

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

In The Matter of	)	
	)	AU Docket No. 17-182
Connect America Fund	)	WC Docket No. 10-90
	)	

**COMMENTS OF THE RURAL ELECTRIC COOPERATIVES**

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The Association of Missouri Electric Cooperatives, Midwest Energy Cooperative, Great Lakes Energy, HomeWorks Tri-County Electric Cooperative, Indiana Electric Cooperatives, Alger Delta Cooperative Electric Association, the Arkansas Electric Cooperatives, Inc., the Utilities Technology Council (“UTC”), and the National Rural Electric Cooperative Association (“NRECA”) (collectively, the “Rural Electric Cooperatives”) hereby submit these comments in response to the Federal Communications Commission’s Public Notice<sup>1</sup> (the “Public Notice”) concerning performance measures for services supported by the Connect America Fund (“CAF”).

As a condition of receiving universal service support, recipients must offer broadband that meets certain basic requirements.<sup>2</sup> In 2014, the Commission sought comment on performance measures and testing, including “how compliance with speed obligations should be determined.”<sup>3</sup> The Commission proposed requiring providers to conduct speed testing at a minimum of 50 locations per state, and suggested that providers test during peak times of

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<sup>1</sup> *Comment Sought on Performance Measures for Connect America High-Cost Universal Service Support Recipients*, Public Notice, WC Docket No. 10-90, DA 17-1085 (rel. Nov. 6, 2017) (“PN”).

<sup>2</sup> *In re Connect America Fund*, Report and Order and Further Notice of Proposed Rulemaking, 26 FCC Rcd 17,663, 17,705–06 ¶ 109 (2011).

<sup>3</sup> *Id.* ¶ 4.

between 7:00pm and 11:00pm.<sup>4</sup> In the instant Public Notice, the Commission seeks comment to “refresh the record regarding performance measures for Connect America high-cost universal support recipients,” and, in particular, seeks comment on a USTelecom proposal submitted in May 2017.<sup>5</sup>

The Rural Electric Cooperatives support rigorous performance measures that will ensure compliance with CAF requirements and will help guard against waste, fraud, and abuse of finite universal service resources. To that end, we urge the Commission to adopt its original proposal and require speed testing during peak times. We are concerned that USTelecom’s proposal, which would permit testing over an 18-hour span,<sup>6</sup> could open the door to abuse, as it would allow providers to test when few users are online. Testing during such low-usage times could provide the Commission with a distorted and potentially misleading picture of network performance. The Commission should also ensure that whatever software is used for speed tests is not susceptible to gaming.

Additionally, because the performance measurements will apply to all CAF recipients, the Commission must ensure that the sample size is consistent across all areas and programs. In particular, the Commission should not adopt any proposal in which providers serving smaller geographic areas are forced to test a disproportionately large number of locations, a potential result of the USTelecom proposal, which calls for testing the lesser of 20% or 50 subscribed locations per state. In lieu of USTelecom’s proposal, we propose that the Commission require

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<sup>4</sup> *Wireline Competition Bureau et al. Seek Comment on Proposed Methodology for Connect America High-Cost Universal Service Support Recipients to Measure & Report Speed & Latency Performance to Fixed Locations*, Public Notice, 29 FCC Rcd 12,623, 12,625 ¶ 9 (2014) (“2014 Public Notice”).

<sup>5</sup> *PN* ¶ 6; see Letter from Kevin G. Rupy, Vice President, Law & Policy, USTelecom, to Marlene Dortch, Secretary, FCC, WC Docket No. 10-90, at 4 (May 23, 2017) [hereinafter “USTelecom Proposal”].

<sup>6</sup> See USTelecom Proposal, *supra* note 5, at 4.

providers to test the lesser of 5% or 50 actively-subscribed locations per state. For price cap carriers with a state-wide election, 50 locations out of tens or hundreds of thousands of locations could amount to testing less than 0.1% of customers. There is little reason to require providers serving a smaller area to test 20% of locations when larger carriers test less than 1%. Our proposal will ensure that all providers—whether serving large or small geographic areas—test a similar sample size.

