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

In the Matter of	)
	)
Performance Measures for Connect America	) CC Docket No. 10-90
High-Cost Universal Service Support Recipients	)

COMMENTS
OF
WTA – ADVOCATES FOR RURAL BROADBAND

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Summary

WTA-Advocates for Rural Broadband ("WTA") has reviewed the USTelecom broadband performance testing template that was developed primarily by and for price cap carriers. Whereas WTA takes no position regarding the suitability of the template for price carriers, critical differences between rural local exchange carriers ("RLECs") and price cap carriers render the template inequitable and inappropriate as a vehicle for testing the broadband performance of RLECs. Rather, separate broadband testing procedures are needed to obtain a fair, accurate and productive measure of RLEC broadband performance.

The most significant difference between RLECs and price cap carriers is that RLEC networks are generally remote and far removed from IXPs, and must route their broadband traffic over lengthy middle mile routes operated by entities, often multiple entities, over which they have little or no control. The most efficient, effective and equitable solution to these indirect IXP connectivity, distance and control problems is to require RLECs to conduct performance testing solely and entirely with respect to their own networks. This may not measure the full broadband service experience of customers, but will allow the Commission to determine whether individual RLEC recipients have used their federal high-cost support funds to invest in, construct and deploy broadband facilities at the required speeds and whether they are making the efforts within their control to accomplish the intended result of preserving and advancing voice and broadband service for all Americans.

Another substantial difference between RLECs and price cap carriers is that RLECs are much smaller in all relevant aspects including customer bases, revenues, and employees. A sample size of 50 locations per state may make sense for AT&T or Verizon because it is far less than one percent (1.0%) of the customer locations that they serve in most states. However, a

more reasonable test size for each RLEC in each state would be the lesser of: (a) 50 locations; or (b) five percent (5.00%) of the RLEC's customer locations in the state. This alternative would not require 50 locations to be tested by an RLEC unless and until the RLEC provides broadband service to at least 1,000 locations in the state. RLEC test procedures will also need to recognize that ACAM Path participants have varied service obligations involving the provision of different broadband speeds to differing numbers of locations in each state, and will need to divide their total "50 or 5%" samples in each state into three different speed sub-categories for testing purposes.

Finally, while WTA recognizes the Commission's need for performance test data to monitor progress toward its broadband service goals and to ensure that federal high-cost support is being used for the intended purposes, it urges the Commission to minimize the burdens, complexities and costs of performance testing upon RLECs so that they may devote more of their budget-constrained USF support and other limited financial resources to the upgrade and operation of their broadband facilities and services.

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WTA – Advocates for Rural Broadband ("WTA") hereby submits its comments in response to the Public Notice (*Comment Sought on Performance Measures for Connect America High-Cost Universal Service Support Recipients*), WC Docket No. 10-90, DA 17-1085, released November 6, 2017.

WTA and its members have worked long and hard to provide voice and broadband services to their rural customers that are reasonably comparable in quality and price to the services available in urban areas. As recipients of federal high-cost support, WTA members understand that the Commission needs to establish performance goals and measures that will enable it to determine not only whether federal high-cost support funds are used for the intended purposes, but also whether such funds are accomplishing the intended results, particularly preserving and advancing voice and broadband service for all Americans.[1] The Commission has also noted that performance goals and measures may assist in identifying areas where additional action – including action by state regulators, Tribal governments and other entities – is necessary to achieve universal service, and that they may improve participant accountability.[2]

[1] *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, at para. 49 (2011) (*USF/ICC Transformation Order*).
[2] *Id.*

WTA is aware of the recent USTelecom proposal for broadband speed and latency measurement reporting and compliance by recipients of Connect America Fund ("CAF") support that provide broadband service to fixed locations.[3] WTA understands that the USTelecom proposal focused predominately upon broadband performance testing for price cap carriers, and that these large carriers have requested that the measurement rules and standards applicable to them be clarified as soon as possible because the three-year CAF Phase II compliance milestone and the CAF Phase II auction are approaching.

