

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

In the Matter of   )  
  )  
Connect America Fund   ) WC Docket No. 10-90  
TO: The Commission

**APPLICATION FOR REVIEW**

**WTA – Advocates for Rural Broadband**

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Dated: September 19, 2018

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## Summary

WTA – Advocates for Rural Broadband (“WTA”) respectfully applies to the Commission for review and revision the Wireline Competition Bureau, Wireless Telecommunications Bureau and Office of Engineering and Technology (“the Bureaus”) *Order* (DA 18-710, released July 6, 2018) and its proposed framework for the implementation of the Commission’s broadband performance testing and reporting requirement. As a first step, WTA asks the Commission to postpone the scheduled Third and Fourth Quarter 2019 commencement of testing, at least for rural local exchange carriers (“RLECs”). A reasonable postponement (*e.g.*, for two years or so) should permit RLEC-compatible testing equipment to become more available and affordable, and allow qualified third party vendors to determine whether they will offer testing services for RLECs.

More importantly, a postponement will give the Bureaus and the RLEC industry the opportunity to develop a new or revised performance testing framework that is better adapted to rural customer needs and preferences and to RLEC resources and operating circumstances. Given the limited resources and small broadband customer bases of RLECs, the amount of performance testing required by the *Order’s* framework (which was developed primarily for much larger price cap carriers) can and should be greatly reduced. An RLEC-compatible testing framework should have: (a) a reduced number and distribution of testing weeks (*e.g.*, one week per year – possibly two if upgrades or repairs are required – rather than quarterly); (b) a much smaller number of test locations (*e.g.*, 10-to-15 locations, or 2-to-3 percent of the subscribers on each CAF-required service tier, with more flexible selection processes and less frequent new samples); (c) a more rural-oriented timing and number of hourly tests per day (*e.g.*, less focus on evening video primetime); and (d) be limited to the testing of the RLECs’ own networks. These changes and others are needed to address the difficulties of obtaining rural testing participants, the high costs

of the *Order's* testing framework, and the inability of RLECs to control, avoid or repair delays and disruptions caused by poor quality or congested middle mile services and/or customer equipment. In particular, it makes no practical, legal or equitable sense to penalize RLECs by reducing their high-cost support due to middle mile and/or customer equipment shortcomings or congestion over which they have no control and which they have no ability to repair or upgrade to improve broadband speed and latency.

A new or revised RLEC performance testing network needs to be effective in monitoring the use of federal high-cost support for the intended broadband deployment purposes and correcting course if some RLECs are not deploying the supported services at the required pace. However, the framework should not entail such major performance testing cost increases and revenue-reducing “compliance” penalties that RLECs will be deprived of the net high-cost support that they urgently need to extend, upgrade and provide the very high-speed and low-latency broadband services that the Commission’s performance testing requirements are intended to encourage.

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WTA – Advocates for Rural Broadband (“WTA”) hereby applies, pursuant to Section 1.115 of the Rules, for Commission review of the *Order*, DA 18-710, released July 6, 2018, in the referenced docket by the Wireline Competition Bureau (“WCB”), Wireless Telecommunications Bureau (“WTB”), and Office of Engineering and Technology (“OET”) (“*Order*”). A summary of the *Order* was published in the *Federal Register* on August 20, 2018 [83 Fed Reg. 42052 (August 20, 2018)].

WTA acknowledges and takes no issue with the Commission’s previous determinations that eligible telecommunications carriers (“ETCs”) must offer broadband services in their supported areas that meet certain basic performance requirements, and that certain recipients of high-cost support must test their broadband networks for compliance with speed and latency metrics and certify the results of such testing to the Universal Service Administrative Company (“USAC”) and relevant state and tribal authorities on an annual basis.<sup>1</sup>

On December 6, 2017, WTA filed comments in the portion of this docket wherein the WCB, WTB and OET (collectively, “the Bureaus”) undertook their delegated task of implementing the Commission’s determinations by developing performance testing and

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<sup>1</sup> *Connect America Fund et al.*, WC Docket No. 10-90 *et al.*, Report and Order and Further Notice of Proposed Rulemaking, 26 FCC Rcd 17663, 17705-06, para. 109 (2011).

measurement procedures. WTA, a national trade association that represents more than 340 rural incumbent local exchange carriers (“RLECs”), asserted that the broadband performance testing template presented to the Bureaus by USTelecom appeared to be designed predominately for price cap carriers and was neither appropriate nor equitable for much smaller RLECs. Rather, different broadband testing procedures more suitable to the size, resources and operating circumstances of RLECs were needed to obtain fair, accurate and cost-effective measures of RLEC broadband performance. For example, WTA showed that RLECs should be required to test the performance only of their own broadband networks, and should not be forced to test for speed or latency over facilities and routes beyond their control, much less to be subject to penalties that take away critical high-cost support for alleged low test “results” which they have virtually no ability to affect or remedy.

