Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of

Accelerating Wireless Broadband Deployment by Removing Barriers to Infrastructure Investment	)	WT Docket No. 17-79
Accelerating Wireline Broadband Deployment By Removing Barriers to Infrastructure Investment	)	WC Docket No. 17-84

To: The Commission

REPLY COMMENTS OF
THE NATIONAL RURAL ELECTRIC COOPERATIVE ASSOCIATION

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EXECUTIVE SUMMARY

Unregulated pole attachment rates do not impede broadband deployment in the rural communities served by electric cooperatives. A handful of the major services providers attempt to establish a causal relationship between unregulated pole attachment rates and broadband deployment by comparing regulated pole attachment rates to unregulated pole attachment rates. This line of reasoning is beside the point. Broadband deployment by the major services providers in rural communities is governed by population densities. If the major services providers' internal benchmarks of customers-per-mile are not met, these entities will not pursue pole attachment agreements or agree to extend their facilities and services into less densely populated areas.

In a recent pole attachment rate proceeding before the Virginia State Corporation Commission, the hearing examiner concluded that, in rural areas served by a cooperative, low population density drives the cable operator's broadband deployment decisions, not unregulated pole attachment rates. The hearing examiner also observed that even in rural areas served by investor-owned utilities having lower regulated attachment rates, broadband is not readily available. The examiner's decision was affirmed by the full Commission.

Conversely, when established broadband and video services providers are interested in providing service to rural communities, unregulated, commercial negotiations between cooperatives and services providers often result in mutually acceptable pole attachment agreements. A case in point is the agreement reached in 2008 between the Georgia cable association and the Georgia cooperative statewide association under which all Georgia cable operators and the state's 41 electric cooperatives operate. This agreement remains in effect today.

Major services providers often decline to offer broadband service despite offers of substantial reductions in cooperative pole attachment rates. In response to legislation introduced in 2015 by the state cable and telecommunications association, the Arkansas electric cooperatives' statewide association offered the FCC's cable pole attachment rate in exchange for a commitment from the services providers to extend broadband service throughout the service territories of all cooperatives by 2020. The cable and telecommunications providers declined the offer. Legislation was not enacted.

A Virginia electric cooperative having a relatively large electric service territory recently issued an RFP to the major cable and telecommunications companies offering free pole attachments in perpetuity in exchange for providing service across its service territory. The cooperative did not receive a responsive bid.

In the context of pole attachment negotiations between a very large Tennessee rural electric cooperative and a major services provider in which an executive presented its request for a lower pole attachment rates, a member of the cooperative's board of directors inquired how much must pole attachment rental rates be reduced for the services provider to extend its network to additional areas of the cooperative's service territory; the services provider responded that it would not extend its facilities' footprint even if pole attachment rates were reduced to zero.

The primacy of population density in terms of driving broadband deployment decisions by major services providers is confirmed in a recent study prepared by the NRECA staff. In the 2017 Report of the Tennessee Advisory Committee on Intergovernmental Relations ("TACIR") on "Broadband Internet Deployment, Availability and Adoption in Tennessee," TACIR recommended that because electric cooperatives serve the most rural areas of the state that are either underserved or unserved for broadband, Tennessee law should be amended to permit cooperatives to provide broadband service. This spring, the Tennessee legislature enacted the Tennessee Broadband Accessibility Act, removing the barrier to entry that had prohibited electric cooperatives from providing broadband.

In the absence of legal barriers to entry, cooperatives have and continue to deploy broadband networks to meet the broadband requirements of their rural communities. This point is underscored in recent testimony on behalf of Jo-Carroll Energy, Inc., before the Subcommittee on Agriculture, Energy and Trade in a hearing focusing on improving broadband deployment in rural areas. This cooperative's engagement in broadband deployment is consistent with the investment decisions of countless cooperatives across the country, including those interested in and participating in the Commission's Rural Broadband Experiments program.

As to the proposed amendments to the technology transition rules, UTC and EEI joined NRECA in urging retention of the current rules, particularly: (i) 180-day direct notice to business customers for planned copper retirements; (ii) requiring replacement IP services to deliver the same functionality as the existing TDM services, particularly latency; and (iii) requiring existing services remain in place until the IP replacement services are installed, tested and accepted.

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The National Rural Electric Cooperative Association ("NRECA") hereby submits its Reply Comments in the above captioned proceedings addressing Comments related to rural broadband deployment and rural electric cooperatives and proposed modifications to rules governing the transition from TDM to IP-based networks by telecommunications carriers, focusing principally on Comments filed in response to the *Wireline NPRM/NOI*.[1]

INTRODUCTION

In its Comments, NRECA expressed its support for the Commission's goal of promoting broadband deployment in rural communities and in other unserved and underserved communities throughout the United States. NRECA member cooperatives that distribute electric power to rural communities have witnessed firsthand the emergence of the digital divide that often separates their rural communities from the Nation's urbanized communities in which broadband

[1] *See Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment*, Notice of Proposed Rulemaking, Notice of Inquiry, and Request for Comment, 32 FCC Rcd 3266 (2017) ("*Wireline NPRM/NOI*"); *Accelerating Wireless Broadband Deployment by Removing Barriers to Infrastructure Investment*, Notice of Proposed Rulemaking and Notice of Inquiry, 32 FCC Rcd 3330 (2017) ("*Wireless NPRM/NOI*").

service meeting or exceeding the fixed service benchmark of 25 Mbps/3Mbps is readily available, often from multiple services providers. NRECA noted that "[w]hen traditional providers show no interest in serving our territories, some NRECA members make the decision to build and operate broadband systems" to meet the 21st Century telecommunications and broadband requirements within their communities.[2]

NRECA's support for broadband deployment in rural areas is technology-neutral and business model-agnostic. Each cooperative assessing whether to offer broadband services weighs multiple factors in deciding whether to pursue a fiber-based, fixed wireless or an integrated technologies' solution. The same is true for its business structure. In some cases, electric cooperatives form an affiliate or business unit whose focus is developing the technology roadmap and business plan, deploying the network, and delivering and supporting the service. Sometimes members elect to partner with an existing services provider. In all instances, the desired outcome is the same: the delivery of robust broadband service that promotes economic growth and educational advancement for the local communities and individuals served by our member cooperatives.

The explicit language in 47 U.S.C. Section 224(a)(1) of the Act excludes "any railroad, any person who is cooperatively organized, or any person owned by the Federal Government or any State" from the definition of "utility" and therefore beyond the scope of the Commission's pole attachment jurisdiction. From this perspective, NRECA was and remains perplexed by passages in the *Wireline NPRM/NOI* requesting comment related to cooperative electric distribution infrastructure, including "what can the FCC do to encourage or to speed deployment

[2] Comments of National Rural Electric Cooperative Association (NRECA), WC Docket No. 17-84, , at 5 (filed June 15, 2017) (NRECA Comments).

of next generation networks on these facilities."[3] As discussed below, the answer has little to do with cooperative pole attachment rates.

