

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, DC 20554**

In the Matter of	)	
	)	
Establishing the Digital Opportunity Data Collection	)	WC Docket No. 10-90
	)	
Mordernizing the FCC Form 477 Data Program	)	WC Docket No. 11-10

**COMMENTS OF  
WTA - ADVOCATES FOR RURAL BROADBAND**

**WTA – Advocates for Rural Broadband**

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## Summary

WTA – Advocates for Rural Broadband applauds the Commission’s efforts to create more granular broadband maps that can be used to determine more accurately the nature and extent to which areas are served, underserved, or unserved by broadband. WTA members are committed to serving their local communities and have a wealth of experience in delivering world-class communications to the hardest-to-serve areas in the country.

The Commission’s decision to use polygon shapefile reporting, and potentially create a location fabric, is a vast improvement over the current Form 477 regime that has overstated the amount of locations served. However, as the Commission is well aware, small providers have limited staff and resources such that new reporting requirements should be carefully balanced so as to provide necessary information without becoming overly burdensome.

WTA notes that despite best efforts to collect more granular data, virtually all data is subject to errors, either deliberate or negligent. To minimize this problem, the Commission must institute a regularly occurring challenge process that can be used to verify the data.

WTA has concerns with the Commission’s proposal to adopt “crowdsourcing” as a method of verifying coverage maps. There are a number of reasons, usually out of an RLEC’s control, that could explain a customer not receiving the speed and latency measurements they’re expecting. As such, WTA believes that crowdsourced information should be used to identify potential problems and inaccuracies, but not to resolve them.

The Commission must also adopt rules that accurately portray fixed wireless coverage. WTA notes that many WISPs have overstated coverage via Form 477 data, making many areas ineligible for federal funding. However, due to fundamental differences between fixed and

mobile wireless, WTA does not believe that using mobile wireless mapping standards will lead to accurate maps.

WTA believes the Commission must adopt policies that promote the deployment of future-proof networks that will be capable of very low latency. Latency is critical to the overall performance of the network and is a major determinant of network quality. Therefore, WTA believes the Commission should collect data on latency and should create a new tier of  $\leq 25$  ms for providers to report.

Finally, this data collection can be used to prevent overbuilding and make sure every federal dollar is spent on those most in need. Specifically, WTA suggests that providers annually report their existing fiber connections to schools in order to assist USAC in its evaluation of proposed special construction projects in the E-rate program.

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**Comments of  
WTA – Advocates for Rural Broadband**

WTA – Advocates for Rural Broadband (“WTA”) files these Comments in response to the Report and Order and Second Further Notice of Proposed Rulemaking “Report and Order and Second Further Notice,” “Report and Order,” or “Further Notice”) adopted by the Commission on August 1, 2019.<sup>1</sup> In its Further Notice, the Commission seeks comment on how it can collect the most granular, accurate, and useful data possible.<sup>2</sup>

WTA represents more than 340 small rural local exchange carriers (“RLECs”) that offer local voice, broadband, and video-related services to customers in some of the hardest to serve areas in our country and are providers of last resort in their communities.

WTA agrees that better mapping is critical to enable the Commission and others to determine the speeds and quality of broadband service that is available throughout the country, as well as what areas are served, underserved, and unserved. WTA members are on the front lines of closing the digital divide and have first hand experience as to the accuracy and reliability of existing broadband service data. The current Form 477 regime has allowed all locations in a

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<sup>1</sup> Establishing the Digital Opportunity Data Collection, WC Docket Nos. 19-195, 11-10, Report and Order and Second Further Notice of Proposed Rulemaking, adopted August 1, 2019, “Report and Order and Further Notice,” “Report and Order,” or “Further Notice.”

<sup>2</sup> Id. at ¶ 1-4.

census block to be considered “served” by a particular high-speed broadband connection (and thus rendered entire census blocks ineligible for high-cost support ) even if only a few locations in the census block have the subject high-speed connection. Similarly, the current FCC Form 477 regime has also rendered ineligible for high-cost support locations in a census block that very much need continued federal support because some entity has begun to offer service in just a small portion of the census block.