The *Order* does not indicate that the Bureaus gave significant consideration to the resources, operating conditions and circumstances of RLECs, or made any discernable attempts to work with RLEC representatives, in order to develop a performance testing framework that would be practicable, accurate and equitable for RLECs. Rather, the *Order* adopted a testing framework that appears to be even more intensive and expensive than the template developed by USTelecom, and applied it both to price cap carriers and to the much smaller RLECs. For the affected RLECs, this framework imposes excessive testing burdens, extremely difficult (often impossible) implementation processes, and potentially major cost increases and revenue reductions. Overall, this onerous testing framework will impair the ability of RLECs to extend, upgrade and provide the very high-speed and low-latency broadband services that the Commission’s testing requirements are intended to encourage.

Therefore, pursuant to Section 1.115(b)(2)(iii) of the Commission's Rules, WTA applies for Commission review of the *Order* as it pertains to RLECs. It specifically asks the Commission to defer the performance testing of RLEC broadband networks scheduled to begin during the Third and Fourth Quarters of 2019 for a reasonable period, and to order the Bureaus to work with the RLEC industry during that time to develop a new or revised broadband performance testing framework for RLECs that is suitable for the needs and concerns of rural customers and congruent with RLEC operations and resources.

## A

### **The *Order's* Framework Imposes Excessive Testing Burdens Upon RLECs**

The typical WTA member has 10-to-20 full-time employees and serves fewer than 3,500 access lines in the aggregate and fewer than 500 access lines per exchange. Broadband adoption is increasing in rural areas, but is still in the 50-to-60 percent range for the typical WTA member. Given the limited resources and small customer bases of RLECs, the amount of performance testing required by the framework – in terms of quarterly testing, the number of test locations, and the timing and number of hourly tests per day – is much greater than necessary *per se* to demonstrate that high-cost support is being used by RLECs for the broadband deployment purposes intended. This is true without even considering related implementation and cost issues regarding the subject testing.

#### **1. Quarterly Testing**

Whereas USTelecom proposed that performance testing take place during a period of four weeks that the price cap carrier can choose, the *Order* mandates that all large and small ETCs subject to the framework conduct one week of testing in each of four designated calendar quarters.

The stated purpose is to “capture any seasonal effects on a carrier’s broadband performance” and to “reflect a carrier’s performance throughout the year.” *Order*, ¶¶26, 29.

For RLECs, four weeks of daily testing scattered throughout four separate “seasonal” periods during the year is a substantial burden that is unlikely to provide the Commission with more accurate information than a single week of testing. First, unlike fixed wireless services, the fiber optic and hybrid fiber-copper facilities used by the vast majority of RLEC networks are not affected by the presence or absence of leaves on trees or other seasonal foliage. Second, large portions of the United States do not have four different seasons that significantly affect the relative amounts of time that consumers spend on things such as outdoor activities and indoor Internet usage. In much of the South and Southwest, the weather is conducive to outdoor activities for virtually the entire year. Similarly, in substantial parts of the Northern and Mountain States, there can be major snowfalls during a long Winter that can extend from October into April, with the rest of the year divided in various ways among the three shorter seasons. Third, if actual RLEC broadband customers were surveyed, the large majority would respond that they would find it much more burdensome to participate in the testing of their broadband service speeds and latency during four separate and scattered weeks during the year rather than getting all of the testing completed at one time. In fact, given the reluctance of many rural customers to participate in performance testing (as discussed below), it is likely that some, perhaps many, customers will refuse to participate in a second, third or fourth week of seasonal testing during a year. Over and above outright refusals by certain rural customers to participate in multiple weeks of seasonal testing, RLECs will have trouble collecting four weeks of seasonal data from many specific customer locations due to vacations, family visits, business trips, work and family emergencies,



and other conditions that will render even normally cooperative customers unwilling or unable to have their broadband service tested during certain weeks of the year.