WTA takes no position as to whether the USTelecom proposal should be adopted as the broadband performance measurement procedures and requirements applicable to the networks and operations of price cap carriers. However, a performance measurement regime designed by and for the large price cap carriers is neither appropriate nor workable nor equitable for WTA members and other rural local exchange carriers ("RLECs") that differ substantially from the price cap carriers. In addition to being much smaller in all relevant aspects (including customer bases, revenues, and employees), RLECs also vary significantly from most price cap carriers in that their networks and service areas generally are located far from Internet core peering interconnection points ("IXPs") and are connected to IXPs only indirectly over many miles of transport facilities which are often operated by multiple different entities.

WTA believes that there must be a separate RLEC-oriented performance measurement regime that can constitute a fair, accurate and productive test of whether RLECs are using their Universal Service Fund ("USF") support for the intended purposes, whether they are accountable for the intended service results, and whether additional action is necessary to achieve universal service. First, any broadband performance measurement system for RLECs must recognize the

[3] Letter from Kevin Rupy, Vice President, Law & Policy, USTelecom, to Marlene Dortch, Secretary, FCC WC Docket No. 10-90 (filed May 23, 2017) ("*USTelecom Ex Parte*")

fact that most small rural networks are too remote to be able to connect directly with IXPs, but rather must obtain middle mile transport and other IXP connections from one or more non-controlled, often unrelated, third parties. This lack of direct connectivity and relationships with IXPs renders testing of the entire customer-to-IXP "route" very difficult and complex, if not impossible, to perform, as well as furnishing little or no information capable of identifying the facilities or entities responsible for any performance shortcomings. Consequently, broadband speed and latency testing for RLECS should be focused solely and entirely upon the facilities that they can actually control and upgrade -- that is their own networks. Second, an effective and efficient performance testing and compliance system for RLECs must take into consideration the differing build-out obligations of the Alternative Connect America Cost Model ("ACAM") Path and the legacy Rate-of-Return ("RoR") Path RLECs, as well the limited staffs, customer bases and financial resources of all RLECs. Performance testing for RLECs needs to be carefully designed and adjusted so as to generate useful information without diverting critical time and dollars away from the extension, upgrade and operation of their broadband facilities and services.

I
WTA – Advocates for Rural Broadband

WTA is a national trade association representing more than 340 rural telecommunications providers that offer voice, broadband, and video-related services in rural America. WTA members are predominately RLECs that serve some of the most rugged, remote and/or sparsely populated areas of the United States. Their primary service areas are comprised of farming and ranching regions, isolated mountain and desert communities, and Native American reservations. They must construct, operate and maintain their networks under conditions of climate and terrain ranging from the deserts of Arizona to the lakes of Minnesota to the wilderness and villages of

Alaska, and from the valleys of Oregon to the plains of Indiana to the hills of Tennessee and to the mountains of Wyoming. The major common features of these diverse rural areas are the much longer than average distances that must be traversed and the much higher per-customer costs of constructing, upgrading, operating and maintaining broadband networks than in urban and suburban America. WTA members are providers of last resort to many remote areas and communities that are both very difficult and very expensive to serve.

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. WTA members are all RoR carriers. Approximately forty-five percent (45%) of WTA's members are included among the 207 RoR companies that have elected to receive federal high-cost Universal Service Fund ("USF") support for the next ten years pursuant to the ACAM Path.[4] With the exception of several Alaska Plan companies, the rest of WTA's members have remained on the legacy RoR Path.

WTA members have been investing in broadband upgrades to the rural local exchange networks that they operate and over which they have control. Some have been able to deploy fiber-to-the-home ("FTTH") or fiber-to-the-curb ("FTTC") facilities in some or all of their local exchanges. However, most have elected or been forced by limited resources to take the more gradual approach of extending fiber optic trunks into their second mile and "last mile" (often, last 10-to-50 mile) networks in multiple discrete steps and completing their customer loops with hybrid fiber-copper technology such as digital subscriber lines ("DSL"). Starting in 2017, most

[4] See Public Notice (*Wireline Competition Bureau Authorizes 35 Rate-of-Return Companies to Receive More Than $51 Million Annually in Alternative Connect America Cost Model Support And Announces Offers of Revised A-CAM Support Amounts to 191 Rate-of-Return Companies to Expand Rural Broadband*), WC Docket No. 10-90, DA 16-1422, released December 20, 2016; and Public Notice (*Wireline Competition Bureau Authorizes 182 Rate-of-Return Companies to Receive $454 Million Annually in Alternative Connect America Cost Model Support to Expand Rural Broadband*), WC Docket No. 10-90, DA 17-99, released January 24, 2017.

