provide merger-and-acquisition as well as valuation-related services to companies in the telecommunications industry, notably the rural telecommunications industry.   I have provided independent financial analysis and advice in the telecommunications industry for nearly 30 years. My education and business background are found in Appendix 1, attached to this testimony.

I would like to address two questions in this hearing.

- The first concerns whether the universal service fund (USF)—more recently known as the "Connect America Fund" (CAF)—is sufficient to support networks and services required in rural regions.

- The second question concerns how to improve the targeting of USF/CAF monies to better achieve the policy goals associated with those programs.

I.   **IS USF/CAF SUFFICIENT TO SUPPORT NETWORKS AND SERVICES IN RURAL REGIONS?**

The simple answer is "no." Setting aside the shortfall for larger price-cap carriers for the moment, I believe that small rate-of-return (RoR) carriers are insufficiently funded, possibly by $260 million annually. I have two comments in support of my response.

A. *THE FCC ITSELF ACKNOWLEDGES THAT THE FUND, AS CURRENTLY CONSTITUTED TO SUPPORT SMALLER CARRIERS, DOES NOT HAVE SUFFICIENT FUNDING.*

The FCC authorizes the actual payments of universal service funding through the Universal Service Administrative Company (USAC). Pursuant to the FCC's March 2016 Rate of Return Reform Order, USAC recently released its calculation of a budget-driven reduction in payments to small RoR carriers for fiscal year mid-2017 to mid-

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2018. I summarize the calculation in a table below. The calculation preserves payments to Alaska carriers, to carriers that have chosen to receive Alternative Connect America Cost Model (ACAM) funding (albeit at levels lower than the original offer as I will explain below), and to carriers that are eligible for certain intercarrier support.

Because of a cap of $2 billion on annual support for small RoR carriers—a cap set in the 2011 Transformation Order—funding for RoR carriers that continue to receive support through rate-of-return mechanisms will be adjusted lower by the full amount of the shortfall.

The $2 billion cap was determined based on 2011 levels of support approved for RoR carriers. To the best of my knowledge, no analysis was performed to determine that $2 billion was sufficient in 2011 or that the funding would be sufficient in future years.   I emphasize this important point because the Telecommunications Act of 1996 presents several fundamental principles for the Act, including at Section 254(b)(5) where the law stated that "[t]here should be specific, predictable and **sufficient** Federal and State mechanisms to preserve and advance universal service." (Emphasis added.)

Because the statute mandates that USF should be sufficient, a question has been posed about whether there is a fundamental inconsistency if "sufficiency" was not, and is not, assessed?

As noted above, the shortfall in payments is borne, in this calculation, by the small RoR carriers (those that did not elect the ACAM).   Parenthetically, I note that small carriers with specified broadband buildouts to at least 90% of their service region *could not* accept the ACAM model and were compelled—due to their successful deployments—to remain under the rate-of-return regime.

The calculated shortfall in available funding for mid-year 2017 to mid-year 2018 results in a $173 million, or a 12.4%, RoR reduction in "allowed support" in the upcoming fiscal year—2017 to 2018. The shortfall appears to be *prima facie* evidence that the funding level—once assumed appropriate for 2011—is now insufficient for the smaller carriers. This upcoming adjustment follows on the reduction for smaller carriers in the first half of calendar year 2017 when the FCC cut CAF Broadband Loop Support (BLS) by $80 million, again to remain within the 2011-based budget.

The FCC is not simply reducing funding for carriers that remain under rate of return. The FCC-determined "budget" is also affecting ACAM carriers.   Even the carriers that accepted the ACAM are not receiving the support offered in the initial proposal last year.   The reason is that the ACAM was oversubscribed.[1]   As a result, in December

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[1] The FCC reported on December 16, 2016 that 216 rate-of-return carriers submitted letters electing 274 separate offers of ACAM support in 43 states.

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2016, the FCC chose to address the oversubscription by reducing the per-line offer of support by 27%, from the $200 per line to $146.10.

I suggest that the FCC itself is effectively stipulating that the 2011-based budget is insufficient and the Transformation Order has prompted the Commission to override the Telecom Act's legislative principle regarding the "sufficiency" of funding.

The rural trade organizations have been advocating what appears to be a reasonable solution, which is that the FCC should fully-fund rate-of-return service territories, both ACAM and CAF BLS. Their estimate is that fully funding ACAM and RoR carriers would require an annual increase of approximately $200-$260 million, which is not a dramatic increase, in my opinion, in light of growing broadband responsibilities.

Calculate Total Demand 2017-2018		
High Cost Loop Support (+ Safety Net and Safety Valve)	$	573,435,648
Connect America Fund (CAF) Broadband Loop Support + True Up	$	830,789,347
CAF Intercarrier Compensation (CAF-ICC)	$	395,952,660
Alternative Connect America Cost Model (ACAM)	$	328,837,694
Alaska Plan	$	44,413,233
Total Demand	$	2,173,428,582
Except Total Demand cannot exceed $2.0 billion	**$**	**2,000,000,000**
Reconcile by first subtracting CAF-ICC, ACAM, and AK Plan		
CAF-ICC	$	395,952,660
ACAM	$	328,837,694
AK Plan	$	44,413,233
Subtotal	$	1,230,796,413
Budget for HCLS and CAF BLS RoR Support Mechanisms	$	1,230,796,413
Forecasted HCLS and CAF BLS Amount	$	1,404,224,995
Budget Adjustment Factor		0.876495

Summary of Funding				
Mechanism		Forecasted		Adjusted to budget
High Cost Loop Support (incliuding Safety Net and Safety Valve)	$	573,435,648	$	502,613,571
CAF Broadband Loop Support (including True Up)	$	830,789,347	$	728,182,842
Sum	$	1,404,224,995	$	1,230,796,413
Reduction in RoR HCLS and CAF BLS Support				12.4%

B. *MY PROFESSIONAL OPINION IS THAT THE FCC WAS MISTAKEN IN REDUCING THE ALLOWED RATE OF RETURN.*

I will be brief in my second point, in part because I suspect that Congress wants to defer to the FCC in determining the allowed rate of return.

I believe that the FCC was mistaken when it ordered a reduction in the allowed rate of return in March 2016, in great part relying on a report generated by the FCC Staff in May 2013. The allowed rate of return was reduced from 11.25% in a transition that is

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gradually implemented annually through a 25-basis point reduction until the rate settles at 9.75% on July 1, 2021. The effect, obviously, is to reduce the potential funding available to small carriers.

I provided a long and carefully-sourced analysis of the Commission Staff's report on which the FCC based its decision.[2] That analysis was filed before the California Public Utilities Commission, in a proceeding in which I represented ten small California carriers. I have attached that long testimony as Appendices 2 (September 2015 prefiled direct testimony) and 3 (March 2016 rebuttal testimony), in the event the Subcommittee wishes to review the issue.

Because I assume the Subcommittee is not interested in technical cost-of-capital theory or capital asset pricing models, I will make a simpler comment about the trends in rural costs of capital, based on my real-world investment banking experience.

Valuations of rural telephone companies have demonstrably collapsed from ten years ago when rural-carrier sales were valued at approximately eight times each dollar of operating cash flow. Since then, the valuations have settled generally between 4.5 and 5.5 times operating cash flow, which means that investors perceive new risks that have caused a startling contraction of 30%-40% in value. Certain fundamentals of the rural business have not changed significantly in that period as voice lines continue to contract and broadband continues to expand, but other risks have increased including competitive and regulatory developments. The effect is a valuation contraction that is unlikely to reverse in the foreseeable future.

The financial principle is straightforward. When values contract and expected future cash flows are not appreciably changed, the explanation is that the cost of capital—the discount rate applied to those cash flows—is rising.

I note that this analysis is similar to valuing a home in an area where there are demographic changes. You may believe your house should attract a higher value because you are aware of historical values and you can tabulate your actual investment; but, if the neighborhood has changed and other economic factors have created negative pressures, the best indicator of value is the price agreed to by a willing buyer and willing seller. Whatever the FCC may argue from a theoretical point of view—and I disagree with specific elements of those arguments as spelled out in the Appendices— the willing buyers and willing sellers are telling you that the cost of capital for rural carriers is up sharply as reflected in the deeply depressed prices. Respectfully, I represent that the FCC is not correct and is therefore assigning returns on capital that are well below those indicated by the capital markets.

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[2] See Appendix 3, which includes the Balhoff Rebuttal Testimony, California Public Utilities Commission, A. 15-09-005, filed March 11, 2016, notably at pages 63-80.

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Quite simply, rural carriers are no longer protected, monopoly utilities with governmental oversight and ready access to capital. It is nonsense to suggest that a rural carrier's cost of capital which was 11.25% in 1990 (the last time the rate was adjusted before 2011) or in 2001 when the 11.25% was reaffirmed, should now be lower when competition, technology and regulatory risks have dramatically increased.

If I am correct, then the shortfall outlined by USAC is not 12.4%, but well higher, as is supported in my California testimony.[3]   For further perspective, if the FCC had maintained an allowed rate of return at 11.25%—and again I believe it has gone higher still—the shortfall for the RoR carriers in the upcoming year would be approximately 16.2%, by my calculation.   If the rate should be 12.00%, then this coming year's shortfall is 21.5%.

I state again that I believe that RoR carriers are insufficiently funded.

II.   **MIGHT THERE BE IMPROVED TARGETING OF THE USF/CAF MONIES TO BETTER ACHIEVE THE POLICY GOALS ASSOCIATED WITH THOSE PROGRAMS?**

Yes.   I respond again in two parts, one regarding small carriers and the second regarding larger, price-cap carriers.

A. *ROR CARRIERS ARE INSUFFICIENTLY FUNDED BUT THE TARGETING APPEARS GENERALLY REASONABLE.*

The FCC and USAC have generally done a good job in determining *how* the funding is allocated for small RoR carriers—based on investment and operating costs that are carefully tracked. And the FCC models indicate, with some degree of accuracy, that funding levels are too low.   I believe that the reason for the shortfall, in part, is the accelerating pace of required upgrades to meet customer needs in a rapidly evolving broadband world, but the systems appear to me at this time to be generally reasonable.

B. *MOST RURAL AREAS OF LARGE CARRIERS, PRICE-CAP CARRIERS ARE OFTEN WHERE THE PROBLEMS EXIST.*

In the 2011 Transformation Order, the FCC stated at paragraph 21 that "[m]ore than 83 percent of the approximately 18 million Americans that lack access to residential fixed broadband at or above the Commission's broadband speed benchmark live in areas served by price cap carriers—Bell Operating Companies and other large and mid-sized carriers."

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[3] See Appendix 2, which is the prefiled testimony, September 1, 2015, notably at pages 49-71.   An analysis of the implied cost of equity arising from transactional data is included from pages 62 to 71.

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This paragraph is stunning in making two important points. First, the FCC is stating that 15 million Americans lack residential broadband access *in larger-carrier regions*. For perspective, the large price-cap carriers served a total of approximately 60 million lines at that time; it can be inferred that the vast majority of large-carrier rural lines are underinvested, assuming that the large-carrier broadband-capable lines are concentrated in non-rural regions. Second, at most, 17% of the underinvested lines are in regions served by smaller carriers, which suggests that the former USF system was working with laudable effectiveness. This second insight of course raises the question about why the new system should further limit support to companies that have been investing successfully to achieve policy goals.

Since the time of the Transformation Order, the FCC has attempted to address this underinvestment problem, notably in large-carrier, price-cap regions. The Commission authorized initiatives such as the Connect America Fund II to offer incremental funding to build out to specified high-cost service locations.

Still, my experience is that very little widespread investment is occurring in rural regions of the large carriers. And the reason, in my opinion, is that many of those carriers are focused on more urban, more wireless, more enterprise, and more international opportunities that provide superior opportunity for growth. The failure to invest in rural areas, therefore, may not explained by insufficient capital or insufficient universal service funding in most cases, but by the strategic focus of those larger carriers which is dedicated to other "more productive" businesses.

This is the major "targeting" problem, in my opinion. Large carriers own substantial swaths of rural America, but are not likely to make significant financial commitments in those areas. The largest carriers have major other responsibilities, which are not in rural regions in any state. To illustrate, the table nearby indicates that the large carriers in Mississippi have the greatest number of high-cost rural properties—150,000 in the state—compared with small carriers that serve a total of 67,000 lines in the state.[4] The table summarizes state-by-state how that illustration is the rule rather than the exception as the high-cost locations and extremely high-cost locations where large, price-cap carriers are the providers of service are generally larger than the number of lines served by small carriers (rural local exchange carriers). Again, I contend those smaller carriers are investing in rural America at approximately appropriate levels. If the FCC is right that large carriers are underinvesting—and I think it is correct—then the problem of targeting is not a capital-allocation issue. It is a problem that is explained by the fact that the wrong carriers own those properties.

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[4] USAC at https://usac.org/hc/rules-and-orders/rate-of-return-reform-order.aspx. See, also, https://apps.fcc.gov/edocs_public/attachmatch/DA-15-509A1_Rcd.pdf and https://apps.fcc.gov/edocs_public/attachmatch/DA-16-929A1_Rcd.pdf. Note that the column for large, price-cap carriers includes only FCC-designated high-cost or extremely high-cost locations, not the total number of lines served by the large carriers in the states. The rural local exchange carrier (RLEC) column provides the total number of lines served by RLEC, that is, RoR carriers, in the state.

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I believe that there are promising solutions that involve creating appropriate incentives for large carriers to divest underinvested and non-strategic properties to smaller carriers in the state or in nearby states. Further, I believe it is possible to craft solutions that require buyers to invest

State	Rural locations		Number of carriers		State	Rural locations		Number of carriers	
	Large carrier HC locations	RoR total lines	Large carrier	RLEC		Large carrier HC locations	RoR total lines	Large carrier	RLEC
AK	35,364	116,991	1	15	MT	46,355	121,730	2	12
AL	135,139	147,915	5	14	NC	71,764	377,598	5	12
AR	144,651	106,737	3	16	ND	12,108	186,937	1	17
AZ	65,065	58,026	2	11	NE	56,238	122,870	3	25
CA	290,948	76,447	5	10	NH	14,305	54,273	1	5
CO	77,102	43,306	2	19	NJ	6,865	9,467	2	1
CT	2,076	-	2	-	NM	54,229	59,925	3	12
DE	3,422	-	1	-	NV	20,648	35,925	3	8
FL	91,785	36,525	6	4	NY	145,205	136,642	4	21
GA	144,455	273,892	4	22	OH	174,840	103,924	6	26
HI	13,202	8,090	1	1	OK	92,737	237,036	4	31
IA	111,196	244,661	4	125	OR	69,371	86,322	2	20
ID	34,842	54,714	2	14	PA	152,808	71,898	6	14
IL	135,664	104,601	5	36	RI	864	-	1	-
IN	144,015	170,449	3	24	SC	52,429	555,934	4	12
KS	89,000	140,894	3	32	SD	19,688	164,706	1	20
KY	159,635	200,816	3	12	TN	97,809	404,275	3	13
LA	107,832	101,302	2	8	TX	266,640	289,094	5	41
MA	15,329	4,019	2	2	UT	14,622	98,270	2	9
MD	21,946	7,373	1	1	VA	145,156	114,368	3	11
ME	40,884	96,793	1	6	VT	29,345	60,776	1	6
MI	191,203	126,139	3	22	WA	103,541	53,712	3	13
MN	198,065	341,056	4	41	WI	243,729	353,709	3	36
MO	305,093	130,394	4	27	WV	101,518	19,411	1	5
MS	149,603	67,203	4	9	WY	23,884	48,348	1	6

at levels that assure broadband services at levels that are comparable to those in urban areas.   One solution involves forgiving sale-related taxes imposed on the sellers so that the sale prices can contract to acceptable levels—not to reward the seller, but to assure that the buyer can acquire the properties at deep discounts to current market prices and with sufficient financial headroom for greater subsequent investments.   Those solutions are under discussion at the present.

For the purposes of this hearing, I propose that it is critically important to understand the nature of the problem before taking constructive steps toward broadband solutions. It is my testimony today that the major broadband challenge is centered in regions where the carrier-owner has no strategic intent to improve those regions. The solution, therefore, must involve assessing how to incent sales by underinvesting carriers to dedicated operators that have the obligation to upgrade in those regions.

III.   CONCLUDING REMARKS.

I am happy to discuss the shortfall in funding or the reasons that large carriers are generally ill-suited to provide service in rural regions.

Thank you and I look forward to answering your questions.

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![Charlesmead Advisors LLC logo]

Appendix 1—Bio of Michael J. Balhoff, CFA

Michael Balhoff is a Senior Partner and co-founder of Charlesmead Advisors, LLC, and is Managing Partner at Balhoff & Williams, LLC, a professional services firm that provides financial-regulatory consulting and advisory services to companies, investors and policymakers in the communications and energy industries.

Before founding Charlesmead Advisors and the predecessor firm to Balhoff & Williams, Mike headed the Technology and Telecommunications Equity Research Group at Legg Mason and, in the final seven of his sixteen years as a senior analyst at Legg Mason, he covered equities in the incumbent local exchange carrier industry.

Prior to joining Legg Mason in 1989, Mike taught as a graduate and undergraduate teacher. Mike has a doctorate in Canon Law and four master's degrees, including an MBA-concentration finance-from the University of Maryland. He is a CFA charterholder and is a member of the Baltimore Security Analysts Society. Mike has been named in six annual awards as a Wall Street Journal All-Star Analyst for his recommendations on the Telecommunications industry. His coverage of telecommunications, and especially rural telecommunications, was named by Institutional Investor magazine as the top telecommunications boutique in the country in 2003.

Mike is a Registered Representative of and Securities Products are offered through BA Securities, LLC Member FINRA SIPC.   Any testimonial or endorsement may not be representative of the experience of other customers and is no guarantee of future performance or success.

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Appendix 2—California Prefiled Testimony

of

Michael J. Balhoff, CFA

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BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

Application of	)	
Calaveras Telephone Company (U 1004 C)	)	Application _____
Cal-Ore Telephone Co. (U 1006 C)	)	
Ducor Telephone Company (U 1007 C)	)	(Filed September 1, 2015)
Foresthill Telephone Company (U 1009 C)	)	
Kerman Telephone Co. (U 1012 C)	)	
Pinnacles Telephone Co. (U 1013 C)	)	
The Ponderosa Telephone Co. (U 1014 C)	)	
Sierra Telephone Company, Inc. (U 1016 C)	)	
The Siskiyou Telephone Company (U 1017 C)	)	
Volcano Telephone Company (U 1019 C)	)	
for a Determination of Applicants' Cost of	)	
Capital for Ratemaking Purposes	)	
_____	)	

PREFILED OPENING TESTIMONY

OF MICHAEL J. BALHOFF

ON BEHALF OF THE APPLICANTS

1   **I.**   **Introduction and Purpose**

2   **Q.**   **Please state your name and position for the record.**

3   A.   My name is Michael J. Balhoff. I am Managing Partner of Balhoff & Williams, LLC

4   ("B&W"), and my business address is 5850 Waterloo Road, Suite 140, Columbia,

5   Maryland 21045. I am also Senior Partner of Charlesmead Advisors, LLC

6   ("Charlesmead"), and Charlesmead has the same business address as B&W.

7   **Q.**   **What services do B&W and Charlesmead provide?**

8   A.   B&W provides advisory services, including financial and regulatory consulting. Our

9   clients are various telecommunications, cable television, and energy companies.

10   B&W previously was known as Balhoff & Rowe, LLC, and then Balhoff, Rowe &

11   Williams, LLC. The firm changed its name to reflect the active partners, but the

12   services of the firm have remained consistent since the company was established in

13   2004. With two other partners, I also co-founded Charlesmead in June 2010 to

14   provide investment banking services to telecommunications companies. My services

15   in this proceeding are provided through B&W.

16   **Q.**   **Please describe your relevant educational and professional background.**

17   A.   I have a doctorate and four masters degrees, including an M.B.A., with a concentration

18   in finance, from the University of Maryland. I am a Chartered Financial Analyst and

19   am a member of the Baltimore Security Analysts Society. During a period of 16 years,

20   I was a senior equity analyst and Managing Director with responsibility for leading the

21   telecommunications and technology sell-side equity research group at Legg Mason

22   Wood Walker, Inc., which was the wholly-owned capital markets division of Legg

23   Mason, Inc. ("Legg Mason"), headquartered in Baltimore, Maryland. In that role, I

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1   staffed and supervised a team of sell-side equity analysts providing research coverage

2   of technology and telecommunications companies. With respect to regulated

3   companies, I supervised and provided research coverage of incumbent local exchange

4   carriers ("ILECs"), long-distance providers, and competitive local exchange carriers.

5   Over the last seven years of my time at Legg Mason, I was also the primary analyst

6   providing research coverage of local exchange telephone companies, including the

7   regional Bell operating companies and publicly-traded rural telephone companies. My

8   practice at Legg Mason was recognized notably for detailed coverage of rural

9   telephony and the specific questions that arise related to the financial effects of

10   regulation on equity securities in that sector. My more extensive resume, including

11   publications, presentations, and testimonies, is included as Exhibit MJB - 1.

12   **Q.   On whose behalf are you offering testimony in this proceeding?**

13   A.   I am offering testimony on behalf of ten small, rural California ILECs in this

14   proceeding. The rural ILECs are Calaveras Telephone Company, California-Oregon

15   Telephone Co., Ducor Telephone Company, Foresthill Telephone Co., Kerman

16   Telephone Company, Pinnacles Telephone Co., The Ponderosa Telephone Co., Sierra

17   Telephone Company, Inc., The Siskiyou Telephone Company, and Volcano Telephone

18   Company. I understand that the companies generally refer to themselves as the

19   "Independent Small LECs."

20   **Q.   What is your relationship with the companies?**

21   A.   I have no current relationship with any of these companies except that they have asked

22   me to analyze the appropriate cost of capital for them. Prior to this work, I have not

23   had any relationship with these companies.

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1   **Q.   Have you appeared before the California Public Utilities Commission**

2   **("Commission") in any other proceedings?**

3   A.   No, I have not. However, I have provided regulatory testimony concerning

4   telecommunications matters before the Regulatory Commission of Alaska, the Iowa

5   Utilities Board, the Public Utility Commission of Texas, the Vermont Public Service

6   Board, the New Hampshire Public Utilities Commission, and the Maine Public

7   Utilities Commission.

8   **II.   PURPOSE AND SUMMARY OF TESTIMONY**

9   **Q.   What is the purpose of your testimony in this proceeding?**

10   A.   I have been asked to provide testimony addressing cost of capital related to the

11   Independent Small LECs in connection with an application to be submitted on

12   September 1, 2015 to this Commission. In D.15-06-048, the Commission ordered the

13   Independent Small LECs to initiate a consolidated proceeding where the issue of Cost

14   of Capital ("COC") would be examined for each carrier.[1] I understand that the results

15   of the COC proceeding are to be applied in the next cycle of General Rate Cases

16   ("GRCs") to take place generally from 2015 through 2019. My testimony is focused

17   on estimating an appropriate cost of capital for application in these rate cases. I will

18   provide recommendations regarding an appropriate cost of equity capital and related

19   cost of capital metrics to aid the CPUC in determining an appropriate Weighted Cost

20   of Capital ("WACC") for each of the companies.

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[1] *See* Decision 15-06-048 June 25, 2015 at 20.
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1   **Q.**   **What are your specific qualifications for evaluating cost of capital for rural**

2   **telephone companies?**

3   **A.**   As I explained above, at Legg Mason, I developed a financial specialization in the

4   equities of rural telephone companies in addition to my broader telecommunications

5   coverage. I have given numerous presentations to the National Association of

6   Regulatory Utility Commissioners ("NARUC") and appeared before Congressional

7   and federal agency groups. Most recently, after the Federal Communications

8   Commission's ("FCC") sweeping 2011 reforms of universal service and intercarrier

9   compensation, I was invited to brief the Department of Agriculture's Rural Utilities

10   Service ("RUS"), the White House, the Secretary of Agriculture, and the FCC

11   concerning the financial effects of those policy changes. On the basis of coverage of

12   rural companies, my Legg Mason practice was named by Institutional Investor

13   magazine as the top telecommunications financial analysis boutique in the country in

14   2003. I was also honored to be named as a Wall Street Journal All-Star Analyst in six

15   annual awards for the performance of my equity recommendations.

16   **Q.**   **Please summarize your professional career after leaving Legg Mason.**

17   **A.**   In 2004, I had the opportunity to co-found a company with Robert Rowe, who was

18   chairman of the Montana Public Service Commission as well as former president of

19   NARUC and former chairman of NARUC's telecommunications committee. The

20   professional focus at Balhoff, Rowe & Williams and at Charlesmead has been on rural

21   telecommunications carriers and services. Our primary work today is investment

22   banking-related as we represent buyers and sellers in the ILEC industry, advising in

23   transactions involving the sales or purchases of entire companies, or advising

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1   regarding transactions involving segments of businesses such as wireless assets,

2   towers, fiber transport, cable television operations and data centers. Our services

3   require us to value telecommunications assets and advise managements and boards of

4   directors regarding strategic opportunities.

5   **Q.   What information did you review related to this testimony?**

6   A.   I evaluated, among other sources, the procedural record in Commission Rulemaking

7   11-11-007, prior cases involving cost of capital brought before the Commission,

8   United States Supreme Court decisions related to cost of capital, orders of the FCC

9   concerning rate-of-return matters, cost-of-capital resources related to telephone

10   companies as compiled by Ibbotson/Morningstar[2] and Duff & Phelps,[3] as well as

11   transactional data that we maintain at our firm, Charlesmead Advisors. I have also

12   studied the financial reports of each of the Independent Small LECs, reviewing their

13   capital structure and debt costs, with a focus on the last six years from 2009 through

14   2014.

15

16

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[2] In March 2006, Morningstar, Inc. completed its previously announced acquisition of Ibbotson Associates, a leading provider of asset allocation research and services. Ibbotson Associates was founded by Professor Roger Ibbotson in 1977, and expanded over time to compile and publish annual valuation data widely used by the financial community. As of 2014, Morningstar no longer publishes the Ibbotson valuation materials, which, as of 2015, are included in the Duff & Phelps publications. Ibbotson/Morningstar still publishes its *Classic Yearbook* with important financial information in support of valuation professionals. All the Ibbotson and Duff & Phelps cited pages and tables are included in Exhibit MJB - 2.

[3] Duff & Phelps is a respected global valuation and corporate finance advisor focused on services including complex valuation, dispute consulting, M&A and restructuring. The company publishes annual statistical valuation resources that are widely used by the financial community. All the Ibbotson and Duff & Phelps cited pages and tables are included in Exhibit MJB - 2.

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1 **Q. Please summarize your testimony.**

2 A. I recommend a cost of capital for the Independent Small LECs to be utilized for

3 ratemaking purposes in the rate case cycle to take place from 2015 through 2019. My

4 testimony is generally divided into the following sections:

5 • **Approaches in calculating cost of capital.** The initial section of this

6 testimony outlines the theoretical framework for estimating the cost of capital,

7 detailing the standard approaches for calculating a corporate cost of capital,

8 including capital structure, cost of debt and cost of equity. I explain that the

9 use of several cost-of-capital assessment methods in a proceeding such as this

10 one allows the regulator or analyst to arrive at improved confidence that the

11 conclusions are reasonable. Conclusions based on just one methodology or

12 data source are less reliable. I emphasize that determinations of the cost of

13 capital are not slavish applications of one formula or even several formulae,

14 but are judgments arising from testing multiple inputs and thoughtful

15 considerations of industry data. Accordingly, I begin with traditional valuation

16 approaches, using the Buildup Method, which is a variation of the Capital

17 Asset Pricing Model ("CAPM"), with a modification (using an average 1.06

18 beta based on five ILECs) to make the industry-specific factor better match the

19 Independent Small LECs' industry. I then use several time periods and

20 approaches to assess any variations in the results. Then I test those results

21 based on transactional data to ensure their validity.

22 • **Industry changes that affect the corporate cost of capital for small ILECs.**

23 The second section emphasizes that the Commission should assess industry

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1   forces to understand how those factors affect the companies and the degree to

2   which those forces impose new and greater financial pressures. An analyst

3   uses historical statistics with the assumption that the future may be like the

4   past, but I explain that assumption should be tested because the future may be

5   riskier or safer than the past, depending on the current or reasonably

6   anticipated risk drivers in a given industry. Valuation and determinations of

7   costs of capital always involve judgment. I provide data and arguments in

8   support of the fact that the industry risks are not less—but demonstrably

9   greater—than they were nearly two decades ago when the Commission settled

10   on a presumptive 10% WACC for the ten Independent Small LECs. I also

11   supply data from real-world mergers and acquisitions ("M&A"), which show

12   that valuations have contracted sharply since the early 2000s, notably over the

13   last five or six years, signaling that the rural ILEC cost of equity has been

14   raised to a significant extent, almost certainly because of adverse changes in an

15   industry undergoing a fundamental transformation from monopoly to

16   competition and from a focus on voice telephony to a focus on broadband

17   services. These data provide the rationale and a compelling confirmation of

18   increased costs of equity over recent years. To be clear, while interest costs

19   have declined recently, there is little question in reviewing the data that the net

20   cost of equity has risen steeply in the last decade.

21   • **Calculation of an appropriate range and estimate for equity costs.** To

22   calculate a cost of equity, I begin with the well-tested Buildup Method, which

23   is conceptually the same in implementation as the CAPM, both of which are

1   traditional valuation approaches. Using those methods, and by making

2   appropriate adjustments for equity risk, industry-specific risk, and size risk, I

3   identify an appropriate range for the Independent Small LECs' equity costs.

4   On the basis of the historical data, I estimate that a realistic range for the

5   Independent Small LECs' cost of equity is 17% to 22%, and I recommend

6   18.5%, which I will show to be a conservative calculation. I also testify that an

7   assessment of industry risks provides the Commission with a high degree of

8   confidence that the cost of equity for the Independent Small LECs is

9   substantially higher than it was eighteen years ago when the Commission set

10   the 10% target WACC. Given the relatively low costs of equity that are often

11   applied in public utility sectors, I recognize that some may initially be skeptical

12   about a 18.5% equity cost estimate, but I am confident that it is reasonable for

13   these companies and appropriate for adoption in this proceeding. If anything,

14   the cost of equity I recommend may be lower than will be required to attract

15   capital for investments in rural telecommunications infrastructure. As I explain

16   above, I rely on multiple methodologies to test and re-test my findings, and

17   then I check the results against M&A data in an approach that is rigorous,

18   intellectually honest, and convincing. In this section, I also provide a summary

19   of other premia that I have chosen not to add to my estimate, including premia

20   for liquidity and marketability risks, in spite of the fact that there is significant

21   authority for including those incremental adjustments. The data and the

22   methodologies demonstrate that my proposed cost of equity in this proceeding

23   is both responsible and conservative.

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1   •   **Debt costs.** There is evidence that the Independent Small LECs will have

2   lesser access to debt capital in the future and that debt costs are likely to rise in

3   the future. The average and median costs of debt in 2014 for the seven

4   Independent Small LECs with debt on their balance sheets were 4.5% and

5   4.8%, respectively. If the Commission wishes to use a target cost of debt to

6   calculate a target WACC, I recommend the use of 5.5% as the cost for

7   forward-looking debt. The interest rate is in line with Sierra Telephone's

8   current cost of debt and less than the 5.6% average for the AAA corporate

9   monthly rate from January 1997 to June 2015. I will provide a full explanation

10   for this recommendation below.

11   •   **Capital structure.** I present the actual capital structures for each of the

12   Independent Small LECs, and report that the 2014 equity ratios averaged

13   70.1%. The capital structure ratios have remained relatively stable over recent

14   years (*e.g.,* there was a 68% average equity ratio five years ago in 2010). I also

15   offer my opinion about how a hypothetical capital structure might be

16   formulated, if the Commission were to use such an approach. I testify that it is

17   my judgment that the appropriate capital structure is toward the high end of the

18   Commission's 1997 equity ratio "zone of reasonableness," which was

19   previously defined as 60% to 80%. It is my opinion that an imputed capital

20   structure might reasonably incorporate equity percentages between 70% and

21   80%, particularly as lenders and other investors have become more cautious

22   about the industry. If the Commission chooses to use a target for the

23   companies' cost of capital, I recommend that the Commission use the equity

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1   and debt costs that are presented in this testimony as reasonable. In the event

2   that the Commission seeks to set an overall rate of return for all companies, I

3   have calculated a standardized WACC that assumes a 70% equity ratio (at the

4   low end of the range I believe is reasonable for such a hypothetical figure), a

5   cost of equity of 18.5% and a cost of debt of 5.5%, resulting in a WACC of

6   14.6%. I test that WACC, using the underlying data and actual transactional

7   prices over the last several years, to provide convincing support for the costs of

8   equity and the proposed WACC that I present in this testimony. I demonstrate

9   that M&A data are the most reliable test of "reasonableness" for valuations and

10   hence for costs of equity, and those data confirm the conservative nature of the

11   estimates that I calculate using the CAPM-related methodologies. The data

12   from these various analyses are compelling and support my conclusions.

13   **III.   LEGAL BACKGROUND.**

14   **Q.   Please briefly summarize the legal precedents regarding equity cost of capital.**

15   A.   As a preliminary matter, I want to clarify that I am not an attorney. However, as a

16   financial expert, I am aware of and familiar with the legal precedents that define the

17   legal constraints on state commissions in setting appropriate rates of return for

18   regulated utilities. The Supreme Court of the United States has confirmed well-

19   established legal precedents for defining the allowed fair rate of return in ratemaking

20   proceedings. In *Bluefield Water Works & Improvement Co. v. Public Service*

21   *Commission of West Virginia,* 262 U.S. 679 (1923) ("*Bluefield*"), the Supreme Court

22   concluded that:

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1   A public utility is entitled to such rates as will permit it to earn a
2   return on the value of the property which it employs for the
3   convenience of the public equal to that generally being made at the
4   same time and in the general part of the country on investments in
5   other business undertakings which are attended by the corresponding
6   risks and uncertainties. . . . The return should be reasonable,
7   sufficient to assure confidence in the financial soundness of the
8   utility, and should be adequate, under efficient and economical
9   management, to maintain and support its credit and enable it to raise
10   money necessary for the proper discharge of its public duties.

11   In *Federal Power Commission v. Hope Natural Gas Company,* 320 U.S. 391 (1944)

12   ("*Hope*"), which expanded on *Bluefield* and emphasized that a utility's revenues must

13   also cover "capital costs," the Supreme Court further found that:

14   From the investor or company point of view it is important that there
15   be enough revenue not only for operating expenses but also for the
16   capital costs of the business. These include service on the debt and
17   dividends on the stock. . . . By that standard *the return to the equity*
18   *owner should be commensurate with returns on investments in other*
19   *enterprises having corresponding risks.* That return, moreover,
20   should be sufficient to assure confidence in the financial integrity of
21   the enterprise, so as to maintain its credit and attract capital.
22   (Emphasis added.)

23   In *Duquesne Light Company et al. v. David M. Barasch et al.,* 488 U.S. 299 (1989),

24   the Supreme Court reiterated the standard of *Hope* and *Bluefield* and then added

25   important new guidelines, including "regulatory risk," which is a distinct risk to be

26   recognized by regulators in defining a fair rate of return:

27   Admittedly, the impact of certain rates can only be evaluated in the
28   context of the system under which they are imposed. One of the
29   elements always relevant to setting the rate under *Hope* is the return
30   investors expect given the risk of the enterprise. *Id.,* at 603, 64 S.Ct.,
31   at 288 ("[R]eturn to the equity owner should be commensurate with
32   returns on investments in other enterprises having corresponding
33   risks"); *Bluefield Water Works & Improvement Co. v. Public Service*
34   *Comm'n of West Virginia,* 262 U.S. 679, 692-693, 43 S.Ct. 675, 679,
35   67 L.Ed. 1176 (1923) ("A public utility is entitled to such rates as
36   will permit it to earn a return . . . equal to that generally being made
37   at the same time and in the same general part of the country on
38   investments in other business undertakings which are attended by

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1   corresponding risks and uncertainties"). The risks a utility faces are
2   in large part defined by the rate methodology . . . . Consequently, a
3   State's decision to arbitrarily switch back and forth between
4   methodologies in a way which required investors to bear the risk of
5   bad investments at some times while denying them the benefit of
6   good investments at others would raise serious constitutional
7   questions.