NRECA addressed several proposed amendments to the Commission's technology transition rules in the *Wireline NPRM/NOI*, requesting that the Commission retain the rules obligating incumbent local exchange carriers (ILECs) to notify directly business customers at least 180 days prior to planned copper retirements. NRECA urged that replacement IP services for critical utility applications, such as protective relaying, offer the same levels of reliability, particularly latency, as the TDM services being replaced.

DISCUSSION

A. Contrary to the Comments of Several Major Services Providers, Unregulated Electric Cooperative Pole Attachment Rates Do Not Impair Broadband Deployment in Rural Areas Served by Electric Cooperatives

A handful of services providers noted that the unregulated pole attachment rates of electric cooperatives and other entities excluded from Section 224 of the Act are higher than the rates charged by investor-owned utilities.[4] These parties offered only generalized statements of some undefined adverse impact on broadband deployment, but did not even try to quantify how unregulated pole attachment rates might somehow impair broadband deployment. These providers consider a number of factors in deciding whether to install more robust, sustainable broadband infrastructure in the rural communities served by electric cooperatives. Without more, the simplistic notion that the Commission should take money from electric cooperative

[3] *Id.*, at 3, *citing Wireline NPRM/NOI*, at para. 30.

[4] Comments of Comcast, WC Docket No. 17-84, at 23-26 (filed June 15, 2017) ("Comcast Comments) (demonstrating weighted average of pole attachment rates of municipal power companies and cooperatives substantially exceed the rates Comcast pays investor owned utilities); Comments of USTelecom, WC Docket No. 17-84, at 4, 11-15 (filed June 15, 2017) ("USTelecom Comments")(focusing on rates attributed to the Tennessee Valley Authority); Comments of CenturyLink, WC Docket No. 17-84, at 18-20 (filed June 15, 2017) ("CenturyLink Comments").

members and give it to gigantic communications companies to encourage broadband deployment in rural America is at best misleading.

Contrary to the claims of these large communications companies, actual evidence and testimony shows instead that unregulated pole attachment rates do not materially impact broadband deployment in rural communities served by electric cooperatives at all, but that other factors drive broadband investment decisions.

In comments before the FCC, Cox Communications' Executive Vice President and Chief Strategy and Product Officer Dallas Clement explained that rural areas do not have high speed broadband service primarily because of the large capital expenditures, secondarily because average revenues might not be sufficient, and only thirdly because of higher operating expenses.[5] In describing higher operating expense costs, he did not even mention pole attachment costs.[6] If pole attachment rental rates were a significant reason cable companies do not provide broadband to rural parts of America, Cox's witness before the FCC certainly would have mentioned it.

The conclusion that pole attachment rental rates have an insignificant effect on broadband expansion in rural areas was specifically made in a recent evidentiary hearing on electric cooperative pole attachment rates before the Virginia State Corporation Commission.[7] In that proceeding, Comcast argued that high pole attachment rental rates were impeding its ability to serve rural America. Following the extensive evidentiary hearing, the Hearing Examiner

[5] *See* transcript of the FCC's National Broadband Plan Workshop, Deployment – Wired, at 80(August 12, 2009). ("[I]n order of priority, I'd say it's the CAPEX to get there. Then it's what's the average revenue out of that home? And that's sort of the second issue. And then the third issue is the cost to support."). http://www.broadband.gov/docs/ws_02_deploy_wired_transcript.pdf (last visited July 8, 2017).

[6] *See id.*, at 76-82.

[7] *See generally* Virginia State Corporation Commission, *Application of Northern Virginia Electric Cooperative*, Case No. PUE-2013-00055, "Report of Howard P. Anderson, Jr., Hearing Examiner" (June 12, 2014) ("Virginia Hearing Examiner Report") (footnotes omitted). The Hearing Examiner's report was affirmed by the full Virginia State Corporation Commission.

rejected Comcast's arguments, concluding that it was not pole attachment rates, but other high cost and low revenue factors that were discouraging Comcast. In approving an annual attachment rate of $20.60 for the cooperative, the Hearing Examiner concluded that pole attachment rates have an insignificant impact on broadband expansion:

> Although Comcast and VTIA have argued that the attachment rates charged by electric cooperatives are a significant factor preventing expanded broadband deployment in rural areas, the greater weight of evidence in this proceeding simply does not support this contention. I find that the record in this proceeding indicates that reasonable pole attachment rates have little impact on broadband expansion.
>
> With the exception of the Page County example noted above, if pole attachment rates were a major factor, one would expect broadband to be readily available in rural areas served by IOUs, whose FCC-regulated attachment rates are similar to the rates advocated by Comcast. As Mr. Farmer, President and CEO of FEC, pointed out from his personal experience, broadband is not readily available in rural IOU service areas despite FCC-regulated pole attachment rates that are significantly lower than most electric cooperative rates.
>
> The fact remains that the cost of providing broadband service in rural areas is often prohibitive for for-profit companies such as Comcast because the customer density simply does not support the cost of providing the service. Customer density appears to be the overriding factor in broadband expansion; therefore, the rate recommended herein should not have any significant impact one way or the other on the development and utilization of broadband technology in NOVEC's service territory.[8]

The Virginia Hearing Examiner's conclusion that customer density is the overriding factor in broadband expansion is confirmed by an analysis performed recently by NRECA. To determine the impact of customer density to broadband penetration in rural parts of the country, NRECA compared the extent of broadband deployment in the less populated rural areas

[8] Virginia Hearing Examiner Report, at 43-44. The Hearing Examiner's report was affirmed by the full Virginia State Corporation Commission.

served by electric cooperatives to the extent of broadband deployment in the more populated rural areas served by Investor Owned Utilities ("IOUs").

The results of this study are contained in the following Table:

Table 1: Comparison of Broadband Service in Rural Areas

	Co-op			IOU		
State	Number of Households	Percent Underserved	Density per Sq Mile	Number of Households	Percent Underserved	Density per Sq Mile
Alabama	37,860	78%	13.5	33,853	66%	25.6
Vermont	10,316	58%	18.0	13,482	30%	41.6
Virginia	71,620	45%	36.7	77,932	31%	46.9
TOTAL	**119,796**	**57%**	**22.1**	**125,267**	**40%**	**37.4**

As reflected in the Table, for the three states used in the study, there is a strong correlation between low household density per square mile and lower broadband penetration in rural parts of the country.[9] As shown, the population density is substantially higher in the rural areas served by IOUs, nearly doubling on average the population density in the rural areas served by electric cooperatives. This large difference in population density and its correlation to lower broadband penetration strongly suggests that the rural households served by electric cooperatives have less access to broadband simply because there are fewer people per square mile in these areas, making it more expensive to provide service to these households.