Therefore, WTA supports the actions that the Commission has taken in the Report and Order and Second Further Notice to create a new data collection and produce more accurate broadband deployment maps. The use of shapefiles, and potentially a broadband location fabric, is a vast improvement over the current FCC Form 477 regime. However, the Commission still needs to develop and implement adequate mechanisms to verify broadband mapping and coverage data. While a crowdsourcing platform is likely to be useful to spot potential coverage errors, a challenge process for fixed broadband is the best way to ensure that providers do not overstate their coverage and that necessary corrections to the broadband map are made in a timely manner. Such a challenge process can be done efficiently in the fixed broadband context. Without such a challenge process, a critical tool for closing the digital divide will go unused and many areas will continue to lack adequate funding.

Relatedly, crowdsourcing can be a beneficial means of locating areas where further broadband coverage investigation is necessary. However, for a number of reasons, tests submitted via a crowdsourcing platform may not accurately reflect the quality of the customer connections at issue. As such, WTA suggests that the crowdsourced data should be used for informational purposes only.

In addition, the Commission should adopt rules that ensure the accuracy of the coverage maps submitted by fixed wireless providers. Rather than submitting coverage of where they believe they can offer service, fixed wireless providers should submit coverage maps based upon where they know they can offer broadband service with certainty. WTA also supports the Commission's proposal to include latency in reporting as it is a crucial metric for measuring the quality of a broadband connection. This new data collection can also be used to gather information on how many schools are already connected with fiber in order to prevent overbuilding through the E-rate program.

## **I**

### **Collecting More Granular and Standardized Data through Shapefiles and a Location Fabric Will Highlight Areas Most in Need**

WTA applauds the Commission for its decision to seek more granular broadband data that will enable the development of more accurate broadband service maps. In the Report and Order, the Commission adopts rules that will require providers to submit their service territories in shapefile format and asks questions in the Further Notice on how this should be implemented. The Further Notice also seeks comment on whether or not the Commission should create a fabric of all serviceable locations in the country. Studies performed by Connected Nation in Kansas and CostQuest in Missouri and Virginia serve as good examples of how improved mapping techniques can show where areas are served or unserved with broadband. Further, the two need not be mutually exclusive as shapefiles can eventually be placed over the fabric when it is eventually developed.

Of note, Connected Nation’s study in Kansas highlighted that 95,000 people or about 3.5% of the state’s population do not have access to broadband.<sup>3</sup> CostQuest’s study revealed that up to 38% of locations considered served in Missouri and Virginia actually lack broadband. CostQuest also revealed that “48% of the location counts in rural census blocks are different from current estimates used by the FCC”<sup>4</sup> and found that standardized GIS reporting across all providers could enhance the accuracy of those locations.<sup>5</sup> Therefore, these studies have been successful at proving the possibility of attaining more granular data.

WTA advises the Commission that regardless of the method used, it is important to find standardized and reliable data that can be used by providers and policymakers alike. RLECs and other small providers have limited staff and expertise that can be dedicated to providing the level of accuracy necessary for submitted maps to be reliable. Many RLECs have invested in GIS technologies for broadband mapping purposes. However, coming into compliance with a new system will likely take time and could put a strain on limited staff and financial resources. In fact, WTA agrees with Connected Nation’s recommendation that a “significant number would face a burden in both time and financial resources”<sup>6</sup> and that the Commission should offer resources to assist small providers in complying.

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<sup>3</sup> Corinne Boyer, New Kansas Broadband Map Shows Internet Accessibility, And The Areas Sans Service May Surprise You, KMUW: Wichita 89.1, Aug. 1, 2019, <https://www.kmuw.org/post/new-kansas-broadband-map-shows-internet-accessibility-and-areas-sans-service-may-surprise-you>.