Finally, in determining what constitutes compliance with the performance measures, the Commission should not penalize providers for variations in testing, inadequate customer equipment, or factors like data overhead, all of which can give the appearance of lower speeds on properly engineered networks. Thus, providers meeting 90% of the speed and latency requirement at least 95% of the time should be considered in full compliance. We propose a graduated reduction of support for providers that do not meet this threshold. Our proposal balances the Commission’s need to avoid unjustly enriching providers that fail to satisfy their public interest obligations with the need to avoid a flash cut of support for providers that have deployed in good faith to meet their obligations.

#### **I. THE COMMISSION SHOULD ADOPT ITS PROPOSAL TO REQUIRE SPEED TESTING DURING PEAK TIMES**

In 2014, the Commission proposed to require network speed testing once hourly during peak times—between 7:00pm and 11:00pm local time on weeknights—for four consecutive weeks to ensure that the Commission receives an accurate snapshot of how well networks perform when customers are actually using them.<sup>7</sup> The Rural Electric Cooperatives support the Commission’s proposal to measure speed during peak usage times, as the proposal will

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<sup>7</sup> 2014 Public Notice, 29 FCC Red at 12,625 ¶ 9.

effectively measure whether providers are actually deploying the infrastructure necessary to meet CAF program requirements.

In order to ensure that service in high-cost and rural areas is reasonably comparable to service available in urban areas,<sup>8</sup> the Commission disburses CAF funds on the condition that recipient providers meet certain broadband performance requirements.<sup>9</sup> If providers fail to deliver on these performance requirements when consumers are actually using the service, providers will not meet their end of the bargain, and scarce universal service resources will be wasted.<sup>10</sup> Otherwise put, a service that functions only when consumers are not using it is of little value to consumers or the communities in which they live.<sup>11</sup>

Data have consistently shown that internet usage in the United States is highest on weeknights between 7:00pm and 11:00pm,<sup>12</sup> when download and upload speeds decrease measurably across technologies.<sup>13</sup> During this time, “the majority of residential customers are attempting to use the Internet simultaneously, giving rise to a greater potential for congestion” than at other times of the day.<sup>14</sup> As a consequence, testing between 7:00pm and 11:00pm is

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<sup>8</sup> 47 U.S.C. § 254(b)(3).

<sup>9</sup> See *PN* ¶¶ 2–4.

<sup>10</sup> *Id.* ¶ 1.

<sup>11</sup> See, e.g., Tom Lawrence, *Evening Internet “Rush-Hour” Affects Broadband Users*, *The Independent* (Nov. 16, 2011), <http://www.independent.co.uk/life-style/gadgets-and-tech/news/evening-internet-rush-hour-affects-broadband-users-6262838.html> (quoting expert’s concern about “bewildered consumers” who “never actually feel like their connection is fast enough” due to “drop-offs” in speed during peak times).

<sup>12</sup> See FCC Office of Engineering & Technology & Office of Strategic Planning & Policy Analysis, *2016 Measuring Broadband America Fixed Broadband Report: A Report on Consumer Fixed Broadband Performance in the United States* 42–43 (2016) [hereinafter “2016 MBA Report”].

<sup>13</sup> See FCC Office of Engineering & Technology & Consumer & Governmental Affairs Bureau, *Measuring Broadband America: A Report on Consumer Wireline Broadband Performance in the U.S.* 4–5 (2011); see also 2016 MBA Report, *supra* note 12, at 41.

<sup>14</sup> Letter from William B. Geibel, Jr., President, Wired or Wireless, Inc., to Marlene H. Dortch, Secretary, FCC, WC Docket Nos. 10-90 & 05-337, at Exhibit 11 (July 11, 2012).

necessary to ensure that providers deliver when consumers need their networks the most. Importantly, testing during peak times also ensures that networks function properly during all other times of day, when demand is markedly lower.<sup>15</sup>

USTelecom has proposed an alternative to allow CAF recipients to test speed and latency once during each of four “testing windows,” which together span the eighteen hours between 6:00am and 12:00am.<sup>16</sup> As a result, USTelecom’s testing methodology would allow providers to test exclusively during times “when few customers are using the Internet”;<sup>17</sup> under the proposal, a provider could potentially measure its speed and latency exclusively during times when internet usage is the lowest.