[9] NRECA examined the rural counties located in three different states. Within these rural counties, NRECA identified which areas are served by electric cooperatives and which are served by IOUs. For this analysis, NRECA defined rural counties as those assigned USDA Rural-Urban Continuum Code 9, indicating they are completely rural or have an urban population less than 2,500 and are not adjacent to a metro area, or those assigned USDA Rural-Urban Continuum Code 8, indicating they are completely rural or have an urban population less than 2,500 and are adjacent to a metro area. Using digital mapping software, these rural areas were layered over broadband coverage data from the FCC to determine if co-op rural service areas are more underserved than IOU rural service areas. These FCC data are the Fixed Broadband Deployment Data from FCC Form 477, available at: https://www.fcc.gov/general/broadband-deployment-data-fcc-form-477. Alabama, Vermont and Virginia were selected because they meet the following criteria: (1) there was a clear delineation in the data between co-op service areas and IOU service areas; (2) these states had at least four rural counties to provide a large enough sample; and (3) in those counties, the ratio of households in rural counties served by electric cooperatives to households in rural counties served by IOUs (or vice versa) was more than 4:3, to ensure a balanced sample of co-op and IOU households. Table 1 shows the percentage of cooperative and IOU households in rural counties that are unserved or underserved for broadband access. Underserved households are defined by the FCC as those without access to broadband service at download speeds of at least 25 Mbps and upload speeds of at least 3 Mbps.

Earlier this year, the Tennessee Advisory Commission on Intergovernmental Relations ("TACIR") published an extensive report on challenges to rural broadband deployment in Tennessee, setting out several key findings and recommendations. [10] A primary conclusion is that population density is a primary factor underlying broadband deployment:

> Unsurprisingly, the census blocks in Tennessee where no provider reported offering broadband of at least 10/1 or 25/3 as of December 2015, have lower housing unit densities on average than those where service was reported. While the average housing unit density of blocks without access to 10/1 is approximately 17 units per square mile, the average density for blocks where providers reported offering at least 10/1 but less than 25/3 is 23 units per square mile. Moreover, the average housing unit density of blocks where providers reported offering at least 25/3 is 127 units per square mile. The likelihood that a census block will have service of at least 10/1 or 25/3 reported for it also rises as housing unit density increases. While only 51% of the 10% of census blocks with the lowest housing densities have access to service of at least 10/1, over 90% of the highest density census blocks do.[11]

Among its principal recommendations, TACIR stated that electric cooperatives whose service territories extend throughout the most remote areas of the state should be authorized to provide retail service, noting that electric cooperatives "have helped expand broadband access in rural areas in other states by building their own networks and serving as retail internet services providers."[12] This report proved persuasive. This spring, the Tennessee Broadband Accessibility Act became law, lifting a major market barrier and allowing electric cooperatives to construct and operate broadband networks.[13]

Cox's witness before the FCC, the Virginia Hearing Examiner's analysis of this issue, NRECA's study and the Tennessee Broadband Report all demonstrate that pole attachment rental

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[10] *See generally* Report of the Tennessee Advisory Commission on Intergovernmental Relations, Broadband Internet Deployment, Availability and Adoption in Tennessee, January 2017 ("Tennessee Broadband Report") available at https://www.tn.gov/assets/entities/tacir/attachments/2017_Broadband.pdf. Last visited on July 14, 2017.
[11] *Id.* at 75-76.
[12] *Id.,* at 7.
[13] Tennessee Broadband Accessibility Act, Tenn. Code Ann. § 4-3-708 et seq.(2017). A link to the full text of the act is available at http://publications.tnsosfiles.com/acts/110/pub/pc0228.pdf.

rates have little, if anything, to do with decisions by cable companies and other communications companies to invest in advanced broadband infrastructure in rural America. Instead, these communications companies have apparently concluded that the returns on capital in rural broadband deployment are noticeably lower than the prospective returns on competing investments in other capital intensive ventures, such as acquiring major programming networks (*e.g.*, Comcast's acquisition of NBC Universal), a major Internet edge provider (*e.g.*, Verizon's acquisition of Yahoo), a satellite broadcast business (*e.g.*, AT&T's acquisition of DirecTV), or a fiber-based provider with extensive metropolitan, interstate and international networks (*e.g.*, CenturyLink's acquisition of Level 3). NRECA is not second-guessing the merits of these transactions, but simply noting that these services providers are investing substantial sums in businesses that from their perspectives offer far better returns on investments than rural broadband deployment.

B. Comcast's Comments Regarding Electric Cooperative Attachment Rates are Beyond the Pale

Comcast complains about pole attachment rental rates charged by electric cooperatives and municipalities in Comcast's "Big South" region, which Comcast says average $18.83 per year and are more than twice as high as what Comcast pays ILECs and investor-owned utilities.[14] Comcast claims these rates are an "impediment to deployment in the many areas served by these poles, and increase the costs of providing broadband services."[15] Comcast, therefore, suggests that FCC regulation of cooperative poles is necessary to prevent broadband services from being "delayed or denied to rural and remote areas where the availability of services could have profound benefits."[16]

[14] Comcast Comments, at 24.
[15] *Id*.
[16] *Id.*, at 26-27.

Comcast's suggestion that it cannot provide broadband to rural America because of high pole attachment rental rates of $18.83 per pole per year is unfounded and misleading. Comcast offers nothing at all to prove its claims, and the attachment rate of $18.83 per pole Comcast complains about is almost $2.00 less than the "reasonable" $20.60 rate the Hearing Examiner in Virginia already decided had an insignificant impact on Comcast's broadband expansion in rural Virginia.[17]

Viewed in proper perspective, this $18.83 annual attachment rate is minimal compared to Comcast's per customer annual revenue. In 2016, Comcast's annual revenues per customer from its cable services was $1,779.12,[18] so that the $18.83 annual pole attachment rental rate Comcast is complaining about amounts to approximately one percent (1%) of its annual per customer revenues ($18.83 ÷ $1779.12 = 0.0106).

It is beyond the pale to conclude that this tiny fraction of Comcast's costs of providing service is preventing Comcast from serving rural America. Comcast, like other cable operators, has negotiated build-out provisions in its franchises with rural counties across the country that limit Comcast's build-out requirements to no fewer than 15 homes-per-mile, or 20 homes-per-mile, or 25 homes-per-mile.[19] Comcast for decades has had no intention to serve any fewer

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[17] Virginia Hearing Examiner Report, at 43-44.

[18] *See* Comcast Corporation's SEC Form 10-K filing for 2016 at: http://cmcsa.com/secfiling.cfm?filingID=1193125-17-30512 (last visited July 8, 2017). Page 48 of that filing indicates Comcast's "Average monthly total revenue per customer relationship" in 2016 was $148.26. Multiplying that figure by 12 months results in annual revenues per customer of $1,779,12 ($148.26 X 12 = $1,779.12).

[19] *See, e.g.*, North Carolina Utilities Commission, Docket No. EC-43, Sub 88, Direct Testimony of Nestor Martin of Time Warner Cable at 15-16 (filed May 30, 2017) (stating: "First, under federal law, TWC is required to have either a local or state-issued franchise for the areas where it provides services. Typically a local franchise agreement will contain a requirement for providing service where a certain density threshold is satisfied. For example, a franchise might require service anywhere in the franchise area where there are 25 homes per mile."), available at http://starw1.ncuc.net/ncuc/ViewFile.aspx?Id=7d783494-3932-48ea-bd9f-17e8366db9cf (last visited July 14, 2017). This proceeding is pending before the North Carolina Utilities Commission and involves a number of pole attachment rates, terms and conditions. Witnesses for TWC and the electric cooperatives have filed competing testimony, each supporting a different idea about what the appropriate pole attachment rates, terms and conditions should be, including the annual rental rate.

homes per mile in rural America, even before any alleged increase in rural electric cooperative rental rates. We doubt that Comcast will modify its business plans any time soon or at all to extend its networks into less densely populated rural areas.