<sup>4</sup> Testimony of James W. Stegeman, President of CostQuest Associates, Before the Subcommittee on Telecommunications and Technology, United States House of Representatives, September 11, 2019, at 5, [https://energycommerce.house.gov/sites/democrats.energycommerce.house.gov/files/documents/Stegeman\\_Testimony%20%2BApend.%20B-C\\_0.pdf](https://energycommerce.house.gov/sites/democrats.energycommerce.house.gov/files/documents/Stegeman_Testimony%20%2BApend.%20B-C_0.pdf).

<sup>5</sup> Id. “In our pilot, the provider submitted locations for 61% of rural homes and businesses were off by over 7.6m (25 feet) and 25% are off by over 100m (328 feet).”

<sup>6</sup> Ex parte letter of Connected Nation, WC Docket Nos. 11-10, 19-195, filed July 25, 2019.

WTA proposes that a shapefile should represent the areas that a provider can reasonably provide service to within ten business days. WTA declines to suggest a set distance for a buffer such as 200 meters since that is dependent on multiple factors including technology, geography, and provider resources. The shapefile for an area should represent the actual broadband speed that the provider can offer in that area. For example, providers would have one shapefile marking the center and immediate vicinity of a town where they can offer 25/3 mbps and another shapefile that marks their 10/1 mbps service outside of town. Shapefiles should also reflect the technology used to deliver service (fiber, cable, DSL, etc.).

WTA also supports the creation of a broadband serviceable location fabric. First, WTA notes that the overwhelming cost of deploying broadband in rural areas is not the result of connecting individual last mile locations, but rather comes from the deployment of a network over a large area that can eventually connect a cluster of locations. That said, many CAF II and ACAM recipients have struggled with identifying fundable locations after placing winning bids for territories in an auction or before accepting model-based support. The creation of a location fabric will greatly assist RLECs and all providers in their future decision-making processes and potentially remove the risk of the provider realizing after the fact that it is obliged to serve a significantly larger number of "locations" than actually exist, and that it is subject to a loss of high-cost support even though it built a broadband network capable of serving the entire area at issue.

WTA agrees with Alexicon's assertion that the Commission should adopt a broad definition of "location."<sup>7</sup> While homes and businesses should obviously be included under the definition as they were in the pilot project completed by CostQuest, USTelecom, and its

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<sup>7</sup> Ex parte letter of Alexicon, WC Docket Nos. 11-10, 19-195, filed July 18, 2019.

consortium partners, it is important that the Commission consider the future growth of smart agriculture. The future will include connected farm buildings and multiple drops throughout a large farm to connect towers that will be connected to various machines and devices working the land. Undoubtedly, many farms in rural America have already built or are building advanced network infrastructure that should count for more than just one location. To limit the definition to the house and potentially only one other farm building would understate the number of connections that will be needed on a 21<sup>st</sup> century farm.

Once the fabric is completed, the Commission must allow for a period of review to validate the map with “boots on the ground.” It is likely that some physical locations may not be captured either due to foliage blocking satellite imagery or for other reasons. Or perhaps, a decrepit, abandoned house was marked as a location and should not be counted. Further, there must also be an opportunity to argue that drops or other end points that extend service unseen by satellite imagery also count as a serviceable location. For a period of time, providers must be given the opportunity to raise these issues so the Commission can adjust locations accordingly in a manner not that different than what occurs now when an auction winner or potential model offer acceptor investigates their service territory.

## II

### **The Commission’s Proposal to Collect More Granular Broadband Data Will Fall Short Without the Addition of a Challenge Process that Validates the Submitted Data**

While the Commission’s goal of creating more accurate and granular broadband service maps is admirable and essential, the Commission should be mindful that the current data is inherently flawed, including both inadvertent and deliberate errors, regardless of the mapping

methodology used. The result of either type of error may lead to an area without broadband service being marked as already served, or an area being deemed to have multiple competing broadband service providers when it does not.