As an example, network degradation due to increased demand is minimal at 6:00am, 2:00pm, 4:00pm, and 11:30pm.<sup>18</sup> Under USTelecom’s proposal, a provider could test its network exclusively during those off-peak times and claim that it meets the relevant speed requirements, even if the provider is *never* compliant during times when most customers are actually using their broadband service—that is, between 7:00pm and 11:00pm.<sup>19</sup> Such a result does not ensure that a provider is meeting its CAF obligations.<sup>20</sup>

USTelecom maintains that testing during peak times is not possible because of concerns over “consumer impact and potential degradation in speed, capacity, and/or functionality that

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<sup>15</sup> See 2016 MBA Report, *supra* note 12, at 41–42.

<sup>16</sup> USTelecom Proposal, *supra* note 5, at 4.

<sup>17</sup> *In re Connect America Fund*, Report & Order, 28 FCC Rcd 15,060, 15,073 ¶ 29 (WCB 2013).

<sup>18</sup> See 2016 MBA Report, *supra* note 12, at 42.

<sup>19</sup> *Id.*; see USTelecom Proposal, *supra* note 5, at 3–4.

<sup>20</sup> 47 U.S.C. § 254(b)(3).

may result.”<sup>21</sup> However, as the Commission has pointed out, USTelecom’s conjecture about “network traffic appears to be based on the assumption that all tests will be conducted simultaneously.”<sup>22</sup> There is no reason why testing must be conducted simultaneously, and the Rural Electric Cooperatives expect that staggering tests throughout the four-hour testing window will minimize any risk of network degradation that may exist. Even if that were not true, the Commission could take steps to minimize testing’s interference with consumer use of broadband service. For example, providers can conduct speed testing with little data, and testing can be halted if there is broadband activity beyond a defined threshold value.<sup>23</sup>

## **II. THE COMMISSION SHOULD ENSURE THAT TESTING SOFTWARE IS NOT SUBJECT TO GAMING**

As the Commission has noted, there are many ways—both hardware and software-based—to test speed, including tests administered by third parties and proprietary tests.<sup>24</sup> In the Public Notice, the Commission seeks comment on how testing should be conducted.<sup>25</sup> In the past, the Commission “raised the possibility of a [neutral testing] platform” administered by third-party vendors that providers would use to test network speeds.<sup>26</sup> USTelecom, by contrast, has proposed that the Commission permit providers to use any equipment or software, whether proprietary or produced by a third party, to conduct speed testing for purposes of certifying compliance with CAF requirements.

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<sup>21</sup> USTelecom Proposal, *supra* note 5, at 4.

<sup>22</sup> See PN ¶ 9; see also USTelecom Proposal, *supra* note 5, at 4.

<sup>23</sup> FCC Office of Engineering & Technology & Consumer & Governmental Affairs Bureau, *2016 Technical Appendix - Measuring Broadband America Fixed Broadband: A Report on Consumer Fixed Broadband Performance in the United States* 24 (2016).

<sup>24</sup> See PN ¶ 5; see also USTelecom Proposal, *supra* note 5, at 7–8.

<sup>25</sup> PN ¶ 9.

<sup>26</sup> *Id.* ¶ 4.



While we support efforts to reduce costs for providers, which USTelecom’s proposal has the potential to do, we are concerned that a rule that permits providers to use any equipment for testing would lack sufficient checks and could open the CAF to gaming. In order to minimize the risk that providers could use a testing methodology that overstates speeds, we urge the Commission to take steps to ensure that any approved testing methodology is not subject to manipulation or gaming and, ideally, is designed by neutral third parties.