WTA believes a single week of testing is sufficient to determine whether an RLEC's network or networks in a state are delivering the broadband speeds and latency which it is obligated to provide in conjunction with its high-cost support. The optimal time for such a testing week would be late Spring (late April-May-early June) or early Fall (September-early October) when Internet usage is most typical (*i.e.*, when fewer households are on summer vacation or using their weekend cottages and cabins, and when schools and weekend youth activities are in session), when leaves and other foliage are in bloom (for more accurate fixed wireless testing), and when there is less likelihood of snow and ice storms and other severe weather that can have lengthy and disruptive impacts upon service, usage and testing.

Where the testing of an RLEC's broadband network in a state fails to demonstrate "full compliance" with the applicable performance standards, the goals of maximizing the speed, quality, availability and adoption of broadband service would appear better served by giving the RLEC an opportunity to locate and correct the problem without reduction or withholding of the monthly high-cost support needed to finance the repair, upgrade and operation of its network. For example, an RLEC that fails to meet the "full compliance" standards during its regular annual test week could be given six (6) months to upgrade or repair its network, and then permitted to conduct a second week of testing. If the second week shows "full compliance" with the applicable performance standards, there should be no penalty. If the re-testing still fails to demonstrate "full compliance," then further investigation or penalties may be appropriate depending upon the circumstances.

The proposed alternative approach is similar to signal leakage testing on cable television aeronautical frequencies where the goal is to annually test for and repair leaks, and where there are no penalties if regular testing is conducted and any needed repairs are promptly made. It also presumes that the reasons for lack of “full compliance” involve shortcomings in the RLEC’s own network that are within its control. WTA reiterates its position that RLECs should not be penalized by loss of high-cost support for facilities or circumstances over which they have no control and which they have no capability to repair or upgrade.

## 2. Number of Test Locations

The approximately 45 percent of WTA members that receive Alternative Connect America Cost Model (“ACAM”) support have 25/3, 10/1 and 4/1 build-out obligations specified in Section 54.308(a)(1) of the Rules. Certain WTA members receiving cost-based support have 10/1 build-out obligations specified in Section 54.308(a)(2) of the Rules. The *Order’s* framework requires that the number of an ETC’s test locations in each state be the lower of: (a) ten percent (10%) of the ETC’s subscribers on each Connect America Fund (“CAF”)-required service tier; or (b) a 50-location per tier maximum. Hence, ACAM recipients can have as many as 150 test locations with respect to their 25/3, 10/1 and 4/1 tiers, while certain RLECs receiving cost-based support can have up to 50 test locations on their 10/1 tier.<sup>2</sup> Small RLECs that serve exchanges on both sides of a state line can have their testing samples doubled.

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<sup>2</sup> This categorization is complicated by the fact that some RLECs receiving high-cost support for 10/1 or 25/3 build-out obligations may actually provide customers with higher speeds if they request them. Whereas, *e.g.*, a 50/6 or 15/2 service offering clearly meets the Commission’s requirement that an ETC provide customers with at least a 25/3 or 10/1 service, it raises questions: (a) whether such higher speed service at a customer location should be dialed down to 25/3 or 10/1 for testing purposes (and whether the customer will agree to that); (b) whether testing of 25/3 or 10/1 service can take place at actual 50/6 or 15/2 speeds, and how the results should enter into calculations; or (c) whether locations with speeds above CAF-required tiers should be deleted from samples and testing.

Political polling and market research surveys are generally conducted with random samples comprising far less than 10 percent of the target population. Up to fifty locations per CAF-required speed tier is a large and cumbersome sample size for most RLECs, particularly when it likely requires numerous telephone calls and lengthy negotiations to obtain participation by reluctant or disinterested customers, and then entails rural truck rolls involving round trips of 20-to-100 miles to deliver, install and retrieve testing equipment to each location. For larger carriers, finding testing locations is a much easier process because they have much larger pools of customers. If a particular customer refuse to participate in testing, they can just move to the next customer on a list. In stark contrast, the much larger portions of their customer bases required to be tested (plus the reluctance of rural customers to be tested) means that RLECs are much more likely to run short of test locations. The number problem is exacerbated considerably for RLECs if their testing locations must be changed every two years.

The architecture of many RLECs does not require testing at 50-to-150 or so randomly selected locations to determine delivered speeds. Rather, many RLEC broadband networks are designed and built to serve population clusters, rings of households, or farms and ranches along a trunk line that runs next to a highway or through a valley. RLECs can test the speed and latency delivered to a population cluster or service ring, or along a trunk by testing a single location in the particular configuration. Obtaining customer consent and installing test equipment at multiple locations within a particular configuration will be redundant, for results will virtually always be the same for a configuration with respect to the speed and latency for the facilities over which the RLEC has control (with differences due virtually entirely to variations in the types and uses of the customer premises equipment (“CPE”) in households -- which CPE the RLEC cannot control).