WTA members are obligated by Sections 54.308(a)(1) [ACAM Path] or 54.308(a)(2) [RoR Path] of the Commission's Rules to upgrade their "last mile" networks by deploying facilities and services at various speeds (*e.g.*, 25/3 Mbps, 10/1 Mbps and/or 4/1 Mbps) to specific numbers of locations within their local exchange service areas as a condition of receiving federal high-cost support. These local exchange areas are typically situated in remote rural areas that are at least 50-to-100 miles, and often hundreds of miles, away from the nearest IXP.

II
Absence of Direct IXP Connectivity for RLECs Requires Performance Testing Limited to Own Networks

AT&T, Verizon and other large price cap carriers appear able to connect most or all of their networks directly to the Internet over facilities that they control all of the way, or virtually all of the way, to the IXPs. In stark contrast, the networks of WTA members and other RLECs are situated predominately in rural areas far removed from the "closest" potential IXPs, and must route the broadband traffic of their customers to such IXPs over tens or hundreds of miles of middle mile and other transport facilities operated by entities, often multiple entities, over which they have little or no control.

A price cap carrier is likely to be able to measure the "full customer experience" by testing broadband speeds and latency over "customer-to-IXP" and "IXP-to-customer" routes it controls in whole or major part. Again, in stark contrast, many RLECs have little, if any, idea of what actual route or routes a specific item of their customer or test traffic may actually take to and from the Internet. RLECs have little or no ability to determine which of the multiple networks over which a specific test messages may have travelled was responsible for any failure to achieve the desired broadband speed or latency, or on which network or in which areas service improvements may need to be made in order to attain the desired speed or latency.

Some WTA members and other RLECs are minority owners of, or participants in, 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 ("INDATEL") 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.[5]

However, even where RLECs are minority owners or significant participants in such networks, they do not have the same or a comparable level of IXP access or of control over the entire customer-to-IXP route as large price cap carriers that can connect their own networks directly with IXPs. Rather, such RLECs generally have little or no control over the routing or speed of their traffic once they hand it off to their state or regional fiber network. For example, if the state network participates in the INDATEL consortium, it may use a third party carrier such as Level 3 to connect to INDATEL. Somewhere along the route, one or more of the third parties – the state network, Level 3 or INDATEL – will determine in some manner (possibly via an algorithm) that current congestion and other factors make it most efficient to deliver the traffic to the Internet at a particular one of the six INDATEL locations. Hence, neither the RLEC nor any of the intermediate carriers may readily be able to determine the destination IXP site in advance. And if unexpected or unusual congestion on one or more of the three intermediate networks slows down the traffic of an RLEC from time to time, it will be difficult for the RLEC to determine the location and cause of the slowdown, or to control whether, how or when the problem can be corrected.

[5] For example, INDATEL connects with the Internet at six points of presence: in Seattle, Denver, Dallas, Minneapolis, Chicago and Ashburn (Virginia).

Performance tests and measurements are likely to be even more difficult, complicated and/or unreliable for WTA members and other RLECs that lack access to state and regional fiber networks and that must depend instead upon the middle mile transport facilities and other connectivity arrangements that are available for purchase or lease from unrelated third parties such as former Regional Bell Operating Companies ("RBOCs"). Given the remote nature of their rural service areas and the long distances to IXPs, some of these RLECs are likely to lack access either to state-of-the-art middle mile transport or to competing middle mile providers, and may have no option but to use tens or hundreds of miles of aging copper or low-capacity fiber transport facilities that the only available third party middle mile provider has little or no incentive to maintain or upgrade.

Performance testing on a "customer-to-IXP" basis is likely to be very difficult, time consuming, expensive and unreliable under these circumstances. The RLEC has no relationship with the manager of the IXP facility, which is likely to be located tens or hundreds of miles away, and may have to send technical personnel to and from the distant IXP on multiple occasions. More important, test measurements can be substantially impacted by the quality and capacity of the middle mile facilities and by both normal traffic congestion and unexpected spikes in traffic at the time of testing. Particularly if sub-standard test measurements can result in remedial obligations and/or withholding or reduction of USF support, it is wholly unfair and ineffective to penalize RLECs for the shortcomings of, or congestion on, third party middle mile facilities which they have no choice but to use and over which they have no control.