8   The three standards of fairness related to returns are financial integrity, capital

9   attraction, and comparable earnings, which were reiterated in the Permian Basin Area

10   Rate Cases.[4]

11   In short, an equity owner in a rate-regulated utility should be allowed the opportunity

12   to earn returns that are comparable with those derived from investments in other

13   businesses that have equivalent risks, with appropriate adjustments for other risks such

14   as regulatory risk. The issue to be determined by the Commission, therefore, is what

15   rate of return is necessary to allow the Independent Small LECs to earn on their

16   investments a return that is commensurate with the risk-adjusted, market-based rate

17   available for other similar investments. My professional opinion is that the current

18   10% overall rate of return applied in ratemaking for Independent Small LECs should

19   be significantly *raised* to reflect the increased risks since 1997. The remainder of this

20   testimony will develop and support that opinion, relying on relevant data and

21   authoritative sources.

22   **Q.**   **Why should a commission be concerned about ensuring that a utility is assigned a**

23   **reasonable return on capital?**

---

[4] *Permian Basin Area Rate Cases*. 390 U.S. 747 (1968). *See also Federal Power Commission v. Memphis Light, Gas & Water Division,* 411 U.S. 458 (1973).
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1   A.   A commission should be concerned about what is "fair" to conform with the law as

2   defined by the U.S. Supreme Court (*e.g.,* financial integrity, capital attraction, and

3   comparable earnings). That is, the investors who have dedicated capital to the utility

4   have a right to a return that is legally justified. But, even setting aside the legal

5   standard, a commission that is focused on customer welfare will also recognize that a

6   utility without an appropriate equity return will be at-risk in attracting future capital

7   because no rational investor will commit capital investment if the equity or other

8   returns are insufficient. The rational investor will seek alternative and superior returns

9   in investments other than the utility if expected returns at the utility fall short of

10   market-based rates. To be clear, if the Commission were to assign a return on

11   investment that does not reward an investor for the industry's risk, the outcome is

12   predictable. An insufficient return on investment is likely to result in a redirection of

13   capital away from the utility, not because the investor is a "bad actor," but because the

14   investor should not be expected to act irrationally by committing capital where risk is

15   not properly rewarded.

16   Federal and California regulators have identified a wide range of broadband

17   deployment goals and continued network investment is needed to meet those goals.[5]

18   However, an improperly low cost of capital could thwart achievement of these

19   objectives. Moreover, an insufficient rate of return could disincent investments

20   necessary to ensure service quality and network reliability in rural areas. In short, if

21   the cost of capital is too low, it will hurt rural consumers and rural communities.

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[5] *See FCC 2015 Broadband Report and Notice of Inquiry*, FCC 15-10 (rel. February 4, 2015); Pub. Util Code
§ 275.6.
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1   **IV.   BEGINNING THE CALCULATION OF THE COST OF CAPITAL, USING**

2   **STATISTICAL SOURCES.**

3

4   *A.   DETERMINING THE CAPITAL STRUCTURE.*

5   **Q.   What is involved in calculating an appropriate WACC?**

6   A.   Valuation (including estimation of cost of capital) is both an art and a science. Most

7   fundamentally, the process requires judgment, and it must employ data that create a

8   discipline to the process. Estimation of an appropriate rate of return begins with the

9   computation of a WACC that sums the costs of debt and equity, each weighted by its

10   proportion in the real or the hypothetical capital structure of the subject companies.

11   There can be disputes regarding whether to use the market value of debt and make

12   adjustments for the tax effects, but it is more typical to use embedded costs which are

13   the "actual interest obligations, including amortization of discount premium, and

14   expense of the utility's embedded debt outstanding . . . ."[6] Using this latter approach,

15   for example, if the cost of debt is 6.0%, the dividend on outstanding preferred equity is

16   7.0%, and the cost of common equity is estimated to be 12.0%, while the capital

17   structure includes 5% preferred equity and 70% common equity, the calculated

18   WACC would be as illustrated in Table 1 below.

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[6] Roger A. Morin, *New Regulatory Finance,* Public Utilities Reports, June 1, 2006 (hereafter "Morin"), p. 26; see Exhibit MJB - 2 **Duff & Phelps and Ibbotson source pages cited in the testimony including D&P 2015 A-2 and B-2**
Exhibit MJB - 3.
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1 *Table 1: Illustration of cost of capital based on capital structure*

	Cost of capital	Percentage of capital	Allocated cost
Debt	6.00%	25.00%	1.50%
Preferred equity	7.00%	5.00%	0.33%
Common equity	**12.00%**	70.00%	8.40%
WACC			**10.23%**

2

3 **Q.   Please comment on capital structure as it pertains to this proceeding.**

4 A.   Evaluating the capital structure of a company involves determining the total capital

5   available to the company and the individual capital components, which may include

6   several kinds of debt or several kinds of equity. The regulator or financial analyst

7   determines the current or average percentage of each component in the total capital

8   structure of the company. It is also possible to use the actual capital structure or a

9   hypothetical capital structure in determining the WACC. However, in regulatory

10   proceedings, I believe that hypothetical structures are often used to better match

11   industry-wide capital structures or to simplify regulatory regimes affecting many

12   utilities or to assure the buildup of equity. A commission may determine that a "fair"

13   price for capital reflects an industry-based average capital structure, even if the equity

14   ratio for a company is relatively low. The rationales for using a hypothetical capital

15   structure rather than the actual structure can be controversial as such a process requires

16   subjective judgment. It is my understanding that the Commission has attempted in the

17   past to arrive at a more generic cost of capital that is forward-looking, and therefore

18   the WACC may not be based strictly on any single company's actual capital structure.

19   I support this goal of determining a cost of capital that is forward-looking, and I

20   believe that it would be unreasonable to use a company's actual structure if such a

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1   structure is inconsistent with forward-looking expectations regarding the appropriate

2   mix of capital sources.

3 **Q.** **Are you familiar with the Commission's historical approach with respect to**

4   **capital structure?**

5 A. I understand that the Commission sought in the past to establish a target WACC that

6   allowed for differing capital structures at small telephone companies.[7] In the cases

7   that were decided in 1997, for example, the Commission determined a WACC of 10%,

8   which was deemed to be a reasonable target, and then it tested that WACC by using

9   the actual cost of debt for California ILECs and by evaluating the residual returns (an

10   implied cost of equity) for the Independent Small LECs. The Commission's

11   conclusion at that time was that a WACC of 10% resulted in returns on the

12   Independent Small LECs' actual debt and equity that were within acceptable ranges.[8]

13   The adoption of this overall rate of return allowed companies to manage their own

14   capital resources, while maintaining a reasonable overall cost of capital for ratemaking

15   purposes. *See, e.g.* D.97-04-036, at p. 12 ("[c]onsistent with our treatment of cost of

16   capital for large and mid-size telecommunications companies, and as an incentive for

17   applicant to manage its capital structure, we decline to adopt a specific capital

18   structure.").

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[7] My understanding is that the CPUC resolved cost-of-capital proceedings in 1997 for each of the Independent Small LECs. *See* D.97-04-036 (California-Oregon Telephone Co.); D.97-04-034 (Calaveras Telephone Company); D.97-04-035 (Ducor Telephone Company); D.97-04-032 (Sierra Telephone Company, Inc.); *see also* Res. T-16003 (Kerman); Res. T-16004 (Pinnacles); Res. T-16005 (Ponderosa); Res. T-16006 (Siskiyou); Res. T-16007 (Volcano).

[8] *See, e.g.,* D.97-04-036 (California-Oregon Telephone Co.), p. 9; D.97-04-034 (Calaveras Telephone Company), p. 9; D.97-04-035 (Ducor Telephone Company), p. 9; D.97-04-032 (Sierra Telephone Company, Inc.), p. 9.

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1   ***B. ESTIMATING THE COST OF DEBT.***

2   **Q.**   **Is the cost of debt difficult to determine?**

3   A.   For regulatory purposes, the cost of debt is usually the actual cost as specified in the

4   lending documents.[9] However, it is possible to use a different cost of debt, for

5   example, to generalize for an industry or to normalize in a time period when debt costs

6   are assumed to be unsustainably high or low, as I will explain below. In all cases, the

7   regulator or analyst should assess a realistic set of debt costs that are forward-looking.

8   As is well known, the current prices for debt are today at historic low levels, due

9   significantly to the Federal Reserve's ("Fed") bond-buying program; and there is an

10   expectation that those rates will rise as the Fed alters its monetary policy. I will also

11   explain below that debt resources appear to be increasingly *unavailable* to smaller

12   ILECs because the primary lenders to the industry have grown increasingly cautious.[10]

13   For rural ILECs, the effects of greater industry-wide risk combined with lesser

14   availability of debt can shift the capital structure toward a higher percentage of more

15   costly equity or even toward having virtually no debt at all.[11]

16   **Q.**   **Can we simply use the debt costs as reflected in the market today in assessing the**

17   **debt component to cost of capital?**

18   A.   No. Again, the Commission must look for "reasonable" calculations for forward-

19   looking costs, including debt costs. The Fed has engaged in a policy that has driven

---

[9] Morin, p. 26.

[10] The challenges including contracting numbers of switched access lines, increasing required capital commitments necessary to meet growing data demand, and regulatory uncertainties including shrinking revenues from access charges and universal service support mechanisms.

[11] The ten Independent Small LECs appear to be maintaining relatively stable capital structures over the last five years. The equity ratios were 70%, on average, in 2014 and generally fall within the range of the zone of reasonableness referenced in the Commission's 1997 rate case decisions (60% to 80% equity).

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1   interest rates to extraordinarily low levels in recent years, with a goal of stimulating

2   growth and investment. However, the Fed's activities are widely regarded as

3   "unsustainable" as reflected in Duff & Phelps' discussion in its 2015 Handbook:

4   The yields of U.S. government bonds in certain periods during and
5   after the [financial crisis of 2008] may have been *artificially*
6   repressed, and therefore [are] likely unsustainable. Many market
7   participants will agree that nominal U.S. government bond yields
8   in recent periods have been artificially low. Even members of the
9   Federal Open Market Committee (FOMC) have recently discussed
10   the need to 'normalize' interest rates." (Emphasis in original.) [12]

11   At a meeting occurring on December 16-17, 2014, the Federal Open Market

12   Committee ("FOMC"), which is a committee of the Federal Reserve Bank, issued a

13   statement, signaling the need to "normalize" federal policy in the future:

14   Based on its current assessment, the [FOMC] judges that it *can be*
15   *patient in beginning to normalize the stance of monetary policy.*
16   The [FOMC] sees this guidance as consistent with its previous
17   statement that it likely will be appropriate to maintain the 0 to ¼
18   percent target range for the federal funds rate for a *considerable*
19   *time* following the end of its asset purchase program in October . . .
20   . (Emphasis added by Duff & Phelps.)[13]

21   In short, it would be unreasonable to use today's unsustainable debt rates as a proxy

22   for future debt costs.

23   *C. ESTIMATING THE COST OF EQUITY.*

24   Q.   **Why is the process of assessing the appropriate return on equity more**

25   **challenging than determining the cost of debt?**

---

[12] 2015 Duff & Phelps Valuation Handbook: Guide to Cost of Capital, Market Results through 2014,
(Hoboken, NJ: John Wiley & Sons, Inc., 2015) (hereafter "Duff & Phelps 2015 Valuation Handbook Guide to
Cost of Capital"), p. 3-3; see Exhibit MJB - 2.
[13] *Id.*

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1   A.   Debt has clear legal documentation and interest obligations, and debt can be traded in

2   the public markets, making it possible to achieve a better determination of market-

3   based costs. By contrast, common equity costs cannot be observed directly for

4   privately-held companies.[14] Common equity for the vast majority of rural telephone

5   companies has no documentation or defined obligation that would allow its specific

6   costs to be easily computed. Common equity can be traded publicly, but the

7   Independent Small LECs, like most rural ILECs in the United States, do not have

8   publicly-traded common equity.

9   Q.   **How are the costs of preferred equity estimated?**

10   If a company's preferred equity has no defined return, then that security would present

11   the same valuation problem as common equity. If there is a defined return, the cost of

12   preferred equity can be estimated using the dividend on the security. Four of the

13   Independent Small LECs—Pinnacles, Ponderosa, Siskiyou, and Volcano—have

14   preferred equity that is, on average, approximately 2 percent of total capital, and those

15   companies have been paying preferred dividends at a consistent rate, as will be

16   detailed below. I have estimated the cost of those preferred equity securities using the

17   companies' preferred dividend yields, that are 5.0%, 6.0%, 5.5% and 7.0%,

18   respectively.

19   Q.   **How does a financial expert typically estimate common equity costs?**

20   A.   Most financial experts with whom I have been associated seek to estimate common

21   equity costs using *multiple* valuation methodologies. The goal of the financial

---

[14] I use the term "common equity" to distinguish from preferred equity, and I include capital contributions and
retained earnings as common equity.
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1   professional or the regulator in valuing common equity should be to check and re-

2   check the reasonableness of his or her estimates to ensure that they are accurate and

3   sensible. When I analyzed stocks and published while at Legg Mason, I always

4   employed multiple approaches that included company-specific discounted cash flow

5   ("DCF") models, valuations relative to the value of other companies, and historical

6   data and trends. At Charlesmead, we do the same when we advise companies in our

7   M&A business in connection with sales or acquisitive transactions. In the M&A

8   business, financial advisors virtually always test valuations by studying comparable

9   publicly-traded equities as well as DCFs that assess probable operating performance

10   for each year over the projected five to ten years of the model. Additionally, financial

11   professionals use comparable M&A transactional data to observe valuations and

12   trending in the markets over time. The most responsible approach is to analyze

13   valuation from multiple viewpoints to provide confirmation of the reasonableness of

14   the results generated by the methods chosen..

15   *D. USE OF THE COMMON METHODOLOGIES—DCF AND CAPM.*

16   **Q.   What are the most commonly-used methodologies to compute equity costs in**

17   **regulatory proceedings?**

18   A.   The most common approaches used in regulatory proceedings today rely on DCF

19   models and on the CAPM, the latter of which is also the basis for the Buildup or Risk

20   Premium Method. The federal allowed rate of return for interstate services, which was

21   last reduced to 11.25% from 12% in 1990, was derived using a constant-growth DCF

22   model to compute equity costs, using data from the Regional Bell Operating

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1   Companies, also known as Regional Holding Companies ("RHCs").[15] In the 1990

2   represcription order, the FCC clarified at paragraph 35 that the formula for that DCF

3   is:

4   K_e = $D/P + G$
5
6   Where:
7   Ke = Cost of equity
8   D   = Annual dividend on a share of common stock
9   P   = Price of a share of common stock
10   D/P = Dividend yield on a share of common stock
11   G   = Annual dividend growth rate
12
13   The DCF model, as traditionally used by the FCC or state commissions, is based on an

14   assumption of predictable dividends in a stable industry with a predictable growth

15   trend. The formula was assumed to be reliable in 1990. I note that those assumptions

16   are no longer applicable today because the industry is no longer a predictable

17   monopoly with high assurances of receiving returns. Rather, local

18   telecommunications dividends—essentially payments for equity costs—can no longer

19   be assumed to expand at a constant rate nor can they be assumed to be perpetual.

20   Pertinent to this proceeding, I note that the DCF model relies on two other important

21   assumptions. The first is that the price of the equity can be known, which is of course

22   not true for privately-held companies such as the Independent Small LECs, whose

23   equity market value cannot be observed or verified. The second assumption is that

24   there are reliable publicly-traded proxies (the RHCs were assumed to be sufficiently

25   similar to other ILECs in 1990); in that regard, as I explain below, the large dividend-

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[15] FCC, *In the Matter of Represcribing the Authorized Rate of Return for Interstate Services of Local Exchange Carriers,* 68 Rad. Reg. 2d (P&F) 771 (F.C.C), 5 FCC Rcd. 7507. 1990 WL 604105, FCC 90-315. *See, e.g.,* Exhibit MJB - 4, pp. 8-9; the Exhibit makes clear that the 1990 estimates of equity costs were derived from data related to very large companies with multi-state operations serving rural and urban areas. As I explain below, these companies had – and continue to have – lower risk profiles than rural telephone companies like the Independent Small LECs.
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1   paying ILECs—the ones that were the basis for the 1990 DCF—are no longer suitably

2   similar to the Independent Small LECs.[16] The simple constant-growth DCF formula,

3   in my opinion, cannot be used for this testimony, and I am unaware of any commission

4   that is using such a formula today.

5   **Q.   Are there variants of the DCF model used by financial analysts?**

6   A.   As I noted above, financial investors and investment bankers use company-specific

7   DCF models that rely on estimating the individual company's cash flows for each

8   modeled year based on highly-detailed revenue, cost and capital expenditure inputs

9   over a period of time, such as five to ten years. These models involve discounting to

10   the present the estimated future cash flows plus a final-year "terminal value." The

11   FCC and regulatory commissions have used the simpler, constant-growth DCF, and

12   not the detailed discount cash flow model that I describe above.

13   **Q.   What is the CAPM?**

14   A.   The CAPM is a computation of the expected return on a security, based on concepts

15   derived from the work of Harry Markowitz and the subsequent study of William

16   Sharpe in 1960. The premise underlying this method is that the expected return of a

17   security, or of a portfolio, equals the rate on a risk-free security (generally assumed to

18   be the long-term U.S. Treasury Bond for which the risk of principal loss or failure-to-

19   pay is very low) plus certain other risk-premia to adjust for systematic (market) risk.

20   This approach reflects the overall market risk (the broad market rising or falling), plus

21   adjustments for individual-company risk captured by a "beta," plus adjustments for

22   size (generally called a "size premium"). "Beta" is a factor that is multiplied by the

---

[16] *Id.* The differences will be identified in the testimony below.
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1   expected market return to adjust for a public company's risk that is determined to be

2   higher or lower (more or less volatile) than the overall market risk.[17] The size

3   premium is founded on the well-established premise that smaller firms present higher

4   risks than larger ones, and it is possible to add other premia as will be discussed

5   below. The CAPM formula defines a theoretical linear relationship between expected

6   return on equity (cost of equity) and risk as:[18]

7                    $$K_e = R_f + (\beta \times RP_m) + RP_s$$

9   Where:
10   K_e =   Expected return (cost) on equity
11   R_f =   Risk-free rate
12   β =   Beta of the security (statistical volatility v. the market)
13   RP_m =   Equity Risk Premium
14   RP_s =   Size premium

15   If the expected return on the security does not meet or exceed the required return, then

16   the model suggests that the rational investor will not purchase the equity security in

17   question. She or he will choose to invest money in other investments where the risk-

18   return relationship is more favorable.

19   **Q.   What is the Buildup Method?**

20   A.   The Buildup Method is an additive Risk Premium approach that relies on CAPM

21   concepts in computing the cost of equity. In reality, it is the CAPM, with the beta

22   calculation divided into two parts: one for the overall market risk (the equity risk

23   premium) and the second for a proxy premium related to the industry (an industry-risk

24   premium). The Buildup Method begins with the risk-free rate and then adds a

---

[17] A beta of 1.0 equals the market risk, and a beta under 1.0 adjusts the equity risk premium for companies with a volatility in returns that suggests lower-than-market-risk, while, conversely a beta above 1.0 adjusts for volatility that suggests higher-than-market-risk.
[18] Duff & Phelps 2015 Valuation Handbook Guide to Cost of Capital, p. 2-8; see Exhibit MJB - 2.

1   premium for the estimated overall equity risk in the stock market, plus another

2   adjustment for the relative industry-specific risk, and a further adjustment for a firm

3   size premium. Ibbotson Associates ("Ibbotson") first began publishing buildup

4   industry risk premia in its *Stocks, Bonds, Bill, and Inflation Valuation Edition 2000*

5   *Yearbook*. However, since 2015, Duff & Phelps has integrated much of the cost of

6   capital analyses from Ibbotson and Morningstar (which purchased the Ibbotson

7   business) into Duff & Phelps' annual *Valuation Handbook*. Ibbotson/Morningstar also

8   published additional statistics, including industry risk premia, categorized by three- or

9   four-digit Standard Industry Classification ("SIC") codes, which Duff & Phelps now

10   includes in a separate volume, entitled *2015 Valuation Handbook: Industry Cost of*

11   *Capital*.[19] The incumbent local telecommunications industry is designated as

12   "Telecommunications, except RadioTelephone" with an SIC code of 4813.   The

13   formula for the Buildup model is the following:[20]

14         $$K_e = R_f + RP_m + RP_i + RP_s$$

15
16   Where:
17   K_e =   Expected return (cost) on equity
18   R_f =   Risk-free rate
19   RP_m =   Equity risk premium
20   RP_i =   Industry risk premium
21   RP_s =   Size premium
22
23   Duff & Phelps also provides a formula that is an alternative to the Buildup Model

24   presented above. In that alternative, a size adjustment that includes the market

25   premium can be added to the risk-free rate. That is, only two variables are added, and

26   those are the risk-free rate and the combination of the size and market premium. I will

---

[19] Duff & Phelps 2015 Valuation Handbook: Industry Cost of Capital, (Hoboken, NJ: John Wiley & Sons, Inc., 2015).
[20] Duff & Phelps 2015 Valuation Handbook Guide to Cost of Capital, p. 2-8; see Exhibit MJB - 2.
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1   provide that estimate, which further confirms the results of my analysis, although the

2   calculation is relatively crude.

3   **E. USE OF TRANSACTIONAL DATA TO CONFIRM CAPM ESTIMATES.**

4   **Q.   Are these the primary approaches to assess the cost of capital in regulatory**

5   **proceedings?**

6   A.   In my experience, the CAPM, Buildup and DCF models are the most commonly-used

7   cost-of-capital estimation tools in regulatory proceedings.[21] Before the mid-1960s, the

8   Comparable Earnings approach was used almost exclusively in regulatory valuation

9   exercises, but it was replaced by the DCF after that time.[22] In the investment banking

10   industry, including at our firm, Charlesmead, value (with calculations that rely on cost

11   of equity estimates) is assessed using the CAPM, with adjustments for size or

12   company-specific differences from the industry, and detailed (not the constant growth)

13   DCFs. As I explained earlier, we also rely on two other methodologies that are not

14   typically used in regulatory proceedings, but which help to confirm the validity of our

15   conclusions. Specifically, we assess multiples (ratios) of enterprise value ("EV"),

16   which is defined as equity value plus net debt (total debt less cash and equivalents),

17   divided by cash flows, most often using operating cash flow (earnings before interest,

18   taxes, depreciation and amortization or "EBITDA"). We compile those EV/EBITDA

19   multiples and other ratios from actual transactions, so we can understand the market

---

[21] There are variations of the CAPM, including the Empirical Capital Asset Pricing Model ("ECAPM"), the Arbitrage Pricing Model ("APM"), and the Fama-French Three-Factor Model. These models rely on similar concepts related to proxy groups and market risk estimations. As I will explain, I believe that the larger "proxy" companies do not sufficiently capture regulatory and small-business risks, and that alternative CAPM-based models do not refine an estimation of those risks.

[22] Morin, page 18.

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1   perception of value and the trends over time.[23] The resultant ratios permit us to

2   "normalize" our comparisons of one transaction with other transactions. We are

3   convinced that the most informative valuation approaches are based on real-world

4   transactions between a knowledgeable buyer and seller. As such, these data provide

5   insights into efficient and real-time assessments of value and risks.

6 **Q.** **How do you utilize actual transactional data in your analysis?**

7 A. Especially instructive are the insights derived from transactions when companies are

8   bought or sold in their entirety. Transactions provide direct data related to private *and*

9   public companies, large *and* small enterprises, without any control discount. Like all

10   professional financial advisors, Charlesmead tracks M&A data over time to understand

11   the trends and provide appropriate advice to buyers and sellers. Those insights are

12   even more valuable when an industry is undergoing dramatic change, as is happening

13   with companies such as the Independent Small LECs. Dr. Roger Morin, Professor of

14   Finance and author of the oft-cited text, *New Regulatory Finance*, notes the problem

15   with historical models when the future is *not* like the past.

16   [S]hifts in growth prospects take some time before they are fully
17   reflected in the historical growth rates. Hence, backward-looking
18   growth and statistical analysis may fail to fully reflect the fact that
19   the risks and growth prospects of utilities have escalated, and may
20   only provide limited evidence that the risk and the cost of capital to
21   these utilities have increased.[24]

22   It is clear to me that we are in such a period for telecommunications carriers, both

23   large and small ILECs, as these markets are driven by rapidly-shifting customer

---

[23] The approach is analogous to real-estate metrics such as price per square foot or grocery store labels with price per unit. In the case of ILEC transactions, we assess how much a buyer is willing to pay for one dollar of operating cash flow (EBITDA).
[24] Morin, p. 436.
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1   demand for voice, video, broadband, as well as the ongoing overhauls of regulatory

2   support mechanisms, more limited access to capital, and evolving competitive threats.

3   It is my opinion that the transactional valuations are most instructive and specific as

4   they capture risk that is not fully explained in the CAPM or the Buildup Methods

5   which rely on historical as well as broader and less-specific data sets. To be clear, I

6   believe that the historical data are drawn from a less turbulent time for the industry,

7   which means that the CAPM-based data are inclined to *understate* the cost of an

8   ILEC's equity today. The transactional approach provides a corrective as it is more

9   current information and is based on the concept of "fair value" which involves an

10   arms' length transaction between a "willing buyer and willing seller."[25] Using M&A

11   data, we track rising value (declining risk) over time, stable value (unchanged risk) or

12   deteriorating value (increasing risk). While we rely on these data in our transactional

13   work, I will only use the M&A data in this proceeding to *confirm the findings* derived

14   from the CAPM-based approaches, and *not to establish a baseline cost of equity*.

15   **Q.   Are you able to provide data to verify all the transactions in the marketplace?**

16   A.   Some, but not all, transactional data are available. Exhibit MJB - 5 provides the

17   publicly-available data related to small ILEC transactions from 2001 to the present.

18   Some of the transactions listed in the Exhibit appear to have higher valuations in

19   recent periods but the ILEC valuations that rely primarily on LEC services—sales of

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[25] Ibbotson SBBI 2013 Valuation Yearbook, Market Results for Stocks, Bonds, Bills, and Inflation 1926-2012 (Chicago, IL: Morningstar, Inc., 2013) (hereafter "Ibbotson 2013 Valuation Yearbook"); see Ibbotson 2015 Classic Yearbook Market Results for Stocks, Bonds, Bills and Inflation 1926-2014, (Chicago, IL: Morningstar, Inc., 2015), (hereafter "Ibbotson 2015 Classic Yearbook"), p. 11; "*Fair market value* is defined by IRS Revenue Ruling 59-60 [sec. 2.02] as '. . . the price at which the property would change hands between a willing buyer and a willing seller when the former is not under any compulsion to buy and the latter is not under any compulsion to sell, both parties having reasonable knowledge of relevant facts." (Emphasis in original); see Exhibit MJB - 2.
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1   ILECs without cable TV, wireless, significant fiber transport, or tax benefits—are

2   valued consistently lower over the last several years, in a range today of 4.5 to 5.5

3   times last-twelve-month EBITDA. I frequently report on the generalized trends and I

4   regularly explain those trends at industry conferences.[26]

5   **Q.**   **Can a valid cost of capital analysis use the cost of equity from the stocks of the**

6   **publicly-traded ILECs to estimate the capital costs for small ILECs?**

7   A.   The analysis can *begin* with data derived from guideline or proxy ILECs, as has been

8   done for many years. However, small ILECs have characteristics that make their risks

9   considerably different from the risks at larger companies, and the differences appear to

10   growing. Accordingly, we cannot rely exclusively on those data. Indeed, the

11   differences between diversified publicly-traded carriers and small private carriers are

12   much larger than when the FCC set the interstate rate of return in 1990.

13   **Q.**   **Please explain the differences between large and small ILECs as it pertains to**

14   **their investment and market risk.**

15   First, and probably most significantly, the regulatory factors affecting small rural

16   carriers are fundamental to the business of those companies, which have a high

17   proportion of their operations in regions that are uneconomic or less economic than

18   those served by large carriers. Large carriers rely on relatively little or no regulatory

19   support revenues because their businesses are concentrated in denser areas and those

20   carriers provide lesser-regulated or non-regulated products such as wireless, enterprise,

21   and extensive video products. In light of the rural carriers' relative dependence on

---

[26] *See, e.g.,* Michael J. Balhoff, Slide Presentation: *Emerging Strategic Value Creation,* June 2014, presented at the Georgia Telecommunications Association Conference, Orlando, Florida (hereafter "Georgia Presentation"), slide 7. See Exhibit MJB - 6.
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1   universal service support and intercarrier compensation revenues, regulatory threats to

2   these revenue sources disproportionately increase the risk profiles for these smaller

3   carriers compared with those of larger carriers. Second, the larger carriers are all

4   engaging in significant acquisition activities, based on their financial capacity to

5   acquire other assets and businesses. The purpose of those acquisitions is to generate

6   efficiencies (synergies), which often reduce the target companies' cash operating costs

7   by 20%-30%, and allow for critical diversification of operations. It is important to

8   note that *every* large ILEC is or has been engaged in sweeping acquisitions in

9   transforming the carrier's businesses, made possible by significant size and access to

10   capital.[27] The large ILECs' capacity to mitigate today's operating risks through major

11   acquisitions is a strategic advantage that is not being employed to a meaningful extent

12   by smaller ILECs and is likely not available to smaller ILECs.[28] Finally, large carriers

13   generally have extensive access to publicly-traded equity capital and cost-effective

14   debt capital. The Independent Small LECs do not have public equity and have limited

15   access to cost-effective debt, as will be explained below.

16

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[27] AT&T Inc., SEC Form 10-K Annual Report 2014. Retrieved from SEC EDGAR website http://www.sec.gov/edgar.shtml, Seq 4, AT&T Inc. 2014 Annual Report, "Other Business Matters," p. 21. Verizon Communications, Inc., SEC Form 10-K Annual Report 2014. Retrieved from SEC EDGAR website http://www.sec.gov/edgar.shtml, Seq 4, Exhibit 13, "Acquisitions and Divestitures," p. 34. CenturyLink, Inc., SEC Form 10-K Annual Report 2014. Retrieved from SEC EDGAR website http://www.sec.gov/edgar.shtml, "Acquisitions," p. 13. Frontier Communications Corporation (2014). Form 10-K Annual Report 2014. Retrieved from SEC EDGAR website http://www.sec.gov/edgar.shtml, "Acquisitions," p. F-12. Windstream (2014). Form 10-K Annual Report 2014. Retrieved from SEC EDGAR website http://www.sec.gov/edgar.shtml. "Strategic Acquisitions," p. 4. Consolidated Communications Holdings, Inc., SEC Form 10-K Annual Report 2014. Retrieved from SEC EDGAR website http://www.sec.gov/edgar.shtml, "Recent Business Developments," p. F-7.

[28] For a summary graphical presentation on the transformation of large ILECs, *see* Georgia Presentation, Exhibit MJB - 6, slides 10-14.

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1   Q.   **Do valuation professionals typically make adjustments for size of the companies?**

2   A.   Yes. Most professionals rely on the data and resources provided by companies such as

3   Morningstar, Inc. (Ibbotson *Stocks, Bonds, Bills, and Inflation* ("SBBI")) and Duff &

4   Phelps, LLC.[29] Both Ibbotson/Morningstar and Duff & Phelps are clear that

5   adjustments should be made for size effects and other risk factors. For example, Duff

6   & Phelps in its *2013 Risk Premium Report* writes:

7   Research tells us that the CAPM often misprices risk for certain
8   investments. Specifically, researchers have observed that commonly
9   used methods of measuring risk used in the CAPM (specifically,
10   beta) often understate the risk (and thus understate the required
11   return) for small company stocks. Examination of market evidence
12   shows that within the context of CAPM, beta does not fully explain
13   the difference between small company returns and large company
14   returns. In other words, the historical (observed) excess return of
15   portfolios comprised of smaller companies is greater than the excess
16   return predicted by the CAPM for these portfolios. This 'premium
17   over CAPM' is commonly known as a "beta-adjusted size premium"
18   or simply "size premium".[30]

19   To be clear, investors *require* a return for smaller companies that exceeds that

20   predicted in the CAPM for larger companies, as proven in the historical studies. This

21   investor behavior cannot be ignored in valuation. Moreover, Duff & Phelps is clear in

22   its *Valuation Handbook*, cited above, that research verifies the existence of a size

23   premium. This premium is appropriately added to the equity return to reflect market-

24   based risk that is greater for smaller companies compared with larger companies.

25   Ibbotson/Morningstar also provides statistics to demonstrate the effect of size on

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[29] Ibbotson 2015 Classic Yearbook; Ibbotson 2014 Classic Yearbook, Market Results for Stocks, Bonds, Bills, and Inflation 1926-2013 (Chicago, IL: Morningstar, Inc., 2014)(hereafter "Ibbotson 2014 Classic Yearbook"); Duff & Phelps, 2014 Valuation Handbook, Guide to Cost of Capital (Chicago, IL: Duff & Phelps, LLC, 2014)(hereafter "Duff & Phelps 2014 Guide to Cost of Capital").

[30] Duff & Phelps, *Risk Premium Report 2013* (Chicago, IL: Duff & Phelps, LLC, 2013), p. 60, available at http://www.duffandphelps.com/SiteCollectionDocuments/Reports/(EXCERPT)%202013%20Duff%20Phelps%20Risk%20Premium%20Report.pdf.

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1   returns, and summarizes this relationship with the comment that "[i]f small companies

2   did not provide higher long-term returns, investors would be more inclined to invest in

3   the less risky stocks of large companies."[31]

F. OTHER REASONABLE PREMIA,

WHICH ARE NOT USED IN THIS ANALYSIS.

6   **Q.**   **Are there sources justifying adjustments that must be made in calculating the**

7   **cost of equity other than the size premium cited above?**

8   A.   Yes. I will not use any other adjustments in this testimony, but it is important to

9   recognize that there is ample evidence that further adjustments can and possibly

10   should be made. The Internal Revenue Service ("IRS") has issued guidance on

11   valuation over the years, including in its Revenue Ruling 59-60, which provides a

12   framework for valuation of the stock of closely-held corporations or the stock of

13   corporations where market quotations are either lacking or too scarce to be recognized.

14   Morningstar, Inc, in its 2013 Ibbotson/Morningstar *SBBI Valuation Yearbook*, states

15   that Ruling 59-60 "changed the way businesses are valued and is the cornerstone of

16   the valuation process.[32] That Ruling begins with the counsel that an appraiser should:

17   . . . maintain a reasonable attitude in recognition of the fact that
18   valuation is not an exact science. A sound valuation will be based
19   upon all the relevant facts, but the elements of common sense,

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[31] Ibbotson 2014 Classic Yearbook, p. 109; see Exhibit MJB - 2.

[32] Ibbotson 2013 Valuation Yearbook, p. 12; see Exhibit MJB - 2. *See also,* Ibbotson 2014 Classic Yearbook, pp. 123-127 in which liquidity-related investing issues are explained, as they require an adjustment because the "premium is the extra return an investor would demand in order to hold a security that cannot costlessly be traded" (p. 124); see Exhibit MJB - 2.

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1   informed judgment and reasonableness must enter into the process of

2   weighing those facts and determining their aggregate significance.[33]

3   IRS Revenue Ruling 77-287 recognizes that there are important valuation differences

4   and considerations for small and closely-held companies.[34] Further, various United

5   States Tax Court and Court of Federal Claims cases support the application of

6   discounts or premia arising from illiquidity, lack of marketability, lack of control, and

7   industry risk.[35] In particular, there is substantive support that the cost of equity should

8   include additional premia for illiquid and less-marketable securities.

9

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[33] IRS Revenue Ruling 59-60, sec. 3.01, available at http://www.aticg.com/Documents/Revenue/RevRule59-60.pdf. See Exhibit MJB - 7.