Unfortunately, Comcast's reluctance to extend service into remote areas is not unique. The fallacy that unregulated pole attachment rates discourage broadband deployment in rural areas is highlighted in a 2015 memorandum prepared by the Tennessee Electric Cooperative Association and submitted to the Tennessee Advisory Committee on Intergovernmental Relations.[20] TECA shared several observations underscoring that lower, regulated pole attachment rates have little, if any, impact on rural broadband deployment by services providers.

1. In 2008, Tennessee enacted the "Competitive Cable and Video Services Act" authorizing state-wide cable franchises. To encourage broadband service expansion to rural areas, the law established a 50% pole attachment discount to any attaching party seeking to expand its services into historically unserved areas. This discount equaled 50% of the unregulated pole attachment rate as of January 1, 2008, and would remain in effect until July 1, 2018. TECA noted that to its knowledge, "no attaching party has sought to take advantage of the discount in Tennessee."[21]

2. During pole attachment negotiations in 2014 involving a Tennessee cooperative having a substantial service territory, a vice-president of one of the world's largest telecommunications companies was invited to the cooperative's board meeting at which the executive presented a request for a lower pole attachment rate. A board member asked about the company's plans to expand their services to more of the co-op's membership, inquiring what pole attachment rate would support an extension of the company's service territory. The vice president answered that the company "would not extend its services further into the co-op's rural areas <u>even if the pole attachment rate were zero</u>."[22] (emphasis of original).

[20] *See generally* Memorandum to the Tennessee Advisory Commission on Intergovernmental Relations ("TACIR") submitted by the Tennessee Electric Cooperative Association, October 21, 2015 (regarding TACIR's study on the Development and Deployment of Broadband in Tennessee) ("TECA Memorandum"). Available at https://www.tn.gov/assets/entities/tacir/attachments/2015OctoberTab3BB_TECA.pdf.
[21] *Id.*, at 25.
[22] *Id.*, at 26.

Without commitments from companies such as Comcast to invest any savings from electric cooperative pole attachment rental rates to expand the reach of their broadband services in rural areas, any reductions in these pole attachment rates simply siphon money from rural America, giving it to the service providers to invest as they see fit. That, of course, is inconsistent with the Commission's goal of promoting broadband deployment in rural America.

C. Unregulated Pole Attachment Rates Are Not an Impediment to Reaching Pole Attachment Agreements

The Comments submitted in this proceeding confirm that telecommunications carriers and cable operators on the one hand and investor owned and cooperatively owned electric utilities on the other have different perspectives on attachment rates, make-ready costs and work rules and procedures. Despite these differences, pole attachment agreements have been and are negotiated on a commercial basis between cooperatives and services providers without prescriptive rules on rates, terms and conditions. The value of commercial agreements is that the interests of all parties can be addressed in a reasonable manner. This is particularly important to member-owned, not-for-profit electric cooperatives that operate in rural areas; their members want broadband and cable services that are comparable to the service offerings generally available in urban areas. Telecommunications carriers and cable operators that understand the interests of cooperatives and rural markets and want to provide service in these communities often reach agreement on pole attachments with cooperatives.

One example is the state-wide pole attachment agreement between the "Cable Television Association of Georgia ("CTAG")" (now the Georgia Cable Association) and the Georgia Electric Membership Corporation ("EMC"). CTAG formally initiated negotiations in 2007 at the behest of State Senator David Shafer, proposing CTAG and EMC negotiate a master pole attachment "that would be honored by each member of the respective associations."

Negotiations proved successful, as an agreement was reached in 2008. All the cable operators in the state, including Comcast and Charter, and the 41 electric cooperatives operate under this agreement that remains in effect today.

D. Tennessee Valley Authority's Pole Attachment Rates Have a Reasonable Basis

As explained on its website, the Tennessee Valley Authority ("TVA") is a corporate agency of the United States that provides electricity to business customers and local power distributors in parts of seven southeastern states. Several commenters take issue with a new pole attachment rate formula that TVA developed for use by the electric cooperatives and municipally-owned utilities under its jurisdiction, noting that TVA also just approved a $300 million "strategic fiber initiative."[23] Frontier, for one, claims that this amounts to TVA "competing directly with carriers at the same time it is hiking their pole attachment rental rates."[24]

NRECA is not speaking on behalf of TVA, but respectfully makes the following points. First, TVA has full legal authority to regulate the electric cooperatives and municipally-owned utilities under its jurisdiction based on the Tennessee Valley Authority Act of 1933 and Public Utility Regulatory Policies Act of 1978. Second, TVA's pole attachment rental rate formula was developed pursuant to TVA's duty to regulate electric rates and is intended to prevent electric ratepayer funds from being used for non-electric purposes. Third, the primary purpose of TVA's $300 million "strategic fiber initiative" is to connect, control, manage and support TVA's electric infrastructure. It is our understanding that TVA has no intention of competing against broadband providers.

[23] Comments of Frontier, WC Docket No. 17-84, at 10-14 (filed June 15, 2017) ("Frontier Comments"); USTelecom Comments, at 12-15; CenturyLink Comments, at 19-20.
[24] Frontier Comments, at 12.

E. Electric Cooperatives Often Take the Lead on Broadband Deployment in Their Communities Because the Established Carriers Have Declined to Do So

The reluctance of the major communications companies to provide service to rural electric cooperative service areas is compelling electric cooperatives to respond. One cooperative's efforts to deliver broadband to the communities within its rural electric service territory is representative of the circumstances in which many cooperatives find themselves. In a recent hearing before the House Subcommittee on Agriculture, Energy and Trade,[25] Christopher Allendorf, Vice President for Government Affairs and General Counsel for Jo-Carroll Electric Cooperative ("JCE"), testified about JCE's motivations and efforts to bring broadband to JCE's northwest Illinois service territory. He explained that wireless Internet providers and the local telecommunications company provided Internet service in the larger communities in JCE's service territory, but did not serve many residents living outside of these communities. Beginning in 2009, JCE initiated efforts to address the broadband challenge by providing a wireless service and then purchasing one of the wireless providers that otherwise would have failed, recognizing that the lack of true broadband service was impeding economic growth and educational opportunities in its communities. He then explained that while JCE continues to serve 1600 wireless accounts, the cooperative has concluded that a fiber-based broadband solution, due to JCE's successful deployment of fiber technology to support electric distribution management and substation control, would provide a more cost-effective, reliable

[25] Written Testimony of Christopher Allendorf, V.P. of External Relations and General Counsel, Jo-Carroll Energy, Inc. (NFP), before the Subcommittee on Agriculture, Energy, and Trade, "Improving Broadband Deployment: Solutions for Rural America," June 22, 2017. A copy of Mr. Allendorf's written testimony is included as Exhibit A.

long-term broadband solution. In 2015, JCE initiated a pilot fiber project in one of its larger communities, noting the successful reception from small businesses and remaining challenges in improving residential take rates. Mr. Allendorf concluded his testimony with a recommendation that more funds be made available for rural broadband deployment.