This is not just theoretical. The Commission was forced recently to update its 2019 Sec. 706 Broadband Deployment Report when it learned that a provider falsely claimed to “offer FTTH service with downstream speeds of 940 mbps to 100 percent of the geographic area and 100 percent of the population” in eight states.<sup>8</sup> In reality, the provider did not market fiber-to-the-home service at any speed and its actual maximum advertised speed for its fixed wireless offering was only 25 mbps symmetrical.<sup>9</sup>

Thus, the best solution to creating a map as accurate as possible is by adding a challenge process that can be used to verify the data that is submitted by a provider. In fact, a challenge process may be the best opportunity for the Commission to obtain data even more granular than a census block or a shapefile because a provider may wish to challenge much smaller areas where it believes another provider cannot appropriately provide broadband service. As was similarly established in the *Mobility Fund Phase II Challenge Order*, the Commission could establish a timely challenge phase where providers could submit uniform and specific data showing that another provider does not actually serve what it purports to serve with time given to the challenged provider to respond. A challenge process would help keep the broadband map as current as possible because it would be an additional instance that a map may have to be updated. Additionally, any challenge process should not only be open to providers, but also to states, localities, and other interested parties that have a vested interest in seeing their communities

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<sup>8</sup> Letter of Free Press, GN Docket No. 18-238, filed on March 5, 2019, at 1-2, <https://ecfsapi.fcc.gov/file/10306056687881/Free%20Press%20706%20Report%20Form%20477%20Erroneous%20Data%20ex%20parte.pdf>.

<sup>9</sup> Id.

connected with world-class communications. It should also be noted that there is plenty of bipartisan support in Congress for the adoption of a challenge process with multiple bills introduced using it as a means of verifying data.<sup>10</sup>

The Commission has seen in the Mobility Fund Phase II proceeding the interest of providers in utilizing a challenge process. In that proceeding, wireless providers have extensively traveled service territories and collected data for the purpose of challenging submitted data. Their challenges have revealed that many wireless carriers overstate their data to the detriment of the customers in that area who cannot actually receive service from that carrier.<sup>11</sup>

The challenges have also revealed an important truth about the economics of serving rural America: Serving rural America with voice and broadband service is an expensive endeavor. There are currently incumbents already on the ground that have been serving as providers of last resort in their service territories and have utilized federal funding to ensure that

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<sup>10</sup> See S.1522, Broadband Data Improvement Act, sponsored by Shelley Moore Capito (R-WV), Brian Schatz (D- HI), Jerry Moran (R-KS), and Jon Tester (D-MT) introduced May 15, 2019; S. 1822, Broadband Deployment Accuracy and Technological Availability (DATA) Act, sponsored by Roger Wicker (R-MS), Gary Peters (D-MI), John Thune (R-SD), Amy Klobuchar (D-MN), introduced on June 12, 2019; S. 842, Improving Broadband Mapping Act of 2019, sponsored by Amy Klobuchar (D-MN), Shelley Moore Capito (R-WV), Joe Manchin (D-WV), John Hoeven (R-ND), introduced March 14, 2019; S. 2275, Broadband Transparency and Accountability Act of 2019, sponsored by Senator Michael Bennet (D-CO), introduced on July 25, 2019; H.R.3162, Broadband Data Improvement Act, sponsored by Tom O'Halleran (D-AZ), Cathy McMorris Rodgers (R-WA), G.K. Butterfield (D-NC), Ann Kuster (D-NH), David McKinley (R-WV), and Rob Wittman (R-VA), introduced June 6, 2019; H.R. 2643, Broadband MAPS Act of 2019, sponsored by Bob Latta (R-OH), Peter Welch (D-VT), introduced on May 9, 2019; H.R. 4024, Broadband Transparency and Accountability Act of 2019, sponsored by Rep. Abby Finkenauer (D-IA), introduced on July 25, 2019; H.R.4229 - Broadband Deployment Accuracy and Technological Availability Act, sponsored by Rep. David Loebsack (D-IA), introduced on Sept. 6, 2019.