### **III. THE COMMISSION SHOULD ENSURE THAT THE SAMPLE SIZE IS NOT DISPROPORTIONALLY LARGER FOR PROVIDERS SERVING SMALLER AREAS**

In the Public Notice, the Commission sought comment on defining the testing populations for purposes of the performance measures. The Commission proposed requiring support recipients to test at least 50 randomly selected locations per state.<sup>27</sup> In order to avoid imposing an unreasonable burden on small providers, USTelecom proposed testing the lesser of 50 subscribed locations per state or 20% of subscribed locations in that state.<sup>28</sup> While we welcome USTelecom’s effort to reduce the burden on smaller providers, we believe that a requirement for small providers to test 20% of locations is too high and, as detailed below, suggest the lesser of 50 subscribed locations or 5% of actively subscribed locations.

The Rural Electric Cooperatives agree with USTelecom that the Commission should amend its testing-sample-size proposal in order to avoid “overburdening ETCs that may have a smaller universe of potential testing locations.”<sup>29</sup> The record contains significant concerns about the Commission’s proposal to require “a minimum of 50 . . . customers locations to be tested

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<sup>27</sup> PN ¶ 7.

<sup>28</sup> USTelecom Proposal, *supra* note 5, at 3.

<sup>29</sup> *Id.*

within the geographic area being funded within a given state,”<sup>30</sup> as such a requirement burdens small providers who may find the “challenge of finding a statistically valid pool of volunteers” in certain areas to be “significant.”<sup>31</sup> Indeed, for some providers, “there may not even be 50 subscribers to the services being targeted for measurement.”<sup>32</sup> For these reasons, only actively subscribed locations should be tested, and some alternative minimum testing pool is necessary.

However, the Rural Electric Cooperatives are concerned that USTelecom’s proposal, which would test the lesser of “1) 20% of the HUBB input locations with subscribers; or 2) 50 subscribers per state,”<sup>33</sup> does not go far enough to reduce the burden on CAF recipients serving a small number of locations in a given state: Providers that receive support for a large number of locations would have to test only a very small percentage of their locations, whereas those receiving support for a small number of locations would be required to test one of every five locations.

For example, many price cap carriers reporting pursuant to their state-wide elections obligations would have to test less than 1% of locations (and, in many cases, less than 0.1% of locations).<sup>34</sup> Imposing an alternative minimum 20% testing requirement would result in a far

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<sup>30</sup> 2014 Public Notice, 29 FCC Rcd at 12,625 ¶ 9.

<sup>31</sup> Comments of NTCA—The Rural Broadband Association et al., WC Docket No. 10-90, at 6 (Dec. 22, 2014).

<sup>32</sup> Comments of the Smithville Telephone Company, Inc., WC Docket No. 10-90 at 3 (Dec. 22, 2014).

<sup>33</sup> USTelecom Proposal, *supra* note 5, at 3.

<sup>34</sup> For example, in Mississippi, AT&T accepted statewide support to connect 133,981 locations. Assuming a 70% take rate, 50 subscribers would amount to a mere 0.05% of all locations. Assuming a 50% take rate, 50 subscribers would amount to 0.07% of all locations. Even in the first year of reporting (with 40% deployment), in Mississippi, AT&T would test only 0.1% of locations assuming a 70% take rate and 0.18% of locations assuming a 50% take rate. Similarly, in California, AT&T accepted statewide support to serve 141,540 locations. During the first year of reporting with 40% deployment, assuming take rates of 70% and 50%, AT&T would be required to test just 0.1% or 0.18% of locations, respectively. See News Release, FCC, *Connect America Fund Phase II Funding by Carrier, State, and County* (Sept. 15, 2015), <https://www.fcc.gov/document/connect-america-fund-phase-ii-funding-carrier-state-and-county>.

larger sample size for providers with small geographic areas. There is no justification for requiring providers serving smaller CAF areas to have such a disproportionately large sample size. For this reason, the Commission should require support recipients to test the lesser of 5% of locations with active subscribers or 50 locations. The locations to be tested must be selected at random to avoid the potential for gaming that would arise if providers could cherry-pick certain locations over others.