[34] IRS Revenue Ruling 77-287, available at http://www.aticg.com/Documents/Revenue/RevRule77-287.pdf. See Exhibit MJB - 7. This ruling pertains to discounts that are used for securities that cannot be resold immediately because they are restricted from resale pursuant to Federal securities laws. At Sec. 4.02, the Ruling notes:

> Pursuant to Congressional direction, the SEC undertook an analysis of the purchases, sales, and holding of securities by financial institutions, in order to determine the effect of institutional activity upon the securities market. The study report was published in eight volumes in March 1971. The fifth volume provides an analysis of restricted securities and deals with such items as the characteristics of the restricted securities purchasers and issuers, the size of transactions (dollars and shares), the marketability discounts on different trading markets, and the resale provisions. This research project provides some guidance for measuring the discount in that it contains information, based on the actual experience of the marketplace, showing that, during the period surveyed (January 1, 1966, through June 30, 1969), the amount of discount allowed for restricted securities from the trading price of the unrestricted securities was generally related to the following four factors [earnings, sales, trading market, and resale agreement provisions].

The smaller the sales, according to the SEC study and the IRS Revenue Ruling, the greater the discount.

[35] *See, e.g.*, *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); *Estate of Webster E. Kelley v. Commissioner*, T.C. Memo 2005-235 (Oct. 11, 2005). See the American Institute of Public Accountants, *Statement on Standards for Valuation Services*, para 40, available at (http://www.aicpa.org/InterestAreas/ForensicAndValuation/DownloadableDocuments/SSVS_Full_Version.pdf): "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*." (Emphasis in the original.)
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1   **Q.   Can you expand on your comments about adjusting for illiquidity or lack of**

2   **marketability?**

3   A.   I will not make any specific adjustments in this testimony for illiquidity or lack of

4   marketability, but I note that the omission of such a premium is a further signal of the

5   conservatism of the estimates in this analysis. Financial professionals have developed

6   a consensus view that cost of capital should be adjusted based on size effects, as

7   explained above. However, *in addition*, there is a convincing case that there should be

8   another premium related to liquidity/marketability. Because the size effect premium is

9   premised on larger or smaller stocks that are marketable *and* liquid, a premium to

10   account for insufficient marketability and liquidity can, and likely should, also be

11   applied. In 2009, the IRS provided a 115-page "Discount for Lack of Marketability:

12   Job Aid for IRS Valuation Professionals" in which the IRS authors, clarifying that the

13   document was not the official position of the IRS, set out the study's purpose "to

14   identify issues around [the discount for lack of marketability or 'DLOM'] and to

15   present techniques to assist valuators in the field [with information] . . . of value not

16   only to our own personnel but also to our valuation customers."[36] The guide does not

17   recommend a specific approach or premium but concludes that the DLOM in the

18   marketplace may be 20% to 25% based on Securities and Exchange ("SEC") studies,

19   approximately the same amount based on tax court rulings.[37] Thus, there is evidence

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[36] IRS Engineering/Valuation Program DLOM Team, Discount for Lack of Marketability: Job Aid for IRS
Valuation Professionals, September 25, 2009, available at http://www.irs.gov/pub/irs-utl/dlom.pdf, [hereafter
"IRS DLOM"], p. 1.
[37] IRS DLOM, p. 77: "Greatest weighting of [SEC-study] transactions occurred within the '15%' and '25%'
implied discount groupings. This suggests a most-common discount for lack
of marketability of 20%"; p. 80: "the valuator will review the results of several cases such as McCord, Lappo
and Peracchio and then base the choice of discount on the discounts accepted by the court in the reviewed
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1   that an adjustment should be made related to both size *and* lack of marketability. It

2   has been my experience that marketability is reduced further in environments where

3   investors find that regulatory obligations are greater than in other jurisdictions and

4   where sales are perceived to be accompanied by more challenging regulatory

5   conditions. While I am convinced that such a discount for lack of marketability likely

6   should be included, *the omission of such a discount makes the inclusion of a size*

7   *premium even more critical in the calculation of the cost of equity to assure an*

8   *appropriate return on equity.*

9 **V.   INDUSTRY CHANGES THAT AFFECT THE CORPORATE COST OF CAPITAL**

10   **FOR SMALL ILECS.**

11 **Q.   Please summarize the major changes in the ILEC industry that have affected the**

12   **cost of equity for the Independent Small LECs.**

13 A.   Over the last 15-20 years, changes have occurred that have dramatically increased risk

14   for ILECs in general and notably for the small, rural ILEC industry, including the

15   carriers involved in this proceeding. The changes can be explained as sequential

16   forces. Technology changes accelerated, increasing the number of competitors. New

17   competitors have forced changes in regulatory systems. And the changed regulations,

18   particularly for ILECs focused on less economic service regions, have created a

19   significant uncertainty among debt and equity investors.

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cases. For example, the range of court discounts might have been from 20% to 25% so the valuator chooses 22.5% with the rationale that his valuation subject
is similar to the subjects under consideration in the cases cited. Judges are sometimes found to adopt this approach as well. The judge will look at McCord with its 20% discount and add a factor of say 3% based on his analysis of the special factors of his case to arrive at a chosen DLOM level of 23%." p. 80: "Wruck found a discount for lack of marketability of 17.6%, Hertzel & Smith found a discount of 13.5% for lack of liquidity or that Bajaj et al determined that the discount for lack of marketability should be 7.23%."
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1   **Q.   How have technology changes affected the telecommunications marketplace?**

A.2   The pattern is clear that competitors are using new technologies – notably using IP-based and

3   wireless platforms – to target customers in highly-profitable markets and then subsequently adding

4   customers in relatively less profitable markets. As digital technologies developed and wireless has

5   become more pervasively reliable, competitors have been able to attract not only business customers,

6   but also residential customers. Figure 1 and

7

8

9

10   *Figure 2*, below, depict current nationwide data from USTelecom, the major ILEC trade

11   organization, which tracks access line loss and competitive market share.[38] Notably,

12   the competitive losses of voice services have remained significant over time and the

13   "voice" losses are primarily driven by the migration toward wireless service.

14   **Figure 1: Annual Switched Access Line Loss**

15

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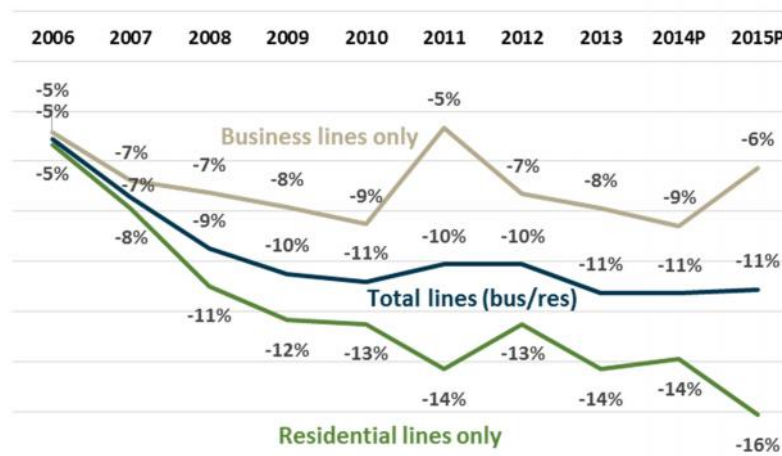
[38] Patrick Brogan, *Voice Competition Has Ended ILEC Dominance,* (Washington, DC: US Telecom, April 2014), available at http://www.ustelecom.org/blog/voice-competition-has-ended-ilec-dominance-0.
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1   *Source: US Telecom, April 2014.*

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6   ***Figure 2: Share of Nationwide U.S. Households***

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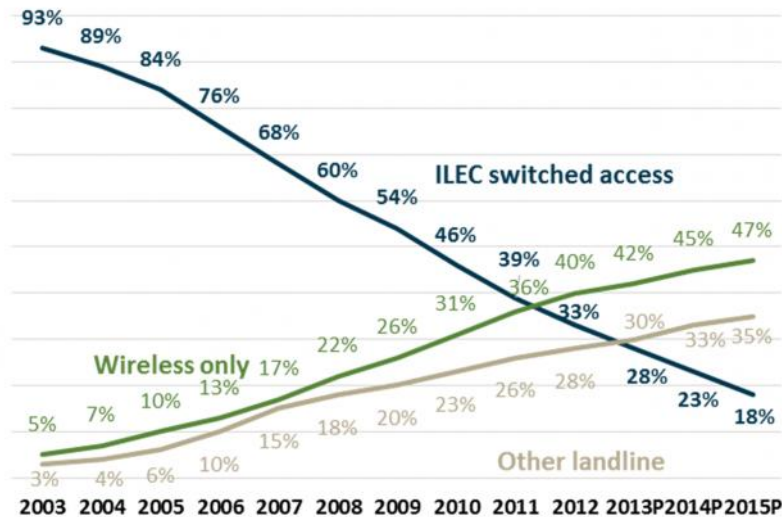
8   *Source: US Telecom, April 2014.*

9   **Q.   Is increased competition a positive development as competitors and ILECs offer**

10   **products more efficiently?**

11   A.   Yes, as a general matter, competition is a constructive force that, in the big picture,

12   benefits customers. The competitive thrust into rural America is also positive from a

13   broad policy perspective, but it is notable that competitive gains appear to be

14   concentrated in clustered populated regions or along major roadways where customers

15   can be served economically. It is also notable that competition is significant, even

16   when the markets have not been designated as "competitive" by regulators, because

17   wireless is the primary threat to landline residential voice service, even where it is not

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1   a complete functional substitute.[39] Intermodal competitive threats have meant that

2   rural ILECs are left with an increasingly higher proportion of high-cost and often

3   uneconomic properties along with a Carrier of Last Resort ("COLR") responsibility

4   that requires them to fulfill any reasonable request within their defined service

5   territories. Recent FCC policy has amplified this effect by requiring rural carriers to

6   fulfill all reasonable requests for broadband access at specified download and upload

7   speeds.[40] The result is approximately the same fixed network costs and investments

8   but fewer customers over which to spread those costs.

9   I generated a study related to this problem, relying on extensive data in Texas.[41] The

10   Texas study evaluated 350,000 access lines, using confidential financial data. Among

11   other conclusions, the study highlighted that without universal service funding, 77% of

12   the rural wire centers generated on average a negative 9.7% return on investment. And

13   13% of the wire centers generated an average positive return of 2.9% , which was

14   insufficient to justify investment. Finally, 10% of the wire centers generated a 10%

15   return or higher. The conclusion was that, without universal service support funding

16   ("USF"), 90% of the wire centers are candidates to lose service entirely. From a

17   financial perspective, then, *the vast majority of rural wire centers are uneconomic –*

---

[39] Even where wireless service may not be ubiquitously functional, as I understand is the case in many Independent Small LEC areas, some customers choose wireless services as a substitute for wireline service. This phenomenon makes wireless services a serious threat to the financial stability of a rural telephone company in spite of the fact that the wireless service may be less reliable or not ubiquitously available for customers..

[40] *See FCC Connect America Fund ETC Order*, FCC 14-190 (rel. Dec. 18, 2014) (establishing the 10 Mbps download / 1 Mbps upload standard as a requirement for receipt of federal high-cost support).

[41] Michael J. Balhoff, Robert C. Rowe, and Bradley P. Williams, *Universal Service Funding: Realities of Serving Telecom Customers in High-Cost Regions*, (Columbia, MD: Balhoff & Rowe, 2007), available at http://www.balhoffrowe.com/pdf/USF%20Funding%20Realities%20of%20Serving%20Telecom%20Customers%20in%20High%20Cost%20Regions%207-9-07.pdf.

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1   and would not be served – absent high-cost support. The data in that 2007 report

2   assumed that the ILEC would continue to have intercarrier compensation revenues and

3   margins. This study also relied on the assumption that the universal service system

4   would continue in substantially the same form as it had for the decade preceding 2007.

5   However, the most recent FCC reform in November 2011 has mandated the

6   elimination of terminating access charges by 2020 and implemented a sweeping and

7   evolving set of reforms of the federal universal service system.[42] The import of the

8   2011 reforms is that the financial outlook for small carriers is today more dire than the

9   cases I studied in 2007, where the situation was already challenging.

10   **Q.**   **Does the rate-of-return regulatory platform or the Independent Small LECs'**

11   **access to California High Cost Fund A ("CHCF-A") shield the Independent Small**

12   **LECs from the effects which you describe?**

13   A.   The Independent Small LECs are not shielded if there is a failure to determine and set

14   appropriate rates of return. While the rate-of-return regulatory structure should result

15   in a fair opportunity for companies to earn a reasonable rate of return, that opportunity

16   only exists to the extent that the rate structure is set, based on reasonable assumptions.

17   Rate-of-return regulation provides no guarantee that a company will achieve any

18   particular revenue level, and I believe that CHCF-A support is not retroactively

19   increased to remedy revenue shortfalls that carriers may have incurred. Moreover, I

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[42] *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, *Universal Service – Mobility Fund,* WT Docket No. 10-208, Report and Order and Further Notice of Proposed Rulemaking, 26 FCC Rcd. 17663 (2011) ("*USF/ICC Transformation Order"*).

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1   believe that the Commission has introduced certain high-cost fund reductions from the

2   federal system and applied them to CHCF-A calculations, including the imposition of

3   a "corporate cap" that is designed to disallow companies' corporate expenses. *See*

4   D.14-12-084, at p. 101 (O.P. 3). Further, the CHCF-A program remains under review

5   in R.11-11-007, and the scope of that proceeding could further threaten Independent

6   Small LEC revenue streams. *See* D.14-12-084, at p. 12.[43] Regulatory changes and

7   risks must be taken as a whole in assessing the financial stability of carriers whose

8   service is targeted to customers in a high proportion of less-economic regions.

---

[43] Notably, this decision defines Phase 2 to include a reconsideration of whether rate of return regulation will continue and other major potential changes to the regulatory structure under which the Independent Small LECs operate. I offer no opinion as to the likelihood of any of these adjustments being made, but their continued consideration underscores the profound uncertainty and associated risk that Independent are experiencing.

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1   Q.   **Is support for wireline networks less important given the rise of wireless services?**

2   A.   No, it would not be correct to say that wireless is the future of all telecommunications.

3   I make this point because the Commission might ask whether it is appropriate to

4   maintain a utility, and hence its cost of capital, if the industry is dying. I do not

5   believe the wireline industry is dying, but rather I believe that it is evolving toward a

6   new core service. I note that customers are today increasingly reliant on broadband,

7   which is now an important service. The FCC's 2011 reforms of USF and intercarrier

8   compensation ("ICC") outlined this migration in its *USF/ICC Transformation Order*

9   cited above. At paragraph 10 of the *USF/ICC Transformation Order*, the FCC stated

10   that it was "modernizing USF and ICC from supporting just voice service to

11   supporting voice and broadband, both fixed and mobile, through IP networks is

12   required by statute."

13   Broadband is likely to remain primarily a wired service. The FCC reported in 2009

14   that the average monthly consumption of wired data services was 9 gigabytes ("GB")

15   and the agency expected the average to rise to 15 GB by the end of 2010.[44] The FCC

16   now reports that the average fiber user and average DSL user consumes each month 32

17   GB and 22 GB of data, respectively.[45] The growth in volume is up over a year ago by

18   42% and 79%, respectively. Further "proving" the value of the wired broadband

19   network, the two dominant U.S. *wireless* carriers—Verizon and AT&T, Inc.

20   ("AT&T")—have invested, respectively, over $20 billion in FiOS and over $14 billion

---

[44] FCC, *Broadband Performance, OBI Technical Paper No. 4*, available at http://transition.fcc.gov/national-broadband-plan/broadband-performance-paper.pdf, p. 6.

[45] FCC, *A Report on Consumer Wireline Broadband Performance in the U.S.*, Charts 19 and 20; available at http://www.fcc.gov/measuring-broadband-america/2013/February.

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1   in U-verse.[46] The reason for that huge capital commitment is that the average home or

2   business uses too much bandwidth to be cost-effectively served by a commercial

3   wireless provider at today's rates. Furthermore, a consumer, using today's average

4   wireline volumes, would be required to pay over $200 monthly for commercial

5   *wireless* broadband from Verizon Wireless or AT&T Wireless. Commercial wireless

6   is not today a substitute, and, in my opinion, is not likely to be a price-effective

7   substitute in the foreseeable future in light of the growing demand for broadband

8   bandwidth.

9   In short, wireless and wireline platforms provide complementary services. Consumers

10   currently rely on data-centric communications services that are growing at a rapid rate,

11   requiring carriers to continue to invest in wireline plant that is not likely to be replaced

12   by commercial wireless services. The federal policy is clear that both wireless and

13   wireline services will be needed and should be supported in rural and low-density

14   regions, as ubiquitous, high-quality wired service will continue to be important, and

15   will likely remain a major policy goal for the foreseeable future.[47]

16 **Q. What do you mean by the statement that investors are more uncertain about the**

17   **wireline industry than they have been in the past?**

---

[46] While Verizon and AT&T have slowed or stopped high levels of investment in recent years, the reason relates to the fact that they have completed their buildout in higher density regions, and those companies have apparently determined that certain lower-density regions are too expensive or that there are alternative businesses in which to invest capital to earn superior returns (compared with the low-density regions.)

[47] See *USF/ICC Transformation Order,* para. 10: "Under these circumstances, modernizing USF and ICC from supporting just voice service to supporting voice and broadband, both fixed and mobile, through IP networks is required by statute. The Communications Act directs the Commission to preserve and advance universal service: 'Access to advanced telecommunications and information services should be provided in all regions of the Nation.' It is the Commission's statutory obligation to maintain the USF consistent with that mandate and to continue to support the nation's telecommunications infrastructure in rural, insular, and high-cost areas."

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1   A.   Investors are now assigning lower valuations (higher required return on equity) to

2   ILECs and becoming even more cautious in light of the regulatory uncertainty and the

3   changing competitive marketplace. The equity prices of the ILEC-centric carriers, that

4   is, those without major wireless operations, have lagged, as is illustrated in Figure 3.

5   The graphic provides an indexed view beginning in 2000 for the stock prices of

6   CenturyLink (ticker symbol CTL), Frontier (FTR) and Windstream (WIN), and

7   tracking their performance relative to the S&P 500, which is widely used as an index

8   for the overall market.[48] The three carriers are the largest of the publicly-traded ILECs

9   with no wholly-owned wireless business and with extensive service in rural areas.

10   Figure 3 illustrates that, from the low point in the market collapse in 2008, the S&P

11   500 has sharply outperformed the three ILEC companies, which I believe are

12   approximately representative of investor sentiment about ILECs prior to considering

13   any "size effects" or rural carrier regulatory risks. The stocks of CenturyLink and

14   Windstream have outperformed Frontier's stock, in part because those two carriers

15   have diversified within the last five years into business and data services where

16   investors may be expecting higher growth. Windstream's stock weakened at the end

17   of April 2015, as the company spun-off its operating assets to a real estate investment

18   trust ("REIT") in a sales-leaseback, and investors appear to be uncertain about

19   valuations for the surviving operating company and the REIT. Frontier has the largest

20   percentage of ILEC-only operations and has at least recently slipped below the

21   performance of the other two carriers and that of the S&P 500. It is my conviction that

22   the market has a negative view of the ILEC businesses, and this graphic is illustrative

---

[48] Standard & Poor's 500, is a widely-used stock market index based on the market capitalizations of 500 large
companies having common stock listed on the NYSE or NASDAQ.
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1   of the growing investor caution. The underlying data for the figure are provided in

2   Exhibit MJB - 8.

3   *Figure 3: Indexed equity markets: larger rural carrier v. S&P 500*

4
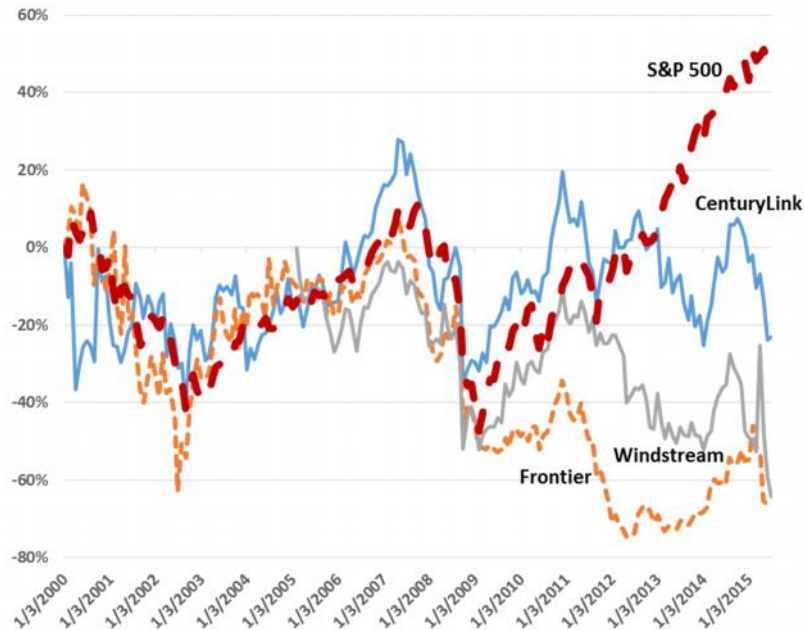
5   *Source: Yahoo Finance.*

6   **Q.   Does the transactional market reflect the same caution about the ILEC industry?**

7   A.   Yes. The prices paid—expressed as multiples on cash flow (*e.g.,* EV/EBITDA)—to

8   acquire or bid on pure-play[49] ILECs have fallen since 2001 and most notably since

9   2007.[50] Investors use multiples on cash flow to make it easier to compare one

---

[49] A "pure-play" ILEC is best defined as an ILEC without significant other non-ILEC services such as major cable or wireless or extensive fiber transport; that is, the ILEC's business is composed primarily of voice and broadband services to residential and business customers.

[50] Multiples are used to provide a better "apples-to-apples" comparison from one transaction to the next. Multiples allow the financial advisor to focus on ratios that indicate how much a buyer is willing to pay, for example, for $1 of revenues or more typically $1 of operating cash flow, regardless of the size of the transaction. So, 8.0x (8 times) the last year's earnings before interest, taxes, depreciation and amortization ("EBITDA") means that an investor is willing to pay $8 for $1 of operating cash flow generated over the last twelve months, because he or she assumes it will be possible to realize a risk-adjusted sufficient return on investment over future periods.

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1 transaction or one valuation with another.[51] In 2001, as detailed in Exhibit MJB - 5,

2 there were three rural ILEC transactions at an average price that was 10.2 times last-

3 twelve-month trailing EBITDA.[52] Figure 4 illustrates more recent, large and medium-

4 sized ILEC transactions since the beginning of 2006, depicting how the pricing trend,

5 based on multiples of EV to EBITDA, has weakened.[53] In the period since the end of

6 2008, the average purchase price of the seven announced transactions was 5.4 times

7 EBITDA.[54] Because small ILECs do not typically announce sale prices, most of the

8 data remain confidential and we are not able to discuss specific pricing for certain

9 transactions on which we have worked. However, my partners and I have been

10 reporting in our presentations at conferences that the "going rate" for a pure-play ILEC

11 appears to have collapsed to approximately 4.5 to 5.5 times trailing (last full year)

12 EBITDA, which means that the value today is about half the value reflected in the

13 EBITDA multiples realized in 2001 and about 56% to 69% (based on 4.5x and 5.5x

---

[51] Multiples are standardizations. In the financial world, multiples are analogous to housing prices per square foot, or, for tires, pounds per square inch. Big homes can be compared with small homes, and inflation in large tires with inflation in small tires.

[52] In 2001, Country Road acquired Saco River (8.5x trailing EBITDA), TDS acquired MCT, Inc. (9.6x), and D&E acquired Conestoga (12.5x).

[53] Again, the data are included in Exhibit MJB - 5. The abbreviations include CNSL (Consolidated Communications), CTCO (Commonwealth Telephone), CTL (CenturyTel which became CenturyLink), CZN/FTR (Citizens Communications which became Frontier), D&E (D&E Communications), SNET (Southern New England Telephone which are the Connecticut operations of AT&T), WIN (Windstream), and VZ (Verizon). The green bubbles (FairPoint-Verizon, CenturyTel-Embarq, Frontier-Verizon, and CenturyLink-Qwest) in the graphic were tax-advantaged transactions (Reverse Morris Trusts or stock-for-stock), which means that the sales prices would likely have been somewhat higher if there had been no tax benefits. In the case of several recent transactions, the prices were higher than they might otherwise have been because they included non-ILEC operations that added incremental value (Windstream-Iowa Telecom, Blackfoot-FairPoint, and Consolidated-SureWest, Consolidated-Enventis), which also suggests that the pure ILEC value is lower than the bubble depicts. For example, the Iowa Telecom sale included $130 million in net operating losses, which means that the EV/EBITDA calculation should be adjusted lower.

[54] Charlesmead has tracked 71 transactions in the period announced from the beginning of 2008 to the present, and has provided services related to nine announced ILEC transactions in that period. The publicly-available data are unfortunately scarce, but our public discussions at conferences over the last several years provides corroboration of this testimony.

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1   EBITDA) of the 8.0 times EBITDA value realized on average between 2001 and the

2   end of 2007.[55] To be clear, investors appear to be signaling that there is significantly

3   greater risk today compared with ten years ago or even five years ago, as will be

4   discussed further below.

---

[55] The most recent transactions are Consolidated Communications' purchase of Enventis which included substantial fiber transport (4,200 miles) and business-centric services (business and broadband account for more than 50% of revenues), providing the reason for the relatively high valuation, and Frontier Communications' proposed purchase of Verizon's operations in three states, including California, where the valuation of 5.9x EV/EBITDA is likely lower as Frontier reports that it is paying 3.7 times EBITDA after excluding avoided (unallocated) costs on Day 1 of the acquisition. The statistics above use Day 1 EBITDA calculations for the Frontier-AT&T transaction (announced Day 1 EV/EBITDA of 4.8x, Frontier's Financial Analyst presentation 12/17/13, slide 3) and for the proposed Frontier-Verizon transaction (Frontier's Financial Analyst presentation, 2/5/15, slide 6); and Enventis is excluded because it is not appropriate to compare a fiber-transport and business-centric company to ILEC-only operations. Illustrating the presentations we have made, I have attached a slide deck projected and distributed June 16, 2014 as part of my keynote for the Georgia Telecom Association; I cited at slide 7 that the appropriate value for ILEC assets was 5.0x trailing EBITDA; see Exhibit MJB - 6.
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1   *Figure 4: Reported Multiples on EBITDA for ILEC Acquisitions*

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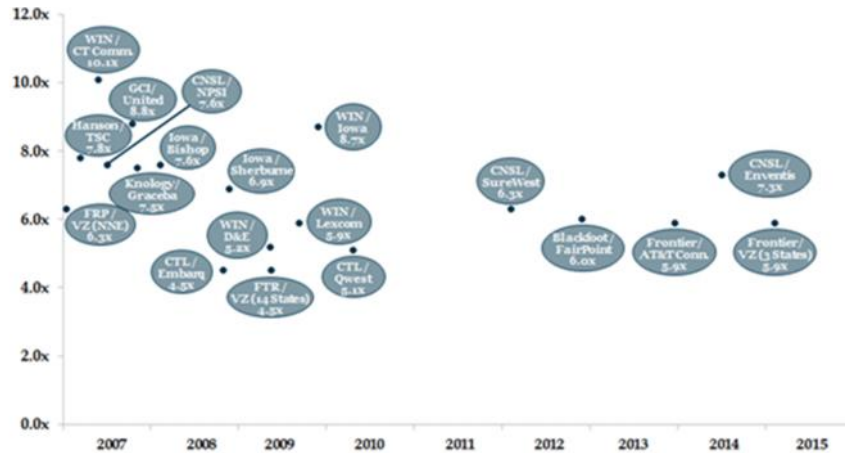
3   Source: Company press releases and filings
(1) Windstream / Iowa transaction value excludes the value of Iowa's net operating loss carry-forwards.

4   *Source: Company press releases and filings.*

5   **Q.   Are there cautionary signs in the debt markets for small ILECs?**

6   A.   Yes. Lenders have become more cautious in lending to small ILECs, if the banks are

7   willing to lend at all to the carriers. For example, CoBank ($95 billion in assets),

8   which has been a large lender to rural wireline companies, reports that it is making few

9   loans, almost none of which are principally for infrastructure improvements. CoBank

10   sent a letter to the FCC in 2012 that elucidates its concerns about the current

11   regulatory environment for the financial viability of rural ILECs:

12   CoBank is concerned about the negative impact the USF/ICC
13   Transformation Order (the Order) . . . . Unfortunately, we view
14   many of the provisions of the Order . . . as antithetical to that goal.
15   Affordable broadband for all Americans cannot be achieved
16   without increasing the funding spent to support broadband
17   deployment. The rate-of-return regulated Rural Local Exchange
18   Carrier has historically done the lion's share of the work in
19   deploying truly robust broadband in rural America. Instead of
20   trying to find ways to cut and curtail support to these carriers, we
21   continue to believe the Commission's goals would be better served
22   in finding ways to help these carriers continue to succeed in their

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1   decades-long mission of bringing modern telecommunications
2   services to their subscribers. [56]
3
4   Similarly, the RUS, which is part of the Department of Agriculture, has $4.7 billion in

5   principal outstanding for telecom infrastructure loans and the Farm Bill Broadband

6   Loan Program.   The RUS has been able to place its full loan portfolio every year that I

7   have been able to track—*until* 2012 (immediately after the FCC's November 2011

8   Transformation Order) when borrowers were lent only 11.6% of the $690 million that

9   was available. This means that the RUS and/or the borrowers have become more

10   cautious in light of regulatory instability in the industry. Further, of another $736

11   million available for RUS broadband loans, only 9.4% ($68.9 million) was placed with

12   carriers in 2012.[57] As presented in Table 2, the percentage of available funding placed

13   in 2013 and 2014 improved to 28% and 31%, respectively, but it is still profoundly

14   troublesome that total dollars loaned declined by more than two-thirds from the pre-

15   2012 levels even in the most recent period. Our conversations with companies and

16   with the RUS indicate that the low investment is a combination of caution at the RUS

17   and uncertainty among the companies. In either case, the financial import is similar.

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[56] Letter of Robert F. West to FCC, Marlene H. Dortch, May 18, 2012, available at
https://prodnet.www.neca.org/publicationsdocs/wwpdf/0511cobank.pdf.

[57] 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; see Exhibit MJB - 9, 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.

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1   *Table 2: RUS loan activity to traditional telecommunications*

Fiscal year	Loans approved	Amount ($000)	Available funding ($000)	% of available funding
2011	41	689,999	690,000	100.0%
2012	7	79,765	690,000	11.6%
2013	13	196,159	690,000	28.4%
2014	14	213,993	690,000	31.0%
2015 *	13	203,783	690,000	29.5%
Total	**88**	**1,383,699**	**3,450,000**	40.1%

Approximate as of end of fiscal year, June 2015.

2   *Source: Rural Utilities Service*

3   As important or possibly more important than the overall trend, it appears that the

4   lower costs of debt are generally unavailable to the small ILECs, based on the

5   comments from CoBank cited above and the statistics of the RUS.

6

7

8

9   **VI.   CALCULATION OF AN APPROPRIATE RANGE AND ESTIMATE FOR EQUITY**

10   **COSTS.**

11   **Q.   How does the changing ILEC marketplace affect the Independent Small LECs'**

12   **cost of equity?**

13   A.   The federal rate of return was adopted as 11.25% in 1990 and reiterated in the FCC's

14   Multi-Association Group Order of 2001. It is difficult to believe or argue that the

15   appropriate return on equity is lower today. In fact, industry risks are demonstrably

16   greater than ten or twenty or twenty-five years ago, as described in the previous

17   section of this testimony. In 1990, the ILEC industry had monopoly characteristics;

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1   there was ongoing growth in switched minutes of use and in access lines; the carriers

2   had virtually 100% market share across which to manage internal cost-shifting and the

3   high fixed-cost nature of the business; and there was a regulatory safety net that was

4   predictable and well understood.

5   There is only one change since 1990 that *might* reduce the appropriate return on

6   equity, and that is the lower cost of debt in the last several years, but this factor is far

7   outweighed by the profound countervailing risks of the current environment. Further,

8   with respect to today's debt levels, I note that most observers believe the Fed has been

9   committed to an "unsustainable" approach in manipulating interest rates to low levels,

10   which means that the forward-looking rates are likely to be significantly higher than

11   today's rates.[58] I provide data related to the change in debt costs in a later section of

12   this testimony. However, low interest rates can only be part of a cost of capital

13   calculus if they are *really available* in the future. The evidence for rural carriers points

14   toward increased risks, lesser availability of debt, and the probability of higher interest

15   rates going forward for the general market and for the ILECs, assuming debt capital

16   can even be obtained given the uncertainties affecting the rural telecommunications

17   industry.

18   Q. **How do you derive the specific inputs appropriate for use of the CAPM and the**

19   **Buildup calculations to be developed in this proceeding?**

20   A. The inputs most commonly used for the CAPM or Buildup Models are drawn from

21   data compiled in annual publications from Ibbotson/Morningstar and from Duff &

22   Phelps. The publications provide statistical information about annual risk-free rates,

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[58] Duff & Phelps 2015 Valuation Handbook Guide to Cost of Capital, p. 3-3; see Exhibit MJB - 2.
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1   annual returns on equity for the market as a whole, and returns for specific industries

2   relative to the overall market. Ibbotson/Morningstar has continued to publish its

3   *Classic Yearbook,* but it ceased publishing its *Valuation Handbook* after 2013. The

4   Ibbotson valuation data and analyses are now consolidated into the publications

5   provided by Duff & Phelps, as of 2015. I make reference in this testimony to both

6   sources, which are the principal authoritative resources.

7 **Q. Do you use cost of equity inputs from different periods?**

8 A. Yes. I provide input from several different periods. The approach is consistent with

9   my professional view that multiple methodologies help to test assessments of the costs

10   of equity. The expectations for returns on the "risk-free rate," returns on the equity

11   market and returns on specific industries vary from one period to the next. Inflation

12   may be high or low; the stock market may be depressed or inflated; and the global

13   markets may be affected by turbulence (higher risk) or more peaceful growth (lower

14   risk). We are using inputs from longer periods to reduce the effects of cyclical

15   conditions that may show up in the data. And we assess different periods to compare

16   returns to confirm our findings with respect to a "normalized" expectation of equity

17   returns (costs).

18 **Q. Is it appropriate to use lower risk-free rates from one period and lower market**

19   **equity returns from another period to create a lower estimate for costs of equity?**

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1   A.   No. The statistical data compiled by Ibbotson and Duff & Phelps provide information

2   about the equity returns in a period *relative to* the risk-free rate in that same period.[59]

3   The markets expect certain returns in total, which include that period's risk-free rate

4   *and* that period's equity premium. It is not appropriate to use a market equity risk

5   premium derived from one period with a risk-free rate from another period. Again, I

6   provide information for several periods so the Commission can confirm that the

7   estimates are reasonable.

8   **Q.**   **What periods are most appropriate to use in computing the cost of equity for the**

9   **Independent Small LECs?**

10   A.   I begin with the longest period available, which is the Ibbotson data from 1926 to

11   2014. I also use readily available information in the most recent Duff & Phelps 2015

12   *Valuation Handbook*, which details inputs for the period from 1963 to 2014, Finally, I

13   use the Ibbotson years 1995 to 2014, which are absorbed into and reported in the Duff

14   & Phelps 2015 *Valuation Handbook*. I provide specific citations to each of these

15   sources in my subsequent testimony. The CAPM/Buildup data are included in Table 3

16   below. I also present the Duff & Phelps Risk Premium data in the final column for

17   1963 to 2014. As I will explain below, the Duff & Phelps' Risk Premium approach

18   uses a different size premium, which is more general because it does not include an

19   industry-specific or company-specific adjustment.