The most efficient, effective and equitable solution to the problems, complexities and lack of control resulting from the inability of most RLECs to connect directly with an IXP is to require performance testing solely and entirely with respect to an RLEC's own network. This

will not measure the full broadband service experience of customers, but will allow the Commission to determine whether individual RLEC recipients of USF have used their federal high-cost support funds to invest in, construct and deploy broadband facilities at the required speeds and whether they are making the efforts within their control to accomplish the intended result of preserving and advancing voice and broadband service for all Americans. Such individual RLEC network testing would eliminate most of the complexities and costs of coordinating testing with other entities – including state and regional fiber networks, unrelated third party middle mile providers, and IXPs. RLECs could schedule their annual performance testing during the two-week period they desired, purchase and use the test equipment that best meets their needs, minimize the travel obligations and times of their staffs, and focus entirely upon performance factors within their control -- that is, whether their networks provide the requisite broadband speeds and latency throughout the areas that they directly serve.

III
Adjustments to Price Cap Testing Procedures Will Be Required for Smaller USF Recipients

WTA agrees with USTelecom that performance testing should be required to be conducted only for actual service locations. It makes sense to require both large and small carriers to undertake performance testing only at locations where there are existing customers receiving service.

To the extent that the Commission directs RLECs and other small ETCs to conduct performance testing solely and entirely within their own networks, WTA agrees with USTelecom that such testing can be conducted over an annual two-week period and that daily testing can take place within up to four time periods (for example, 6:00 AM to 10:30 AM; 10:30 AM to 3:00 PM; 3:00 PM to 7:30 PM; and 7:30 PM to midnight). WTA is aware that some of its

members believe that Internet usage may not have the same daily peak usage period as prime time television, but rather is likely to be spread out more widely through the day (with at least a significant jump during the 3:00-to-4:00 PM hour when many adults and school children return home) due to such things as farm and ranch usage, work from home, school homework, after-school videos and gaming, social media participation, home shopping, and retiree business and social activities.

WTA expresses no preference for a certain type or types of test equipment. Given that a substantial variety of testing equipment appears to be available, WTA encourages the Commission to give RLECs and other ETC's the flexibility to select and deploy the testing equipment that best meets their technical needs and financial constraints. Such flexibility depends a lot upon the ability of RLECs and other small ETCs to conduct performance tests solely and entirely within their own networks. If they are required to coordinate customer-to-IXP testing over middle mile facilities shared with numerous other service providers, their testing equipment options and costs are likely to be narrowed or determined by the choices of the middle mile service provider, the IXP manager and/or the other entities sharing the facilities.

A second significant area where RLEC circumstances differ substantially from the price cap conditions underlying the USTelecom proposal is with regard to the number of locations required to be tested. Whereas 50 locations is far less than one percent (1.0%) of the customer locations served by AT&T or Verizon within many states, it is a much more significant portion of the customer locations served by most RLECs in most states. USTelecom's proposed alternative of twenty percent (20.0%) of an ETC's locations in a state would provide no relief from the testing burden for RLECs once they serve 250 locations in a state. A more reasonable alternative for setting the performance test sampling size for each RLEC in each state would be

the LESSER of: (a) 50 locations; or (b) five percent (5.00%) of the RLEC's locations in the state. This alternative would not require 50 locations to be tested by an RLEC unless and until the RLEC provides broadband service to at least 1,000 customer locations in the state.

Performance testing is further complicated with respect to RLECs that have elected the ACAM Path. Given that ACAM participants have varied service obligations involving the provision of 25/3, 10/1 and 4/1 speeds to differing numbers of locations in each state, they will need to divide their total "50-or-5%" samples in each state into three different speed sub-categories for testing purposes.