WTA believes that the number of RLEC test locations should be set at a much lower level – for example, 10-to-15 locations, or 2-to-3 percent of the subscribers on each CAF-required service tier. Testing might also be more efficient and effective if locations are required to be distributed throughout the distinct configurations or sectors of an RLEC’s service area rather than selected in some “random” manner.

Requiring the changing of sampled test locations every two years (*Order* at ¶40) will have an extremely expensive and disruptive impact upon RLECs. If rural households were surveyed, a very limited percentage would be found to be willing to participate in federally-required broadband performance testing. In many instances, getting a household to agree to participate in testing will require an RLEC to make multiple telephone calls, engage in lengthy and delicate negotiations (a fair number of which are likely to end in a “no”), and then send technicians and trucks to the home (which can entail lengthy round trips) multiple times to inspect CPE devices and install (and later remove) test equipment. To start this process anew every two years will be extremely time consuming and expensive, and it is very likely that situations will be encountered in future years where RLECs will be unable to obtain a sufficient number of test participants. For example, if a particular customer has complaints or bad experiences with respect to testing in which he or she participates, it is likely that his or her family, friends, neighbors or acquaintances will refuse to participate in future testing (which will exacerbate the already difficult problem of obtaining the designated numbers of rural test locations).

WTA proposes that RLECs be given more flexibility in selecting customer households as testing locations. For example, rather than rigid random selection and two-year turnover requirements, RLECs ought to be able to select willing customers (having no employment

relationship or controlling ownership interest in the company) in various portions of their service areas, and to continue testing such locations for as long as five (5) years.

### **3. Daily Testing Period**

The *Order* rejected both USTelecom's proposal for one speed test per day in each of four testing windows over an 18-hour period from 6:00 AM to 12 midnight, as well as the observations of WTA members that peak Internet usage may not coincide with prime time television (*Order*, ¶30). Rather, a daily testing period from 6 PM to 12 midnight was mandated. The *Order* did, however, indicate that the Bureaus "intend to revisit this requirement periodically to determine whether peak Internet usage times have changed substantially" (*Id.*).

The Measuring Broadband America ("MBA") data relied upon by the *Order* is likely to be weighted heavily towards urban usage patterns rather than those of rural consumers. In rural areas, people working on farms and ranches or telecommuting several days a week from home do not spend weekdays in the office and then catch up on their personal Internet activities at home in the evening. Rather, they are typically making personal and business use of their household Internet connections throughout the day.

Use of a 6 PM to 12 midnight testing period has two major implications for RLECs. First, there is likely to be considerable congestion at times on RLEC networks during the early evening hours (*e.g.*, 6 PM to 10 PM) due to use of Internet connections to obtain movies and other video streaming entertainment. Is this the type of Internet usage that the Commission wants to measure and study? And if an RLEC's middle mile service or network facilities or the customer's CPE are operating at or over their maximum capacity during the evening due to video streaming, will testing give rise to customer complaints if the additional test packets (no matter how minimal) during a time of peak or maximum congestion interfere with picture quality? Or looked at from the testing

perspective, if a customer is using all of his or her available bandwidth for video streaming, will the testing of the speed and latency of service at his or her location provide an accurate or an unrepresentative picture of the RLEC's service?

Second, evening and weekend test hours require RLECs to re-schedule one or more technicians from their regular daytime maintenance and installation duties and pay them premium or overtime wages. Whereas price cap carriers may have 24/7 operations centers and maintenance staffs, RLECs generally make due with small technical staffs (typically less than five technicians, and rarely more than 10) that work regular 40-hour weeks and are "on call" at other times if emergencies arise. Pulling one or two technicians away from their regular maintenance and installation work for the *Order's* specified four weeks of evening testing per year poses a substantial staffing and financial hardship for many RLECs, and is likely to result in significant delays in responding to and resolving concrete problems with respect to actual customer services.

## **B**

### **The *Order's* Framework Imposes Serious Implementation Problems Upon RLECs**

The *Order* also places implementation burdens upon RLECs that are extremely difficult (if not impossible) to meet and that are also inequitable. First, much of the equipment necessary for testing appears to be still in the development stage or not yet adapted and approved for the contemplated FCC testing purposes, and it is not clear at this time when the equipment will be available to RLECs or how much it will cost. Second, as indicated above, obtaining the consent of rural customers to participate in performance testing is going to be extremely difficult and likely to become a customer relations nightmare. Third, RLECs have no significant control over two of the three portions of the customer-to-IXP (Internet Exchange Point) path over which the *Order* requires performance testing to be conducted. Rather, the high-cost support that RLECs critically

need to extend, upgrade and operate their broadband networks can be withheld or reduced due to problems or defects with respect to CPE equipment and its use, and/or middle mile service and its routing. RLECs have virtually no control over either sector, and little or no ability to eliminate or repair or upgrade conditions or defects in them that slow service.