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[59] Duff & Phelps 2015 Valuation Handbook Guide to Cost of Capital, p. 3-1; "The risk-free rate and the ERP [equity risk premium] are interrelated concepts. All ERP estimates are, by definition, developed *in relation* to the risk-free rate." (Emphasis in original); see Exhibit MJB - 2.
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1

Table 3: Cost of Equity based on CAPM/Buildup Method

	Ibbotson Years 1926-2014	D&P Years 1963-2014	Ibbotson Years 1995-2014	D&P Risk Premium 1963-2014
Risk-free rate	5.07%	6.61%	4.92%	6.61%
Beta	1.06	1.06	1.06	
Equity premium predicted by CAPM				6.67%
Equity risk premium	7.00%	5.05%	6.84%	
Base or market equity cost of capital	**12.07%**	**11.66%**	**11.76%**	**13.28%**
Industry-adjusted premium	0.42%	0.30%	0.41%	
Size premium to CAPM (1963-2014)	5.78%	5.78%	5.78%	8.15%
Total estimated cost of equity	**18.27%**	**17.74%**	**17.95%**	**21.43%**

2
3

4 **Q. Why do you refer to the combined CAPM/Buildup rather than to two distinct**

5 **methods?**

6 A. I refer to the methods collectively because the Buildup Method is derived from the

7 CAPM, both conceptually and in terms of the fundamental inputs. In both methods,

8 there is a risk-free rate, an addition for the necessary market return, and a size

9 premium. The Buildup Method employs beta-like inputs that are included as two

10 buildup figures: a specific market equity risk premium plus an industry-specific risk

11 premium. By contrast, in the CAPM, the use of a beta is a company-specific factor

12 that includes both the market *and* company-specific premium as a single input. The

13 Buildup Method typically adds premia for the risk-free rate plus the general market

14 equity risk premium plus the industry-specific premium plus the size premium to

15 arrive at approximately the same result as the CAPM. I will explain below that the

16 industry-specific premium for the ILEC industry should not be used in our Buildup

17 Method, so, as Duff & Phelps suggests, I included an industry-adjusted premium

18 relying on an average of betas from similar companies. We do not have a beta for the

19 Independent Small LECs, but I use an adjusted premium of 1.06 (average beta of 5

20 ILECs). If that beta of 1.06 were included in a typical CAPM, the result would have

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1   been precisely the same as that presented in the table above. I am referring in the table

2   to CAPM/Buildup as one and the same in this case because the computations, using

3   the proxy beta, generate the same results.

4 **Q. Please explain the sources for and variations in the risk-free rate.**

5 A.   The risk-free rate is based on the yield of the 20-year U.S. treasury bond, which is

6   assumed to be the best credit available over a twenty-year period (expectation that

7   there will be no loss of principal and guaranteed dividend payments). This horizon is

8   appropriate because we are seeking a rate for companies that expect to be in business

9   indefinitely. The risk-free rates used for the 1963-2014 period (6.61%) and 1995-2014

10   period (4.92%) are drawn from Duff & Phelps' 2015 *Valuation Handbook* and the

11   Ibbotson/Morningstar *2015 Classic Yearbook*, respectively.[60]

12 **Q. Are there differences of opinion about which risk-free rate should be used?**

13 A.   Yes. It might be argued—with strong authority—that the appropriate rate is higher

14   than the yield alone. According to this school of thought, the risk-free rate is not

15   simply the yield for the 20-year treasury bond, but also includes inflation as well as

16   maturity risk.[61] In certain years, the underlying bond value is up or down, depending

17   on fluctuations in market-based interest rates, which affect the price for the bonds. So,

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[60] Duff & Phelps 2015 Valuation Handbook Guide to Cost of Capital, p. 7-10 to 7-11 reports that from 1963-2014, "the 'historical' average annual long-term equity risk premium is 5.05%. The average annual risk-free rate is 6.61%." See also Ibbotson, 2015 Classic Yearbook, Long-Term Government Bond Yields, A-9, Exhibit MJB - 2; 4.92% is the monthly average for the period.

[61] Shannon Pratt and Roger Grabowski, Cost of Capital: Applications and Examples, Third Ed. (Hoboken, NJ: John Wiley & Sons, Inc., 2008) ("Cost of Capital"), p. 71. "The so-called risk-free rate reflects three components: 1. *Rental rate.* A real return for lending funds over the investment period, thus forgoing consumption for which the funds otherwise could be used. 2. *Inflation.* The expected rate of inflation over the term of the risk-free investment. 3. *Maturity risk or investment rate risk.* . . . the risk that the principal's market value will rise or fall during the period to maturity as a function of changes in the general level of interest rates." This text explains how the 20-year treasury bond can be significantly negative or very high in a given year, as the underlying bond appreciates or depreciates in the period. See Exhibit MJB - 11.

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1   while the expected dividend has been paid in a given period, the market-driven price

2   of the bond fell or appreciated in the year in question compared with the prior year.

3   For example, in 2014, the total return on the 20-year treasury was up 24.5% after

4   being down 11.4% in 2013, primarily due to the movement of market-based interest

5   rates during those years.[62] If I had used the total return for the risk-free rate, Table 3

6   above would have been replaced by the following table:

7   *Table 4: Alternative cost of equity calculation with total-return-risk-free rate*

	Ibbotson Years 1926-2014	D&P Years 1963-2014	Ibbotson Years 1995-2014	D&P Risk Premium 1963-2014
Risk-free rate (2015 Ibbotson Table C-4)	5.70%	7.40%	8.60%	7.40%
Beta	1.06	1.06	1.06	
Equity premium predicted by CAPM				6.67%
Equity risk premium	7.00%	5.05%	6.84%	
Base or market equity cost of capital	**12.70%**	**12.45%**	**15.44%**	**14.07%**
Industry-adjusted premium	0.42%	0.30%	0.41%	
Size premium to CAPM (1963-2014)	5.78%	5.78%	5.78%	7.36%
Size premium above risk-free rate				
Total estimated cost of equity	**18.90%**	**18.53%**	**21.63%**	**21.43%**

8

9   *I have not used this alternative in my calculations*, but point out that this approach is

10   supported by significant authorities. A comparison of this table with the previous

11   table reveals that this alternative computation, which is included immediately above in

12   Table 4, generates higher estimated costs of equity for the first three columns and the

13   same cost of equity for the last column. My choice to avoid using this formulation

14   again highlights the conservative nature of the approach in this testimony.

15   **Q.   How did you generate the beta to be used in your calculations?**

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[62] Ibbotson 2015 Classic Yearbook, Table C-4, pp. 2, 4; see Exhibit MJB - 2. See also Tom Copeland et al., McKinsey & Company, Valuation: Measuring and Managing the Value of Companies (New York: John Wiley & Sons, 1990), p. 192. See Exhibit MJB - 12.
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1   A.   Duff & Phelps provides industry-specific adjustments that can be used in the

2   calculation of the Buildup analysis, which is a useful approach when no company-

3   specific beta is available, and such is the case with the Independent Small LECs. The

4   industry-specific adjustment relies on data compiled for SIC codes, which, in this case,

5   is SIC code 4813 (Telephone Communications, except Radiotelephone).[63] The 2015

6   adjustment for SIC 4813 is recommended to be -1.44%, which would offset the long-

7   term historical equity premium (dropping it lower by 1.44%) because the industry

8   companies in 4813 are perceived, according to the data in Duff & Phelps, as having

9   less risk compared with the overall market. However, Duff & Phelps explains that an

10   analyst can review the companies included in the industry-specific group to determine

11   whether they are truly comparable, and then Duff & Phelps provides a formula for

12   adjusting the industry-specific risk if a "custom" beta is used.[64] The companies

13   included in SIC code 4813, upon review, are very different from the Independent

14   Small LECs, as revealed in a quick glance at the entire list in the footnote below.[65]

15   The companies include CenturyLink, multi-national Cogent which is an Internet

16   Service Provider, and General Communications Inc., which is primarily a cable and

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[63] Duff & Phelps 2015 Valuation Handbook Guide to Cost of Capital, pp. 5-12 to 5-22. Ibbotson 2015 Classic Yearbook, Appendix C-4, p. 6. See Exhibit MJB - 2.

[64] Duff & Phelps 2015 Valuation Handbook Guide to Cost of Capital, pp. 5-14 to 5-15; and the adjustment is "(PeerGroupBeta x RP_m) – RP_m"; see Exhibit MJB - 2. In the CAPM table, the adjustment is (1.06 x the equity risk premium) – equity risk premium, which is shown as the "industry-adjusted industry risk premium. Windstream would have been included in our calculation of the industry beta, but the company recently divested its assets, and Value Line now reports Windstream's beta as "NMF".

[65] The company list for SIC 4813 can be downloaded from Duff & Phelps at http://www.duffandphelps.com/SiteCollectionDocuments/Services/Valuation/Cost%20of%20Capital/March% 202015_IRP%20Company%20List_vFINAL%206.15.15.pdf. The companies are Alaska Communications Sys., Alteva, AT&T Inc., Cablevision Sys Corp., Centurylink Inc., Cincinnati Bell Inc., Cogent Communications Holdings, Consolidated Communications Holdings Inc., Elephant Talk Communications Inc., Empire District Electric Co., Frontier Communications, Corp., General Communications, Hawaiian Telcom Holdco Inc., Hc2 Holdings Inc, IDT Corp, Level 3 Communications Inc., LICT Corp, New Ulm Telecom Inc., Otelco Inc., Sprint Corp., Verizon Communications Inc., Windstream Holdings Inc.

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1   wireless company. The listed companies serve multiple states and/or non-U.S.

2   regions, with a variety of businesses including enterprise services, wireless and cable

3   television products. These companies bear no reasonable resemblance to very small,

4   localized, wireline carriers with between 300 and approximately 20,000 customers,

5   such as the Independent Small LECs. Because of the fundamental differences between

6   the SIC Code 4813 proxy group and the Independent Small LECs, I then reviewed

7   reports from Value Line Funds to compile betas for companies that might be relatively

8   more comparable in terms of concentrated ILEC services and relatively smaller size.

9   The companies that are more comparable, in my estimation, are FairPoint

10   Communications, Inc. (Value Line beta of 1.4), Telephone & Data Systems, Inc.

11   (Value Line beta 1.2), NTELOS Holding Corp. (Value Line beta 1.0), Frontier

12   Communications (Value Line beta 0.95) and Consolidated Communications (Value

13   Line beta 0.75).[66] On the basis of the five companies, I used the average beta of 1.06,

14   but believe that the figure is still low for the Independent Small LECs, again because

15   the comparison companies are larger and more diversified, thereby likely resulting in

16   an understated (too low) beta. This underscores the critical need for a size premium,

17   which I will discuss later.

18

19   **Q.   What is the equity risk premium and how do you estimate that premium?**

20   A.   The equity risk premium is the difference between what a risk-free investment—

21   generally using the long-term Treasury Bond as a proxy—would generate and what

22   stocks in the market over the same period would produce. Generating a market equity

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[66] See Exhibit MJB - 13.
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1   risk premium is a simple exercise in subtraction, taking the total market return or

2   expectation, based on historical data, for equities and subtracting the risk-free rate.

3   The appropriate market premium data are tabulated in studies such as Duff & Phelps

4   2015 *Valuation Handbook* which builds on the data previously published by

5   Ibbotson/Morningstar. In Exhibit 3.10 of the Duff & Phelps *Valuation Handbook*

6   *Guide to Cost of Capital*, the Handbook reports that the long-horizon equity risk

7   premium is 7.0%, which is the observed premium from 1926 to the present. For the

8   period from 1963-2014, the equity risk premium is 5.05% as reported by Duff &

9   Phelps. For the period from 1995 to 2014, the premium is 6.84% as also reported by

10   Duff & Phelps.[67]

11   **Q.**   **What size premium should be applied?**

12   A.   As Ibbotson/Morningstar did in the past, Duff & Phelps provides two approaches to

13   size premia based on its longer-term observations of data. The size effects can be

14   captured by adding them to CAPM results or to the risk-free rate, using one of two

15   different size premia, each appropriate to the different respective starting points for the

16   analysis. I used the former because the latter approach is less precise, but I also report

17   the latter result below. The data, based on statistics from 1963 to the present, are

18   compiled in the Duff & Phelps 2015 *Valuation Handbook Guide to Cost of Capital* in

19   the Appendices, with Exhibit B-2 providing size premia above the CAPM and with

20   Exhibit A-2 providing size premia over the risk-free rate. I provide the pages from the

21   relevant Appendices in Exhibit MJB - 2. The pages in question divide companies into

22   groupings (portfolios) ranked by size from 1 to 25, with 25 being the smallest.

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[67] Duff & Phelps 2015 Valuation Handbook Guide to Cost of Capital, pp. 7-11 and 3-23. See Exhibit MJB - 2.
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1   Portfolio 25 in Appendix Exhibit B-2 and in Exhibit A-2 includes companies with an

2   average book value of $65 million, which is larger than any of the Independent Small

3   LECs. I have used the smoothed premium of 5.78% over the CAPM for Portfolio 25

4   drawn from Duff & Phelps Exhibit 7.3 rather than 10z premium of 11.98% (smallest

5   group in the tenth decile) or the 8.94% (average of the two smallest groups in the tenth

6   decile), further underscoring that my estimate is conservative.[68]

7   Q.   **Why did you not use the size premium over the risk-free rate as provided in**

8   **Appendix Exhibit B-2?**

9   A.   For Portfolio 25, the indicated smoothed size premium is 12.49%, which is combined

10   with 6.61% risk-free rate since 1963, resulting in a cost of equity of 19.1%.[69] The

11   estimate is in the middle of the other estimates generated in Table 3, but, in my

12   estimation, is so general and approximate that it is not necessarily helpful in this

13   discussion.

14   Q.   **What is the Duff & Phelps Risk Premium?**

15   A.   Duff & Phelps provides an analysis of Portfolio 25 stocks, indicating that, since 1995,

16   this group of stocks has generated a total return of 21.43%. This percentage is

17   comprised of the 6.61% risk-free rate and the 6.67% excess return predicted by the

18   CAPM in addition to the size difference, which was 8.15%.[70] As I explained above,

19   this formulation does not make any adjustments for industry-specific risks or

20   company-specific risks, so the inputs and results are more general. The results reflect

21   what actually occurred, providing insight into what might have been expected. The

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[68] Duff & Phelps 2015 Valuation Handbook Guide to Cost of Capital, p. 7-10, see Exhibit MJB - 2.
[69] Duff & Phelps 2015 Valuation Handbook Guide to Cost of Capital, see Exhibit MJB - 2.
[70] Duff & Phelps 2015 Valuation Handbook Guide to Cost of Capital, p. 7-11; see Exhibit MJB - 2.
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1   size premium in this case is higher than in the first three scenarios in Table 3, but it is

2   still below the Ibbotson/Morningstar finding that the smallest group should be

3   assigned an 11.98% premium.[71]

4   **Q.**   **Are you concerned about the magnitude of these premia?**

5   A.   No. Size premia are standard modifications in CAPM calculations, and they are

6   clearly appropriate for application here.[72] Ibbotson/Morningstar and Duff & Phelps

7   have compiled extensive data to show that very small companies, such as the

8   Independent Small LECs, should have a size premium that is substantially higher than

9   the 5.78% premium that I use above. The tenth decile (grouping of the smallest

10   companies) is subdivided in Duff & Phelps Exhibit 7.3 into four categories, 10w, 10x,

11   10y, and 10z, with respective size premia of 3.18%, 5.54%, 7.51%, and 11.98%. The

12   Ibbotson/Morningstar 2015 Yearbook provides data in Table C-1.[73] Ibbotson/

13   Morningstar explains that the smallest sub-category of "10z" includes companies with

14   a market capitalization of up to $96.16 million.[74] At the same time, I have chosen to

15   be conservative and use a premium of 5.78% rather than 11.98%, and have applied this

16   figure to each of the periods being analyzed.

17   **Q.**   **Can you provide the debt and equity information for the Independent Small**

18   **LECs?**

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[71] Duff & Phelps 2015 Valuation Handbook Guide to Cost of Capital, p. 7-10; see Exhibit MJB - 2.

[72] See, e.g., Duff & Phelps 2015 Valuation Handbook Guide to Cost of Capital, pp. 4-1 to 4-24; see Exhibit MJB - 2.

[73] Duff & Phelps 2015 Valuation Handbook Guide to Cost of Capital, p. 7-10, Exhibit 7-3. Ibbotson 2013 Valuation Yearbook Table C-1. See Exhibit MJB - 2.

[74] Ibbotson 2013 Valuation Yearbook, p. 216, Table C-1. See Exhibit MJB - 2.

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1   A.   Yes. Table 5 summarizes the debt and equity for each of the Independent Small LECs

2   from 2010 to 2014 based on information that I received from the companies. The

3   book value of all the ten California ILECs is very small, and the largest book value is

4   reported by Siskiyou Telephone, which has $60 million in 2014 book equity, while the

5   average and median values for all the Independent Small LECs are $20.2 million and

6      $14.3 million, respectively; thus, it is apparent that the ten California ILECs fall in the

7   lower half of the "10z" group, for which the indicated size premium is 11.98%.

1   *Table 5: Small LECs total debt and equity 2010-2014 ($)*

	2010	2011	2012	2013	2014
Common Equity					
Calaveras	8,474,778	9,104,216	8,842,007	8,513,358	8,513,358
Cal-Ore	13,882,635	14,517,314	15,647,046	16,552,928	17,560,657
Ducor	4,999,962	5,251,571	4,706,568	3,560,678	3,061,029
Foresthill	5,878,103	6,744,103	7,320,103	7,666,103	8,065,319
Kerman	9,953,000	10,835,000	10,802,000	10,802,000	10,967,000
Pinnacles	3,512,226	2,819,751	2,623,554	2,705,413	2,911,150
Ponderosa	26,749,383	26,508,056	31,127,582	36,423,316	38,068,157
Siskiyou	50,805,747	58,305,399	59,897,477	59,914,384	59,602,160
Sierra	38,172,169	37,133,193	33,013,887	39,619,212	31,088,208
Volcano	16,551,253	21,560,425	19,289,744	20,955,729	22,085,190
Average	**17,897,926**	**19,277,903**	**19,326,997**	**20,671,312**	**20,192,223**
Median	**11,917,818**	**12,676,157**	**13,224,523**	**13,677,464**	**14,263,829**
Preferred equity					
Pinnacles	70,000	70,000	70,000	70,000	70,000
Ponderosa	792,720	792,720	792,720	792,720	792,720
Siskiyou	418,000	418,000	418,000	418,000	418,000
Volcano	1,295,250	1,295,250	1,295,250	1,295,250	1,295,250
Average	**643,993**	**643,993**	**643,993**	**643,993**	**643,993**
Median	**605,360**	**605,360**	**605,360**	**605,360**	**605,360**
Debt					
Calaveras	8,004,652	7,301,284	7,180,350	6,446,570	5,659,346
Cal-Ore	-	-	-	-	-
Ducor	3,229,791	3,069,108	2,903,308	2,743,589	2,604,140
Foresthill	8,141,911	10,282,551	9,854,670	10,993,194	9,259,383
Kerman	9,061,177	9,869,591	10,253,699	12,588,721	11,364,864
Pinnacles	-	-	-	-	-
Ponderosa	18,067,143	16,157,886	19,123,394	24,961,238	21,934,990
Siskiyou	-	-	-	-	-
Sierra	23,072,963	20,975,945	18,901,086	16,548,092	14,304,846
Volcano	14,027,900	13,487,505	12,918,209	12,319,170	11,688,418
Average	**8,360,554**	**8,114,387**	**8,113,472**	**8,660,057**	**7,681,599**
Median	**8,073,281**	**8,585,437**	**8,517,510**	**8,719,882**	**7,459,364**

2

3   **Q.   Do you believe that any other adjustments are appropriate?**

4   A.   As I explained in a previous section of this testimony, I believe that a good case can be

5   made for assigning a cost to illiquidity to capture the lack of marketability in the

6   equity of the Independent Small LECs. I have little question that this factor is

7   appropriate because small companies generally trade at discounts that reflect a higher

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1   level of risk, as is further corroborated above in the IRS discussions of lack of

2   marketability. Some observers might contend that the small-size premium captures

3   this effect, but the small-size premium pertains to *liquid* securities. In this case, there

4   is an incremental risk as these companies are both small *and* illiquid. I have chosen

5   *not* to use this premium, in spite of the fact that the sources indicate that it is

6   appropriate. The simple calculation, however, would be to take the recommended cost

7   of equity and divide by 0.80 to include the premium, so my recommendation of 18.5%

8   cost of equity would be 23.1% if such a liquidity/marketability premium were to be

9   included (18.5% divided by 0.80).

10   Q.   **Do you believe that your cost of equity estimates are realistic given that they**

11   **include the possibility of overall capital costs that rise as high as the mid-20-**

12   **percent range?**

13   A.   Yes. I have provided multiple periods and methodologies to assess the reasonableness

14   of my findings, as is the practice when I work on M&A transactions. Additionally, to

15   test my findings, I turned to the M&A data, which provide compelling confirmation of

16   reasonableness. In fact, the transactional marketplace reports sharply reduced

17   valuations for small ILECs, which have slipped from approximately 10 times EBITDA

18   in 2001 (based on three transactions with publicly-available data) to 4.5 to 5.5 times

19   EBITDA over the last several years. Taking a longer view, from the beginning of

20   2001 through the end of 2007, at least 98 transactions involving small ILECs were

21   announced, 20 of which included announcements of public valuation data, as included

22   in Exhibit MJB - 5. The transactional multiple based on EV to EBITDA averaged

23   8.0x in that period. Assuming no change in the small ILEC industry's absolute level

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1   of debt and the cost of debt (which I believe is a realistic assumption) for industry-

2   wide carriers as of the period when small ILECs were valued at 8.0x (*i.e.*, 2000-2007),

3   this collapse in enterprise value implies that the equity value has fallen very sharply,

4   and the near-total loss of value is absorbed in the market value of equity.[75] The

5   concept is relatively simple. If a house is valued at $1 million and $200,000 is owed

6   to the bank, and then subsequently the house value slips to $500,000 and the same

7          $200,000 is owed to the bank, the residual equity value has fallen from $800,000 to

8          $300,000. Because the debt must be repaid at face value, the equity account bears the

9   entire loss of value in this scenario. This is what I believe is occurring for the

10   Independent Small LECs.

11   Q.   **How does a contraction in equity value affect the cost of equity, and does it**

12   **support your conclusions related to the cost of equity?**

13   A.   Before responding, I emphasize that the following assessment is a corroboration of the

14   analyses above, not the central presentation in this testimony. A critic might argue

15   that there is a mixing together of book value and market value. Such an argument

16   misses the larger point, which is that the size of the *relative contraction in value in the*

17   *marketplace* is a clear indication of the startlingly increased risks in the industry,

18   which is the basis for contending that a higher return on equity is appropriate. To aid

---

[75] A simplified illustration can illustrate that investors today are not paying the same amount for the same relative levels of cash flows, which means that they are requiring a higher return on equity because of higher perceived risks. The illustration captured in the table assumes that if a small ILEC were valued in 2007 at $100 and had a capital structure with 40% debt ($40 in this illustration), then the original equity was valued at $60. However, a change in enterprise value (debt plus equity) from 8.0x EBITDA to 5.0x EBITDA would mean that the enterprise would be worth 37.5% less today than in 2007. If the value of the debt is unchanged, the equity value would have fallen from $60 to $22.50 (down $37.50) for a loss of 62.5% of its value. Higher risk therefore is translated into higher required returns. The markets are confirming that equity risk is significantly more elevated today compared to perceived risk eight years ago.
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1   in understanding the concept about what has happened to market equity, I have

2   prepared Table 6, below. In the table, I examine the loss in enterprise value (the entire

3   company, which again means net debt and equity) as transactional multiples have

4   fallen over the last 10-15 years and notably since 2007. The table analyzes various

5   equity ratios and various multiple contractions. While the table is complex, it makes

6   important points in verifying the reasonableness of the estimates related to cost of

7   equity.

8   *Table 6: Illustration of the transaction price changes related to equity costs*

		80%	70%	60%
R1	**Assumed equity ratio**	**80%**	**70%**	**60%**
R2	Assumed enterprise value in year 2000	$100.00	$100.00	$100.00
R3	Implied equity value at start in 2000 (R1 x R2)	$80.00	$70.00	$60.00
R4	**Lost enterprise value (EV) from 8.0x EBITDA at start**			
R5	Assuming new EV multiple of 5.0x ((1-(5.0/8.0)) x R2)	$37.50	$37.50	$37.50
R6	Assuming new EV multiple of 5.5x ((1-(5.5/8.0)) x R2)	$31.25	$31.25	$31.25
R7	Assuming new EV multiple of 6.0x ((1-(6.0/8.0)) x R2)	$25.00	$25.00	$25.00
R8	**Net equity value after loss**			
R9	Assuming new EV multiple of 5.0x (R3-R5)	$42.50	$32.50	$22.50
R10	Assuming new EV multiple of 5.5x (R3-R6)	$48.75	$38.75	$28.75
R11	Assuming new EV multiple of 6.0x (R3-R7)	$55.00	$45.00	$35.00
R12	**Assumed original equity cost of capital**	12.00%	12.00%	12.00%
R13	Assuming new EV multiple of 5.0x (1/(R9/R3) x R12)	**22.59%**	**25.85%**	32.00%
R14	Assuming new EV multiple of 5.5x (1/(R10/R3) x R12)	**19.69%**	**21.68%**	25.04%
R15	Assuming new EV multiple of 6.0x (1/(R11/R3) x R12)	17.45%	18.67%	20.57%

9

10   **Q.   Please explain the table.**

11   A.   The table addresses the criticism that the estimations of the cost of equity, as presented

12   on the basis of the Ibbotson/Morningstar and Duff & Phelps statistics, rely on data that

13   are somehow distorted or are too theoretical. This table relies on data from arms'

14   length sale transactions in the real world and demonstrates what happens to equity

15   value and the cost of capital for local telecommunications companies such as the

16   Independent Small LECs. As an example, if an entire enterprise was worth $100 in

17   the year 2000 up to 2007, valued at 8.0 times trailing EBITDA, and is now worth 6.0

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1   times EBITDA with no change in the amount of the debt, then the loss of value ($25 in

2   this illustration) is entirely subtracted from the market value of the equity. If the

3   equity ratio was 80%, then one has to subtract $25 from $80, or if the equity ratio was

4   70%, then the loss of value is $25 from $70, and if the equity ratio was 60%, the loss

5   is $25 from $60. The table demonstrates that if the current multiple is actually 5.5

6   times EBITDA, then the losses to equity value are greater, and if the current multiple

7   is 5.0 times EBITDA, the losses are greater still.

8   Q.   **Should the Commission care about the loss of equity value over this period?**

9   A.   In theory, no, but given public policy objectives that the Commission cannot ignore,

10   the answer should be "yes." One could argue that the answer is "no" because all

11   companies incur risk in operating their businesses, and operations always result in

12   capital appreciation or loss of value for the shareholders. These are privately-owned

13   public utilities, so the loss of market equity value is borne by the shareholders and not

14   by the ratepayer or the Commission. But the answer is "yes" in this case because these

15   carriers are responsible for achieving certain public policy objectives and a strong

16   equity position for a utility will better assure access to debt-capital and will reduce the

17   risk associated with operations. Conversely, *loss* of market equity value can reduce

18   access to debt and raise the risk associated with operations. One must only imagine

19   the problem in refinancing a home when the housing market weakens sharply. Lower

20   market equity value in the home reduces or eliminates the homeowner's access to debt

21   capital and may result in higher interest rates. The Independent Small LECs' access to

22   the debt markets and their forwarding-looking debt prices are part of the calculation

23   with respect to WACC, and those factors will have an effect on the costs of equity.

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1   Again, if the Independent Small LECs cannot access capital, the state's universal

2   service and broadband deployment goals will be significantly impaired, and ratepayers

3   will suffer.

4   **Q.   Please explain your assessment of how the transactional or M&A data support**

5   **your findings about the cost of equity for the Independent Small LECs.**

6   A.   As the above table indicates, a change in the valuation multiple on EBITDA applied to

7   the enterprise has a direct effect on the market value of equity and an inverse effect on

8   the cost of equity. If a carrier is to achieve a return on invested capital that is fair and

9   comparable with what was earned ten years ago, but the market value of the equity is

10   now depressed, then the relative return (cost of equity) on that market value must

11   increase. I provide Table 7 for perspective on the 1997 Commission decisions and

12   resolutions regarding each of the Independent Small LECs, with the table presenting

13   capital structure, costs of debt and equity at that time.

14   *Table 7: WACC Decisions/Resolutions in 1997 for the Independent Small ILECs*

	CPUC Decision / Resolution	Debt			Equity			Wtd avg
		Ratio	Cost	Wtd cost	Ratio	Cost	Wtd cost	(WACC)
Calaveras	D97-04-034	29.21%	3.44%	1.00%	70.79%	12.81%	9.07%	10.00%
Cal-Ore	D97-04-036	39.98%	5.40%	2.16%	60.02%	13.06%	7.84%	10.00%
Ducor	D97-04-035	36.67%	5.11%	1.87%	63.33%	12.84%	8.13%	10.00%
Foresthill	D97-04-033	25.00%	5.07%	1.27%	75.00%	11.64%	8.73%	10.00%
Kerman	T-160003	25.00%	5.64%	1.41%	75.00%	11.45%	8.59%	10.00%
Pinnacles	T-160004	25.00%	5.64%	1.41%	75.00%	11.45%	8.59%	10.00%
Ponderosa	T-160005	33.76%	6.04%	2.04%	66.24%	12.02%	7.96%	10.00%
Siskiyou	T-160006	40.53%	6.24%	2.53%	59.47%	12.56%	7.47%	10.00%
Sierra	D97-04-032	20.69%	6.36%	1.32%	79.31%	10.94%	8.68%	10.00%
Volcano	T-160007	48.38%	7.10%	3.43%	51.62%	12.73%	6.57%	10.00%
Average		**32.42%**	**5.60%**	**1.84%**	**67.58%**	**12.15%**	**8.16%**	**10.00%**
Median		**31.49%**	**5.64%**	**1.64%**	**68.52%**	**12.29%**	**8.36%**	**10.00%**

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1   **Q.   Please use the transactional data to demonstrate how your conclusions are**

2   **reasonable.**

3   A.   The demonstration is straightforward. Today's capital structure of the Independent

4   Small LECs, on average, is approximately the same as in 1997, as the equity ratio falls

5   within the Commission's previously-defined zone of reasonableness which, in 1997,

6   was described as 60% to 80%, and when the cost of equity was, on average, near 12%,

7   as presented in Table 7.[76] In Table 6, above, I then tested my finding of 18.5% using

8   the following base formula: [old cost of equity x old market equity] = [new cost of

9   equity x new market equity]. The calculation attempts to generate an equity return

10   today that is the same as that generated in 1997, again assuming that returns are

11   relatively matched with capital invested. If I assume that the old return on equity

12   should approximately equal the new return, the new cost of equity is derived by an

13   algebraic adjustment to divide the [old cost of equity x old market equity] by the [new

14   market equity] to get the [new cost of equity], as indicated in Table 6. Again, I used

15   12% as the old cost of equity and the other calculations are spelled out in that table.[77]

16   Taking the top (5.5 times) of today's EV valuation range (assuming 4.5 to 5.5 times

17   EBITDA), the result is that today's cost of equity should rise to 19.7% to offset the

18   loss in equity value if the equity ratio is 80% or to 21.7% if the equity ratio is 70%.

19   Similarly, if we assume the market equity value has fallen to 5.0 times EBITDA (the

---

[76] As I previously noted, the zone for the equity ratio was set at 60%-80% in the Commission's 1997 rate cases and today's average equity ratio is about 70% for the Independent Small LECs.

[77] It is also consistent with the commentary in each of the 1997 Decisions outlined in the table above, where the Commission explains "Upon consideration, evaluation, and weighting of applicant's and ORA's financial and risk analyses with the above-mentioned observations of mitigated and increased risks, we find that a reasonable equity range for small telephone companies, such as applicant, should be 10.10% to 14.06%." See, e.g., Sierra Telephone, 1997 Cal. PUC LEXIS 1245;, *29, p. 8 of 18. The 12% cost of equity is the approximate midpoint of the low and high values.

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1   mid-point of today's valuation ranges, shaded in the table), then the cost of equity has

2   risen to 22.6% and 25.9% for 80% and 70% equity ratios, respectively. As I explain, I

3   am currently using 5.0 times EBITDA in my conference presentations to ILEC

4   executives and boards, as that figure is the mid-point of valuation for the smaller ILEC

5   industry, so this calculation suggests that the cost of equity has risen above 20%.

6   Once again, I emphasize that this transactional analysis is not intended to be the

7   principal cost of capital methodology, but the analysis is corroborative of my other

8   CAPM and Buildup findings above as it highlights the increased risk in the

9   marketplace.

10   **Q.   Please summarize your analysis of the transactional data.**

11   A.   The likely fully-valued enterprise value for the Independent Small LECs today is 5.0

12   times EBITDA, but I have used 5.5 times to be conservative. If I accept that the

13   Commission effectively stipulated in 1997 that a reasonable capital structure was 60%

14   to 80% equity, and I take the mid-point of 70% (consistent with today's capital

15   structure for the Independent Small LECs), the implied equity cost today, using the

16   straightforward calculation in Table 6 is 21.7%.

17   **Q.   Should we adjust for the lower interest rates today compared with those ten or**

18   **fifteen years ago?**

19   A.   No. The formula provides for the Commission to input debt costs and determine how

20   to adjust the WACC. Debt costs should have no effect on the calculation of the

21   previous or the current cost of equity (although the practical reality is that the costs of

1   equity could be expected to rise if the carriers have diminished access to debt).[78] I did

2   review those changes in preparing this testimony, and note that the change in AAA

3   corporate bond rates, using the monthly average of 20-year corporates between

4   January 1997 and December 2000 compared with June 2015, as reported by the

5   Federal Reserve Bank of St. Louis, was about 287 basis points, which would reduce

6   today's WACC by only 86 basis points (change of 287 basis points times 30% debt

7   ratio). But again, this is a separate input and theoretically does not affect the

8   calculation of the equity cost (excluding the effects in increased equity risk).[79]

9   **Q.   What are the fundamental points of this analysis?**

10   A.   The recent transactional data tell us that the cost of equity capital is sharply higher

11   than it was previously. This is not speculative or theoretical, but demonstrable in the

12   transactional markets. I also believe that there is no sign that valuations will rise, as

13   risks remain significant and competition is growing. This assessment leads me to

14   several important conclusions. First, the figures in the shaded section of Table 6

15   confirm the direction and demonstrate the reasonableness of the estimates calculated

16   using the Ibbotson/Morningstar and Duff & Phelps statistical information in the earlier

17   CAPM/Buildup analyses. Second, the M&A-based costs of equity are higher because

18   they likely reflect the fact that the Duff & Phelps and Ibbotson/Morningstar analyses

19   relied on historical valuation data that were too conservative or did not include other

20   risk factors, such as the changing ILEC marketplace as well as liquidity and

21   marketability factors. Finally, the table makes a strong point in defense of higher

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[78] To be clear, equity investors would logically want a higher return if debt were unavailable to a carrier, as the perceived risk is increased in operating the business.

[79] I have supplied the monthly AAA 20-year corporate bond interest rates from the Federal Reserve Bank of St. Louis in Exhibit MJB - 14.

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1   equity capital-structure ratios, as low equity ratios result in increased risk when market

2   equity values are falling. That is, when market values are falling, the proportion of

3   market equity is also falling relative to debt, which means that the company's debt

4   costs are likely to rise in the future and its operating risk is likely to increase. Thus, I

5   suggest that the Commission consider whether the former zone of reasonableness

6   (60%-80%) should be shifted higher above 70% and likely to 80% to preserve

7   forward-looking access to capital and to manage operating risk.

8   Q.   **Please provide data for the capital structure of the Independent Small LECs.**

9   A.   I provide the data in the following table about the companies' debt and equity capital

10   structure and the costs of debt.[80]

---

[80] While the debt ratio is not included in the table, it can be readily calculated as the residual, subtracting the
common equity and preferred equity ratios from 100% in the table.