The testimony submitted on behalf of JCE dovetails with the strong interest among electric cooperatives in the Commission's Rural Broadband Experiments program, including those cooperatives submitting expressions of interest, those whose applications met the technical and financial requirements (including the unduly restriction limitations on financial institutions eligible to issue letters of credit that the Commission ultimately replaced with more reasonable criteria), and those obtaining funding under this program. This interest contrasts sharply with the multiple rejections by the major ILECs of the Commission's 2015 Connect America Fund (CAF-II) state-wide offers.

NRECA members are also engaged in the state legislative process to support and encourage broadband deployment by the established services providers and to remove barriers to entry so that cooperatives can provide broadband service. An example of the former is set out in the Declaration of Kirkley Thomas, Vice-President of Government Affairs of the Arkansas Electric Cooperatives, Inc. (the Arkansas statewide) attached as Exhibit B hereto. In 2015, the major Arkansas state telecommunications and cable trade association drafted and forwarded a bill to the Arkansas General Assembly that would have obligated electric cooperatives to install new distribution poles to meet the requirements of cable companies and telecommunications carriers at a cost of $6 million to the state's cooperatives. After the bill was introduced, the Arkansas statewide was given the opportunity to propose amendments. The offer to the major cable and telecommunications providers was straightforward—the cooperatives would agree to

the FCC cable attachment rate if the services providers would commit to delivering broadband at transmission speeds of 25 Mbps/3 Mbps throughout the service territories of state's electric cooperatives by 2020. The offer was rejected. The established service providers' trade association declined to negotiate or offer further amendments. No legislation moved forward.

As noted above, a more positive outcome was achieved earlier this year in Tennessee with the enactment of the Tennessee Broadband Accessibility Act that eliminated a longstanding barrier to entry, allowing the state's electric cooperatives to offer broadband service in a state "in which about 34 percent of the state, or more than 800,000 Tennesseans are without Internet access," as noted by Tennessee Governor Bill Haslam.[26]

A Virginia cooperative's experience closely tracks the outcome in Arkansas. In his Declaration attached as Exhibit C, Gary Wood, the President and CEO of Central Virginia Electric Cooperative, describes his cooperative's repeated attempts to induce cable and telecommunications providers to provide broadband service throughout the cooperative's service territory which comprises all of parts of fourteen counties, towns and cities in rural central Virginia. He noted that over the years, *free* pole attachments in perpetuity were offered to services providers as an inducement to deploy facilities and provide service; all offers were declined. He also appeared before the Virginia State Corporation Commission in 2013 in a pole attachment dispute between another cooperative and Comcast. Subsequently, Central Virginia Cooperative issued a RFP offering *free* pole attachments to the major telecommunications and

[26] **"**Tennessee lawmakers are lifting restrictions on electric cooperatives so they can deliver broadband internet service to their members," Cathy Cash, NRECA (April 13, 2017), available at https://www.cooperative.com/public/news/Pages/tennessee-to-allow-co-op-broadband.aspx.

cable service companies in exchange for providing service in the cooperative's territory. No responsive bids were submitted.

F. Section 253 of the Act Does Not Provide a Basis for Commission Regulation of Cooperatives' Pole Attachment Rates

Several service providers maintain that Section 253 of the Act is a vehicle for regulating the pole attachment rates of cooperatives.[27] These arguments are strained at best and do not withstand scrutiny under the framework applicable to regulatory agencies' for determining the scope of their regulatory authority as set out in *Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837 (1984). The initial Chevron prong is "whether Congress has directly spoken to the precise question at issue. If the intent of Congress is clear, that is the end of the matter; for the court, as well as the agency, must give effect to the unambiguously expressed intent of Congress." *Id.* at 842-843. Only if the statute is ambiguous, the agency's action may be supported by a permissible construction of the statute. *Id.* at 843.

As noted above, Section 224(a)(1) of the Act expressly excludes cooperatives from the scope of the Commission's jurisdiction over pole attachments. Though subsequently enacted, Section 253 does not reference or mention cooperatives. Thus, the services providers' argument fails the first-prong of *Chevron*. The logical, reasonable and permissible reading of the two provisions is that Section 253 does not provide the Commission authority to regulate the rates, terms and conditions of cooperative pole attachments.

G. Other Utility Organizations Express Reservations to Proposed Amendments to the Technology Transition Rules

The Utilities Technology Council (UTC) and the Edison Electric Institute (EEI) echoed NRECA in opposing changes to the notice provisions to business customers regarding copper

[27] *See* Frontier Comments, at9-10; *see* Comments of Verizon, WC Docket No. 17-84, at 34 (filed June 15, 2017) ("Verizon Comments") ; *see* CenturyLink Comments, at 20-21.

retirements, each supporting retention of the 180-day notice period and the obligation to provide notice to customers. UTC noted that the copper facilities support legacy network services essential to utility operations, failing to provide reasonable notice of copper retirements would undermine utility planning for IP service replacements and potentially undermine core operations of electric distribution and generation networks.[28] A thoughtful perspective on copper retirements was offered by Verizon, noting that the 180-day notice on copper retirements can be confusing to customers, and the more relevant consideration is the planned migration to replacement IP services for the customer.[29] This dovetails with NRECA's position that the replacement IP service should be installed and tested prior to discontinuance of the legacy service. NRECA believes Verizon's approach has merit so long as direct notice to the business customer is provided 180 days prior to the planned migration.

NRECA disagrees with Verizon that the streamlined, auto grant process should apply to all legacy services.[30] The discontinuance of DS-1 and higher TDM services may well move rapidly in Verizon's service territories, but the replacement of these essential access circuits is largely indeterminate for many rural areas throughout the United States. Reasonable advance-notice as provided in the current rules should be retained. NRECA also opposes elimination of the functional test for replacement services, as proposed by Verizon.[31] IP replacement services should provide the same functionality as existing TDM services. Customers do not dwell on or review to any great extent tariffed descriptions of the providers' services; the essential interest of

[28] Comments of Utilities Technologies Council, WC Docket No. 17-84, at 24-27 (filed June 15, 2017) ("UTC Comments"); *See also* Comments of Edison Electric Institute, WC Docket No. 17-84, at 46-47 (filed June 15, 2017).
[29] Verizon Comments, at. 21-22.
[30] *Id*, at p.41.
[31] *Id*, at p. 39-40.

end-users is whether the replacement service is reliable and possesses the same functionalities as the service being replaced, particularly in terms of latency.[32]

CONCLUSION

Electric cooperatives unequivocally support the Commission's efforts to promote broadband deployment in rural areas and other unserved and underserved communities. In many instances, cooperatives are confronted with the challenge of deploying broadband facilities in their rural communities because the established services providers have chosen not to do so. The notion that unregulated pole attachment rates are an impediment to broadband deployment does not withstand scrutiny. Other factors drive the investment decisions of the major services providers when considering (or dismissing) investments in advanced broadband infrastructure in rural areas. These considerations should inform and guide the Commission's deliberations and further efforts in advancing broadband deployment in rural areas. As for technology transition, the Commission should retain its existing technology transition rules and continue to balance the interests of cooperatives, all power generation and distribution companies, and other end-users whose core operations are dependent reliable and predictable TDM services with the interests of telecommunications carriers throughout the technology transition.