### **1. Uncertain Availability and Cost of Testing Equipment**

The *Order* presently requires the first performance measures data and certifications to be filed by July 1, 2020 and to include data for the third and fourth quarters of 2019 (*Order*, Appendix A). With testing required to begin in less than a year, WTA and its members do not yet know what equipment options will be available to choose from, when some equipment options will be offered for commercial sale and delivery, or how much they will cost. In addition, there has not yet been sufficient time for third parties, such as consulting or engineering firms, to determine whether they can develop, organize and offer performance testing services to RLECs at affordable prices.

WTA is aware that the *Order* lists three permissible testing methods: (1) Measuring Broadband America (“MBA”) testing with Whiteboxes; (2) existing network management systems, including ping tests and other off-the-shelf testing; and (3) provider-developed self-testing configurations, including software installed in residential gateways or equipment attached to residential gateways. (*Order*, ¶9).<sup>3</sup> WTA members recognize that Whiteboxes for MBA testing are being used by large carriers, but thus far have generally been unable to obtain Whitebox pricing estimates for their likely levels of demand. WTA members have spoken with several potential

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<sup>3</sup> The *Order* clearly states that ETCs can select any of the three testing options they wish. However, a sentence in paragraph 3 of the *Federal Register* summary (83 Fed. Reg. 42053) is somewhat ambiguous and can be read to indicate that ACAM and legacy rate-of-return support recipients may only select the MBA testing option. WTA requests that the Commission confirm that all companies, including A-CAM companies and cost-based rate-of-return RLECs, may select any of the three testing options.

vendors of other types of network management and residential gateway equipment that may be used for the required performance testing. All of these vendors appear to be working hard to develop useful products, but the development and de-bugging of broadband equipment takes time. The common experience of RLECs is that estimated equipment development and shipping schedules are rarely met, and that most newly developed equipment needs a couple of hardware or software upgrades before it works as intended. RLECs are also well aware that most new broadband equipment is developed and priced for price cap company use, and that it often takes several years for more affordable versions to become available that are better adapted for small company use.

If and when affordable new performance testing equipment becomes available in the marketplace, it is not going to be usable by all RLECs throughout their service areas. For example, a significant number of RLECs provide broadband service to part or all of their network via equipment whose manufacturer has gone out of business or whose manufacturer has discontinued the equipment line and no longer supports it. Such equipment remains fully functional and capable of providing service to customers. However, it is not likely to be compatible with some or all of the new performance testing equipment being developed. The affected RLECs either may not be able to test substantial portions of their network or customers, or may only be able to test if they can afford to replace fully functional equipment long before it is fully depreciated and while it still has years of remaining useful life.

WTA believes that the uncertain availability of testing equipment requires postponement of the scheduled commencement of performance testing in the Third and Fourth Quarters of 2019, at least for RLECs. If nothing else, a reasonable delay (for example, of two years or so) may permit RLEC-compatible equipment to become more available and affordable, and allow RLECs



and the Commission to determine whether capable and qualified third party testing vendors will be formed and offer viable services. More important, a postponement will give the Bureaus and the RLEC industry the opportunity to develop a new or revised performance testing framework that is better adapted to rural customer preferences and RLEC resources and operating circumstances.

## **2. Difficulties Obtaining Rural Customer Participation**

WTA is aware that Commissioners have heard complaints from consumers, including rural customers, that they are not getting the broadband speeds that they want or that they believe they are paying for. RLEC managers and employees live in their rural service areas, and become aware very quickly when their friends, neighbors and acquaintances are unhappy with the speed or quality of their broadband services. However, the fact that some customers will complain about the speed of their broadband service does not mean that 50-to-150 or so rural customers will go to the trouble of participating in formal performance testing of their broadband service, particularly during eight scattered seasonal weeks over a two-year period. RLEC staffs know their customers very well, and are fully aware of the opposition and customer relations problems that will arise if the performance testing regime mandated by the *Order* must be implemented in their rural service areas.