1

Table 8: Capital structure and cost of debt and preferred equity for Small LECs

	2010	2011	2012	2013	2014
Common equity ratio					
Calaveras	51.43%	55.49%	55.19%	56.91%	60.07%
Cal-Ore	100.00%	100.00%	100.00%	100.00%	100.00%
Ducor	60.75%	63.11%	61.85%	56.48%	54.03%
Foresthill	41.93%	39.61%	42.62%	41.08%	46.55%
Kerman	52.35%	52.33%	51.30%	46.18%	49.11%
Pinnacles	98.05%	97.58%	97.40%	97.48%	97.65%
Ponderosa	58.65%	61.00%	60.98%	58.58%	62.62%
Siskiyou	99.18%	99.29%	99.31%	99.31%	99.30%
Sierra	62.33%	63.90%	63.59%	70.54%	68.49%
Volcano	51.93%	59.32%	57.58%	60.62%	62.98%
Average	**67.66%**	**69.16%**	**68.98%**	**68.72%**	**70.08%**
Median	**59.70%**	**62.06%**	**61.42%**	**59.60%**	**62.80%**
Preferred equity ratio					
Pinnacles	1.95%	2.42%	2.60%	2.52%	2.35%
Ponderosa	1.74%	1.82%	1.55%	1.27%	1.30%
Siskiyou	0.82%	0.71%	0.69%	0.69%	0.70%
Volcano	4.06%	3.56%	3.87%	3.75%	3.69%
Average	**2.14%**	**2.13%**	**2.18%**	**2.06%**	**2.01%**
Median	**1.85%**	**2.12%**	**2.08%**	**1.90%**	**1.83%**
Cost of preferred equity					
Pinnacles	5.00%	5.00%	5.00%	5.00%	5.00%
Ponderosa	6.00%	6.00%	6.00%	6.00%	6.00%
Siskiyou	5.75%	5.75%	5.75%	5.75%	5.75%
Volcano	7.00%	7.00%	7.00%	7.00%	7.00%
Average	**5.94%**	**5.94%**	**5.94%**	**5.94%**	**5.94%**
Median	**5.88%**	**5.88%**	**5.88%**	**5.88%**	**5.88%**
Cost of Debt					
Calaveras	4.66%	4.67%	4.51%	4.51%	4.50%
Cal-Ore					
Ducor	5.10%	5.10%	5.10%	5.10%	5.10%
Foresthill	5.10%	5.08%	5.07%	4.82%	4.77%
Kerman	4.20%	4.10%	3.75%	3.69%	3.66%
Pinnacles					
Ponderosa	4.53%	4.16%	3.42%	3.06%	2.93%
Siskiyou					
Sierra	5.60%	5.58%	5.55%	5.52%	5.53%
Volcano	5.20%	5.20%	5.20%	5.20%	5.20%
Average	**5.11%**	**4.98%**	**4.72%**	**4.59%**	**4.55%**
Median	**5.20%**	**5.20%**	**5.20%**	**5.20%**	**5.20%**

2

3

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1   **Q.**   **What is the conclusion from your analyses surrounding the required rate of**

2   **return for Independent Small LECs?**

3   A.   I recommend that the Commission take a realistic view of the expected returns on the

4   equity component in determining rates of return. The Commission previously

5   authorized a target WACC of 10%, implying an approximate 12% cost of equity, and

6   assumed an equity ratio in a zone between 60% and 80%.[81] As a result of this study,

7   my best estimate is that equity costs are today in a range between 17.5% and 23.0%,

8   and an more convincing and narrower range is toward the high end, as supported by

9   the M&A data outlined above. I recognize that a cost of equity averaging 18.5% is

10   higher than this Commission has previously adopted, but circumstances have changed,

11   and I am confident that this is reasonable as a forward-looking measurement of cost of

12   equity. I have been conservative in multiple calculations, which likely compound to

13   make the estimate far too low. I note that the average of the four analyses provided in

14   Table 3 is 18.9%, and without the Risk Premium calculation, the average is 18.1%. As

15   a financial analyst, I believe that the data verify that the estimates I have produced are

16   likely understated or at the bottom of a reasonable range.

17   I summarize the reasons I believe this conclusion is conservative. No liquidity or

18   marketability premium is included. The size premium is 641 basis points lower than

19   the 11.98% recommended by Duff & Phelps for the smallest of companies

20   (appropriate for a 10z grouping into which these companies clearly fall). The beta

21   used in the computation is relatively low at 1.06, as it is drawn from proxies that are

22   all substantially larger, more liquid, more capable of acquisitions, and more

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[81] See, e.g., D.97-04-032, p. 5.

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1   diversified. The risk-free rate employed is the lower of the two options (a higher

2   result is generated when using total return on the Treasury). And, the strongest

3   evidence of reasonableness, in my judgment, is the M&A data where I have again

4   been conservative, as my experience leads me to the judgment that the multiple on

5   EBITDA for these companies is likely closer to 5.0 times, which suggests a higher

6   cost of equity than the one I have used. The transactional data indicate that the actual

7   cost of equity is between 19.7% and 25.9%, which is well above 18.5% that I

8   recommend to the Commission here. I assume that the Commission recognizes that

9   risks in this industry are well higher than they were in 1997.

10   **Q.**   **Do you recommend a single target weighted average cost of capital for the**

11   **Independent Small LECs?**

12   A.   I leave that decision to the Commission. My testimony is focused on analyzing the

13   costs of capital, with a greater focus on the question related to the cost of equity. I can

14   recommend 18.5% as a conservative estimate that can be used in a hypothetical

15   structure or it can be used in assessing a specific company's costs of capital. The

16   financial health of each of these companies is important to its customers, and the

17   Commission should continue to assess how the companies are able to cope with

18   important risks many of which are outside their control. In Table 9, I have presented

19   the WACC calculations for each of the Independent Small LECs based on the two-

20   year average of their actual capital structure and the two-year average of their costs of

21   debt.   The capital structures of the companies vary significantly, and I believe they

22   may become more conservative in the future as the companies cope with competition,

23   regulatory pressures, and limited access to capital.

1   *Table 9: WACC for each of the Independent Small LECs*

	Debt ratio	Preferred equity ratio	Common equity ratio	Cost of debt	Cost of preferred equity	Cost of common equity	WACC
			Average 2013/2014				
Calaveras	41.5%		58.5%	4.5%		18.5%	12.7%
Cal-Ore	0.0%		100.0%			18.5%	18.5%
Ducor	44.7%		55.3%	5.1%		18.5%	12.5%
Foresthill	56.2%		43.8%	4.8%		18.5%	10.8%
Kerman	52.4%		47.6%	3.7%		18.5%	10.7%
Pinnacles	0.0%	2.4%	97.6%		5.0%	18.5%	18.2%
Ponderosa	38.1%	1.3%	60.6%	3.0%	6.0%	18.5%	12.4%
Siskiyou	0.0%	0.7%	99.3%		5.8%	18.5%	18.4%
Sierra	30.5%		69.5%	5.5%		18.5%	14.5%
Volcano	34.5%	3.7%	61.8%	5.2%	5.9%	18.5%	13.4%
Average	**29.8%**	**2.0%**	**69.4%**	**4.5%**	**5.7%**	**18.5%**	**14.2%**
Median	**36.3%**	**1.9%**	**61.2%**	**4.8%**	**5.8%**	**18.5%**	**13.1%**

2

3 **Q.** **What are the potential issues that arise in applying the actual debt costs to**

4   **specific capital structures of the companies?**

5 A. My observation in reviewing Table 9 is that there are widely divergent WACCs in

6   California, the result depending on whether the ILEC has 100% equity, or, for

7   example in the case of Foresthill, where there is an equity ratio of 43.8%. I believe

8   that providing Foresthill with return on capital set at 10.8% could make it difficult to

9   build equity during a challenging time for ILECs, and it is possible that customers may

10   be negatively impacted. The evaluation of the public policy import belongs to the

11   Commission, which I believe could make the determination that a WACC other than

12   the actual WACC, for example for Foresthill, does not harm customers as they are

13   paying the same capital costs as those incurred by customers of other ILECs and such

14   a WACC may help the customer because the carrier will be able to build a stronger

15   financial foundation to serve customers in the future. For companies that fall

16   significantly outside the Commission's previously defined "zone of reasonableness," a

17   hypothetical structure would be appropriate.

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1   **Q.**   **What do you recommend if the Commission were choose to use a hypothetical**

2   **capital structure and establish a target WACC?**

3   A.   I would propose that the Commission employ a hypothetical capital structure with

4   approximately 70% to 80% equity. I use 70% in my calculations below. This opinion

5   relies on the Commission's previous adoption of a zone of reasonableness of 60%-

6   80%. It also reflects my conclusion that the market value of equity has fallen and that

7   the companies will increasingly have to rely on book equity ratios that are relatively

8   higher in the future than in the past. In calculating a target WACC, I also assume that

9   the cost of debt will rise, both because we are going to emerge from the artificially-

10   low interest rates in today's markets and because I believe the risk for telephone

11   companies will grow greater in the future. If the Commission were to posit a cost of

12   debt figure as part of a hypothetical capital structure calculation, I recommend that the

13   Commission use a hypothetical debt rate of 5.5% for companies without any actual

14   debt rates. This is above the current median of 5.2% of the Independent Small LECs.

15   However, it is approximately the interest rate that Sierra Telephone currently pays

16   (5.53%), and approximates a rate that might be expected in the future for any of these

17   carriers, although it is very possible the rates will rise higher. Again, this exercise is

18   purely to arrive at a target WACC. Using the figures above and the recommended

19   18.5% cost of equity, a realistic target WACC is 14.6%.

20   *Figure 5: Calculation of a target WACC*

	Capital structure	Cost of Capital	Allocated cost
Debt	30%	5.50%	1.65%
Equity	70%	18.50%	12.95%
Total			**14.60%**

21

22

1   While the target WACC is higher than the current 10.0%, it is consistent with my

2   transactional analysis. That is, the market collapse in ILEC enterprise value from 8.0

3   times trailing EBITDA to 5.5 times trailing EBITDA converts the former 10% target

4   WACC to 14.5% and if the change is assumed to be from 8.0 to 5.0 times trailing

5   EBITDA, the result is a target WACC of 16.0%. The calculation is $10\% * (1/(5.5/8.0))$

6       $= 14.5\%$. or $10\% * (1/(5.0/8.0)) = 16.0\%$.

7

8   **VII.   CONCLUDING COMMENTS.**

9   **Q.   Do you have any concluding comments?**

10   A.   Yes. The U.S. Supreme Court has been clear about a utility's rights to rates that

11   permit a risk-adjusted, market-based return on invested capital. Just as important, the

12   entire rationale for maintaining support and setting appropriate rates of return is

13   focused on ensuring that services are viable today and in the future for customers who

14   live in high-cost regions, consistent with the federal policy articulated in Section 254

15   of the Telecommunications Act of 1996. If the California goal for near-ubiquitous

16   telecommunications services, including broadband, is to be realized across higher-cost

17   regions, then sound financial mechanisms will be required. The loss of sound financial

18   mechanisms, including the loss of appropriate returns on equity, will likely assure that

19   universal service policies will fail. It is my belief that, if the carriers do not see a way

20   to provide service in a manner that produces appropriate returns on invested capital,

21   the end result will likely be reduced service quality, limited service availability,

22   impaired service reliability, and, in some cases, a withdrawal from service altogether.

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1   This would be harmful or possibly devastating to ratepayers in these regions and likely

2   represent a policy failure for all users of the telephone network.

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

4   A.   Yes.

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Appendix 3—California Rebuttal Testimony

of

Michael J. Balhoff, CFA

BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

Application of Calaveras Telephone Company (U 1004 C) Cal-Ore Telephone Co. (U 1006 C) Ducor Telephone Company (U 1007 C) Foresthill Telephone Company (U 1009 C) Kerman Telephone Co. (U 1012 C) Pinnacles Telephone Co. (U 1013 C) The Ponderosa Telephone Co. (U 1014 C) Sierra Telephone Company, Inc. (U 1016 C) The Siskiyou Telephone Company U 1017 C) Volcano Telephone Company (U 1019 C) for a Determination of Applicants' Cost of Capital for Ratemaking Purposes	A. 15-09-005 (Filed September 1, 2015)

REBUTTAL TESTIMONY OF MICHAEL J. BALHOFF ON BEHALF OF

CALAVERAS TELEPHONE COMPANY (U 1004 C)
CAL-ORE TELEPHONE CO. (U 1006 C)
DUCOR TELEPHONE COMPANY (U 1007 C)
FORESTHILL TELEPHONE COMPANY (U 1009 C)
KERMAN TELEPHONE CO. (U 1012 C)
PINNACLES TELEPHONE CO. (U 1013 C)
THE PONDEROSA TELEPHONE CO. (U 1014 C)
SIERRA TELEPHONE COMPANY, INC. (U 1016 C)
THE SISKIYOU TELEPHONE COMPANY U 1017 C)
VOLCANO TELEPHONE COMPANY (U 1019 C)
("INDEPENDENT SMALL LECS")

March 11, 2016

1   **REBUTTAL TESTIMONY OF MICHAEL J. BALHOFF**

2   **I.**   **INTRODUCTION AND PURPOSE**

3   **Q1.**   **Would you please state your name and position for the record.**

4   A.   My name is Michael J. Balhoff.

5   **Q2.**   **Are you the same Michael J. Balhoff who provided prefiled**

6   **opening testimony on September 1, 2015 in this proceeding?**

7   A.   Yes, I provided prefiled testimony ("Opening Testimony") on

8   behalf of the Applicants (the "Independent Small LECs").[1]

9   **II.**   **SUMMARY OF REBUTTAL TESTIMONY**

10   **Q3.**   **What is the purpose of your rebuttal testimony in this**

11   **proceeding?**

12   A.   This rebuttal testimony addresses misconceptions, errors, and

13   policy concerns raised by the testimony of the Office of Ratepayer

14   Advocates ("ORA") of the California Public Utilities Commission

15   ("Commission" or "CPUC") submitted in this proceeding on

16   February 12, 2016.[2]

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[1] Opening Testimony of Michael J. Balhoff on Behalf of Applicants, Independent Small LECs' Application for a Determination of Applicants' Cost of Capital for Ratemaking Purposes in Proceeding No. A. 15-09-005 ("Balhoff Opening Testimony").

[2] The Office of Ratepayer Advocates, Report and Recommendations on the Cost of Capital for Independent Small Local Exchange Carriers, filed on February 12, 2016 ("ORA Testimony"). I note that ORA's testimony is organized as a

1   **Q4.   Please summarize your rebuttal testimony.**

2   A.   I organize my response into four sections.

3   •   **Response to ORA Testimony about cost of equity.** My

4   testimony explains that ORA did not provide any

5   meaningful substantive response to my testimony. Rather,

6   ORA provided its opinions about inputs for estimating

7   equity costs and offered no authority or source information

8   for those estimates except for a 2013 report prepared by the

9   FCC Wireline Competition Bureau Staff (the "FCC Staff

10   Report[3]") that has never been adopted or endorsed by the

11   FCC, and which is now nearly three years old. I will show

12   that ORA's reliance on the FCC Staff Report to reject the

13   use of a premium for small companies and the FCC Staff

14   Report's reliance on one citation to a survey article (and no

15   other citation) to justify eliminating such a premium results

16   in an exclusion that is demonstrably wrong for multiple

17   reasons. In particular, the survey article itself reports the

18   finding that there is a size effect among the smallest

"Report," but ORA offers three separate witnesses, each of whom sponsors
discrete parts. For ease of reference, I will refer to the "Report" as ORA's
"testimony."

[3] Federal Communications Commission, *Prescribing the Authorized Rate of
Return, Analysis of Methods for Establishing Just and Reasonable Rates for Local
Exchange Carriers*, DA 13-1111, released May 16, 2013 available at
http://www.fcc.gov/document/bureau-releases-rate-return-represcription-staff-
report ("FCC Staff Report").

1   deciles, which include the Independent Small LECs at the

2   bottom of the tenth decile. The Staff's sole source

3   therefore arrives at a conclusion entirely opposite what is

4   proposed in the FCC Staff Report, and that source actually

5   serves to *support my testimony* by *justifying* the inclusion

6   of a premium for size effect in the cost of equity

7   calculation. In my Opening Testimony, I provided analyses

8   based on all the major valuation resources, including data

9   drawn from multiple periods and using multiple

10   approaches. Finally, I corroborated my findings in my

11   Opening Testimony using merger and acquisition data,

12   which was not presented as the basis for my findings, but

13   was presented as an additional verification of those

14   findings. ORA offers no analysis to respond to or attempt

15   to contradict the principal conclusions in my Opening

16   Testimony. ORA's summary dismissal of my testimony

17   relies on sources that can be impeached easily and

18   effectively.

19   •   **Response to ORA Testimony about debt.** My testimony

20   explains that I recommended the use of actual, embedded

21   costs for carriers that have reported debt on their balance

22   sheets, and I recommend that the rates for that actual debt

23   should be supplied in the carriers' rate cases. I do not

1   recommend imputation of debt or the development of a

2   "forecast" for debt.   However, in the event that the

3   Commission chooses to impute debt costs, I proposed a

4   reasonable cost of debt of 5.5%, a rate lower than the AAA

5   cost of debt and slightly below the rate being paid by Sierra

6   Telephone, one of the Independent Small LECs.[4] ORA

7   proposes to use a lower figure (4.53%), computed as the

8   average of the seven Independent Small LECs that report

9   having debt, but in arguing that the carriers have access to

10   inexpensive debt in a range of 2.47%-2.82%, ORA does not

11   explain why all the carriers have higher debt costs than

12   these figures, and five of the seven have costs well higher

13   than the government-subsidized rates that ORA claims are

14   available to the carriers. I testify that rates are rising from

15   the artificially-depressed levels referenced by ORA and the

16   Federal Reserve is currently in the process of easing the

17   controls that are depressing those rates. I also explain that

18   the largest lender to rural carriers, CoBank with $95 billion

19   in assets, has publicly commented on the increased

20   regulatory risks that are dampening the credit markets for

21   small Incumbent Local Exchange Carriers ("ILECs"),

22   meaning that debt is less available for the small carriers.

[4] Balhoff Opening Testimony, p. 10, lines 7-9; Exhibit MJB-14.

1   CoBank also warns that the allowed rate of return should

2   not be reduced, because such an action—ORA's precise

3   recommendation in this proceeding—will create even

4   greater limitations on credit, and potentially render the

5   industry as "not bankable."

6   •   **Response to ORA Testimony about capital structure.**

7   ORA asks the Commission to rely on the companies' actual

8   capital structures or to possibly reduce the hypothetical

9   equity ratio, but my testimony shows that this approach

10   would overlook current and reasonably foreseeable trends

11   toward more conservative, equity-based balance sheets.

12   Carriers are migrating to a greater reliance on equity

13   because of higher risks attendant to their businesses. Three

14   of the Independent Small LECs have virtually 100% equity

15   ratios and five of the remaining seven companies have

16   improved their equity ratios by an average of 689 basis

17   points from 2010 to 2014. The conservatism related to the

18   companies' capital management practices suggests

19   increasing caution as industry risks rise. Since 1997, the

20   Commission has relied on a hypothetical capital structure,

21   which appears to be a reasonable approach today and, if

22   adopted, should reflect the growing and justifiable

1   conservatism in an increasingly risky industry, as I

2   explained in my Opening Testimony.

3   • **Commentary regarding the FCC Staff Report as the**

4   **FCC considers represcribing the authorized rate of**

5   **return.** In calculating the cost of equity, ORA relies

6   almost exclusively on the FCC Staff Report, which is a

7   discussion document about potential changes to the allowed

8   rate of return, including allowed equity cost, for rural

9   carriers. The FCC may issue an Order regarding

10   represcription, possibly as early as the first half of 2016,

11   but the FCC Staff Report is an opinion paper from FCC

12   Staff, and is not determinative at this time. Even if the

13   FCC were to rely on the assumptions and data in that FCC

14   Staff Report, this Commission should itself carefully and

15   deliberately consider the issues surrounding cost of capital,

16   which will have profound effects on the long-term welfare

17   of rural California customers. I have demonstrated that the

18   data I have supplied in my Opening Testimony are

19   accurate, fair and financially justified. It is my strong

20   conviction that the FCC Staff's conclusions are

21   demonstrably false, and I stand ready to defend that

22   professional opinion even if the FCC were to accept some

23   or all of the recommendations of its Staff. Specifically, the

1   FCC Staff used a guideline or so-called proxy group with

2   characteristics significantly different from those of the

3   small rate-of-return ILECs, predetermining that its analysis

4   is unreliable in setting a cost of capital in this proceeding.

5   Further, the FCC Staff used a risk-free rate that was

6   distressed and well lower than any suggested by the major

7   professional valuation services. The FCC Staff also

8   rejected the incorporation of key size and marketability

9   premia, based on an argument that we will show leads to a

10   very different conclusion. The ORA Testimony that is

11   reliant upon the FCC Staff Report leads to an incorrect

12   estimation model.

13

14   **III.   RESPONSE TO ORA TESTIMONY ABOUT RETURN ON**

15   **EQUITY**

16   **Q5.   ORA expresses concern that your calculation of the cost of**

17   **equity is higher by 50% over the implied cost of equity in the**

18   **1997 rate case decisions for the Independent Small LECs. How**

19   **do you respond?**

20   A.   As I noted in my Opening Testimony, I understand that my

21   recommendation is significantly higher than the implied cost of

1   equity range referenced in the 1997 decisions.[5] However, capital

2   markets and ILEC industry dynamics have evolved significantly

3   since the late 1990s, as regulatory, political, and competitive

4   developments have sharply increased the risk profiles of these

5   companies. I urge the Commission to look past ORA's superficial

6   skepticism regarding my proposal, as the proof of its

7   reasonableness lies in its details. I was careful in my testimony to

8   provide the highest-quality sources for data and applications of

9   premia, relying on the most respected resources provided by

10   Ibbotson/Morningstar and Duff & Phelps. I used not one or two,

11   but multiple analytical estimation tools to test and re-test the data,

12   including assessments of data across various historical periods to

13   appropriately smooth any anomalous results.[6] I rejected any

14   estimations that might have been interpreted as aggressive.

15   Specifically, I was conservative by: (i) applying no incremental

16   liquidity or marketability premium; (ii) using a size premium that

17   is 641 basis points lower than the 11.98% recommended by Duff &

18   Phelps for the smallest of companies (appropriate for a 10z

19   grouping into which the Independent Small ILECs clearly fall);

20   (iii) relying on an industry beta that is relatively low at 1.06, as it is

21   drawn from proxies that are all substantially larger, more liquid,

[5] Balhoff Opening Testimony, p. 9, lines 10-13.
[6] Balhoff Opening Testimony, p. 53, Table 3.

1   more capable of acquisitions, and more diversified; and (iv) using

2   a risk-free rate that is the lower of the two options for each of the

3   periods studied (a higher result is generated when using total return

4   on the Treasury).[7] Finally, I tested the results on the basis of

5   M&A data where I have again been conservative. My experience

6   leads me to the judgment that the appropriate valuation multiple

7   based on enterprise value to earnings before interest, taxes,

8   depreciation and amortization ("EBITDA") for these companies is

9   likely closer to 5.0 times, which suggests a higher cost of equity

10   than the one I used.[8]

11   **Q6.**   **Did ORA provide any sources that directly addressed the data**

12   **and the premia you provided in your testimony?**

13   A.   ORA provides virtually no sourcing for the estimates or the

14   opinions it offers in its testimony. ORA's single source for its

15   Capital Asset Pricing Model ("CAPM") equity risk premium is the

16   FCC Staff Report. I will address in detail the deficiencies in the

17   FCC Staff Report in a later section of this testimony. ORA also

18   reported that it "looked at data collected by Professor Aswath

19   Damordan [sic]," but the detailed company-specific performance

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[7] Balhoff Opening Testimony, p. 73, lines 17 ff.

[8] Balhoff Opening Testimony, p. 74, lines 6-8; "The transactional data indicate that the actual cost of equity is between 19.7% and 25.9%, which is well above 18.5% that I recommended."

1   data are not available for my review.[9] Finally, ORA provides

2   footnote 51, which references four reports as the foundation for its

3   generalized claim that authorized rates of return for other regulated

4   utilities—electric, natural gas, and water—have declined.[10] As I

5   will discuss, these utility sectors are fundamentally different from

6   the industry of the small, rural telephone companies.

7   **Q7.**   **Did ORA provide any substantive data in response to your**

8   **calculations?**

9   A.   ORA provided no substantive sources, except to reference the FCC

10   Staff Report, to which I respond in detail below. ORA gratuitously

11   supplies its views and opinions, but does not address the clear and

12   convincing data compiled from authoritative sources that are

13   presented in my Opening Testimony.

14   **Q8.**   **Does ORA disagree with your general approach to the CAPM?**

15   A.   No. ORA relies on a CAPM, which is fundamentally the same as

16   the Build-up Method used in my testimony, but ORA suggests its

17   own inputs that are different from those drawn from the various

18   Ibbotson and Duff & Phelps data.[11] Most surprising, ORA reduces

19   the CAPM to two inputs, which are the forecasted risk-free rate

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[9] ORA Testimony, p. 43, lines 12-13.

[10] ORA Testimony, p. 44.

[11] ORA Testimony, p. 36, lines 11-21.

1   and the equity risk premium.[12] There are no other variables,

2   meaning that ORA recommends that the Independent Small LECs

3   have equity costs that are no different from the equity costs in the

4   general market. This remarkable proposition has never been

5   endorsed by the financial community and has never been supported

6   by a regulatory body, to the best of my knowledge. As the data

7   show, ORA's attempt to equate the equity cost of these companies

8   with the general equity market cannot be correct.

9   **Q9.**   **What risk-free rate does ORA utilize?**

10   A.   ORA notes that the ten-year Treasury rate has fallen from 6.68% in

11   1997 to 3.07% in 2014. Then, ORA proposes to use the most

12   recent reported three-year average rate of 2.91%. ORA provides no

13   citation or authority for its recommended approach, nor does it

14   comment on today's extraordinarily anomalous rate-environment.

15   **Q10.**   **Is the use of 2.91% appropriate?**

16   A.   No. As I explained in my Opening Testimony, the risk-free rate

17   and the equity premium should be matched in terms of the time

18   periods from which they are drawn, as is clear in the valuation data

19   provided by Ibbotson or Duff & Phelps.[13] ORA's estimated equity

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[12] ORA Testimony, p. 36, lines 15-18.

[13] Balhoff Opening Testimony, p. 51, lines 4-12; the market expects a total return

1   premium is apparently based on data from 1928 to 2012, a 76-year

2   period,[14] yet its Treasury rate is drawn from a three-year average.

3   The result is a mismatch that is problematic. Even more

4   troublesome, however, is the fact that ORA's proposed Treasury

5   rate is not a sound data point, as it is drawn from a period in which

6   the rate is at historically low levels and, according to most or all

7   financial experts, is artificially depressed.[15] Using a rate that is at

8   extremely low levels, and demonstrably constrained by the Federal

9   Reserve's interventions, does not provide a good indication of rates

10   that might be projected over extended future periods. It would be

11   just as wrong as if one were to use the 1981 Treasury Bond rate of

12   13.72% or the five-year Treasury Bond average of 12.09% for

13   1980 to 1984. Using a short period with extreme data is not

14   appropriate as such an approach leads to intellectually dishonest

15   and unreliable results. ORA's use of these artificially low starting

16   "risk free" rates appears to be opportunistic and is, in my strong

17   opinion, not based on reasoned judgment and informative data.

18   **Q11. How did you determine the appropriate risk-free rate?**

so equity premia must be matched to the risk-free rate.

[14] ORA Testimony, p. 39, lines 9-11; see also FCC Staff Report, p. 27, para. 72.

[15] Balhoff Opening Testimony, p. 19, lines 1 ff.; 2015 Duff & Phelps Valuation Handbook: Guide to Cost of Capital, Market Results through 2014, (Hoboken, NJ: John Wiley & Sons, Inc., 2015) ("Duff & Phelps, 2015 Cost of Capital").

1   A.   I matched the term of the risk-free rate from several periods with

2   the equity market premium drawn from those same periods. I used

3   extended periods to estimate an appropriate risk-free rate, thereby

4   smoothing data that would otherwise be too high or too low in

5   various periods. This is the standard practice in valuations. I also

6   used multiple periods to test the findings. The extended time

7   periods used in my testimony were 1926-2014, 1963-2014 and

8   1995-2014, and I provided the source data from

9   Ibbotson/Morningstar and from Duff & Phelps, so the Commission

10   can assess so-called "risk-free" rates in different, protracted

11   periods.[16] As I have explained, the valuation-discipline requires

12   evaluating data that eliminate the distortive effects of extreme data

13   points, such as the depressed interest rates reported at the present

14   time. I have sourced the commentary about the Federal Open

15   Market Committee's comments on the artificiality of today's

16   Treasury rates.[17] It is my professional opinion that ORA's

17   approach cannot be viewed as reasonable, which may explain why

18   ORA provides no authorities to affirm its recommendation. My

19   testimony provides the Commission with data, sources, and

20   alternative time periods to justify, test, and confirm the results.

[16] Balhoff Opening Testimony, p. 52, lines 5-7; p. 54, lines 9-10. Strictly
speaking, there is no "risk-free" rate, but the U.S. Treasury is generally regarded
as close to "risk-free."

[17] Balhoff Opening Testimony, p. 19, lines 6-22.

1   ORA has not responded to my supporting authorities nor has it

2   provided any contrary authority, and ORA volunteers a depressed

3   rate from a period different from the period used to calculate the

4   equity premium. These errors are fundamental to ORA's approach

5   and profoundly weaken its estimation of the Independent Small

6   LECs' cost of equity.

7   **Q12.   What equity risk premium does ORA propose?**

8   A.   ORA cites to the FCC Staff Report and suggests using the Staff's

9   figure of 5.88%, which it states is a figure comparable to the one

10   the CPUC used in 1997; the 5.88% rate is based on the period 1928

11   to 2012.[18] ORA reports that recent estimates range from 4.51% to

12   6.21%, but ORA defaults to the FCC Staff Report proposal of

13   5.88%.[19] My Opening Testimony provides equity premia that

14   were 5.1%, 6.6% and 4.9%, for the periods 1926-2014, 1963-2014

15   and 1995-2014, respectively, and alternative data using total

16   Treasury returns (yield plus capital appreciation) of 5.7%, 7.4%

17   and 8.6%, respectively, which, to be conservative, were not the

18   basis of my recommendations.[20] Again, ORA does not consider

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[18] ORA Testimony, p. 39, lines 6-13; p. 43, lines 3-4.

[19] ORA Testimony, p. 43, lines 4-6.

[20] Balhoff Opening Testimony, p. 52, lines 5-7; p. 54, lines 9-10. The alternative rates were based on total Treasury returns (yield plus capital appreciation), but, because they generated *higher* equity costs of capital, were not used; this is another example of the conservative nature of my analysis in the Opening

1   evidence drawn from different time periods and ORA does not

2   respond to the data compiled in my testimony, declining to explain

3   why my findings should be rejected or adjusted. In response, I

4   once again affirm that the data I used were drawn from the most

5   reliable sources and they provide the Commission with alternative

6   and confirmatory data. ORA does not provide a rationale for its

7   figure, except that it relies on the FCC Staff Report, which will be

8   addressed in a later section of my testimony.

9   **Q13.   Have you reviewed ORA's Attachment 9, which presents a**

10   **6.43% averaged return on equity?**

11   A.   Yes. It appears that ORA is attempting to argue that its use of the

12   FCC market premium of 5.88% is reasonable by calculating actual

13   returns on equity ("ROE") over the twelve-month period ended in

14   June 2015 for twelve telecommunications companies listed in

15   Attachment 9.

16   **Q14.   Do the data confirm the 5.88% return on equity that ORA is**

17   **advancing?**

18   A.   No. The Attachment is not instructive in any way. Fourteen

19   companies are included in the Attachment, but only twelve are

20   accompanied by a calculated ROE. The data are flawed upon even

21   a cursory examination. Alteva is primarily a software company,

22   with virtually no ILEC cash flow, and the ROE that ORA reported

Testimony.

1   was a negative 11.4%. On April 26, 2015, Windstream spun off its

2   assets into a real estate investment trust which began to trade that

3   day as CSAL, so the negative 34.2% ROE resulted from no

4   adjustment being made for the spin-off. Verizon has a book equity

5   that reflects the company's many acquisitions, which distorts the

6   ROE in the Attachment. Frontier has been in the process of

7   acquiring large-ILEC assets, including Verizon's California, Texas

8   and Florida operations, with the result that integration-related

9   expenses skew the ROE. Similarly, Consolidated Communications

10   was recently in the process (closed October 16, 2014) of acquiring

11   and integrating Enventis (the former HickoryTech), meaning that

12   its results in 2015/2014 included acquisition expenses. In short,

13   the table provides data that are not instructive, and they certainly

14   do not support ORA's argument that "[a]ctual earned return on

15   equity at this level suggests that ORA's estimate for return on

16   equity in this proceeding is more reasonable than Mr. Balhoff's."[21]

17   **Q15. Have you reviewed the data that ORA reported that it had**

18   **"looked at" regarding Professor Damodaran's calculation of**

19   **ROE?**

20   A.   I did not have access to the underlying company-specific

21   performance data because the company-specific performance data

22   are not available in Professor Damodaran's online spreadsheets,

[21] ORA Testimony, p. 42, lines 10-12.

1   and I understand that this data was not produced by ORA in

2   response to the Independent Small LECs' request for the

3   underlying data collected by Professor Damodaran that ORA

4   reviewed in connection with its Opening Testimony. I note that

5   ORA reported that Professor Aswath Damodaran calculated that

6   Telecommunications Services companies generated an ROE of

7   8.31% in 2014.[22] A review of the Professor's spreadsheet reveals

8   that he lists global securities, which, when sorted, yields 65 stocks

9   in the U.S. telecommunications services sector, only 16 of which

10   have ILEC businesses. The stocks that are included are so

11   disparate—including equipment, long-haul fiber, cable operators,

12   standalone Voice over Internet Protocol ("VoIP") companies and

13   large conglomerates—that the calculated ROE proves meaningless

14   in the ORA testimony.[23] Without conceding that ORA's citation

15   to Damodaran is instructive or proper, I note that the spread

16   between the Treasury rate proposed by ORA (2.9%) and the

17   generalized reported Damodaran Telecom Services ROE is about

18   540 basis points ("bps"). Even this crude metric shows the

19   reasonableness of my testimony, which reports equity market

20   premia of 700 bps, 505 bps, and 684 bps, for the three periods

[22] ORA Testimony, p. 43, lines 13-14.

[23] It is necessary to sort Professor Damodaran's spreadsheet to extract U.S. telecom services companies. See http://www.stern.nyu.edu/~adamodar/pc/datasets/indname.xls.

1   1926-2014, 1963-2014 and 1995-2014, respectively, and an ILEC

2   beta of 1.06, which is only slightly riskier than the overall market.

3   Another salient problem with the ORA analysis—again noting that

4   it is not possible to review the underlying Damodaran company-

5   specific performance data to assess potential outliers—is that ORA

6   is relying on one single year to "sample" telecommunications

7   services companies' equity returns. As such, the approach

8   employed by ORA is so imprecise that it offers no meaningful

9   insight in this proceeding. Again, to reach accurate results, it is

10   necessary to use a longer period of years in assessing a comparable

11   industry group, consistent with the approach employed in my

12   testimony.

13   **Q16.**   **What is your view regarding ORA's proposal not to use an**

14   **industry-specific adjustment?**

15   A.   ORA is fundamentally arguing that the CAPM should be reduced

16   to a "proposed" risk-free rate and a generic market equity return.