Respectfully submitted,

NATIONAL RURAL ELECTRIC COOPERATIVE ASSOCIATION

[32] *See* UTC Comments, at. 32 (stating: "The Commission should seriously question whether the regulatory requirements associated with advance notice requirements and proof of that adequate replacements exist before discontinuing services really hold back investment by the carriers in modernizing their networks.")

/s/

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Dated: July 17, 2017

EXHIBIT A

Written Testimony of Christopher Allendorf

V.P. of External Relations and General Counsel

Jo-Carroll Energy, Inc. (NFP)

Before the Subcommittee on Agriculture, Energy, and Trade

Improving Broadband Deployment: Solutions for Rural America

Electric Cooperatives and Rural Broadband

Thank you for the opportunity to address this committee regarding efforts to increase access to high-speed broadband internet in rural America. As a natural gas, broadband, and electric cooperative serving thousands of rural accounts across four counties in Northwest Illinois, Jo-Carroll Energy is part of a broader electric cooperative industry that serves approximately 42 million consumer-owners (members) who own approximately 42% of electric distribution lines that cover 56% percent of our nation. Considering that most of those members and lines are in rural America, these numbers are critical to identifying and understanding how electric cooperatives serve as an established, sensible partner in developing programs and rules that will increase rural access to broadband internet. In our rural areas, we serve an average of four consumer-owners per mile of line, which is higher than many cooperatives, but significantly less than the thirty or more consumers per mile average for investor-owned and municipal utilities in urban areas. Low customer density is an important statistic to keep in mind when considering how best to help facilitate deployment of large-scale broadband access in rural America.

Jo-Carroll Energy was founded in 1939 as a result of the Rural Electrification Act of 1936 (REA) by a small group of farmers who saw the immense business benefits of electricity, though none of the existing utilities found it economically viable to serve them. This small group of farmers pooled their resources, with critical funding provided under the REA, to construct the necessary infrastructure and energized their first lines in 1940. With electricity provided by their local

cooperative, these rural Americans were able to enjoy the same comforts as their urban peers. There is a parallel situation happening right now with broadband deployment.

Utility cooperatives like Jo-Carroll Energy are private, not-for-profit businesses owned and governed by their consumers. Two principles under which utility co-ops operate are democratic governance and operation at cost. Specifically, every consumer-owner can vote to select local board members who then set rates and oversee the co-op. Revenue received by the co-op that is in excess of the amount it takes to provide services must be returned to consumer-owners as capital credits. Under this structure, utility co-ops provide economic benefits to their local communities, rather than distant stockholders, by ensuring profits stay in the hands of the local consumers, not stockholders.

Why is Jo-Carroll Energy in the Wireless Broadband Business?

Locally-owned cooperatives, as a result of their governing principles, are more attuned to the needs and requirements of those they serve. It has become apparent that the need for access to high speed broadband service is no less important for the success and survival of rural areas today than electricity was more than 75 years ago. Can you imagine large swathes of the inhabited U.S. without electricity today? We have to ask ourselves the same question now about rural areas without broadband access.

Recognizing this reality, Jo-Carroll Energy's board of directors decided to begin offering wireless broadband service to our members in 2009, based on feedback the individual directors received from their constituents that they either had no access to internet or were limited to dial-up connections. This lack of internet service was impeding everything from expansion of small, local businesses, to students not being able to perform necessary coursework at home.

At that time, there were two local, for-profit, wireless internet service providers (WISP) within our service area, a major telco, and a regional cable company providing service. Their services were limited to larger rural towns and villages. None had a business motivation to serve our more rural areas, unless a person/business could afford to make it feasible for them by shouldering significant costs of construction themselves, which is the opposite of how utility cooperatives have operated for 80 years. We have since acquired one of those WISPs, which otherwise would have ceased operating, so that numerous rural residents would continue to have access to fixed-wireless broadband. Others continue to operate for-profit broadband businesses in areas with more concentrated populations.

At that time, our traditional utility operations already required fixed-wireless broadband for our offices and our SCADA (supervisory control and data acquisition) network. We believed then that the cooperative would be able to leverage our existing utility infrastructure to provide wireless internet to individuals and businesses.

What we found over the course of the next six years, however, was that fixed-wireless broadband systems are a rapidly aging technology that struggles to keep up with the ever-increasing speed and bandwidth demands of users. Additionally, the rural nature of our business created geographical challenges to large-scale deployment of fixed-wireless internet. Our service area has several types of topography, from the tallest point in Illinois, through dense forests, to innumerable valleys and river basins. Fixed-wireless proved to be more difficult to deploy due to our terrain and we ended up constructing costly towers in order to somewhat compensate. The resulting service that we could provide was a lifeline to remote users who likely never would have received service from a for-profit company, but it is far from ideal.

Over the course of time, as our utility operation demands changed, we converted our utility communications, including our offices and links between substations and meters, over to a fiber-based loop. Fixed wireless broadband for our utility operations faced the same geographical challenges as our consumer-owners were experiencing and it could not continue to provide the increasing reliability and capacity needs for our own utility operations. Eventually, we nearly eliminated our internal use of the fixed-wireless component, except as a redundancy. Since then, we have seen the benefits of fiber broadband firsthand in our utility operations.

We continue to serve roughly 1600 wireless broadband accounts, but the technology is increasingly expensive to construct and maintain, with most of the equipment having a 5-year useful life. Fiber infrastructure, on the other hand, has an exponentially longer useful life and few bandwidth constraints. It is also cheaper to construct because we can better utilize our existing overhead and underground utility infrastructure rather than having to construct towers. The cooperative business model allows us to provide utility service to the most remote areas in our service territory, but it also means that costs must be shared equally among consumer-owners and broadband is no different for us. Cooperatives' electric utility business took nearly two decades to develop incrementally in order to eventually provide service to everyone. Rural America, especially our businesses, cannot afford to wait that long, at a competitive disadvantage, for broadband to develop in the same fashion.

Why Do We Believe That Fiber is the Solution for our Territory and Rural America?

After seeing for ourselves internally how much of an advantage fiber provided, we saw fiber as a technology that could provide reliable, fast broadband to rural America and one that would allow us to better utilize existing overhead and underground conduit infrastructure, free from the

geographical constraints of fixed-wireless technology. Several companies, including some with government fund grants, had laid "middle-mile" fiber throughout our area, but it is still up to other companies to establish "last-mile" infrastructure for end-users.

As a result, while increased middle-mile infrastructure meant that fiber became a technology option for us to provide retail broadband service, it would still require significant capital to bring fiber to our rural users. In addition to local businesses, one area that stood out to us as demonstrating the urgent need for last-mile fiber construction was rural schools and students. Several of our rural schools were able to connect to the middle-mile fiber network, allowing them to provide the benefits of fiber broadband at school. However, the students were left with whatever internet service they had at home to research, complete, and submit their assignments, which often requires broadband internet. Very rural students were left at a competitive disadvantage because of a lack of access to reliable broadband compared to their peers who lived in towns and villages with more internet options.