The Bureaus unfortunately do not appear to have investigated or otherwise considered the likely reactions of rural residents to the *Order's* testing framework, or their likely willingness to participate in broadband testing to be reported to the federal government. RLECs know that their customers want higher and higher broadband speeds. They also know that it is going to be very difficult, if not impossible, to convince many to participate in federally-required broadband

performance testing or to agree to allow Whiteboxes or other testing equipment with suspected surveillance potential to be installed in their homes.

WTA members report that it is very hard and time-consuming to get in touch with their rural customers to arrange for dates and times to install or upgrade broadband services that they actually have ordered and want. One RLEC general manager reports that he has had to assign a customer service representative on a full-time basis (at least 40 hours a week) to track down customers and schedule installations when his company extends or upgrades its broadband service in a neighborhood or cluster. Given the difficulties they regularly encounter in getting their rural customers to agree to and arrange for a time for technicians to come to their homes to install desired equipment and services, WTA members dread the time and effort that it will take to get 50-to-150 or so of their rural customers to agree to participate in broadband performance testing that they care little or nothing about, and in some cases actually oppose.

Experienced RLEC managers view performance testing as a customer relations nightmare. It is likely that if anything goes wrong with a customer's service or equipment during or within the month or so after a testing week, the RLEC will be blamed and the customer will demand that the problem be repaired or equipment be replaced at the RLEC's expense regardless of the actual cause.

WTA members are skeptical of the value of incentives (such as a period of free or reduced price service) in obtaining the consent of rural customers to participate in performance testing. To date, WTA is aware of no government or private surveys or research on the nature and amount of incentives that would be likely to be effective to convince rural customers to participate in testing. RLECs are aware that: (1) if one customer demands and receives a particularly lucrative incentive or incentive offer, word will quickly spread and every other customer will want the same or better

deal; (2) customers that accept an incentive to participate in the first week of quarterly testing are likely to demand more to continue to participate during the remaining seven quarterly testing weeks of the two-year period they are in a sample; and (3) the cost of incentives will increase with every new two-year testing sample. Incentives can and almost certainly will become a substantial cost element of an already very expensive testing process.

Finally, as indicated above, any and all problems and complaints that generate participating customer dissatisfaction during the initial two-year testing period will make it harder and harder for an RLEC to obtain willing participants for the second and subsequent two-year testing periods.

WTA reiterates its proposals above that a revised RLEC performance testing framework deal with rural customer participation reluctance, *inter alia*, by reducing the weeks of annual testing to one (or two, if necessary to correct network defects or problems), by reducing the numbers of locations to be tested, and by allowing more flexible selection of customer locations and their use for longer periods (*e.g.*, five years).

### **3. Lack of Control Over Middle Mile Service and Customer Equipment**

WTA understands that the Bureaus want to test whether customers are “able to enjoy high-quality real-time applications” (*Order*, ¶19). However, such testing – which would need to extend not only from the customer’s CPE to an IXP but then also via the Internet and further routing to the website or location with which the customer desires to communicate – is not practicable given the massive number of such potential website and other destinations. Consequently, the *Order*’s specified customer-to-IXP testing path does not capture the actual customer experience.

Even though it does not accomplish the *Order*’s stated goal, the adopted customer-to-IXP testing path threatens RLECs with the withholding or reduction of critical high-cost support due to problems or defects with respect to middle mile services and customer equipment over which

they have no control and which they have virtually no ability to upgrade or repair. WTA knows of no principle of statutory or common law that contemplates the imposition by a government agency of penalties upon an entity for matters over which the entity has no control and which it has no ability to avoid, improve or correct.

As the Commission is well aware, RLECs are small entities with minimal financial resources that have been, and continue to be, reliant upon high-cost support to make the transition from the former public switched voice network to today's evolving broadband network. During a time of growing broadband service demands, increasing broadband-related costs and limited high-cost support budgets, RLECs have been working hard and overcoming many obstacles to upgrade more and more of their networks to the Commission's supported broadband service levels. Where an RLEC receives ACAM or cost-based support that is conditioned upon building-out its network to provide specified levels of service to specific numbers of locations, it must construct its network to satisfy those requirements and will forfeit certain amounts of high-cost support if it does not.

WTA members have been using their ACAM and cost-based support to construct, deploy, upgrade and operate the broadband facilities and services for which such support was intended. They are confident that their networks have been constructed to provide the speeds and latency for which they are receiving support. However, they cannot predict or guarantee that customer-to-IXP performance testing will demonstrate the desired "full compliance" due to the potential for problems and defects with middle mile services for which they get no high-cost support and over which they have no control, and customer equipment over which they also have no control. These circumstances which they can do nothing about can result in penalties ranging from 5% to 25% of their critically needed high-cost support.