#### **IV. THE COMMISSION SHOULD ADOPT STRICT PENALTIES FOR NONCOMPLIANCE**

The Commission also seeks comment on how to measure compliance, and on how to treat non-compliant providers.<sup>35</sup> USTelecom proposed a compliance and certification regime with several “tiers” of compliance.<sup>36</sup> In particular, USTelecom explained its view that “ETCs [should] utilize a modified Form 481 to report and certify the results of their broadband testing conducted for each state” as falling within one of five levels of compliance defined by reference to the proportion of speed tests that show that the tested network is in compliance with speed requirements.<sup>37</sup> USTelecom envisions that in certain cases, the Commission would have the ability to temporarily—or, in the worst cases, permanently—withhold CAF funds.<sup>38</sup> In the Public Notice, the Commission specifically sought comment on USTelecom’s proposal.<sup>39</sup>

The Rural Electric Cooperatives agree with USTelecom that the Commission should require CAF recipients to use a modified Form 481 to report and annually certify the results of

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<sup>35</sup> PN ¶ 9.

<sup>36</sup> USTelecom Proposal, *supra* note 5, at 5–6.

<sup>37</sup> *Id.* at 4.

<sup>38</sup> *Id.* at 5–6.

<sup>39</sup> PN ¶ 9.

their broadband testing conducted for each state, so long as (1) the certification is made under penalty of perjury to deter misrepresentations and (2) the Commission makes clear that all test results must be reported in order to deter selective testing. However, we are concerned that USTelecom’s framework is too lenient, as it allows even seriously delinquent providers to continue to retain a large portion of CAF support and escape meaningful consequences.

As “steward[]” of the USF, the Commission also has a duty to avoid improper payments.<sup>40</sup> As the Commission has put it, because “[t]he cost of universal service programs is ultimately borne by the consumers and businesses that pay to fund these programs,” the Commission has an “obligation to exercise fiscal responsibility” when disbursing universal service funds.<sup>41</sup> As the Rural Coalition has previously noted, “[t]his obligation entails the utmost care in design and management to prevent waste, fraud, and abuse.”<sup>42</sup> Accordingly, the Commission must take measures to ensure that CAF recipients deliver on their commitments, and to ensure that scarce universal service funds are not wasted on providers that fail to do so.

We are concerned that USTelecom’s compliance framework, as proposed, does not meet this standard. For example, a provider that meets speed requirements only 80% of the time would continue to receive 100% of support for one year.<sup>43</sup> Similarly, a provider that meets speed requirements a mere 70% of the time (during USTelecom’s proposed 18-hour testing window) would receive 100% of support so long as it eventually returns to a 95% pass rate

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<sup>40</sup> *E.g.*, *In re Connect America Fund*, Report and Order and Further Notice of Proposed Rulemaking, 31 FCC Rcd 5949, 5986 ¶ 109 (2016).

<sup>41</sup> *In re Connect America Fund*, Report and Order and Further Notice of Proposed Rulemaking, 32 FCC Rcd 2152, 2161 ¶ 24 (2017) (“*Mobility Fund II Report and Order*”).

<sup>42</sup> Comments of the Rural Coalition, WC Docket No. 10-90, at 17–18 (Sept. 18, 2017) (citing *Mobility Fund II Report and Order*, 32 FCC Rcd at 2161 ¶ 24; *In re Lifeline & Link Up Reform and Modernization*, Notice of Proposed Rulemaking, 26 FCC Rcd 2770, 2859 ¶ 288 (2011)).

<sup>43</sup> USTelecom Proposal, *supra* note 5, at 5.

during the following year.<sup>44</sup> USTelecom's proposal does not necessarily incentivize full compliance with CAF obligations.

Additionally, even where USTelecom would permit the Commission to recover or permanently withhold funds, the penalties are minimal. For instance, a provider that can satisfy the speed requirement only 50% of the time would still receive 50% of support.<sup>45</sup> Given that bidders in the CAF Phase II Auction stand to gain an advantage by bidding in a higher speed tier, stricter penalties are necessary to ensure that no bidder purposefully bids in a higher speed tier for which it is not qualified with the understanding that it will not be seriously penalized if it fails to meet the speed requirements even half of the time.