17   ORA proposes to use a very depressed Treasury rate and simply

18   add a low equity risk premium of 5.88%, again employing only

19   two inputs to estimate its so-called "reasonable cost of equity."[24]

20   ORA reveals its fundamentally flawed "logic" when it explains

21   that "[h]olding all other variables fixed, one would expect the cost

22   of equity estimates to be lower when a lower risk-free rate is

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[24] [24] ORA Testimony, p. 3, line 8; p. 38, lines 9-10;

1   employed in the financial models used to calculate costs of

2   capital."[25] According to ORA's proposal, only the change in the

3   risk-free rate matters, as it is "holding all other variables fixed,"

4   meaning that the market return remains essentially the same over

5   the protracted 1928 to 2014 period. ORA does not evaluate any

6   other variables, and believes that it is sufficient to assign the LECs

7   a cost of equity that is the sum of a lower Treasury rate plus a

8   market-wide return—without any premium for industry-specific

9   risk and without an allowance for any other risks. ORA summarily

10   rejects market or company analyses, which is an approach that, to

11   the best of my knowledge, no professional source endorses. In

12   addition, I believe the failure to account for industry-specific risks

13   is inconsistent with the plain language of applicable legal guidance

14   from the United States Supreme Court.

15   **Q17.   In what way do you believe ORA's approach to equity risk is**

16   **inconsistent with applicable Supreme Court guidance?**

17   A.   I am not an attorney, but I am familiar with the seminal U.S.

18   Supreme Court cases addressing the legal parameters within which

19   state commissions must examine rate-of-return issues. ORA

20   acknowledges some of these U.S. Supreme Court authorities in its

21   "Cost of Equity" section, but it fails to follow the critical guidance

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[25] ORA Testimony, p. 39, lines 15-17.

1   that is evident in those opinions.[26] The Supreme Court calls for

2   industry-specific assessments, including a consideration of relevant

3   regulatory risks. In *Bluefield Water Works & Improvement Co. v.*

4   *Public Service Commission of West Virginia*, 262 U.S. 679 (1923)

5   ("Bluefield"), the Court states that a public utility is entitled to

6   such rates that will permit a return "equal to that generally being

7   made at the same time and in the general part of the country on

8   investments *in other business undertakings which are attended by*

9   *the corresponding risks and uncertainties . . .*" (emphasis added).

10   *Federal Power Commission v. Hope Natural Gas Company*, 320

11   U.S. 391 (1944), makes a similar point, citing "the return to the

12   equity owner should be *commensurate with returns on investments*

13   *in other enterprises having corresponding risks*" (emphasis added.)

14   Finally, *Duquesne Light Company et al. v. David M. Barasch et*

15   *al.*, 488 U.S. 299 (1989), reiterated the standard of *Hope* and

16   *Bluefield* and then added important new factors, including

17   "regulatory risk," noting that a "decision to arbitrarily switch back

18   and forth between methodologies in a way which required

19   investors to bear the risk of bad investments at some times while

20   denying them the benefit of good investments at others would raise

21   serious constitutional questions." From the plain language, these

22   opinions point to a required assessment of industry-specific risks,

[26] ORA Testimony, pp. 34-35.

1   including risks in a period of significant regulatory change, that

2   should be reflected in cost of equity capital. My experience and

3   my reading of these constitutional rulings lead me to believe that it

4   is not defensible to argue that the Independent Small LECs deserve

5   a return that simply mirrors the overall market return for equity.

6   **Q18.**   **What basis does ORA offer for its rejection of a size premium?**

7   A.   ORA devotes a mere twelve lines in its testimony to the size

8   premium, and fails to address the sources and data provided in my

9   Opening Testimony. ORA dismisses the premium with the

10   summary comment that because the Independent Small LECs are

11   rate-regulated, the companies experience no risk that exceeds the

12   overall market risk.[27] ORA supports its view with a single citation

13   to the FCC Staff Report that also did not recommend a size

14   premium.[28] Finally, ORA states, without further explanation, that

15   "even if size was determined to be a relevant factor, it is quite

16   possible that the relatively small size of the ILECs would afford

17   them an opportunity to more nimbly adjust strategy and budgets in

18   response to competitive forces . . ."[29]

19   **Q19.**   **Is it appropriate to dismiss the size premium?**

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[27] ORA Testimony, p. 43, lines 14-16.

[28] ORA Testimony, p. 43, lines 16-18; footnote 50.

[29] ORA Testimony, p. 43, lines 18-21.

1   A.   No. Significant research supports the validity of enhanced risk that

2   is either due to, or closely related to, size. That is, a CAPM model

3   that relies only on a risk-free rate and a market equity risk

4   premium is not sufficient to estimate the costs of equity for small

5   companies. Again, ORA cites to the FCC Staff Report.[30] No

6   other justification is provided for ignoring this widely-used factor.

7   I will explain below that the FCC Staff Report on which ORA

8   relies also devotes a mere six lines to the size premium, citing only

9   a single source which is a 25-page survey article in 2011 as the

10   justification for rejecting the premium, and overlooking the

11   article's findings that the size effect is significantly related to

12   illiquidity and concentrated in the three smallest deciles of the

13   market.[31] The Independent Small LECs fall in the *lowest quartile*

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[30] ORA Testimony, p. 40, line 1.

[31] Crain, Michael A., *A Literature Review of the Size Effect* (October 29, 2011), ("Crain") *available at* SSRN: http://ssrn.com/abstract=1710076, pp. 11-12; 15:

> Studies reveal that market liquidity may be an important risk factor underlying firm size. Amihud & Mendelson (1986) examine American stocks from 1961 to 1980 and find that the size effect is linked to liquidity when measured by bid-ask spread. They regress stock returns on CAPM beta, firm size, and bid-ask spread; they find that size is insignificant. But when the bid-ask spread variable is omitted, size is significant. Amihud & Mendelson reason that firm size is a proxy for liquidity. More recently, Amihud (2002) finds market illiquidity effects on returns are significant and stronger in smaller firms. He examines NYSE stocks from 1964 to 1997 by regressing returns on firm size, market liquidity, and other variables. From the findings, he suggests that temporal variations in the size effect are related to changes in market liquidity over time. Further, Pastor & Stambaugh (2003) examine American firms from 1966 to 1999 and find that marketwide liquidity is a factor in explaining returns by adding a liquidity variable to Fama & French's (1993) three-factor model. Since this three-factor model has a

1   *of the smallest decile*. The article's author, Michael Crain, devotes

2   Section 6 of his survey to address findings that the size effect is

3   concentrated in the smallest companies.

4   Researchers find the size effect, when observed, is
5   concentrated in smaller firms. It seems the size
6   effect is not linear across listed firms. Horowitz et
7   al. (2000a) observe the size effect seems to occur
8   only in smaller listed firms. . . . Since Horowitz et
9   al. replicate the methodology of Fama & French
10   (1992), they argue that the findings of Fama &
11   French are concentrated in very small firms and not
12   across all small firms as Fama & French claim. In
13   another study, Fama & French (2008) observe that
14   the size effect exists in U.S. listed firms but it is
15   strongest among microcap firms using data from
16   1963 to 2005.[32]
17

variable for firm size, Pastor & Stambaugh's study essentially finds
marketwide liquidity is important in addition to firm size. Subsequently,
Liu (2006) confirms that market liquidity has power in explaining returns
by examining U.S. stocks from 1960 to 2003. He illustrates that market
liquidity varies significantly over time and, thus, so does investor
liquidity risk (Liu 2006, Figure 1). Further, he finds that liquidity
subsumes effects due to size (and other factors). In a later study, Chen et
al. (2010) examine American stocks from 1972 to 2009 and find the
liquidity effect does not completely capture the size effect but that
liquidity is highly correlated with firm size. A model without a variable
for liquidity might cause the size effect to vary (or, perhaps, even
disappear) as market liquidity changes over time. Horowitz et al. (2000a)
are implicitly examining the liquidity hypothesis when they find the size
effect disappears after a small-cap fund was introduced. That fund
provided more access and, thus, liquidity to smaller listed firms.
Moreover, Amihud (2002) finds that returns of smaller firms are more
sensitive to market illiquidity and that smaller firms have more liquidity
risk than larger firms. He asserts that such findings may explain
variations of the size effect. Market liquidity changes over time, he
contends, due to shifts in sentiment whereby investors sometimes flee to
liquidity, which makes large stocks relatively more attractive. Amihud
also finds that market liquidity is consistent over time, unlike firm size,
as a factor explaining returns.

[32] Crain, p. 15.

1 Thus, the survey article cited by the FCC Staff in its Report—on

2 which ORA relies—finds that size effects do exist in the smallest

3 firms. The Fama & French study, referenced by Crain, affirms size

4 effects in "microcap" companies which are typically described as

5 companies with market capitalizations of $50 million to $300

6 million. For perspective, the 2014 average common book equity of

7 the Independent Small LECs is $20.2 million and the median book

8 equity is $14.3 million.[33] The Crain article, therefore, finds the

9 exact opposite of what the FCC and ORA is claiming as that article

10 *justifies* a size premium for companies that are even larger than the

11 Independent Small LECs.

12 **Q20. Does other scholarly research reject the addition of a size**

13 **premium?**

14 A. No. As I have explained, the widely-accepted approach

15 recommended by valuation experts and scholars applies a size

16 premium to account for increased risks among the smallest

17 companies. Data seeking to quantify the size-effect premium are

18 reflected in seminal valuation reports, such as those released by

19 Ibbotson/Morningstar and Duff & Phelps. In the face of these

20 authorities supporting a size premium and/or related factors such

21 as liquidity, ORA's rejection of the approach is startling. Indeed,

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[33] The largest of the Independent Small LECs is Siskiyou, which reported 2014
book equity of $59.6 million, which is still at the bottom of the microcap range.

1   even the article referenced by the FCC Staff Report states that the

2   CAPM does not explain the risk associated with all companies,

3   particularly firms that are in the smallest deciles. The survey

4   article considers whether there are other factors that better explain

5   the size effect, and it provides sources with alternative – but

6   confirmatory – explanations for the size effect, which include

7   liquidity and size factors concentrated in the three smallest deciles

8   of the stocks studied. [34] In the final section of his survey, Crain

9   summarizes his article as follows:

10   When the size effect is observed, theory suggests that
11   superior returns in smaller firms arise from higher
12   risk in these firms compared to larger firms.
13   Researchers do not claim that size per se is a source
14   of risk that drives superior returns of smaller firms.
15   Instead, firm size may be a proxy for one or more
16   underlying risk factors linked to smaller firms. Such
17   factors could be endogenous or exogenous and
18   explain variations in the size effect. Empirical
19   research suggests one such embedded factor in
20   smaller firms is liquidity risk. Logically, these
21   findings on liquidity seem linked to the emergence of
22   small-cap investment funds in the 1980s. Small-cap
23   funds increase the liquidity of smaller firms and, thus,
24   liquidity risk in these firms ought to be lower on
25   average after these kinds of funds launch. It follows
26   that superior returns of smaller firms should decline
27   when liquidity risk decreases. In addition to the
28   discoveries of the size effect and variations in the
29   effect, two areas of research are related to these
30   findings. First, research shows that when the size
31   effect is observed, it is nonlinear and concentrated in
32   smaller listed firms. One study finds the effect is five
33   times larger in firms in the 20th percentile using

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[34] Crain, p. 4, citing a Michou study in 2010.

1   NYSE breakpoints for size and only marginal across

2   the remaining larger firms.[35]

3

4   In addition to the sources cited in Crain's article, including those

5   referenced in footnote 31, above, the highly-respected valuation

6   experts. Shannon Pratt and Roger Grabowski, dedicate two entire

7   chapters and an appendix to size effect— "Chapter 14: Size

8   Effect," "Chapter 15: Criticism of the Size Effect," and "Appendix

9   15A: Other Data Issues Regarding the Size Effect"—in their Cost

10   of Capital text.[36] Pratt and Grabowski report that:

11   Two results of the *Size Study* [of
12   Ibbotson/Morningstar and Duff & Phelps] seem
13   strikingly similar.
14   1. In spite of the different time period, the size effect
15   results corroborate the Morningstar results that the
16   size effect is empirically observed.
17   2. The results are significantly similar for all eight
18   measures of company size.
19   Although the market value of common equity has
20   both the highest degree of statistical significance and
21   the steepest slope when regressing average returns
22   against size, all size measures show a high degree of
23   statistical significance. . . .
24   While there have been many criticisms of the size
25   effect, it continues to be observed in data sources that
26   utilize the CAPM methodology. . . . Studies have
27   shown the limitations of beta as a sole measure of
28   risk. The size premium is an empirically derived
29   correction to the textbook CAPM.[37]

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[35] Crain, pp. 21-22.

[36] Shannon Pratt and Roger Grabowski, *Cost of Capital: Applications and Examples,* Fifth Ed. (Hoboken, NJ: John Wiley & Sons, Inc., 2014), ("Pratt and Grabowski Cost of Capital 2014"), pp. 301-371. See also Shannon Pratt and Roger Grabowski, *Cost of Capital: Applications and Examples*, Third Ed. (Hoboken, NJ: John Wiley & Sons, Inc., 2008) ("Cost of Capital"), pp. 179-223.

[37] Cost of Capital 2008, pp. 207, 219. See also, Pratt and Grabowski Cost of

1

2   In this discussion, "beta" is the company or industry adjustment (a

3   single number) multiplied times the CAPM equity premium and

4   the result is added to the "risk-free rate." As I explained in my

5   Opening Testimony, "beta" is a number used in the CAPM to

6   adjust the overall market return to account for the greater or lesser

7   risk associated with a stock or with an industry relative to the

8   overall market risk.[38] Notably, in the quotation above, Pratt and

9   Grabowski state that the use of an industry beta in the CAPM is

10   not sufficient, in the absence of a size premium, which is a view

11   consistent with my experience and my testimony about the

12   necessity for a size-related adjustment. Pratt and Grabowski are

13   criticizing the proposal that the FCC Staff has made—that a risk-

14   free rate plus an industry beta (applied to the equity market return)

15   with no size premium is sufficient. ORA's proposal is even more

16   extreme, as it proposes no size premium *and no industry*

Capital 2014, p. 361, which repeats the last two sentences of the quotation above.

[38] See Balhoff Opening Testimony, pp. 23-24; "beta: is a number that represents statistical volatility that is calculated by performing regressions on stock price changes related to the overall equity market and similar regressions for the stock or industry in question. If the equity market premium is 6% above the risk-free rate, then a stock with a beta of 1.1 is 10% more volatile (riskier) than the overall market and should have an equity premium of 6.6% (1.1 times 6%), and a stock with a beta of 0.9 is 10% less volatile (risky) than the overall market and should have an equity premium of 5.4% (0.9 times 6%). Industry betas are calculated on the basis of the betas of the individual stocks in an industry, which makes industry betas dependent on choosing companies similar to the companies whose equity premia are being studied.

1   *adjustment.* ORA's approach contains no citations because, to the

2   best of my knowledge, there are no credible authorities available to

3   support such a methodology.

4   **Q21.** **Is there evidence that a size premium is appropriate for**

5   **regulated utilities?**

6   A.   Yes. Dr. Roger Morin, who is referenced in more than 20

7   footnotes in the FCC Staff Report, writes the following in his oft-

8   cited text, *New Regulatory Finance*:[39]

> Investment risk increases as company size diminishes, all else remaining constant. Small companies have very different returns than large ones, and on average they have been higher. The greater risk of small stocks does not fully account for their higher returns over many historical periods. The size phenomenon is well-documented in the finance literature. Empirical studies by Banz (1981) and Reinganum (1981A) have found that investors in small capitalization stocks require higher returns than predicted by the standard CAPM. . . . The relationship between firm size and return cuts across the entire size spectrum but is most evident among companies that have higher returns than larger ones on average. Ibbotson Associates' well-known historical return series publication covering the period 1926 to the present reinforces this evidence (Ibbotson Associates' *2005 Yearbook, Valuation Edition*). To illustrate, the Ibbotson data suggests that under SIC Code 49, *Electric, Gas & Sanitary Services,* the average return for that group over almost an 80-year period was 14.03% for the small-cap company group and 10.86% for the large-cap group, more than a 300-basis point difference. This is true for all industry groups.[40]

[39] Roger A. Morin, New Regulatory Finance (Vienna, VA: Public Utilities Reports, Inc., 2006) ("Morin").

[40] Morin, pp. 181-182.

1

2   Even for utilities that are true monopolies, which the Independent

3   Small LECs are not, Dr. Morin's observed difference in the costs

4   of equity between larger and smaller companies is striking

5   (approximately 300 bps). I am convinced that there should be the

6   addition of a size premium, and the actual difference is larger for

7   companies in a highly competitive market, such as

8   telecommunications, compared with traditional public utility

9   sectors, such as water or energy, where there is essentially no

10   competition.

11   **Q22. Can you respond to ORA's claim that "even if size was**

12   **determined to be a relevant factor, it is quite possible that the**

13   **relatively smaller size of the ILECs would afford them an**

14   **opportunity to more nimbly adjust strategy and budgets in**

15   **response to competitive forces, changing customer demands,**

16   **and technological innovations, thereby lowering risk"?[41]**

17   A.   Yes. ORA's conclusion is nothing but speculation and is wrong, in

18   my opinion. Small companies have greater risk, particularly in the

19   ILEC industry, which is a high fixed-cost business in which large,

20   long-term investments are necessary. Customer losses often

21   translate to proportionately higher losses of operating cash flows,

22   because the plant does not go away; the result is that operating risk

[41] ORA Testimony, p. 43, line 18 ff.

1   rises rapidly as competition grows. Greater size permits carriers to

2   spread marginal costs over a large number of customers, and

3   smaller firms are severely disadvantaged in managing their costs.

4   As a result, small carriers require more federal and state support to

5   supplement their investments and operations, while keeping rates

6   within reasonable bounds. Further, small carriers have relatively

7   low diversification of revenues compared with large carriers, and,

8   as in a stock portfolio, diminished diversification results in

9   increased risk. Finally, small carriers have limited access to the

10   capital markets, which creates significantly greater risks. Dr.

11   Morin addresses the greater risk for smaller utilities, effectively

12   responding to ORA.

13   Smaller companies are less able to deal with
14   significant events that affect revenues and cash flows
15   than larger companies. For example, the loss of sales
16   from a few large customers would exert a far greater
17   effect on a small company . . . . Presumably, small
18   stocks provided less utility to the investor, and require
19   a higher return.[42]
20
21   ORA's statement is not only speculative—and offered without any

22   citation or justification—but it is also contrary to prevailing

23   authority and common sense.

[42] Morin, p. 187.

1   **Q23.   How do you respond to ORA's commentary that since 1997,**

2   **authorized rates of return for U.S. regulated electric, natural**

3   **gas, and water utilities have declined?[43]**

4   A.   The other U.S-regulated industries—electric, natural gas, and

5   water—have monopoly characteristics that are distinguishable

6   from those in the ILEC industry. ILECs are no longer monopolies,

7   and even rural carriers are affected by increasing competitive

8   pressures. The ILEC industry is challenged by significant capital

9   expenditure pressures due to technology transitions with shorter

10   lives, and, as recent trends in FCC policy amply demonstrate, the

11   ILEC industry is buffeted by regulatory turbulence. These "risks"

12   create a significantly higher uncertainty, and, hence, higher equity

13   cost for ILECs.

14   **Q24.   Did you consider ORA's argument regarding the decline in**

15   **authorized ROEs for regulated utilities since 1997?**

16   A.   Yes. While not quantified in ORA's testimony, the 2009 report

17   from Regulatory Research Associates (cited in the ORA testimony

18   at footnote 51), reveals that the average equity returns for electric

19   and gas utilities have declined from 11.34% in 1997 to 10.42% in

20   2008, that is, by approximately 92 bps over that 12-year period.[44]

21   In that same footnote, ORA also cites an April 2009 slide

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[43] ORA Testimony, p. 44, lines 13-15.

[44] Regulatory Research Associates, *Regulatory Focus*, (January 12, 2009), p. 4.

1   presentation from Moody's Investors Service ("Moody's"), which

2   tracks what appear to be authorized and realized utility ROEs for

3   the electric industry. At the time of the presentation, the

4   authorized returns were slightly above 10%, while the realized

5   ROEs were graphed at levels approximately 50 bps lower.[45] The

6   February 2013 *Industry Outlook* report from Moody's, also cited in

7   ORA's footnote 51, explains that the stable outlook for the electric

8   and gas sector is the result of a "sustained period of low natural gas

9   prices," a "flight to quality" in the capital markets (when investors

10   are fearful they usually trade out of riskier securities and flee to

11   quality securities that are large, dividend paying and predictable

12   equities or higher-grade debt instruments), and anticipated large

13   capital expenditures that "will contribute to rate base growth."[46]

14   In the 2015 "Capital Market Conditions" article cited by ORA in

15   footnote 51, Dr. Randall Woolridge reports that gas and electric

16   companies have authorized ROEs that have fallen to approximately

17   9.7% by 2015.[47]

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[45] Moody's Investor's Service, *Estimating the Cost of Capital in Today's Economic & Capital Market Environment*, 41st Financial Forum, Society of Utility and Regulatory Financial Analysts (April 2009), slides 7-8.

[46] Moody's Investor Services, Industry Outlook: US Regulated Utilities (February 6, 2013), p. 1.

[47] J. Randall Woolridge, *Capital Market Conditions, Authorized Utility ROEs, and Hope and Bluefield Standards,* October 22, 2015, p. 7 (Table 1).

1   **Q25.**   **Do these sources support an argument that the Independent**

2   **Small LECs' equity costs are consistent with those of gas and**

3   **electric utilities?**

4   A.   No. The ORA sources listed in footnote 51 all refer to gas and

5   electric companies that have little or no competition, and which are

6   readily distinguishable from ILECs. Moody's *Industry Outlook*

7   focuses primarily on the costs for natural gas, resulting in reduced

8   expenditures that should enable higher generation profitability. In

9   contrast, today's ILEC profitability and cash flows are shrinking as

10   the carriers work to respond to competitive pressures and

11   regulatory mandates for modern, broadband-capable infrastructure.

12   As an illustration of a telling difference between the utilities cited

13   by ORA and telecommunications carriers, Duff & Phelps in its

14   most recent *Industry Cost of Capital* Handbook indicates that, in

15   2015, the median cost of equity for the gas and electric industry

16   (SIC code 493) is approximately 240 bps *lower* than the cost of

17   equity for the telecommunications industry (SIC Code 4813),

18   which is a clear sign of the greater risk in the telecommunications

19   industry.[48] So, if Dr. Woolridge is correct that gas and electric

20   utilities should have authorized ROEs of approximately 9.7%, the

21   Duff & Phelps data suggest that the telecommunications services

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[48] Duff & Phelps 2015 Valuation Handbook: Industry Cost of Capital, (Hoboken, NJ: John Wiley & Sons, Inc., 2015); unnumbered pages—SIC Codes 493 and 4813.

1   industry should *start* with ROEs closer to 12.1%, before adding

2   size or liquidity premia for the Independent Small LECs. It is clear

3   that the electric and gas industry is not comparable with the ILEC

4   industry, as the risks for telecommunications carriers are greater

5   than those of monopoly utilities and are becoming arguably even

6   larger as regulatory uncertainties increase.

7   **Q26.   Has the CPUC found that there is a difference in risk for**

8   **smaller utilities compared with larger ones?**

9   A.   Yes. In 1997, the CPUC wrote that the Commission "concur[s]

10   that applicant's [Foresthill's] risk is impacted by its small size in

11   relation to the large size of the companies in the study group."[49]

12   However, the Commission did not adopt an explicit size premium,

13   nor did it adopt any specific risk premium, because the CPUC

14   chose to approach setting rates in a different way; that is, it

15   adopted a 10% rate of return for each of the carriers, independent

16   of capital structure or specific costs of debt.

17 **Q27.   Does ORA correctly assess the effects of regulation on the risk**

18   **profiles of the Independent Small LECs?**

19 A.   No. ORA fails to acknowledge the significant political and

20   regulatory risks attendant to rural telephone company revenue

21   streams, and ORA wrongly alleges that the companies are

[49] D.97-04-033 (Foresthill), at 20.

1   "shielded" from risks by virtue of their access to certain federal

2   and state high-cost support.

3   **Q28.   Does ORA explain how it believes that universal service**

4   **programs "shield" the companies from risk?**

5   A. No. ORA simply asserts that "the USF and CHCF-A [California

6   High Cost Fund A] provide known levels of revenue for the Small

7   LECs" and that "revenues derived from revenue requirements

8   adopted in general rate cases . . . are updated annually."[50]

9   **Q29.   Do the USF and CHCF-A provide "known levels of revenue"**

10   **for the Independent Small LECs?**

11 A. No. The federal Universal Service Fund program and the CHCF-A

12   do not guarantee that Independent Small LECs will achieve any

13   particular level of total revenue. The support programs provide

14   important revenue sources for the Independent Small LECs, but

15   Independent Small LECs also depend upon revenue from end users

16   and intercarrier compensation. As one reference point, Public

17   Utilities Code Section 275.6(b)(3) defines small independent

18   telephone corporations' "rate design" to include a "mix of end user

19   rates, high-cost support, and other revenue sources." The

20   Independent Small LECs do not "know" what their revenues will

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[50] ORA Testimony, p. 38.

1   be from year to year, and the amounts derived from federal high-

2   cost support and CHCF-A fluctuate from year to year.[51]

3   **Q30.**   **If an Independent Small LEC does not achieve revenues**

4   **sufficient to meet its revenue requirement in a given year, do**

5   **the USF or CHCF-A programs provide a mechanism to make**

6   **up for that shortfall?**

7   A.   The federal USF program provides no mechanism to correct for

8   revenue shortfalls experienced by program participants. Similarly,

9   subject to a narrow exception that addresses only a limited subset

10   of revenue impacts, the CHCF-A program has no mechanism for

11   supplementing funding to address revenue shortfalls. Each

12   company's CHCF-A revenue is set in its most recent rate case, and

13   that annual funding level remains effective until the company's

14   next rate case, subject only to limited annual adjustments based on

15   specific factors prescribed in the CHCF-A rules.

16   **Q31.**   **What are the limited annual adjustments?**

17   A.   There are four processes that can alter CHCF-A levels between

18   rate cases. First, if a company is projected to earn more than its

19   target rate of return based on seven months of annualized data, its

20   CHCF-A funding level for the next year will be reduced by the

21   amount by which the company exceeded the target. This "means

22   test" serves to decrease prospective funding levels for "over-

[51] See D.91-09-042, Appendix.

1   earning," but it provides no supplemental funding for "under-

2   earning." Second, because federal support for the intrastate

3   revenue requirement fluctuates from year to year, and because that

4   support may be higher or lower than forecasted in a rate case,

5   CHCF-A is adjusted on a revenue-neutral basis to account for the

6   differences. If federal funding is higher than projected, the CHCF-

7   A will be prospectively reduced dollar for dollar by that additional

8   amount. If federal funding is lower than anticipated, the CHCF-A

9   will be prospectively increased by that amount. Third, if a

10   company does not file a rate case within prescribed timeframes

11   under the CHCF-A rules, CHCF-A funding is to be reduced to zero

12   over a three-year period, starting with a 20% funding reduction in

13   the first year of reduction, followed by a contraction to 50%

14   funding in the second, and concluding with no funding in the third

15   year. The mechanism is known as the CHCF-A "waterfall."

16   Finally, CHCF-A funding can be adjusted annually for the revenue

17   effects of "regulatory changes of industry-wide effect" that alter

18   the assumptions upon which the CPUC set a company's rate

19   structure in a rate case. This adjustment for "regulatory changes of

20   industry-wide effect" is the one limited and narrow exception

21   whereby CHCF-A funding can compensate for a limited subset of

22   revenue shortfalls. As reflected in the Commission's most recent

23   Resolution establishing funding amounts for the CHCF-A for

1   2016, the only "regulatory changes of industry-wide effect" that

2   generated annual adjustments were changes to the California

3   LifeLine program that shifted LifeLine-related administrative

4   expenses to the CHCF-A program, and changes related to the

5   FCC's intercarrier compensation reforms.[52]

6 **Q32. Does this fourth mechanism, accounting for the revenue effects**

7 **of regulatory changes, "shield" the companies from**

8 **"fluctuations in revenue"?**

9   A.   No. In fact, the effects of regulatory changes are generally small

10   relative to the universe of factors that could influence a company's

11   cost structure and realized revenue. The limited annual

12   adjustments for fundamental regulatory changes do not provide a

13   sufficient mechanism for increased funding in response to changes

14   in a company's income statement. If, for example, a company

15   must spend significantly more than anticipated to provide its

16   employees with health benefits, the CHCF-A provides no

17   additional funding. If more customers than expected drop their

18   landlines to rely on wireless services, the CHCF-A provides no

19   additional funding. If a catastrophic event occurs, which requires

20   significant additional costs to be incurred, the CHCF-A provides

21   no additional funding. ORA is not correct that the CHCF-A

22   "shields" from fluctuations in revenues and therefore eliminates

[52] *See* Res. T-17505.

1   company risk. Moreover, as I noted above, if a company earns

2   more than its earnings target, the carrier will lose funding dollar-

3   for-dollar in the next year.

4   **Q33. Is it true that revenues are "updated annually," as ORA**

5   **asserts?**[53]

6   A.   No. As I explained, revenues fluctuate based on many factors, and

7   there is no mechanism to increase revenues on an annual basis to

8   adjust for revenue shortfalls. Neither revenues nor revenue

9   requirements are "updated annually."

10   **Q34. Does federal high-cost support provide a mechanism for**

11   **recouping lost revenues or neutralizing unanticipated costs or**

12   **revenue losses?**

13   A.   No. USF support is calculated based on specific formulas

14   designed to recover specific costs, but if those amounts prove to be

15   insufficient to cover actual costs, no additional funding is

16   provided.

17   **Q35. Are there other risk factors associated with federal high-cost**

18   **support and CHCF-A funding that ORA fails to explain?**

19   A.   Yes. ORA ignores the significant political and regulatory risks

20   related to these programs. In fact, in my conversations, it is clear

21   that investors and companies have become increasingly concerned

22   about the uncertainties affecting small and vulnerable carriers that

[53] ORA Testimony, p. 40, lines 8-10.

1   are clearly dependent on support mechanisms. More specifically,

2   the *USF/ICC Transformation Order* (FCC 11-161) and the various

3   subsequent FCC orders have put in motion dramatically more

4   unpredictable support mechanisms. Those federal reforms are

5   ongoing, creating significant uncertainties and risks. Similarly, the

6   CPUC has adopted changes to the CHCF-A program, and it is

7   considering additional changes.[54] In D. 14-12-084, the CPUC

8   adopted a rebuttable presumption that Independent Small LECs'

9   revenue requirements could not include corporate expenses beyond

10   the levels applicable to federal support mechanisms, thereby

11   placing a significant limitation on the use of CHCF-A funding.

12   Phase II of the CHCF-A rulemaking includes even more sweeping

13   proposals for change, including the potential for imputation of

14   unregulated broadband revenues into intrastate ratemaking and

15   considerations of "alternative forms of regulation."[55] The breadth

16   of Phase II of the rulemaking contradicts ORA's claim that the

17   CHCF-A "shields" the companies from risk. This regulatory risk

18   is further compounded by the political reality that the CHCF-A is

19   subject to a "sunset" provision, such that the program will

20   terminate at the end of 2018 if it is not legislatively renewed.[56]

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[54] See R.11-11-007 (CHCF-A rulemaking).

[55] D.14-12-084, at p. 12.

[56] See Pub. Util. Code § 275.6(g).

1   Even without changes to the CHCF-A program, the Independent

2   Small LECs are dependent upon the CPUC's timely processing of

3   rate cases to make adjustments to rate structures to account for

4   increasing costs. Illustrating this, one of the Independent Small

5   LECs, Kerman Telephone, has a current rate case that has been

6   pending for more than four years.[57] It is my understanding that

7   Kerman has been unable to address any of the cost increases that

8   have occurred since 2008, which was the company's last rate case

9   "test year." Significant delays in rate cases are major risk factors

10   for the companies, and further rebut the claim that the CHCF-A

11   eliminates risk for the carriers.

12   **Q36.**   **ORA rejects the portion of your testimony concerning merger**

13   **and acquisition ("M&A") data.[58] How do you respond?**

14   A.   ORA summarily rejects the M&A data and analyses that I used to

15   test the Ibbotson/Morningstar and Duff & Phelps calculations.

16   ORA contends that the M&A data represents too small a sample

17   because only 24 sales or about 20% of all the sales over the period

18   were accompanied by public disclosure of data. I respond that it is

19   typical that the vast majority of small transactions are announced

20   with no significant disclosure of valuation information. At the

21   same time, the number of transactions about which we do have

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[57] *See* A.11-12-011.

[58] ORA Testimony, p. 41, lines 8-14.

1   data is large and consistent, revealing the collapse in valuation

2   over the period. Moreover, the transactions include sales and

3   purchases of properties by sophisticated sellers and buyers, so

4   those publicly-disclosed purchase prices provide compelling

5   evidence about the sharply-lower valuations. If, for example,

6   Verizon were to sell its California assets to Frontier at values

7   meaningfully below market value, Verizon would be legally liable

8   to its shareholders, some of whom would certainly file lawsuits.[59]

9   If Qwest were to sell to CenturyLink at valuations below fair

10   value, it too would be at risk for shareholder actions.[60] The data

11   reveal a clear and convincing downward value trend that is in

12   sharp contrast to valuations ten years ago. The factual trend cannot

13   be dismissed, and it provides important corroborative evidence

14   about the increasing cost of equity reflected in the CAPM

15   valuation methodology.

[59] Frontier reported on February 5, 2015, when the company announced the transaction to purchase Verizon's California, Texas and Florida wireline operations that it was paying 3.7x 2014 estimate pro forma EBITDA, a figure below the 4.5x to 5.5x EBITDA that I used as a typical value in my Opening Testimony. *See* Frontier Investor Presentation, *Frontier Communications to Acquire Verizon Wireline Operations in California, Florida and Texas* (Feb. 5, 2015), available at http://investor.frontier.com/common/download/download.cfm?companyid=AMDA-OJWDG&fileid=807528&filekey=D05E3F23-F896-4B56-AB6C-3D69DB74DBFB&filename=Frontier_Communications_to_Acquire_Verizon_Wireline_Operations_in_California_Florida_and_Texas.pdf, slide 6.

[60] See Balhoff Opening Testimony, p. 47, Figure 4; Qwest sold for 5.1x EBITDA, which is well below the prices that averaged 8.0x EBITDA from 2001 to 2007; see Balhoff Opening Testimony, p. 46.

1   **Q37.   What about ORA's argument that regulators rely on book**

2   **value and not market value?[61]**

3   A.   I make the point clearly in the Opening Testimony:

4   I emphasize that the following assessment is a
5   corroboration of the analyses above, not the central
6   presentation in this testimony. A critic might argue that
7   there is a mixing together of book value and market value.
8   Such an argument misses the larger point, which is that the
9   size of the *relative contraction in value in the marketplace*
10   is a clear indication of the startlingly increased risks in the
11   industry, which is the basis for contending that a higher
12   return on equity is appropriate.[62] (Emphasis in original.)
13

14   The M&A testimony was not proposed as the foundation for

15   setting a rate of return, but as confirmation of the reasonableness of

16   the increase in equity costs and the relative size of the change.

17   ORA does not respond to these data from the real world which, in

18   my view, provide convincing evidence that equity costs have risen

19   steeply. These data offer the CPUC an ultimate test about whether

20   the rising cost of equity and falling equity values are reasonable.

21   IV.   **RESPONSE TO ORA TESTIMONY ABOUT COST OF DEBT**

22   **Q38.   Does ORA accurately state that "the applicants request the**

23   **Commission to use a forward looking debt rate of 5.5%,"**

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[61] ORA Testimony, p. 41, lines 14-19.

[62] Balhoff Opening Testimony, p. 64, lines 14-18.