With respect to middle mile service, some RLECs have the good fortune of ready access to statewide or regional fiber networks such as the Kansas Fiber Network (29 Kansas RLECs), the Wisconsin Independent Network (31 Wisconsin RLECs) and Syringa Networks (12 Idaho RLECs). In addition, entities such as INDATEL Services LLC are forming consortia of state and regional fiber networks to aggregate traffic from the participating networks and deliver it to the Internet at one of several urban locations.

However, other RLECs are not so fortunate, and often have no option but to purchase whatever middle mile service is available (such as T-1 service) from the only interexchange carrier that has facilities capable of connecting them to the Internet. These RLECs do not know how or why the *Order* concluded that “the carrier can influence the quality of transport purchased and can negotiate with the transport provider for a level of service that will enable it to meet the Commission’s performance requirements” (*Order*, ¶19). In the typical remote RLEC’s experience, there is no “influence” or “negotiation” of any kind; rather, the RLEC is told what facilities the larger carrier has available and can provide, and what the price of the service will be. The RLEC’s only choice is to accept what is essentially a “take-it-or-leave-it” offer. WTA is aware of no instance where an RLEC has been able to “negotiate” or otherwise persuade or force a larger carrier having a monopoly over a middle mile route to upgrade its facilities or otherwise improve the quality or pricing of its middle mile service. If the Commission intends to penalize RLECs that have no choice but to use poor quality middle mile services, it should consider providing high-cost support for middle mile expenses and developing a mechanism that would allow RLECs to request and the Commission to require the upgrade of middle mile facilities and services by the interexchange carriers providing them.

Moreover, even where an RLEC is able to secure good middle mile service from an affiliated or non-affiliated entity, it has no control over how its traffic will be routed after it hands it off to the initial middle mile service provider. If an RLEC is required to test speeds from its customer to the Denver IXP, it has no guarantee that its traffic will go directly to the Denver IXP. Rather, congestion, line cuts or algorithms somewhere in the network could result in adjustments that route testing and other traffic through the Dallas IXP and/or the Phoenix IXP before it gets to Denver – causing delays and adversely impacting test data for speed and latency.

Similar uncontrollable problems and delays can occur due to low quality or over used customer equipment. Broadband service is not powered from the central office or connected at the network interface device (“NID”) outside the house like voice service. Rather, fiber-optic broadband service is generally connected via an optical network terminal (“ONT”) inside the customer’s house and then to the customer’s modem and/or WiFi router. Many customers exercise the right to buy their own modems and/or WiFi routers.

One problem is that some customers buy low quality and inexpensive CPE. And whether CPE was expensive or inexpensive when it was purchased, its performance degrades over time due to a variety of causes (including component failures, electrical surges, heat build-up, water damage, poor grounding, frayed inside wiring, and child and animal damage), but customers generally do not replace or upgrade their equipment until it stops working. WTA members estimate that as much as 95 percent of their broadband trouble calls result in determinations that the problem was caused by the defects or degradation regarding the customer’s equipment. In such situations, the RLEC technician can advise the customer to replace or upgrade his or her equipment if the problem is to be resolved and service improved, but cannot force the customer to do so.

Moreover, even where customers have purchased and installed high quality modems and/or WiFi routers, they often produce congestion that slows down their actual service speeds by using applications with extremely high bandwidth requirements or by connecting too many different devices (such as computers, laptops, notebooks, smartphones, and smart TVs). For example, if a customer is using the entire capacity of its household modem or WiFi router to stream video programming, a speed test may not be able to be conducted from the location during the time the streaming is occurring, or the initiation and return of the test packet may be delayed so much that the test data shows “results” that are so slow as to be wholly inaccurate and misleading depictions of the speed and latency of the service provided by the RLEC.

WTA is aware that the Order adopted an “80/80” standard that it intended to serve as a “cushion” to address certain testing issues, including lack of control over backhaul (*Order*, ¶53). However, the Order offers no explanation as to how and why the Bureaus adopted “80/80” rather than some other numerical standard, nor any evidence that an “80/80” adjustment accurately accounts for middle mile quality and congestion problems as well as CPE quality and congestion problems. It is wholly conceivable that low-quality middle mile service or CPE and/or heavily congested middle mile routing or CPE usage could result in slowdowns outside RLEC control that require far more than a 20 percent “cushion.”