Fixed-wireless broadband had not proven to be a feasible solution for connecting our rural consumer-owners and in 2015, Jo-Carroll Energy began planning a fiber pilot project in one of the rural towns we serve, Galena, Illinois. The feedback we heard from our consumer-owners, along with the countless articles and research we read, all demonstrated that reliable broadband was a necessity for quality of life and economic development in rural areas. It is difficult for rural businesses to remain competitive without high-speed broadband. The global economy requires rural areas to have the same access to reliable broadband as their urban peers in order to remain viable.

We felt that Galena was the perfect testing ground for our first fiber deployment. Galena, a town of 3500 near the Mississippi River, has very diverse population and business demographics. It is the second most visited tourist spot in Illinois after Chicago. Tourism has created a large retail and service industry in Galena and the surrounding area. Outside of tourism industry needs, Galena represents the needs of any other small, rural towns. Galena businesses told us they needed reliable broadband service to ensure they could process credit cards in a timely fashion, take online reservations, provide high-speed wireless to customers, and much more.

We believed a fiber system could meet the needs of Galena businesses and we saw Galena as the perfect starting point for a fiber system that could meet the same needs eventually throughout our service area.

Jo-Carroll Energy's Galena fiber pilot project was completed in 2016. We utilized a mixture of existing overhead and underground infrastructure to place the fiber bundles. We estimate that there are approximately 460 possible accounts within the footprint of the project. I have attached testimonials from several of our fiber-connected businesses that demonstrate how crucial fiber broadband has been to their success. Our take rate among businesses is over 60%. Many of these users previously had cable or fixed-wireless broadband. The success of businesses using our fiber internet service in the pilot project area has convinced Jo-Carroll Energy that fiber internet provides the most stable, reliable platform for rural internet and that it is a critical component for economic development.

Residential demand has not been as high as we anticipated and cost is a factor. Though we are working on bringing costs down, our fiber packages are currently more expensive than options offered by other providers, but these other services are subject to latency, reliability, and usage

allowance restrictions. We hope that as our fiber-connected businesses continue to tout the benefits of fiber, more residential users will take note.

A major factor leading to our higher costs is the lack of access to capital in sufficient amounts to cover the high expense of initial construction and deployment. As a cooperative, we operate at cost and our access to capital is limited by what we ask consumer-owners to contribute through rates. As our density figures show, we have a smaller group of consumers over which we can spread costs. Therefore, more government grant funding to reduce the upfront capital investment would help create the financial incentive for local cooperatives to expand high-speed internet access beyond what we are able to undertake on our own.

Another contributing factor to our fiber pilot project also came about because for-profit entities were abandoning broadband in our service area. The major telco providing broadband within our project area is not connecting new users and existing users are constrained by limited infrastructure and slower speeds; much like traditional phone lines, its broadband system has been left to wither on its own.

Regardless of whether broadband service is provided by a for-profit telco or cable company, their offerings are only available to residents who live in towns and villages, where higher customer density provides profit incentives; profits play a large role in determining what areas are served. Additionally, we are offering a superior product with fiber. The existing service options are subject to bandwidth restrictions and high latency during peak demand times which are more acute in rural areas because of weak signals due to topography. All of this frustrated local businesses.

Jo-Carroll Energy has seen firsthand that fiber integrates relatively seamlessly with existing overhead and underground utility infrastructure, making permitting easier to obtain, which is

otherwise a concern for any company. We have found that fiber is also much more scalable at a lower cost than fixed-wireless. As bandwidth demand increases and new users are connected, only relatively minor investments in fiber infrastructure are needed to meet both challenges, which we have not found to be the case with fixed wireless.

Utility cooperatives are uniquely positioned to partner with the government to provide this service because of the existing infrastructure we have in place to serve rural America. Together with a governance model that is favorable for rural internet users because there is no profit motivation and consumer-owners have a direct say in the service being provided. Utility cooperatives will remain serving these areas, long after other companies have reduced the quality of their service or abandoned areas altogether and fiber is the robust, scalable technology we need to provide it.

How Can Government help Provide Reliable Broadband Service to Rural America?

We applaud Chairman Pai and the Federal Communications Commission for creating the Broadband Deployment Advisory Committee (BDAC) to take look at the barriers to providing broadband access to rural areas of our country. We were especially pleased that Jim Matheson, CEO of our national trade association, NRECA, was appointed to serve on the committee and bring the voice of non-traditional providers, like electric cooperatives to the table for these important discussions. Mr. Matheson will undoubtedly make sure that the voice of our consumer-owners in rural America is heard in conversations about expanding broadband access. The BDAC is expected to make recommendations later this year on how to spur greater deployment of broadband service.

Congress has worked with previous Administrations to provide funding for broadband projects through the Federal Communications Commission, the Rural Utilities Service at USDA, and the National Telecommunications and Information Administration at the Department of Commerce. These programs have had both success stories and challenges in pursuit of bridging the digital divide for rural America. I hope we can use the knowledge gained from those programs to make sound investments in the future.

As Congress and the Administration discuss plans for reauthorization of the Farm Bill and an Infrastructure funding package in the coming months, increasing deployment of broadband service in rural America through grants and direct construction contributions must be one of the top priorities in those packages. As you consider proposals to spur broadband deployment, we believe that all potential providers, including electric cooperatives, should be eligible to participate in an open and inclusive process that allows providers the ability to compete for funding opportunities. In addition, we urge policymakers to consider the scope of capital needed to make the upfront capital investment to extend broadband service to rural America and allocate the monetary resources needed to meet this expansive challenge. We hope that our experience with what has and hasn't worked for deploying broadband in rural areas will also provide insight for these discussions.

Looking to the Future for Rural America

Bringing electricity to rural America 80 years ago was a task of epic-proportion. The federal government created a strong, lasting partnership with rural utility cooperatives to accomplish that

goal. That partnership provided the same high quality of life to all Americans, regardless of economics and location. The investments made over 80 years in utility infrastructure shines as an example of what can be done when you are willing to think outside the box to meet a goal. Today, the challenge to bring robust broadband service to rural America is as difficult as it was to bring electricity, but Jo-Carroll Energy has seen that it is no less important for the continued success and well-being of rural America. It is our sincere hope that Congress and this Administration will continue to reinforce their partnership with rural utility cooperatives to bring electricity to rural America and build upon that partnership in the 21st century with continued support for the no-less audacious goal of providing rural Americans with high-speed broadband service

Thank you for taking the time to allow me to share our experiences.

Testimonials from Galena Businesses with Jo-Carroll Energy's Fiber Product

- Note: Jo-Carroll Energy's broadband internet service is marketed as Sand Prairie Wireless to differentiate it from our other utility services. It is a fully integrated business unit.

Paul, Owner of a Galena business

We were really excited when we heard that fiber was coming to downtown Galena. Our business specializes in selling things for people...in our case here, I have eight listing stations. To sell on e-bay you have to upload pictures, create descriptions, and research items. All of that is done on the cloud – or the internet. All of our business is cloud based, so when we had the opportunity to go to a fiber system that offered the speeds that the fiber does, we could not wait.