Finally, USTelecom's proposal fails to consider the speeds that a non-compliant provider is actually delivering to consumers. For instance, under USTelecom's proposal, a provider that meets the speed requirement 70% of the time will suffer a 15% reduction in CAF funds, irrespective of what speeds the provider is delivering during the remaining 30% of non-compliant observations. In other words, USTelecom's proposal does nothing to distinguish a provider that comes within 85% of the speed requirement for the remaining 30% of observations from one that is able to provide speeds of only 25% of the requirement for those remaining observations. This is an important deficiency because the focus of universal service is on the service delivered to consumers and, thus, any measurement should focus on the speed actually received by the consumer.

We propose an alternative with stricter penalties that also refocuses the inquiry on the actual speeds that the provider is delivering. To accommodate the stricter penalties in our

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<sup>44</sup> *Id.* at 5–6.

<sup>45</sup> *Id.* at 6.

proposal, full compliance is measured as meeting the 90% of the speed and latency for at least 95% of testing measurements. Setting the goal at 90% is necessary to account for realities of testing broadband speed, particularly for 1 Gbps. For 1 Gbps service, data overhead and the frame size involved in measurement can have adverse impacts on speeds during testing, as can limitations related to the hardware and software that a provider uses for testing.<sup>46</sup> These are particularly likely to affect the measurement of higher-speed service.<sup>47</sup> Moreover, different testing methodologies may return significantly different results for the same service. As long as testing is conducted using vetted services that are immune to gaming and that reasonably approximate actual network speeds, providers should not be penalized for such variations in testing. Measuring full compliance as 90% of the speed requirement 95% of the time will help to ensure that providers are not unfairly penalized for these minor testing impediments.

As noted above, our proposal for penalties is graduated and focuses on the actual speeds that a provider is delivering. We propose penalizing any provider that cannot deliver 90% of the required speed at least 95% of the time in an amount proportional to its slower speeds. In particular, 2.0% of a provider's CAF funds will be withheld for every percentage point of the required speed (below 90%) that the provider fails to deliver for 95% of measurements:

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<sup>46</sup> See, e.g., *Are You Gigabit Ready?*, Ookla: SpeedTest, <http://www.speedtest.net/insights/blog/are-you-gigabit-ready-17-tips-to-help/> (n.d.).

<sup>47</sup> Data can be transferred to customers only after they are grouped into frames. Frames are bundles that include not only the payload, but also other "parts and pieces," including the preamble, the inter-frame gap, the Ethernet header, the IP header, and the TCP header. All of these "parts and pieces" are necessary to ensure that data successfully reach their destination. However, the overhead created due to these "parts and pieces" is significant, particularly at higher speeds; overhead grows exponentially from a 100 Mbps connection to a 1 Gbps connection and can be as large as 60 Mbps. This overhead lowers speed results during testing; even a perfectly engineered Gigabit network would ordinarily test at between 940 Mbps and 987 Mbps. See *What Is the Theoretical Maximum Throughput of a Gigabit Ethernet Interface?*, NetApp: Knowledgebase [https://kb.netapp.com/app/answers/answer\\_view/a\\_id/1003832](https://kb.netapp.com/app/answers/answer_view/a_id/1003832) (n.d.). Although Gigabit service can sometimes be "overprovisioned" at 1.05 Gbps to address these testing issues, customer premise equipment is often limited to 1 Gbps interfaces, which would not allow for overprovisioning of service. (Customer premises equipment would need 10 Gbps interfaces to allow for such overprovisioning of service. As a general matter, this equipment is not readily available and, even where it is available, it is expensive to deploy.)