1   **including for the three Independent Small LECs which do not**

2   **have any debt on their balance sheets?[63]**

3   A.   No. I was far more precise than ORA suggests, and it was not my

4   testimony that a 5.5% cost of debt is more appropriate than actual

5   debt costs for carriers that have debt. I stated from the outset that

6   "it is more typical to use embedded [debt] costs which are the

7   'actual interest obligations, including amortization of discount

8   premium, and expense of the utility's embedded debt

9   outstanding.'"[64] Second, I recommended using 5.5% for the

10   carriers that had no debt . . . *if the Commission wishes to use a*

11   *hypothetical capital structure.*[65] I offered my professional opinion

12   and recommendation that such a rate was reasonable because it

13   was below the AAA rate and was slightly lower than the rate

14   actually being paid by Sierra Telephone.[66] And my testimony was

15   careful in stating that the rate might be reasonable if the CPUC

16   were to determine that a hypothetical capital structure were

17   appropriate.[67] Finally, I explained that the current Treasury rates

---

[63] ORA Testimony, p. 10, lines 9-13; see also p. 10, line 14.

[64] Balhoff Opening Testimony, p. 15, lines 12-14.

[65] Balhoff Opening Testimony, p. 10, lines 13-16; p. 76, lines 1-17.

[66] Balhoff Opening Testimony, p. 10, lines 5-9; *see also,* Exhibit MJB-14.

[67] Balhoff Opening Testimony, p. 76, lines 11-17.

1   are at levels that are unsustainable, a proposition that ORA fails to

2   address.[68]

3   **Q39.**   **Do you agree with ORA that actual debt costs should be used**

4   **for the LECs with debt on their balance sheets?[69]**

5   A.   Yes, I agree that it is most appropriate to use embedded debt costs

6   for the carriers that have actual debt.

7   **Q40.**   **ORA cites the current Treasury and Federal Financing Bank**

8   **("FFB") rates, which are 2.82% and 2.47%, respectively.[70]**

9   **Are these legitimate rates to use in calculating the cost of debt?**

10   A.   No. As I explained above and in my Opening Testimony, the low

11   Treasury-based rates noted by ORA are artificially depressed.

12   ORA's use of those rates to demonstrate the conservatism of its

13   proposal is not convincing, as those rates are historically low, due

14   to the temporary intervention of the Federal Reserve, and will

15   almost certainly increase and return to more normalized levels.

[68] Balhoff Opening Testimony, p. 19, lines 2-10; Duff & Phelps 2015 Cost of Capital, p. 3-3 "The yields of U.S. government bonds in certain periods during and after the [financial crisis of 2008] may have been artificially repressed, and therefore [are] likely unsustainable. Many market participants will agree that nominal U.S. government bond yields in recent periods have been artificially low. Even members of the Federal Open Market Committee (FOMC) have recently discussed the need to 'normalize' interest rates." (Emphasis in original.)

[69] ORA Testimony, p. 21, lines 12-14.

[70] ORA Testimony, p. 23, lines 1-9.

1 **Q41. How does ORA determine that an imputed cost for debt for the**

2   **Independent Small LECs should be 4.53%?**

3 A. ORA averages the debt costs for the seven Independent Small

4   LECs that have debt on their balance sheet to arrive at 4.53%.[71]

5   ORA attempts to support its proposal as purportedly conservative

6   based on its belief that the carriers could access far less expensive

7   FFB (2.47%-2.82%) or Rural Utilities Service ("RUS") funding.

8   In fact, three of the seven Independent Small LECs have 2014 debt

9   costs above 5.0% and two carriers have debt costs in the 4.5% to

10   4.8% range, and the remaining two have 2014 debt costs of 2.9%

11   and 3.7%. However, all the California carriers have rates above

12   those cited by ORA, including five of the seven with rates well

13   higher than the government subsidized rates, so ORA's claims

14   about the availability of lower debt are not reflected in carriers'

15   actual experiences.[72] It is my understanding that carriers find

16   certain conditions in the application process and in the covenants

17   imposed by the government to be unfavorable, and the effect is that

18   the government-subsidized loans are *not* as readily available as

19   ORA implies.

[71] ORA Testimony, p. 23, lines 1-2.

[72] *Id.;* Calaveras reports debt costs of 4.5%; Ducor reports 5.1%; Foresthill reports 4.77%; Sierra reports 5.53%; and Volcano reports 5.2%. Balhoff Opening Testimony, p. 72, Table 8.

1   **Q42.   Is ORA correct in stating that your testimony is incorrect or**

2   **unsubstantiated about the current lending environment,**

3   **including RUS loans?[73]**

4   A.   No. The RUS reports that FFB funding has contracted sharply, as I

5   reported in my Opening Testimony. Less than one-third of the

6   available funds have been placed each year since the federal

7   telecommunications reforms at the end of 2011.[74] My

8   conversations with the RUS have confirmed that the recent federal

9   reforms have precipitated changes at the RUS. The federal

10   regulatory reforms have prompted the RUS to be more

11   conservative, requiring more detailed five-year forecasts and

12   extending the approval process from a previous approval period of

13   6-12 months to today's 12-18 months. I am aware of the RUS

14   concerns because I was requested to brief the entire senior

15   leadership at the RUS on several occasions regarding the 2011

16   reforms. The senior RUS personnel were candid in reporting

17   concerns about deteriorating operating and financial performance

18   of the carriers to which they were lending. Because of the

19   concerns, I was also requested to brief the Under Secretary of the

20   Department of Agriculture. Subsequently I was invited to discuss

21   the challenging environment in two briefings, one with the White

[73] ORA Testimony, p. 25, lines 14-17.
[74] Balhoff Opening Testimony, p. 49, Table 2.

1   House and the second with the Secretary of Agriculture, in part

2   because of their concern that certain carriers might fail. Based on

3   my professional experience and conversations, I am confident that

4   the funding environment has become significantly more difficult

5   for lenders and for smaller LECs, as evidenced by the sharp

6   contraction in actual lending.

7   **Q43.   Did the FCC Staff Report, to which ORA cites, state that the**

8   **small carriers have access to less expensive debt through**

9   **subsidies, and, hence, lower-than-market cost, for loans**

10   **provided by CoBank?[75]**

11   A.   Yes, but CoBank, which is part of the Farm Credit System and is

12   the largest private lender to small LECs, corrected the FCC Staff

13   Report within weeks of the release of the study, clarifying that:

14   We ask that the Staff Report be corrected to reflect
15   accurately CoBank's requirement to charge a market
16   interest rate to all telecommunications company
17   borrowers and to remove any comments that suggest in
18   any way that CoBank provides subsidized interest rate
19   loans to telecommunications companies. We further
20   ask that the paragraph 49 of the Staff Report be
21   removed in its entirety given it is misleading with
22   respect to the availability of funding to RLECs [rural
23   local exchange carriers].[76]
24

[75] FCC Staff Report, para. 49.

[76] Comments of CoBank, ACB, *In the Matter of Rate Represcription Staff Report, Connect America Fund,* WC Docket No. 10-90, July 25, 2013 ("CoBank"), June 21, 2013, available at https://prodnet.www.neca.org/publicationsdocs/wwpdf/62113cobank.pdf, p. 5.

1   CoBank also addressed the state of the lending environment,

2   contending that it was misleading for the FCC Staff Report to state

3   . . .

4   that all RLECs have access to "extensive funding"
5   from CoBank under the existing rate-of-return (RoR)
6   regulations. Regrettably, many RLECs do not meet
7   CoBank's lending standards due to the various caps
8   and limitations on universal service funding and inter-
9   carrier compensation. It is unfortunate that the
10   uncertainty of a stable, predictable cost recovery
11   mechanism is making it increasingly difficult for
12   CoBank to extend credit for the purpose of deploying
13   ubiquitous rural broadband networks.[77]
14
15   CoBank went on to offer a pointed summary about its financial

16   perspective on the rural marketplace:

17   As CoBank has commented numerous times, for those
18   communication companies serving high-cost areas,
19   deploying affordable broadband is not economically
20   possible without a sufficient, sustainable, and
21   predictable level of support. CoBank views RoR
22   regulation for RLEC customers as an important
23   component to their ability to continue to service
24   existing debt and obtain future access to debt capital.
25   RoR regulation is an important component of CoBank's
26   evaluation of potential loans. While incentive
27   regulation can work for larger consolidators, the vast
28   majority of RLECs are too small, and operate in areas
29   where subscriber density is too low for price-cap or
30   other incentive regulation to be viable. With the new
31   caps and limitations on Universal Service Fund (USF)
32   and the decrease of Interstate Common Line Support
33   (ICLS) from the USF/ICC Transformation Order and
34   Further Notice, *any reduction in the prescribed RoR*
35   *will further decrease the ability of RLECs to obtain*
36   *debt capital.* The authorized RoR is a factor in
37   determining USF support and ICLS, therefore
38   decreasing the RoR will further reduce the cost

[77] CoBank, pp. 4-5.

1   recovery possible. If RLECs don't have a sufficient,
2   sustainable and predictable level of support, deploying
3   affordable broadband is not economically possible and;
4   therefore, not bankable.[78] (Emphasis added.)
5
6   It is notable that CoBank is not simply indicating that risks have

7   increased to the point where lending standards have become more

8   restrictive, but CoBank warns against the precise recommendation

9   being made by ORA. CoBank states that reduced allowed rates of

10   return will create greater limitations on credit, and potentially

11   make the industry "not bankable."   The comments were provided

12   by Robert F. West, who is Senior Vice President of CoBank and

13   responsible for all of CoBank's professionals in its rural

14   telecommunication division. Most financial experts in the industry

15   know that CoBank is careful and professional. It is my expert

16   opinion that Rob West's commentary is not overstated when he

17   points to the increasing risk in the small-ILEC sector, the critical

18   importance of appropriate rates of return, the greater vulnerability

19   of the small carriers compared with larger carriers, and the

20   growing problem with access to capital.

21   **Q44. How do you respond to ORA's reliance on the assertion that**

22   **"none of the Independent Small LECs has a pending loan**

---

[78] CoBank, p. 6.

1   **application with RUS" and none "has had a loan request**

2   **denied from January 1, 2010 to the present"?[79]**

3   A.   The fact that none of the Independent Small ILECs has sought a

4   new loan is indicative of the regulatory challenges about which

5   Mr. West was writing and the growing concern in the industry

6   about the risk of holding debt in a more uncertain regulatory and

7   capital environment. The lack of pending applications is also

8   another data point supporting the sharply-reduced loan totals and

9   the increasingly careful review of pending loans at RUS. ORA

10   posits that the Independent Small LECs were, at a time in the past,

11   able to obtain loans from RUS and that no loans have recently been

12   denied (a tautology because the Independent Small LECs did not

13   apply for loans). The logic is difficult to follow when ORA

14   concludes that RUS' current lower cost of debt provides an

15   important marker for the carriers.[80] In response, I have cited the

16   clear language of CoBank's senior officer, Rob West, who states

17   unequivocally to the contrary in his communications with the FCC.

18   Additionally, while the RUS is not making public pronouncements,

19   this government agency is in fact reporting that loan totals have

20   fallen by more than 70% annually, on average, from 2012 to the

21   present. Something more ominous is occurring here and ORA

[79] ORA Testimony, p. 24, lines 19-22.
[80] ORA Testimony, p. 23, lines 5-9; p. 24, lines 1-22.

1   chooses to dismiss it with the claim that "no actual evidence"

2   exists in support of my testimony that the debt markets are today

3   not what they were previously. As I have summarized, my views

4   are amply supported by the statements and actions of actual

5   lenders, as well as the debt-related behavior of the carriers.

6   **Q45.**   **ORA states that your testimony includes an implied**

7   **assumption that a "sudden and significant increase in**

8   **Treasury rates is imminent."[81] Is that a correct representation**

9   **of your testimony or your opinion?**

10   A.   Absolutely not. My testimony is that interest rates are artificially

11   and historically low due to extraordinary monetary policies. I do

12   not expect a sudden and significant increase, but I do expect the

13   easing of monetary controls, which will allow rates to rise to more

14   normalized levels. In fact, ORA's testimony points to the same

15   insight, as ORA cites a statement from the Chairwoman of the

16   Federal Reserve to the effect that rates will rise in a "prudent and

17   gradual manner."[82] Naturally, this means that rates will rise, as the

18   Federal Reserve eases the repressive controls that have reduced

19   those rates. It is my professional view and it is the view of the

20   experts to which I pointed in my Opening Testimony that Treasury

---

[81] ORA Testimony, p. 27, lines 5-8.

[82] *Id.*

1   rates today reflect a biased view of lending costs to the extent that

2   those rates are proffered by ORA to support debt estimates going

3   forward. It is entirely reasonable to expect rising rates over the

4   next several years. Whether those increases are gradual or

5   dramatic, the likelihood of increases defeats ORA's reliance on the

6   current rates.

7   **Q46.**   **Please comment on ORA's calculations about the incremental**

8   **debt necessary to raise the weighted average cost of debt to**

9   **5.5%.[83]**

10   A.   My testimony recommends using the embedded cost of debt for

11   each of the carriers at the time of the carriers' rate cases. ORA's

12   testimony reflects a misplaced focus on how much incremental

13   debt will be necessary to cause certain carriers, which have debt

14   already, to arrive at a weighted average of 5.5%. I did not testify

15   that such an approach would be appropriate. I testified as follows:

16   If the Commission were to posit a cost of debt figure
17   as part of a hypothetical capital structure calculation, I
18   recommend that the Commission use a hypothetical
19   debt rate of 5.5% for companies without any actual
20   debt rates. This is above the current median of 5.2%
21   of the Independent Small LECs. However, it is
22   approximately the interest rate that Sierra Telephone
23   currently pays (5.53%), and approximates a rate that
24   might be expected in the future for any of these
25   carriers, although it is very possible the rates will rise

---

[83] ORA Testimony, p. 30, lines 10 ff.

1   higher. Again, this exercise is purely to arrive at a

2   target WACC [weighted average cost of capital].[84]

3   It remains my testimony that 5.5% is a reasonable estimate if the

4   CPUC chooses to use a hypothetical capital structure. And it is

5   still my testimony that embedded costs of debt remain reasonable

6   inputs in calculating a carrier's WACC. To get the most up-to-date

7   data related to a carrier's debt costs, the Commission should use

8   the debt that is in place at the time of the company's rate case.

9

10 **V.**   **RESPONSE TO ORA TESTIMONY ABOUT CAPITAL**

11   **STRUCTURE**

12   **Q47.** **Did you recommend that the CPUC use a hypothetical or an**

13   **actual capital structure in your Opening Testimony?**

14   A.   I am aware that the Independent Small LECs have expressed a

15   preference for a hypothetical capital structure, but my testimony

16   presents recommendations for both an actual and a hypothetical

17   capital structure.[85] If properly framed, either a hypothetical or an

18   actual structure could be financially and reasonably defensible. My

19   Opening Testimony stated, however, that an actual capital structure

20   should not be used if it "*is inconsistent with forward-looking*

---

[84] Balhoff Opening Testimony, p. 76, lines 11-14; p. 10, lines 5-7.

[85] Balhoff Opening Testimony, p. 16, lines 3 ff.

1   *expectations regarding the appropriate mix of capital sources.*"[86]

2   (Emphasis added.) If equity should be built up, because it is

3   judged to be too low, or if the actual capital structure includes

4   excessive levels of equity, then a hypothetical structure might be

5   used. I recommended that, if a hypothetical structure is used, it

6   would be reasonable to use a hypothetical 70%/30% equity-to-debt

7   capital structure.

8   **Q48.   Did you "request a single, uniform, hypothetical 70% equity**

9   **and 30% debt capital structure" for ratemaking purposes?[87]**

10   A.   No. I *proposed* that 70% equity ratio and 30% debt ratio was a

11   reasonable hypothetical capital structure.[88] In every instance, I

12   made it clear that I relied upon the CPUC's judgment, but would

13   propose such a capital structure if the CPUC were to choose to

14   employ such an approach.

---

[86] Balhoff Opening Testimony, p. 16, lines 20 ff.

[87] ORA Testimony, p. 7, lines 10-12.

[88] Balhoff Opening Testimony, p. 71, lines 4-7; "Thus, I suggest that the Commission consider whether the former zone of reasonableness (60%-80%) should be shifted higher above 70% and likely to 80% to preserve forward-looking access to capital and to manage operating risk." See also Balhoff Opening Testimony, p. 76, lines 1-14; in response to a question "What do you recommend if the Commission were choose to use a hypothetical capital structure and establish a target WACC", I stated that "I would propose that the Commission employ a hypothetical capital structure with approximately 70% to 80% equity."

1   **Q49.**   **Did you request that no specific capital structure should be**

2   **mandated for anything more than ratemaking purposes, as**

3   **ORA has claimed?**[89]

4   A.   Such a question was not posed to me in my Opening Testimony

5   and I offered no such opinion. I believe, however, that, whether a

6   hypothetical or actual structure is used, a reasonable function of

7   that structure is to calculate a resulting cost of capital for

8   application in the ongoing round of rate cases.

9   **Q50.**   **ORA recommends the use of a capital structure that reflects**

10   **the five-year average of the Independent Small LECs' capital**

11   **structure.**[90] **Is this reasonable?**

12   A.   The Commission's analysis of capital structure should employ an

13   appropriate forward-looking view of capital structure.[91] The risk

14   in relying primarily on the historic five-year average, which is

15   ORA's recommendation, is that the historical data do not properly

16   capture higher or lower risk in an industry that is undergoing rapid

---

[89] ORA Testimony, p. 7, lines 12-13.

[90] ORA Testimony, p. 8, lines 11-13.

[91] Balhoff Opening Testimony, p. 16, lines 16 ff.; "It is my understanding that the Commission has attempted in the past to arrive at a more generic cost of capital that is forward-looking, and therefore the WACC may not be based strictly on any single company's actual capital structure. I support this goal of determining a cost of capital that is forward-looking, and I believe that it would be unreasonable to use a company's actual structure if such a structure is inconsistent with forward-looking expectations regarding the appropriate mix of capital sources."

1   technological, competitive and regulatory changes. Illustrating

2   this, a clear movement is discernible toward a higher proportion of

3   equity, as demonstrated by the companies' reduction of their debt

4   load since 2010. There appears to be a deliberate commitment to

5   managing perceived risks in response to new regulatory changes.

6   This is the rationale for suggesting a 70/30 ratio of equity and debt.

7   **Q51.** **ORA argues that the proxy group used to estimate the CAPM**

8   **beta in your Opening Testimony has higher debt ratios than**

9   **the proxy group used by the CPUC in 1997, and ORA then**

10   **points to your more recent proxy group to question whether it**

11   **is reasonable to maintain the 1997 zone of reasonableness**

12   **(60% to 80%).[92] What is your response to these claims?**

13   A. ORA's testimony is nonsensical as it juxtaposes two analyses that

14   have nothing to do with each other, except that both employ proxy

15   groups. The first proxy group was appropriately employed by the

16   Commission in 1997 to determine capital structure and the second

17   was used appropriately in my Opening Testimony to correct for a

18   demonstrably incorrect CAPM beta. ORA illogically suggests

19   using my beta-related proxy group to determine an appropriate

20   capital structure.

---

[92] ORA Testimony, p. 10, lines 10 ff.

1   **Q52. Why was and is the 1997 proxy group helpful in setting the**

2   **appropriate capital structure and not in adjusting the capital**

3   **structure today?**

4   A.   For nearly 20 years, the Commission has relied on its 1997 capital

5   structure analysis that has proven to be relatively reasonable, as the

6   Independent Small ILECs, on average, have maintained an equity

7   ratio near 60% to 80%, which was determined in 1997 to be a

8   "zone of reasonableness." The CPUC stated in those decisions:

9   The capital structures maintained by similar
10   companies should reflect their collective efforts to
11   finance themselves so as to minimize capital costs
12   while preserving their financial integrity and ability to
13   attract capital. Hence, applicant compiled a group of
14   ten publicly traded small independent telephone
15   companies to arrive at a reasonable capital structure
16   for applicant. The average capital structure of the ten
17   comparable small independent companies consisted
18   of approximately 21% debt and 79% equity. . . . ORA
19   calculated the 1994 and 1995 average common equity
20   for California's eighteen small independent telephone
21   companies. This secondary analysis showed an
22   average common equity ratio of 70.3% for 1994 and
23   75.9% for 1995. . . . Upon our analyses of the 1994
24   and 1995 average common equity for California's
25   eighteen small independent telephone companies and
26   *evaluation of a higher equity ratio trend for smaller*
27   *companies,* as demonstrated by comparing the results
28   of ORA's large comparable companies to applicant's
29   mid-size comparable companies analyses, we concur
30   with applicant's assessment that a reasonable range of
31   common equity for small telephone companies, such
32   as applicant, should be between 60% and 80%
33   equity.[93] (Emphasis added.)

[93] Decision No. 97-04-034, Application No. 95-12-075 (Filed December 26,

1   More recently, the Independent Small LECs are becoming even

2   more conservatively capitalized, which was a similar observation

3   in 1997, with equity ratios rising, in spite of the fact that the

4   carriers derive no incremental benefit in terms of their rates. The

5   equity ratio is rising because risk is increasing, which is precisely

6   the reason that a forward-looking hypothetical equity ratio should

7   not be reduced. ORA contends that it is not reasonable "to rely on

8   the previously established zone of reasonableness . . ." because the

9   beta-related proxy group in my Opening Testimony yields different

10   results for a capital structure (reducing the equity ratio).[94] Again, I

11   was simply using the group to estimate a more useful figure for the

12   industry beta. However, when applied to the capital structure,

13   ORA's argument results in a nonsensical outcome—that the

14   carriers should be assumed to have greater debt and lesser equity.

15   Moreover, the market-based evidence indicates precisely the

16   opposite—that carriers are becoming more cautious and increasing

17   their equity ratios, apparently because the carriers believe that such

18   conservatism is prudent.

19   **Q53.   Is ORA stating that your proxy group is incorrect in**

20   **generating an appropriate beta?**

1995), No. I.96-04-016 (Filed April 10, 1996).

[94] ORA Testimony, p. 11, lines 1-4.

1   A,   No. The use of the proxy group that I proposed to generate a beta

2   is reasonable and unchallenged by ORA. ORA is apparently only

3   arguing that the capital structure might be modified, and the equity

4   ratio assumed for the Independent Small LECs might be reduced.

5   **Q54. So, is it your opinion that the appropriate proportion of equity**

6   **should be higher now for the Independent Small LECs**

7   **compared with the ratio in 1997?**

8   A.   Yes. Risks have *increased* in the LEC sector since 1997, which

9   suggests that companies will capitalize themselves more

10   conservatively today than they did nearly twenty years ago. Rural

11   carriers are attempting to reduce their fixed obligations—including

12   interest costs—to manage the higher risks associated with growing

13   competition, rapid technological change, and uncertain regulatory

14   revenues.   Again, it is not reasonable or prudent to reduce the

15   previously-established range of 60%-80% equity today. If

16   anything, it should be increased to assume relatively more equity

17   which mitigates risks.

18   **Q55. Is ORA correct in excluding the 100% equity-financed**

19   **companies on the basis that they skew the average equity**

1   **structure higher and thus result in a higher WACC or rate of**

2   **return?[95]**

3   A.   No. ORA presents a table that shows that the elimination of three

4   companies with 100% equity ratios results in a lower equity ratio

5   of 56.8%, using average statistics from the last five years. This is

6   apparently an argument sponsored by ORA with a view to reduce

7   the 20-year-old zone of reasonableness. Of course, it is a

8   mathematical certainty that the equity ratio is reduced when one

9   eliminates the three highest equity ratios among the ten ILECs, just

10   as certainly as the equity ratio would be raised if one eliminated

11   the three lowest ratios. It is unreasonable to perform either of

12   these exclusions, which serve only to distort the data. More

13   important, the companies with 100% equity are part of a clear

14   trend toward greater equity, underscoring the increasing risks

15   associated with maintaining significant debt burdens. Three of the

16   ten companies currently have 100% equity ratios and five of the

17   other seven companies have increased equity ratios in 2014 by an

18   average 689 basis points compared with the ratios in 2010. This

19   suggests a growing financial conservatism that cannot be

20   ignored.[96] And, this increasing equity ratio undercuts ORA's

[95] ORA Testimony, p. 14, lines 1-6.

[96] Balhoff Opening Testimony, p. 72, Table 8; Calaveras' equity ratio improved
from 2010 to 2014 by 864 bps, Foresthill by 463 bps, Ponderosa by 397 bps,

1   argument that debt costs are actually low. If ORA were correct,

2   the low government-subsidized debt rates assumed by ORA might

3   motivate a company to incur increasing levels of debt to benefit

4   from the spread between debt costs and equity costs. Contrary to

5   what ORA expects, the companies are behaving in a manner that

6   clearly communicates that it is appropriate to have higher

7   proportions of equity in today's higher-risk LEC environment.

8   Since the Commission has not mandated that any of the companies

9   actually maintain any particular capital structure, the carriers'

10   migration toward equity represents an undeniable trend reflecting

11   on the Independent Small LECs' views of the capital markets and

12   the judgment of the carriers regarding prudent risk-mitigation.

13 **VI.   PROBLEMS WITH THE FCC STAFF REPORT**

14   **Q56.   Can you comment on ORA's reference to, and reliance on, the**

15   **FCC Staff's Report entitled "Prescribing the Authorized Rate**

16   **of Return"?**

17   A.   Yes. First, the ORA testimony makes reference in its "Return on

18   Equity" section to "the FCC's Report," which appears in those

19   words or similar words four times in its filing.[97] However, in the

20   second paragraph of the FCC Staff document to which ORA refers,

Sierra by 616 bps, and Volcano by 1,105 bps.

[97] ORA Testimony, pp. 39, 40, 42, and 43.

1   there is the clarification that "[t]he staff of the [FCC's] Wireline

2   Competition Bureau has prepared this Staff Report to assist the

3   Commission as it considers prescribing a new authorized rate of

4   return."[98] The FCC Staff Report is a discussion document

5   prepared by the FCC Staff, and has not been adopted or approved

6   by the FCC commissioners. In fact, the FCC Staff Report states in

7   its Introduction that the FCC rules require attention to certain costs

8   and capital structure "*[i]f the [FCC] elects to represcribe the*

9   *authorized rate of return.*"[99] (Emphasis added.) Thus, the FCC

10   Staff Report reflects an inquiry in process, not a final

11   determination that could permit a citation to the FCC's authority.

12   The document is incorrectly cited by ORA as the "FCC's Report."

13   The Staff Report has no more authoritative value than the

14   Application that the Independent Small LECs submitted to initiate

15   this proceeding, which reflects a specific proposal for how to

16   calculate cost of equity. ORA's apparent attempt to dismiss a

17   reasoned analysis of this issue by implying that the FCC has

18   already reached a conclusion regarding adjustments to rate of

19   return is misleading and should be rejected.

20   **Q57.   Has the FCC taken action to adopt the FCC Staff Report?**

[98] FCC Staff Report, para. 2.
[99] FCC Staff Report, para. 5.

1 A. No. As of today, about 34 months after the release of the FCC

2   Staff discussion paper, the FCC has not yet represcribed the

3   allowed rate of return, nor, to the best of my knowledge, has it

4   opined publicly about the value of any of the content in the FCC

5   Staff Report. A review of the comments in response to the FCC

6   Staff Report, as compiled on the FCC's website indicates that the

7   majority of the replies contest the reductions proposed in the

8   Report.[100] It is my opinion that the commentaries arguing against

9   lowering the rate of return provide more substantive analyses and

10   are better reasoned.

11 **Q58.** **In your opinion, are there material flaws in the analysis in the**

12   **FCC Staff Report?**

13 A. Yes. First, the FCC Staff Report relies on a proxy group of

14   companies that appears to be fundamentally different from rural

15   ILECs and certainly different from the Independent Small LECs

16   before the Commission in this proceeding. Second, the calculation

17   of equity costs does not include necessary adjustments to reflect

18   risks arising from size or liquidity/marketability. Third, for the

19   CAPM, the FCC Staff Report uses a very low risk-free rate, which

20   is today artificially depressed by economic conditions and an

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[100] While certain commenters noted that the criticisms came from rural trade associations, consultants and rural carriers, such input is logical—not simply because the carriers are self-interested, but also because they are more knowledgeable about the issues and risks.

1   aggressive fiscal policy.[101] Fourth, the Staff Report does not

2   accurately reflect rural ILECs' reduced access to the debt markets.

3   Finally, the Staff Report does not account in any way for the

4   unique political, regulatory, and market risks that the Independent

5   Small LECs face in California. I believe the flaws are so profound

6   that they render the FCC Staff Report unreliable. Even if the FCC

7   commissioners were to use the same approach, in whole or in part,

8   the analysis remains seriously flawed. This Commission should

9   examine the issue more closely and consider the full range of

10   factors that I have outlined here and in my Opening Testimony.

11   **Q59.   What proxy group does the Staff use and why has the selection**

12   **been criticized?**

13   A.   The Staff uses a proxy group of companies identified on the basis

14   of certain criteria: companies that (i) report that 10% of their

15   overall operations include price-regulated interstate

16   telecommunications services, (ii) serve some rural regions, and (iii)

17   were ILECs that were judged to publish reliable financial data.[102]

18   The criteria, therefore, provided a very low 10% threshold for

19   similarity of regulated operations, failed to account for the

[101] FCC Staff Report, para. 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."

[102] FCC Staff Report, para. 12.

1   financial challenge when a relatively large proportion of the

2   business is rural, and chose to emphasize an analysis of carriers

3   that were required to publish significant financial information and

4   attract financial analytical coverage. Thus, the financial profile of

5   the universe of companies—the so-called "proxy group"—used in

6   the FCC Staff Report is, by definition, markedly different from that

7   of the Independent Small LECs', which are not remotely as

8   diversified as the large carriers, have 100% of their intrastate

9   telephone operations regulated, and 100% of their territories

10   focused on rural regions. Based on criteria that support the

11   inclusion of patently non-comparable companies, the FCC Staff

12   proposed a "proxy group" that included the large regional holding

13   companies—AT&T, Verizon and CenturyLink. Additionally, the

14   FCC included mid-sized companies Alaska Communications

15   Systems, Cincinnati Bell, FairPoint, Frontier, Hawaiian Telcom,

16   and Windstream. Finally, the Staff rounded out the sixteen proxy

17   companies with publicly-traded "rural" carriers, including

18   HickoryTech (which was then Enventis and is now merged into

19   Consolidated Communications), Shenandoah Telecommunications,

20   TDS, Consolidated Communications, New Ulm, Lumos and

21   Alteva (which at that time owned an ILEC, Warwick Valley). The

22   Staff made a judgment that the smaller RLECs were less reliable

23   proxies, which created an obvious definitional bias, because fewer

1   analyst estimates were available to use for the Discounted Cash

2   Flow ("DCF") model and because the stocks for those companies

3   are traded infrequently. In short, the FCC Staff presents a set of

4   criteria that pre-determines reliance on large public and diversified

5   companies with a risk profile—regulatory dependence,

6   diversification of operations, concentrated service regions, and

7   access to capital markets—that is entirely different from the

8   Independent Small LECs.

9   **Q60.**   **Do you have further comments about the proxy group?**

10   A.   Yes. I recognize the FCC Staff's challenges in choosing a proxy

11   group, particularly as so many smaller carriers with publicly-traded

12   stocks have been merged into other entities or sold in the last

13   decade. Despite these limitations, a rational and knowledgeable

14   investor would see no meaningful similarities between the larger

15   carriers and the Independent Small LECs. In some ways, the

16   businesses of smaller ILECs and the larger carriers may have once

17   been more similar, but those similarities have disappeared over the

18   last twenty years. Today, the differences are increasingly

19   consequential from an operational and financial perspective.

20   **Q61.**   **Please explain the consequential differences that you see**

21   **between the proxy group and smaller ILECs.**

22   I can summarize the differences.

1   • Verizon and AT&T have wireless operations that have

2   generated more revenue than any other segment of their

3   businesses, making their businesses very different from

4   those of the Independent Small LECs. For 2015, AT&T

5   reported that 50% of its revenues were generated by

6   wireless, while Verizon reported 71% of its revenues were

7   generated by wireless and the wireless proportion is

8   growing. Thus, Verizon and AT&T have growth

9   opportunities and meaningful diversification that do not

10   exist for rural telephone companies, and those trends are

11   moving in the opposite direction for the Independent Small

12   LECs.

13   • Virtually every other carrier on the FCC Staff's proxy list

14   has other significant differences from the majority of rural

15   ILECs, including and perhaps especially from the

16   Independent Small LECs.

17   o Specifically, as of the time when the FCC Staff

18   Report was released, CenturyLink was a large

19   multi-state carrier with significant enterprise and

20   data center operations (the legacy ILEC operations

21   at the end of 2013 were 42% of total revenues) and

22   growth was generated by those two sectors;

1   o   Cincinnati Bell serves a dense cluster of customers

2   in and around a major metropolitan city, supporting

3   a very different regulatory and cost profile;

4   o   Alteva was an integrated communications provider

5   (the small ILEC operations contribute virtually no

6   cash flow), making the core of that company vastly

7   different from the rural carriers; and

8   o   Windstream relied on multi-state operations with

9   diversified data center services and competitive

10   local exchange carrier ("CLEC") businesses (only

11   22% of total 2013 revenues were from consumer

12   services).

13   The FCC Staff explained that the reason for including these

14   carriers was the FCC's requirement for a large enough sample of

15   analysts' estimates to ensure the value of the DCF constant growth

16   model. Because the FCC purportedly sought reliable data, it

17   included carriers that had risks and prospects vastly different from

18   the smaller, private ILECs. From an investment point of view,

19   which is what should inform the determination of the appropriate

20   return on equity and allowed rate of return, there are some

21   superficial similarities between the proxy group and the

22   Independent Small LECs; however, the significant differences

23   require adjustments to the cost-of-capital estimation models,

1   particularly because the size and diversified operations of the large

2   carriers result in lower equity risk compared with the smaller

3   carriers.

4 **Q62.   What about the other problems you note regarding the FCC**

5   **Staff Report?**

6 A.   Two other fundamental problems with the Staff Report

7   unavoidably lead to a flawed analysis. First, the Staff assumes it

8   has correctly determined the risk-free rate, which the FCC Staff

9   astonishingly sets at 1.92% based on the ten-year Treasury note at

10   the time. As detailed in my Opening Testimony, the adoption of so

11   low a "risk-free rate" in a forward-looking proceeding is not

12   defensible because the current interest rates are at historic low

13   levels, which are generally regarded as unsustainable.[103]   I have

14   already noted that the major valuation firms—

15   Ibbotson/Morningstar and Duff & Phelps—set the risk-free rate

16   well higher than the figure in the FCC Staff Report based on the

17   fact that the current Treasury rates have been managed to

18   extraordinarily depressed levels. The FCC does not attempt to

19   match the risk-free rate's term with the equity premium which, is

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[103] FCC Staff Report, para. 64: "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."

1   reported to be 5.88% by Professor Damodaran.[104] A second major

2   problem is that the FCC uses a DCF valuation, which estimates

3   value using dividend and growth expectations that should be

4   applied to a stable industry, which the ILEC sector is not. The

5   ILEC business model is undergoing a wrenching set of

6   technological, competitive and regulatory changes, as I have

7   described at length in my Opening Testimony. The assumption

8   that dividends will be paid into perpetuity in such an environment

9   is a highly questionable—and I believe, incorrect—proposition.

10   **Q63.**   **Are those issues the extent of the problems with the FCC Staff**

11   **Report?**

12   A.   No. The problems with the FCC Report include other factors. If

13   one studies the FCC Staff Report more carefully, it becomes clear

14   that there are other anomalies. For example, the embedded cost of

15   debt is higher than the computed cost of equity for six of the

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[104] FCC Staff Report, paras. 71-72. Aswath Damodaran, Professor of Finance at the Stern School of Business at New York University, available at http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/histretSP.html. See also Professor Damodaran's spreadsheet available at http://www.stern.nyu.edu/~adamodar/pc/datasets/indname.xls. While Professor Damodaran provides the companies included in, for example, "Telecom. Services," and provides ticker symbols as well as the countries where services are provided, there are no data which would permit us to understand and analyze the summary results which he reports.