We went from doing 5x2 to 50x7. The bottom line is that was a huge increase in speed. What that means for us is an increase in productivity. Fiber means we can work faster and we can list more; that means my business can grow, I can employ more people, I can sell more things, and I can help more people find value in the things they have.

If you use the internet from a business standpoint, you need the speed of fiber. It is the way of the future; it is why this install in downtown Galena makes Galena a more viable place to do business. Having a consistently high internet connection is crucial. You need that high-speed connection and you need it to be consistent.

Fiber optic in downtown Galena gives business owners the opportunity to grow their business utilizing the power of the internet. With that consistent speed, you can grow your business to a whole different level outside of just Main Street.

The investment in downtown Galena for the fiber network is incredible from the standpoint of the business community. Very few communities of our size have that kind of a connection. They're working with much slower speeds and connections that are not consistent. To have that investment in downtown Galena just brings us to another level. Galena is already a great place to visit; Galena is a great place to come shop, to eat, and just enjoy the beautiful Main Street that we have. Now as business owners, we can go beyond that by utilizing the power of fiber internet. The investment made in the infrastructure makes it easy for any business on Main Street to do business internationally with the speed of light. It is just phenomenal.

Cory, General Manager of a Galena restaurant.

Chose to go with Sand Prairie Fiber for the fast internet speeds. It is one of the first companies to offer speeds that are beneficial for our restaurant. The fast internet speeds allow our wait staff to give our guests the best service possible by using tablets to enter orders and also to accept credit card payments. With the fast speeds we are receiving credit card transactions are instant and online reservations are made and confirmed in real time. I would highly recommend it. The speeds are blazing fast. The installation process went seamlessly.

Dan, President of a Galena Business

My company uses the Sand Prairie Fiber service for our daily connectivity to our third-party data center and has six people on the connection throughout the day. We are very happy with the speed and stability of the connection. High-speed broadband service was very badly needed here in Galena for the entire business community and we are very happy Jo-Carroll Energy and Sand Prairie have committed to providing this valuable service.

EXHIBIT B

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of

Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment	)	WC Docket No. 17-84
Accelerating Wireless Broadband Deployment by Removing Barriers to Infrastructure Investment	)	WT Docket No. 17-79

DECLARATION OF KIRKLEY THOMAS

1. My name is Kirkley Thomas. I am the Vice President for Governmental Affairs at Arkansas Electric Cooperatives, Inc. (AECI), based in Little Rock, Arkansas. AECI is the statewide service organization for the non-profit rural electric cooperatives in Arkansas. My areas of responsibility include matters before the Arkansas legislature. Over the past several years, the matter of broadband deployment has become a rural development and quality of life focal point for many Arkansas cooperatives because the existing for-profit telecommunications providers have declined to invest in advanced infrastructure to support deployment of broadband service in rural Arkansas that is adequate by today's standards.

2. On Monday, March 9, 2015, House Bill 1798 – drafted and advanced by the Arkansas Cable and Telecommunications Association – was filed in the 90th Arkansas General Assembly. The title of the bill was: "An Act to Require that the Rates of a Public Utility for Pole Attachments be Reasonable and Uniform; to Promote Further Broadband Deployment Efforts in the State; to Declare an Emergency; and for other Purposes." The title was the only time that broadband deployment was referenced in the entire bill. Instead of addressing broadband

deployment, the entire bill pertained to pole attachments to electric utility poles. It should be noted that in Arkansas, pole attachments are regulated by the Arkansas Public Service Commission and not the FCC. In addition to addressing the rates that could be charged by electric utilities for attachments to their poles, the bill would have rolled back safety measures applicable to attachers and given the cable and telecommunications companies control over electric distribution plant/infrastructure by dictating when poles must be changed out to accommodate attachments.

3. The Arkansas electric cooperatives estimated that the bill would have cost their member owners $6 million in additional infrastructure costs that would serve the principal purpose of enhancing the profits for companies like AT&T and CenturyLink that are among the largest and most profitable corporations in the United States.

4. At a meeting with the sponsor of the bill in the General Assembly on Tuesday, March 10, 2015, he suggested that the Arkansas electric cooperatives offer amendments that would make the bill more palatable.

5. The proposed amendment offered by the electric cooperatives was simple – the electric cooperatives would accept the FCC cable rate as the rate they would charge for pole attachments in exchange for broadband deployment by the cable and telecommunications companies at speeds of 25/Mbps downstream and 3/Mbps upstream throughout the service territories of the state's electric cooperatives by the year 2020.

6. Presented with a reasonable compromise solution, the telecommunications and cable companies rejected the offer, did not make a counter-offer and decline to negotiate. Ultimately, the sponsor withdrew the bill in exchange for an agreement that the Arkansas Public

Service Commission would open a docket to consider the pole attachment issues presented in the bill.

I declare under penalty of perjury that the foregoing is true and correct to the best of my information and belief.

Executed on July 14, 2017

Kirkley Thomas

Kirkley Thomas

4847-7790-2411, v. 1

EXHIBIT C

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of

Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment	)	WC Docket No. 17-84
Accelerating Wireless Broadband Deployment by Removing Barriers to Infrastructure Investment	)	WT Docket No. 17-79

DECLARATION OF GARY E. WOOD

1. My name is Gary E. Wood. I am the President and Chief Executive Officer of Central Virginia Electric Cooperative, headquartered in Lovingston, Virginia. In addition to working with the Cooperative's member-elected board of directors to provide strategic and managerial direction over the Cooperative, I have also been asked by the board to explore if there was some appropriate role for the Cooperative in extending broadband internet service over our service territory, which comprises all or parts of fourteen counties, towns, and cities in rural central Virginia. Our geography and member density is very rural—approximately 7.7 meters per mile of electric line. Over the past several years, the matter of broadband deployment has been an important issue for us. Established service providers have declined to invest in advanced infrastructure to support true broadband service. Rural broadband is necessary for continued economic health in rural regions.

2. Over the years, I have made several offers to various cable and telecommunications providers to attempt to bring broadband services to the un-served and under-served regions of central Virginia. Broadly speaking, these have included the offer of free pole attachments in perpetuity to any provider or group of providers who could offer universal

service, or a suitable facsimile of universal service, through any combination of technologies or types of infrastructure.

3. I spoke generally as to this matter on the record in a case before the Virginia State Corporation Commission, *see Northern Va. Elec. Co-op v. Comcast, et. al.*, Docket No. PUE-2013-00055 (Direct Testimony of Gary E. Wood, 3:11-4:2) (on file with counsel).

4. The Cooperative later put out a Request for Proposals (the "RFP") (on file with counsel) offering free pole attachments in exchange for universal service across its territory, allowing for the use of any combination of technologies. The major cable and telecommunications firms were all well aware of this RFP, and the Cooperative received no fully-responsive bid.

I declare under penalty of perjury that the foregoing is true and correct to the best of my information and belief.

Executed on July 17, 2017

Gary E. Wood