Rural Electric Cooperatives' Proposal			USTelecom Proposal		
Compliance Tier	Speed Test Results (% of required speed for at least 95% of tests)	% of CAF Funds Withheld	Compliance Tier	Speed Test Results (% of tests for which 100% of speed is reached)	% of CAF Funds Withheld
Full Compliance	90%-100%	None	Full Compliance	95%-100%	0%
Non Compliance	0%-89.99%	2 x [.90 – (max speed delivered for at least 95% of tests / required speed)].	Tier 1 Compliance	80-94%	0%
			Tier 2 Compliance	70-79%	15%
			Tier 3 Compliance	60-69%	25%
			Tier 4 Compliance	50%-59%	50%

The following table and examples illustrate how the proposal would work in practice:

Required Speed	Maximum Tested Speed (for at Least 95% of Tests)	Penalty (% of CAF Funds Withheld)
100 Mbps	90 Mbps	0%
100 Mbps	89 Mbps	2%
100 Mbps	88 Mbps	4%
100 Mbps	87 Mbps	6%
100 Mbps	75 Mbps	30%
100 Mbps	50 Mbps	80%
100 Mbps	40 Mbps	100%
100 Mbps	25 Mbps	100%

- A provider receiving support for 100 Mbps that delivers 90 Mbps during 95% of testing observations in a given area would forgo 0% of CAF support and would be deemed compliant.

- A provider receiving support for 100 Mbps that delivers 89 Mbps during 95% of testing observations in a given area would forgo 2% ( $2 \times [0.90 - (89 \text{ Mbps} / 100 \text{ Mbps})]$ ) of CAF support in that state for the testing year.
- A provider receiving support for 100 Mbps that delivers 88 Mbps during 95% of testing observations in a given area would forgo 4% ( $2 \times [0.90 - (88 \text{ Mbps} / 100 \text{ Mbps})]$ ) of CAF support in that state for the testing year.
- A provider receiving support for 100 Mbps that delivers 87 Mbps during 95% of testing observations in a given area would forgo 6% ( $2 \times [0.90 - (87 \text{ Mbps} / 100 \text{ Mbps})]$ ) of CAF support in that state for the testing year.
- A provider receiving support for 100 Mbps that delivers 75 Mbps during 95% of testing observations in a given area would forgo 30% ( $2 \times [0.90 - (75 \text{ Mbps} / 100 \text{ Mbps})]$ ) of CAF support in that state for the testing year.
- A provider receiving support for 100 Mbps that delivers 50 Mbps during 95% of testing observations in a given area would forgo 80% ( $2 \times [0.90 - (50 \text{ Mbps} / 100 \text{ Mbps})]$ ) of CAF support in that state for the testing year.
- A provider receiving support for 100 Mbps that delivers 40 Mbps during 95% of testing observations in a given state would forgo 100% ( $2 \times [0.90 - (40 \text{ Mbps} / 100 \text{ Mbps})]$ ) of CAF support in that state for the testing year.
- A provider receiving support for 100 Mbps that delivers 25 Mbps during 95% of testing observations in a given state would be required to forgo 100% ( $2 \times [0.90 - (25 \text{ Mbps} / 100 \text{ Mbps})]$ ) of CAF support in that state for the testing year.

Under this proposal, CAF funds would be withheld for the testing year in an amount directly related to the percentage of speed that the support recipient fails to deliver. Unlike the



USTelecom proposal, non-compliant providers would have no possibility of recouping funds. The 2% penalty would encourage compliance with the Commission's speed requirements, and the graduated nature of the penalty would avoid the harsh effect of the sharp and somewhat arbitrary lines that USTelecom proposes to use to delineate its tiers. Finally, our proposal would ensure that CAF recipients have an incentive to keep speeds as high as possible throughout all locations, which will help to improve the customer experience throughout CAF-funded networks.

### CONCLUSION

The Rural Electric Cooperatives urge the Commission to adopt performance measurements that will ensure that consumers receive the requisite speed and latency during peak times, when they are most likely to use it. It is also important for the Commission to ensure that testing methodologies are not susceptible to gaming, and that the sample size does not penalize small providers. Finally, the Commission should adopt a compliance framework that deters waste and abuse and encourages providers to comply with CAF requirements.

Respectfully submitted,

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