WTA understands that some performance testing within an RLEC's network can be accomplished from the RLEC's router or digital subscriber line access multiplexer ("DSLAM") to the customer premises equipment ("CPE"), without having to send a technician to the customer's home. Other types of performance testing appear to require installation or delivery of test equipment at customer locations. In this latter case, the tested locations are likely to be chosen predominately on the basis of customer consent rather than random selection. Many rural residents are likely to have privacy and other concerns regarding the placement of measuring devices in their homes or elsewhere on their property to test their broadband service. In some areas, RLECs may find it difficult to find enough households that agree to be tested in order to meet the required minimum sample size. Moreover, in the remote and sparsely populated areas served by WTA members, sending trucks and technicians to as many as 50 scattered locations to install or deliver testing equipment, address any problems or malfunctions during testing, and collect the testing equipment when the test period is completed constitutes an expensive task that can consume hundreds of man-hours.

Finally, WTA urges the Commission not to subject RLECs and other small ETCs to the five-tier compliance and penalty system proposed by USTelecom. WTA understands that ACAM Path participants have agreed to certain performance penalties as part of their election and is not seeking reconsideration or modification thereof. However, at a time when RLECs are struggling to deploy and upgrade their broadband facilities and services in the face of insufficient high-cost support and budget control mechanism "haircuts," withholding or taking away high-cost support for failure to meet certain performance levels will deprive RLECs of the very dollars that they need to make the upgrades necessary to meet their broadband performance goals. WTA understands the concepts of "deterrence" and "punishment," but believes that they should be wielded only against ETCs that clearly have the financial resources to meet their broadband service obligations but elect not to do so. Where an RLEC is struggling to meet the broadband needs of its customers due to inadequate resources, reducing its USF funding due to inadequate performance test results just makes it more difficult for it to make the necessary improvements to its network.

Overall, WTA has long asked the Commission to weigh the costs of its information and regulatory needs with respect to the net amounts (that is, USF disbursements, minus the costs of complying with USF-related reporting, testing, and other regulatory obligations) of the critical federal USF revenue stream available to upgrade RLEC networks and improve voice and broadband services. While WTA recognizes the Commission's need for performance test data to monitor progress toward its broadband service goals and to ensure that federal USF is being used for the intended purposes, it urges the Commission not to apply the proposed USTelecom testing regime for price cap carriers to the much smaller and differently situated RLECs. Rather, a separate RLEC-oriented performance testing process should be adopted in order to reduce the

burdens, complexities and costs of performance testing upon RLECs and to allow them to devote more of their USF support and other limited financial resources to the upgrade of their broadband facilities and services.

IV
Conclusion

WTA believes that the USTelecom performance testing template for price cap carriers is not equitable or appropriate for RLECs, and that separate broadband testing procedures are needed to implement a fair, accurate and productive measure of RLEC performance.

The most significant difference between price cap carriers and RLECs is that RLEC networks are generally located far from IXPs, and must route their broadband traffic over lengthy middle mile routes operated by entities, often multiple entities, over which they have little or no control. The most efficient, effective and equitable solution to these indirect IXP connectivity, distance and control problems is to require RLECs to conduct performance testing solely and entirely with respect to their own networks. This will not measure the full broadband service experience of customers, but will allow the Commission to determine whether individual RLEC recipients have used their federal high-cost support funds to invest in, construct and deploy broadband facilities at the required speeds and whether they are making the efforts within their control to accomplish the intended result of preserving and advancing voice and broadband service for all Americans.

The other substantial difference between price cap carriers and RLECs is that RLECs are much smaller in all relevant aspects including customer bases, revenues, and employees. Whereas 50 locations is far less than one percent (1.0%) of the locations served by AT&T or Verizon within many states, a more reasonable test size for each RLEC in each state would be the lesser of: (a) 50 locations; or (b) five percent (5.00%) of the RLEC's locations in the state.

This alternative would not require 50 locations to be tested by an RLEC unless and until the RLEC provides broadband service to at least 1,000 customer locations in the state. RLEC test procedures will also need to recognize that ACAM Path participants have varied service obligations involving the provision of different broadband speeds to differing numbers of locations in each state, and will need to divide their total samples in each state into three different speed sub-categories for testing purposes.

Finally, while WTA recognizes the Commission's need for performance test data to monitor progress toward its broadband service goals and to ensure that federal high-cost support is being used for the intended purposes, it urges the Commission to minimize the burdens, complexities and costs of performance testing upon RLECs so that they may devote more of their budget-constrained USF support and other limited financial resources to the upgrade and operation of their broadband facilities and services.

Respectfully submitted,
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