Given that it is not practicable and is likely impossible to test the actual customer experience of communicating with websites and other locations and that the results of the *Order*'s performance testing are used virtually entirely to determine whether RLECs retain or lose portions of their high-cost support they need to construct, upgrade and operate their networks, the most reasonable and equitable solution is to confine the performance testing area to the RLEC's own network and only such network. It makes no practical or equitable sense to penalize RLECs by

reducing their high-cost support due to middle mile and/or customer equipment shortcomings or congestion over which they have no control.

**C**  
**The *Order* Imposes Excessive Costs and Penalties  
That Will Impair RLEC Broadband Deployment**

WTA has long asserted that the imposition of additional regulatory and reporting costs upon RLECs reduces dollar-for-dollar the amount of net high-cost support available to upgrade and operate their broadband networks.

With respect to the *Order's* performance testing framework, the costs to RLECs are not yet able to be fully and accurately estimated, but it is readily discernible that they will be very substantial. Several WTA members roughly estimate that the testing costs can be as much as \$250,000 per year or more for even a relatively small RLEC.

The estimated RLEC performance testing costs include, but are not limited to:

1. New RLEC testing equipment, plus subsequent upgrades, annual licenses and vendor support charges;
2. Modifications to existing network equipment (or replacements of such equipment) to accommodate testing equipment and software;
3. Hiring and training of additional technical and customer service employees to conduct testing and negotiate customer consents and arrangements;
4. Evening overtime pay for technicians conducting testing;
5. Additional service trucks and tools for added technical employees;
6. Truck rolls to rural test households to install and remove testing equipment;
7. Negotiations with customers and handling of test-related customer complaints;
8. Compilation and reporting of performance test data;
9. Increased middle mile costs: and
10. Incentive payments or bill credits.



In the case of the contemplated performance testing framework, these costs will be substantial and will reduce the amount of net high cost support available for the extension, upgrade and operation of RLEC broadband services. To add insult to injury, if after spending hundreds of thousands of dollars on the testing currently required by the *Order*, an RLEC is deemed not to be in “full compliance” and loses 5%-to-25% of its high-cost support for the year, the end result of the performance testing framework for some RLECs will be to deprive them of the funding necessary to deploy and provide the high speed broadband services that both the Commission and their rural customers want and that the testing framework is intended to ensure.

#### **D Conclusion**

WTA respectfully requests the Commission to review and revise the *Order* and its proposed framework for the implementation of the Commission’s broadband performance testing and reporting requirement as it relates to RLECs. As a first step, WTA asks the Commission to postpone the scheduled Third and Fourth Quarter 2019 commencement of testing, at least for RLECs. A reasonable postponement (*e.g.*, for two years or so) should permit RLEC-compatible equipment to become more available and affordable, and allow qualified third party vendors to determine whether they can and will offer testing services for RLECs.

More importantly, a postponement will give the Bureaus and the RLEC industry the opportunity to develop a new or revised performance testing framework for RLECs that is better adapted to rural customer needs and preferences and to RLEC resources and operating circumstances. Given the limited resources and small customer bases of RLECs, the amount of performance testing required by the *Order’s* framework can and should be greatly reduced – in terms of the number and distribution of testing weeks (*e.g.*, one week per year – possibly two if

upgrades or repairs are required – rather than quarterly), the number of test locations (*e.g.*, 10-to-15 locations, or 2-to-3 percent of the subscribers on each CAF-required service tier, with more flexible selection processes and less frequent new samples), the timing and number of hourly tests per day (*e.g.*, less focus on evening video primetime), and the limitation of testing to the RLECs’ own networks. These changes and others are needed to address the difficulties of obtaining rural testing participants, the high costs of the *Order’s* testing framework, and the inability of RLECs to control, avoid or repair delays and disruptions caused by poor quality or congested middle mile services and/or customer equipment. In addition, the Commission should not reduce or withhold critical high-cost support from RLECs due to middle mile and customer equipment issues that they cannot control, upgrade or repair.

In the end, a new or revised RLEC performance testing network needs to be effective in monitoring RLEC use of federal high-cost support for the intended broadband deployment purposes and correcting course if some RLECs are not deploying the supported services at the required pace. However, the framework should not entail such major cost increases and revenue reductions that RLECs will lose substantial amounts of the net high-cost support that they urgently need to extend, upgrade and provide the very high-speed and low-latency broadband services that the Commission’s performance testing requirements are intended to encourage.

Respectfully submitted,  
**WTA – Advocates for Rural Broadband**

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