1   sixteen carriers.[105] The FCC Staff admits that this makes no sense,

2   and I agree that it does not.[106] However, the FCC Staff Report

3   dispenses with the anomalies, stating that when it finds that the

4   debt costs are higher than the equity costs, it is making adjustments

5   to the cost of equity to ensure that the cost of equity is no lower

6   than the cost of calculated debt. It is my opinion that, when data

7   do not make sense, a more careful examination of the assumptions,

8   the inputs, and the model is needed. It is not sufficient to make

9   arbitrary adjustments to offset irrational results, especially when

10   the results are likely signaling that the model itself and the inputs

11   are wrong. The FCC Staff Report, however, chooses to adjust

12   certain of the unreasonable outputs, apparently without re-

13   examination of the underlying premises. The FCC Staff Report—

14   and its conclusions—do not provide a reasonable foundation for

[105] FCC Staff Report, para. 84: "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)."

[106] FCC Staff Report, paras. 86-87: "[r]equiring 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. 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 economics, strongly implying error in our estimates. 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."

1   decision-making by the FCC or by the CPUC. ORA's reliance

2   upon the FCC Staff Report is misplaced.

3   **Q64.**   **Do you have estimates about the impact on rural carriers if the**

4   **cost of equity were to be set at the reduced levels recommended**

5   **in the FCC Staff Report?**

6   A.   I do not know the specific financial effect, but John Staurulakis,

7   Inc. ("JSI") stated in an FCC filing, on the basis of its analysis of

8   151 cost-company clients, that the effect on rural carriers would be

9   to reduce per-line per-month regulated revenues by approximately

10            $4.99 or $3.99, depending on whether one assumes the low or high

11   rate of return that the FCC Staff proposes.[107] While JSI did not

12   comment further, no avoided costs are associated with such a

13   revenue reduction, and therefore the operating cash flows should

14   fall by the same amount. If one were to assume that the rates were

15            $30 monthly and the EBITDA margins were 40%, rate reductions

16   arising from the very low 8.06% and 8.72% allowed return on

17   equity capital proposed by the FCC Staff would result in the carrier

18   losing operating cash flow per customer that amounts to 41% or

19   33% of its regulated total operating cash flow, respectively. This

20   is not an inconsequential reduction, if JSI is correct. I do not

[107] Comments of John Staurulakis, Inc., On Rate of Return Represcription Staff Report, July 25, 2013, available at http://www.jsitel.com/files/JSI_Rate_of_Return_Represcription_Comments.pdf, pp. 5-6.

1   believe that reasonable investment in rural telephone company

2   infrastructure could be sustained at these levels. This was the same

3   point that CoBank made earlier when it suggested that the sector

4   could become "not bankable."

5   **Q65.   Does the FCC Staff Report make adjustments to the cost of**

6   **capital to reflect risk arising from size, liquidity, and**

7   **marketability?**

8   A.   No. The FCC Staff Report does not provide any allowance for

9   factors reflecting size or marketability/liquidity premia to adjust

10   the CAPM. In fact, citing a single source that purports to

11   summarize other studies, the FCC Staff suggests that any size

12   premium disappears over time.[108] This is a startling conclusion

13   based on one citation, particularly when that source states that

14   there is a liquidity risk for smaller companies and concedes that

15   there is demonstrably higher risk for the smallest-decile

16   companies, as I explained earlier. Most valuation professionals

17   rely on the data and resources provided by companies such as

18   Morningstar, Inc. (Ibbotson Stocks, Bonds, Bills, and Inflation

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[108] FCC Staff Report, para. 75: "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 [the
FCC Staff cites one 2011 report] indicates that the size effect 'seems to vary over
time or even disappears,' 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."

1   ("SBBI")) and Duff & Phelps, LLC.[109] As I outline below,

2   significant authorities have responded to those claims, providing

3   specific explanations for the cyclical anomalies, and analyzing

4   additional data that refute the 1980s-based data. Both

5   Ibbotson/Morningstar and Duff & Phelps are clear that adjustments

6   should be made for size effects and possibly other factors. For

7   example, Duff & Phelps in its *2013 Valuation Handbook* writes:

8   Research tells us that the CAPM often misprices risk for
9   certain investments. Specifically, researchers have observed
10   that commonly used methods of measuring risk used in the
11   CAPM (specifically, beta) often understate the risk (and thus
12   understate the required return) for small company stocks.
13   Examination of market evidence shows that within the
14   context of CAPM, beta does not fully explain the difference
15   between small company returns and large company returns.
16   In other words, the historical (observed) excess return of
17   portfolios comprised of smaller companies is greater than the
18   excess return predicted by the CAPM for these portfolios.
19   This "premium over CAPM" is commonly known as a "beta-
20   adjusted size premium" or simply "size premium."[110]

21   Duff & Phelps is clear that research verifies the necessity for

22   application of a premium to reflect market-based risk beyond the

23   overall equity return for smaller companies compared with larger

24   companies. Ibbotson/Morningstar also provides statistics to

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[109] Ibbotson SBBI 2013 Valuation Yearbook, Market Results for Stocks, Bonds, Bills, and Inflation 1926-2012 (Chicago, IL: Morningstar, Inc., 2013) ("Ibbotson 2013 Yearbook"); Ibbotson SBBI 2014 Classic Yearbook, Market Results for Stocks, Bonds, Bills, and Inflation 1926-2013 (Chicago, IL: Morningstar, Inc., 2014) ("Ibbotson 2014 Classic Yearbook"); Duff & Phelps, 2014 Valuation Handbook, Guide to Cost of Capital (Chicago, IL: Duff & Phelps, LLC, 2014).

[110] Duff & Phelps, 2013 Valuation Handbook, Guide to Cost of Capital (Chicago, IL: Duff & Phelps, LLC, 2013), p. 60.

1   demonstrate the effect of size on returns, and explains that "[i]f

2   small companies did not provide higher long-term returns,

3   investors would be more inclined to invest in the less risky stocks

4   of large companies.[111]

5   **Q66.   Are there critiques in the current financial literature**

6   **addressing the issues raised by the FCC concerning the**

7   **"disappearance" of the size premium in the early 1980s?**

8   A.   Yes. Pratt and Grabowski explain that the methodology of the new

9   studies use average returns that obscure "performance."[112] They

10   describe how, using a more appropriate methodology, small stocks

11   actually "outperformed" large stocks even using early 1980s start

12   dates (contrary to the argument that small-company stocks

13   performed similarly to large-company stocks beginning in that

14   period), which means that the cost of equity is higher for smaller

15   companies. The exception to this "outperformance" occurred

16   when the start date was 1983-1984, when there were, according to

17   Hou and Van Dijk, specific cash flow shocks in the market that the

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[111] Ibbotson 2014 Classic Yearbook, p. 109.

[112] Pratt and Grabowski Cost of Capital 2014, p. 352, Exhibit 15.13; Pratt and Grabowski posit a $1 investment in Fund A that rises each year by 10% over the ten year period except in year 5 when it falls by 70%, resulting in an annual average performance of 2%, and an ending principal of $0.71. Fund B rises by 3% in year one, 1% in year two, and then alternates 3% and 1% in subsequent years, to average 2% annual returns, but to end the decade with $1.22. The annual averages in the two funds were the same 2%, but the "performance" of Fund B was superior.

1   researchers believe explain the anomaly concerning relatively

2   lower returns for small stocks and higher returns for larger

3   stocks.[113] In their most recent edition of "Cost of Capital," Pratt

4   and Grabowski explicitly respond to the data compiled in the Crain

5   article, and they explain that the data today show small stocks are

6   still providing superior returns, which means that the estimation for

7   their cost of equity requires the addition of a size premium.[114] In

8   its 2013 Risk Premium Report, Duff & Phelps responds to the

9   critics who contend that the size effect has disappeared since 1980.

10   In the most recent periods, say 2000–2012, small-cap
11   stocks have outperformed large-cap stocks significantly.
12   Referring to Graph 13, a $1 investment in December 1999
13   in CRSP decile 10 (small-cap stocks) would have increased
14   to $3.79 by the end of December 2012, while a $1
15   investment in December 1999 in CRSP decile 1 (large-cap
16   stocks) would have only increased to $1.06 by the end of
17   December 2012. . . . The average annual arithmetic return
18   of decile 1 (the largest-cap stocks) was 2.12 percent over
19   the 2000–2012 period (and 0.42 percent measured on a
20   geometric basis), while the average annual arithmetic return

[113] Kewei Hou and Mathias A. Van Dijk, "Resurrecting the Size Effect: Firm Size, Profitability Shocks, and Expected Stock Returns," Charles A. Dice Center Working Paper no. 2010-1, July 13, 2012, available at http://ssrn.com/abstract=1368705. See, also, Duff & Phelps Risk Premium Report 2013, available at http://www.duffandphelps.com/assets/pdfs-us/publications/valuation/(excerpt)%202013%20duff%20phelps%20risk%20premium%20report.pdf, ("2013 Risk Premium Report"), p. 34. See Pratt and Grabowski Cost of Capital 2014, p. 355; "[Hou and Van Dijk' adjusted the realized returns [in the 1980s and 1990s] for the cash flow shocks, and the result was that the returns of small firms on a pro forma basis exceeded the returns of large firms by approximately 10% per annum, consistent with the size premium in prior periods."

[114] Pratt and Grabowski Cost of Capital 2014, pp. 350-358.

1   of decile 10 (the smallest-cap stocks) was 16.62 percent

2   (and 10.78 percent measured on a geometric basis).[115]

3   Still, the FCC Staff Report's approach excludes size-effect, citing

4   the one article (and its sources) as justification, and summarily

5   arguing that cost of capital is fundamentally a market return,

6   modified by a telecommunications industry beta that slightly

7   reduces the market return. This approach is contrary to that

8   recommended by the major financial sources and it is inconsistent

9   with the significant data compiled over multiple periods, including

10   the most recent two decades.

11   **Q67.   What adjustments typically are made by regulatory**

12   **commissions and financial analysts to account for specific**

13   **risks?**

14   A.   Small companies are assumed to carry greater risk, as explained

15   above, which supports an adjustment to the large-company proxy

16   calculation by adding a size premium. This straightforward

17   rationale is spelled out by the American Society of Appraisers,

18   which explains:

19   A discount or premium is warranted when
20   characteristics affecting the value of the subject
21   interest differ sufficiently from those inherent in the

[115] 2013 Risk Premium Report, p. 35.

1 base value to which the discount or premium is
2 applied.[116]

3 In fact, there are material and obvious differences between the

4 Independent Small LECs and the FCC Staff Report's proxy group.

5 As explained above, the FCC proxy group includes large,

6 diversified carriers with services in meaningful growth segments,

7 such as wireless, fiber transport and data centers.[117] Further, the

8 larger carriers in the proxy group are nearly all engaged in

9 aggressive acquisition and diversification activities, which provide

10 them with opportunities for cash flow growth and risk mitigation.

11 These factors are size-related "characteristics affecting the value of

12 the subject interest" such that adjustments to reflect the increased

13 risk in the equity cost of the Independent Small LECs are

14 required.[118]

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[116] Shannon Pratt, "Overview of Business Valuation Discounts and Premiums and the Bases to Which They are Applied", p. 2, available at http://www.shannonpratt.com/article/overview_business_valuation_discounts_premiums.pdf.

[117] The proxy group is presented in the FCC Staff's Appendix F: Enventis Corp., TDS, New Ulm, Shenandoah Telecom, Consolidated Communications, Lumos, Alteva, Windstream, Alaska Communications Systems, Hawaiian Telcom, Frontier Communications, FairPoint, Cincinnati Bell, CenturyLink, Verizon and AT&T.

[118] Also, see the American Institute of Public Accountants, *Statement on Standards for Valuation Services*, para 40, available at (http://www.aicpa.org/InterestAreas/ForensicAndValuation/DownloadableDocuments/SSVS_Full_Version.pdf): "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

1   **Q68.   Are you saying that ORA's exclusion of the size effect is not**

2   **justified?**

3   A.   Yes. *ORA points to literature that actually supports the opposite*

4   *conclusion, which is that a size factor should be included.* ORA

5   has provided no justification for excluding a size factor that the

6   CPUC found to be appropriate in 1997, except to cite to the FCC

7   Staff Report. The FCC Staff Report justifies its exclusion of the

8   size factor only by citing to the Michael Crain literature survey.

9   However, this study explains that other factors may better explain

10   the size effect, and that the size effect is observable in the three

11   smallest deciles. The Independent Small LECs fall in the *smallest*

12   *of the four quartiles of the tenth or smallest decile.* Thus, ORA has

13   not only failed to show that a size factor should be excluded, but

14   has pointed to sources that *justify* the inclusion of a size factor.

15   **VIII.   CONCLUDING COMMENTS**

16   **Q69.   Please summarize your testimony in response to ORA.**

17   A.   I have provided a disciplined and comprehensively sourced

18   framework for the CPUC's consideration of capital structure,

19   imputed debt costs and an estimation of equity costs. The CPUC

20   and ORA can assess those sources, data, and the logic based on

include a *discount for lack of marketability or liquidity* and a *discount for lack of control.*" [Emphasis in the original]

1   rigorous and scholarly approaches that test and re-test the

2   conclusions. In response, ORA has provided virtually no sources

3   and does not directly challenge the specific findings in my

4   Opening Testimony. Without valid citations, ORA simply

5   proposes use of a CAPM that is driven by two inputs that ORA

6   believes are appropriate—a very low three-year average Treasury

7   rate of 2.91%—plus 5.88%, which ORA adopted from the FCC

8   Staff Report. Contrary to the Supreme Court opinions and the

9   opinions of reputable financial experts, ORA does not propose

10   analysis of any industry-specific risks, and ORA rejects important

11   sources that call for size and liquidity factors. ORA also proposes

12   a capital structure that is below the 1997 CPUC-defined zone of

13   reasonableness (equity ratio of 60%-80%) and ORA relies on an

14   average capital structure calculated after arbitrarily excluding the

15   three companies with the highest equity ratios. ORA also proposes

16   4.53% as the imputed debt costs for carriers that do currently have

17   debt, by contrast with our recommendation of 5.5%. I believe that

18   I have presented and supported a balanced and clearly defensible

19   set of findings that ORA has not refuted. As surprising as the data

20   may appear to be, the cost of equity has certainly risen since 1997.

21   The data support a cost of equity that is above 20% based on M&A

22   data. However, I have relied on the traditional CAPM formulae,

23   and have found an equity cost of 18.5% and proposed a WACC of

1   14.6%. As I have explained and sourced, I was conservative by

2   applying no liquidity or marketability premium. I used a size

3   premium that is 641 basis points lower than the 11.98%

4   recommended by Duff & Phelps for the smallest of companies (the

5   10z grouping into which the Independent Small ILECs clearly

6   fall). I also used a beta that is relatively low at 1.06, in spite of the

7   fact that it is drawn from proxies that are all substantially larger,

8   more liquid, more capable of acquisitions, and more diversified.

9   Finally, I used a risk-free rate that is the lower of the two options

10   (a higher result is generated when using total return on the

11   Treasury note). My testimony is well-founded in valuation and

12   regulatory practice, and is not aggressive. It should guide the

13   Commission's consideration of establishing a cost of capital in this

14   proceeding.

15   **Q70.   Does this conclude your testimony?**

16   A.   Yes. Thank you.

17

FINANCIAL MARKET PERSPECTIVES

NETWORK NEUTRALITY PRINCIPLE 5

BALHOFF & WILLIAMS, LLC   DECEMBER 15, 2009

The following brief paper provides initial perspectives on how the financial markets might view the adoption of Network Neutrality Principle 5 ("Principle 5") that requires nondiscriminatory handling of Internet content, applications and services. Because the policy proposals from the Federal Communications Commission ("FCC") are still in the developmental stage, it is difficult to provide specific analyses regarding the impact of such proposals, but it is possible to offer substantive insights.

Balhoff & Williams ("B&W") explains below that investors in both debt and equities are likely to view new regulation as negative for capital formation if those rules *unnecessarily* limit the return potential of network infrastructure investment, restrict the competitive options available to network providers, and inject government "regulation" into an industry segment that was largely unregulated. The logic of this paper is summarized in the following bullets:

> *INVESTORS IN BOTH DEBT AND EQUITIES ARE LIKELY TO VIEW NEW REGULATION AS NEGATIVE FOR CAPITAL FORMATION IF THOSE RULES UNNECESSARILY LIMIT THE RETURN POTENTIAL OF NETWORK INFRASTRUCTURE INVESTMENT, RESTRICT THE COMPETITIVE OPTIONS AVAILABLE TO NETWORK PROVIDERS, AND INJECT GOVERNMENT "REGULATION" INTO AN INDUSTRY SEGMENT THAT WAS LARGELY UNREGULATED.*

- The Internet is based on various "layers" that work in concert to provide to end-users high-speed access to applications, content and services; those layers include data, software, and infrastructure. The most costly, highest-risk "layers" of the Internet are those that include network infrastructure, where the greatest risk is concentrated in the end-user access plant, often referred to as the "physical layer."

- Because the risks associated with the physical infrastructure "layers" are the greatest (due to high investment costs, long cost-recovery cycles, and the potential for technological / competitive stranding of investment), investors who contribute capital to fund broadband network providers that supply the infrastructure "layers" will require a relatively higher return on very substantial capital commitments. As such, predictability, or the lack thereof, will be critical in determining the cost and availability of capital to support broadband networks.

- From a policy perspective, the physical "layer" is the most challenging to manage, as investment must occur to ensure that there is a network over which the Internet can operate. Therefore, policymakers should ensure appropriate incentives for network investment, including special mechanisms for high-cost regions, while avoiding unnecessary disincentives. Without a robust broadband infrastructure there is no Internet—open or closed.

- In this context, policymakers should be cautious about creating prophylactic regulations or policies that respond to problems that may not be real, particularly in an apparently competitive marketplace, as the result might be the creation of new and unanticipated problems that artificially chill critical new investment.

THE RATIONALE FOR PRINCIPLE 5

Policymakers are seeking input regarding a proposal that the FCC should adopt network neutrality Principle 5. The proposed rule is that . . .

> 5. Subject to reasonable network management, a provider of broadband Internet access service must treat lawful content, applications, and services in a nondiscriminatory manner.

At first glance, the principle appears reasonable, especially when viewed from the perspective of policymakers who have overseen a highly-regulated telecommunications monopoly for more than a century. The proposed rule focuses on the infrastructure "layers" of the Internet where it is assumed that a network owner ("a provider of broadband Internet access service") may engage in discriminatory behavior that is viewed as anti-competitive.[1]

TODAY (1) THERE IS NO MEANINGFUL EVIDENCE OF SIGNIFICANT ANTI-COMPETITIVE BEHAVIOR ON THE PART OF NETWORK OPERATORS; (2) THERE ARE ALTERNATIVE COMPETITIVE PLATFORMS FOR INTERNET SERVICE DELIVERY; AND (3) THERE IS A GROWING NATIONAL CONCERN ABOUT NETWORK INVESTMENT TO ENABLE RAPID AND UBIQUITOUS DEPLOYMENT OF BROADBAND.

A closer look, however, leads to a more informed view. The more detailed view reveals that today (1) there is no meaningful evidence of significant anti-competitive behavior on the part of network operators; (2) there are alternative competitive platforms for Internet service delivery; and (3) there is a growing national concern about network investment to enable rapid and ubiquitous deployment of broadband, including services to uneconomic areas that are often rural. Thus, the fundamental question for policymakers is whether there is a valid rationale for requiring Principle 5—a rationale based on truly well-defined risks or harms, and based on the sufficient probability that the principle itself will not have a detrimental effect on a growing national imperative that the U.S. should keep pace in the Internet economy.

INVESTMENT RISK IS CONCENTRATED IN PHYSICAL LAYER

The Internet is not a single service, nor is it provided by a single industry. It is a complex set of services that include data sources, applications, management services, peering and transport facilities, switching and routing, as well as access plant, among others. Policymakers understand this complexity that is, in some ways, extraordinarily difficult to manage.

The U.S. has grown increasingly concerned about its national communications infrastructure policy, as other nations appear to be leading in terms of broadband network deployment, at least based on certain studies. While vast network infrastructure remains fundamental to the Internet, the U.S. has relied almost exclusively on private investment to enable the Internet business opportunity, even in the face of major capital risks. The most basic capital risk is that networks are very

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[1] The concept of layers is often traced to MCI which worked to define different layers, from highest to lowest, as application, presentation, session, transport, network, data link, and physical. The logic was that certain layers might be "chokepoints" and should be regulated differently, with the lower levels, such as the transport, data or physical treated as more highly regulated commodity services. Principle 5 appears to reflect the same viewpoint and concerns.

costly, as new and rapidly changing technologies must be deployed in ever shorter investment cycles to allow networks to cope with escalating demand for greater bandwidth and speed. Second, the majority of the network investment is concentrated in the end-user access plant, particularly for wireline operations where the labor component is high, and where stranded investment can be costly if the customer does not subscribe or cuts off service for any reason. Third, the competitive value proposition is based on a complicated combination of consumer judgments that can change quickly, including reliability of the network, throughput speeds, pricing, content (e.g., NFL network or local sports or other video programming), end-user devices (modems, iPhones, etc.), and convenience (e.g., wireless mobility). Finally, there is meaningful risk in terms of the technology cycle. The competitive performance of the technologies grows shorter and shorter by contrast with traditional telephony, for example, and alternative platforms continue to leap-frog the performance of today's networks, with faster cable technologies, the promise of mobile LTE and WiMAX, and growing fiber capacity. The risks are already high, and performance is evaluated carefully and actively by the consumer and by the investor. These capital risks apply in all geographic areas, but policymakers should be aware that the risks are exacerbated in lower-density rural markets that are particularly costly to serve.

WHILE THERE ARE RISKS TO ALL COMPANIES IN THE INTERNET VALUE CHAIN, IT IS CLEAR THAT THE MOST SIGNIFICANT CAPITAL COMMITMENTS ARE BEING MADE BY NETWORK PROVIDERS. AND, THIS PHYSICAL "LAYER" IS MOST CRITICAL TO THE DEVELOPMENT OF A STRONG INTERNET ECONOMY.

While there are risks to all companies in the Internet value chain, it is clear that there are extraordinarily high financial risks arising from the significant capital commitments being made by network providers. And, this physical "layer"[2] is most critical to the development of a strong Internet economy. Other elements remain important, but companies such as Google or eBay or Yahoo or peering companies provide services over an Internet which makes their products available to all who are connected. However, the capital investments of the application and service providers are not remotely as large or as risky as those of the network providers. While companies supplying other Internet "layers" face different and unique challenges, none of those companies must manage investment requirements and financial uncertainties that are as significant as those of the network providers.

The risk related to the physical "layer" network investment is substantial and is likely to continue to grow as technologies and competitive pressures evolve. Verizon is dedicating $20+ billion to deploy what it hopes is a "future-proof" fiber-based wireline network in a high-risk initiative, while AT&T is upgrading its U-verse investment (pegged at $7 billion to $10 billion) to provide broadband services with current speeds of up to 24 Mbps downstream (in addition to video). Rural-focused ILECs, such as CenturyLink, Frontier Communications, Windstream, Consolidated Communications and Iowa Telecom, are achieving very high broadband availability using combinations of fiber and newer copper technologies even in very low-density markets. In addition, the largest wireless carriers will soon upgrade to Long-Term Evolution ("LTE") network technology with 5-12 Mbps download speeds, while Clearwire (in partnership with Sprint and several cable operators) continues to invest heavily to expand a WiMax 4G wireless

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[2] For purposes of this paper, the "physical" layer is the access plant, involving end-user connectivity and devices, as well as the electronics that support those connections.

network. Meanwhile, cable companies report that they have committed more than $146 billion to their U.S. plant since 1996, and that they invested nearly $15 billion in 2008 alone.[3] The cable operators are enhancing their broadband network capabilities through Data over Cable Service Interface Specification ("DOCSIS") 3.0 modems that can deliver speeds that they represent as approaching 200 Mbps.

INVESTORS FOCUS ON HIGH RISKS FOR THE PHYSICAL LAYER

THE FINANCIAL MARKETS ARE NOT FACTORING ANY POLICY-RELATED RISK INTO BROADBAND NETWORK COMMITMENTS TODAY. THE REASON IS THAT THE FCC AND CONGRESS HAVE MAINTAINED POLICIES THAT, IN TERMS OF ADVANCED NETWORKS AND BROADBAND, ENSURED THAT THE COMPETITIVE MARKETS WOULD BE DETERMINATIVE OF THE OUTCOMES.

As described above, the U.S. broadband "policy" to-date has relied heavily on Internet capabilities developed through private investment. The reality is that the system has "worked" because investors believed that they had the potential for sound and appropriate returns on their investment in network operators. However, policymakers generally realize that the providers of capital to competitive enterprises have always and will always require a risk-adjusted return-on-investment that is almost certainly higher than the rate in the traditional monopoly utility model.[4]

Investors continue to assess carefully recent network investments that are high-risk. For example, Verizon's major commitment to FiOS was (and is still) viewed somewhat skeptically in terms of the company's ability to generate appropriate returns on a huge investment.[5] As a result, most telecommunications financial analysts have understood that the markets valued Verizon's stock at a discount to its peers, premised on the uncertain FiOS returns. Verizon pushed ahead with its investment plans in spite of that skepticism, but was able to do so only after regulators clarified that fiber-to-the-premise investments would be exempt from traditional telephony regulation.

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[3] See data from the National Cable and Telecommunications Association, available at http://www.ncta.com/StatsGroup/Investments.aspx.

[4] The FCC is today attempting to determine how to assure appropriate investment, based on appropriate returns and supplementary universal service funding through the National Broadband Plan, including assuring service in uneconomic regions. *See* Public Notice # 19, Comment Sought on the Role of the Universal Service Fund and Intercarrier Compensation in the National Broadband Plan, GN Docket Nos. 09-47, 09-51, and 09-137, DA 09-2419 (rel. Nov. 13, 2009). *See, also,* A National Broadband Plan for Our Future, *Notice of Inquiry*, 24 FCC Rcd 4342, ¶ 5 (2009).

[5] See Om Malik, *Who Wins: Verizon FiOS vs AT&T U-Verse,* August 19, 2008, available at http://gigaom.com/2008/08/19/who-wins-verizon-fios-vs-att-u-verse/; "Verizon recently launched its FiOS TV and fiber-based broadband service in New York City, The New York Times is taking stock of the service, which seems to be doing well. Verizon's $23 billion investment into FiOS wasn't viewed kindly, and Wall Street viewed AT&T's cheaper U-Verse plan as more practical and affordable. Despite such early shellacking on Wall Street, the company's decision to go with the more expensive fiber is proving to be smarter, even though it is still not clear if (and when) Verizon is going to start making big money on its bet . . ." See also, Saul Hansell, A bear Speaks: Why Verizon's Pricey FiOS Bet Won't Pay Off, August 19, 2008, available at http://bits.blogs.nytimes.com/2008/08/19/a-bear-speaks-why-verizons-pricey-fios-bet-wont-pay-off/?pagemode=print; citing Sanford C. Bernstein analyst Craig Moffett, "Mr. Moffett has tried to figure out all the money Verizon will spend building and selling FiOS, the interest it pays on the money it borrowed to pay for it, the savings because the new system is cheaper to maintain and all the fees its customers will pay. He compares this to what he figures Verizon would have earned had it not built FiOS. Add up all the figures and discount it to present value and Mr. Moffett figures that FiOS puts Verizon some $6 billion behind."

B&W believes that the financial markets are not factoring any policy-related risk into broadband network commitments today. The reason is that the FCC and Congress have maintained policies that, in terms of advanced networks and broadband, ensured that the competitive markets would be determinative of the outcomes. Further, investors have seen that there are no meaningful signs that anti-competitive or discriminatory behavior is a real threat to consumers. From a financial point of view, then, investors view network-based companies as relatively free to compete effectively while attempting to generate appropriate returns on very high levels of capital investment.

What will investors think about Principle 5, which adds some undefined limitations to a network provider's potential return on investment? B&W suggests that investors, at least initially, will focus on three simple conclusions. First, government is adding regulatory constraints on an industry (Internet and broadband) where there was light regulation previously. Adopting regulatory principles that potentially reduce returns on previously invested capital will be viewed by the financial markets as the government changing the rules in the course of the game. As such, investors' will estimate that regulatory risk and uncertainty in the industry are greater. Second, once government begins to regulate more actively, Wall Street will assume the probabilities are higher still that more regulation will be forthcoming. Third, because there is elevated regulatory risk and uncertainty regarding operations, investors will require more certitude to commit capital for investment (slowing incremental investment) and/or higher returns to reflect the perceived risks. For carriers serving rural areas where capital costs and operating costs are particularly high, access to external capital at reasonable terms is particularly important in order to continue advancing the policy goal of universal broadband availability for the benefit of customers.

As such, there is real risk that *unnecessary* controls on network investment could commoditize network services, reduce expected returns on investment, and choke the critical capital formation process.

POLICY CHALLENGE IS TO CREATE INVESTMENT INCENTIVES AND AVOID UNNECESSARY DISINCENTIVES

IF THE BROADBAND NETWORK IS IN FACT A CRITICAL COMPONENT IN ASSURING THAT AMERICA REMAINS COMPETITIVE IN THE INTERNET ECONOMY, THE CHALLENGE FOR POLICYMAKERS IS TO ASSURE THAT A ROBUST NETWORK INFRASTRUCTURE EXISTS AS WIDELY AS POSSIBLE.

Most recent national conversations regarding broadband networks concern the creation of incentives for more infrastructure upgrades. If the broadband network is in fact a critical component in assuring that America remains competitive in the Internet economy, the challenge for policymakers is to assure that a robust network infrastructure exists as widely as possible.

There are other concerns in terms of changing telecommunications regulations, intercarrier compensation regimes, and universal service funding. However, the migration toward robust and constantly evolving communications networks available in all markets—urban, suburban, and rural—appears to be the overriding policy imperative. And, to some extent, the challenge is even greater in more tenuously economic regions where policymakers are seeking more rapid and greater investment in the next years.

B&W believes that regulators and legislators have important roles in advancing policy outcomes, or in protecting against abuses, but the current challenge remains that investment capital should be properly channeled to expand and enhance broadband networks, and this will require a rigorous focus. Without a robust broadband infrastructure there is no Internet—open or closed.

B&W believes that the competitive markets are working effectively today in terms of capital commitments. As noted above, policy is not working everywhere and government likely will have to intervene in support of rural geographic areas where the economic case for investing in high-cost broadband network deployment and operations is tenuous or non-existent. Additionally, it is possible that policymakers should provide other incentives even in economically viable areas to speed the deployment and upgrade of services. However, there do not appear to be substantive examples of policy failure in the majority of the markets regarding discriminatory handling of traffic.

It might also be pointed out that it is an *affirmative policy initiative* to continue applying a "light hand" to regulation of the Internet as there remain important uncertainties about the kind of network that will be required for the future, about the consumer demand for various kinds of products, about the technology platform that will provide the best foundation for evolution, and so on. It might also be argued that it is a *bad policy* to create uncertainties where no problems actually exist. B&W believes that the appropriate policy approach today should be to provide incentives and avoid disincentives that might raise meaningful concerns among investors about *unnecessarily* constrained returns.

SOLUTIONS FOR PROBLEMS THAT MAY NOT BE REAL

An important related debate surrounds the relative merit of *post facto* versus *ex ante* definitions of policy; that is, whether regulatory rules should anticipate potential problems before they develop or whether policy should wait and address specific abuses that consumers or firms are actually encountering in the market. The question is particularly apropos when there appear to be already-powerful market forces that provide protections for consumers in an environment that is changing rapidly.

NO STOCK PRICE OR DEBT SECURITY REFLECTS THE POTENTIAL THAT A SINGLE CARRIER OR INDUSTRY WILL BE ABLE TO CONTROL OR DOMINATE THE BROADBAND ACCESS SERVICES MARKET.

In response, some policymakers might ask whether failing to adopt Principle 5 means that network companies will be permitted to engage in anti-competitive or discriminatory behavior. The answer is that anti-competitive behavior generally occurs when a carrier or company has dominant market power. In this case, it appears that no such power is possible in today's communications markets, and it seems that there are sufficient substitute technologies and competitors to discipline any such behavior on the part of network operators. Investors appear to believe that this is the case, as they are requiring relatively higher returns on their investment due to higher capital risk and growing levels of competition. In fact, B&W knows of no stock price or debt security that reflects the potential that a single carrier or industry will be able to control or dominate the broadband access services market.

In the case of prophylactic regulation, then, adopting a fifth "network neutrality principle" in the absence of specific harmful behavior on the part of network owners will require policymakers to decide various issues based largely on speculations about the future, including the extent to which regulators should possibly intervene and impose traditional telephony-like regulatory controls on broadband networks. In a dynamic industry that is characterized by relentless improvements in technology and ever-increasing levels of competition, B&W believes that it is dangerous to speculate on how the industry will or should develop or how financial performance might evolve. A more appropriate approach is to allow competitive behaviors to unfold in response to market forces. If harmful discriminatory or anti-competitive actions by network owners should develop in the future, targeted solutions can be crafted to address those specific problematic behaviors. However, until those problems become real, it is unnecessary and risky to attempt to develop speculative solutions such as Principle 5 that ultimately may cause more harm than they deter.

PUBLIC POLICY IS A CONSTRUCT THAT SUPPORTS AND PROVIDES INCENTIVES IN ACCOMPLISHING SOCIALLY BENEFICIAL GOALS — AND THAT CONSTRUCT MUST ABIDE BY THE FINANCIAL REALITIES THAT ULTIMATELY DETERMINE WHETHER OR NOT COMPANIES SUCCESSFULLY CAN ACHIEVE DESIRED POLICY GOALS.

SUMMARY

The core insight of this paper is based on the financial "reality" that appropriate incentives and return opportunities are necessary for every "layer" of the Internet, if such segregation into layers is sensible at all. Most notably, because the risk is so great at the "physical layer" — huge capital commitments (particularly in lower density, higher cost rural areas), potential for stranded investment, rapid technological changes, competitive last-mile networks (wireless, cable, etc.) — the business case for ongoing broadband investment likely will require rigorous protection of the opportunity for meaningful and sustainable returns.

B&W believes that the financial realities of the business and capital formation process remain critical in framing policy outcomes. Public policy is a construct that supports and provides incentives in accomplishing socially beneficial goals — and that construct must abide by the financial realities that ultimately determine whether or not companies successfully can achieve desired policy goals.

INECA Member Rate-of-Return Analysis

Company	5-Yr Avg Revenue	5-Yr Avg Net Income	5-Yr Avg RoR
Company 1	$ 375,727	$ 40,203	18.73%
Company 2	$ 3,037,247	$ 396,924	8.54%
Company 3	$ 6,686,778	$ 862,901	8.42%
Company 4	$ 14,450,920	$ 2,623,143	7.92%
Company 5	$ 859,901	$ 55,491	7.11%
Company 6	$ 9,794,501	$ 1,613,850	5.98%
Company 7	$ 2,222,437	$ 397,940	5.84%
Company 8	$ 1,043,795	$ 111,526	5.40%
Company 9	$ 1,352,602	$ 112,125	5.35%
Company 10	$ 5,254,756	$ 890,009	5.13%
Company 11	$ 1,293,078	$ 122,547	5.01%
Company 12	$ 792,866	$ 81,556	4.91%
Company 13	$ 8,269,096	$ 916,064	3.58%
Company 14	$ 16,344,271	$ 1,848,821	3.29%
Company 15	$ 2,787,057	$ 90,327	1.82%
Company 16	$ 935,504	$ (7,841)	-0.28%
Company 17	$ 1,917,740	$ (93,729)	-1.13%
Company 18	$ 9,097,100	$ (123,021)	-1.82%
Company 19	$ 1,240,457	$ (41,511)	-1.84%
Company 20	$ 2,848,503	$ (175,155)	-2.17%
Company 21	$ 7,216,801	$ (375,443)	-2.73%
Company 22	$ 3,582,278	$ (507,636)	-5.60%
Company 23	$ 2,252,522	$ (434,877)	-5.60%
Company 24	$ 1,723,306	$ (436,692)	-6.29%
Company 25	$ 835,783	$ (208,435)	-16.33%
TOTAL	$ 106,215,026	$ 7,759,087	2.96%