<sup>11</sup> Informal Request of the Rural Wireless Association, Inc. for Commission Action, WC Docket Nos. 10-90, 10-208, filed on August 6, 2018. "For example, PTCI's speed test data collection included a total of 402,573 test points – drive tests taken using Verizon-specified devices that are on plans not subject to network prioritization or throttling. Of the total test points collected, 357,374 (88.8%) tested below 5 Mbps download speed or did not register 4G LTE service at all on Verizon-designated handsets."

rural Americans have service. Without that federal funding, it would be cost-prohibitive to provide communications service in those rural areas and residents would be forced to go without the services their urban counterparts enjoy. A reliable service would not just magically appear, as millions of dollars of investment would be needed to be spent before any residents could connect to a network. Small companies that are committed to their localities have made that financial commitment by taking out large loans from private and public lenders such as the Rural Utilities Service with the expectation that federal funding will be provided to them through USF to help pay back those loans.

As such, deeming areas as competitive or uncompetitive is of the highest importance to RLECs. Federal funding is critical to service in rural America, and without it many RLECs' efforts to upgrade and extend their services would immediately come to a halt and some could be forced to close their doors, leaving their customers with no other options for affordable broadband service. It is therefore important that coverage data submitted not only be granular but also verified to ensure that service continues in areas where there is a falsely alleged competitive overlap.

WTA recognizes that some view a challenge process as costly and inefficient. However, it is the best way to ensure that rural America continues to have service, and as seen in the Mobility Fund Phase II proceeding, a challenge process is very useful and effective in improving the accuracy of broadband coverage maps. However, a challenge process in the fixed broadband context will be far more efficient and affordable than in the mobile wireless context. In the fixed context, verifying service would likely be done over a more manageable number of existing physical locations and the challenging provider would only need to determine whether each location (i.e. home, business, farm building, etc.) can receive the service that is alleged in a

coverage map. For example, if an RLEC wished to challenge the submitted map of a fixed wireless provider, it would check if the location and its immediate surrounding area can receive a signal from the nearest tower. Thus, a challenge in the fixed context would not need to collect data over vast territories so the resulting mileage, labor costs, and device costs would not apply.

### **III**

#### **The Commission Should Be Mindful that Crowdsourced Results Could Lead to False Positives and Thus Should Be Used for Informational Purposes Only**

In its Report and Order, the Commission calls for the creation of a framework that will be used to seek “input from the people who live and work in the areas that a service provider purports to serve.”<sup>12</sup> While many details remain to be worked out, the general theory of “crowdsourcing” is that customers of a provider will be able to visit a Commission approved website and submit a performance test – similar to ones that already exist today – and provide the necessary information so that it can be tracked by the Commission. The Commission could then use this data to see whether or not the submitted maps are accurate and potentially force providers to change their map coverage if evidence suggests that customers are getting lower broadband speeds and higher latency readings than what was reported to the Commission by the provider. Engaging the public on broadband issues is beneficial; however, the Commission must be mindful that not all submitted results may be an accurate reflection of the network. As such, crowdsourcing should be used for informational purposes only rather than changing broadband maps.

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<sup>12</sup> Id.

To start, WTA is concerned about which customers would have standing to submit a test. For example, if a network is capable of 100/10 mbps download and upload speeds, but the customer only subscribes to 25/3 mbps, any test will reflect the service tier the customer subscribes to and not the actual capacity of the network. The test result would thus have no value when it comes to verifying if the provider submitted accurate mapping coverage.

However, the overriding problem with crowdsourcing is that it seeks to test the entire Internet experience of the customer, which is impacted by multiple factors, and especially in the case of nearly all RLECs, not just the network of the provider. Rather, issues inside the customer home and middle mile services beyond the network could all result in the submission of suboptimal results that are not the fault of the provider.

With respect to issues inside the customer home, RLECs connect to the optical network terminal inside the customer's house and then to the customer's modem and/or Wi-Fi router. Many customers exercise their right to purchase their own modems and routers, and it is common for customers to buy products that fit their budget, which may mean purchasing a lower quality and inexpensive product that underperforms and degrades the customer experience. Further, like nearly all products, customer premise equipment performance degrades over time, but generally, customers do not decide to replace the equipment until it stops working entirely. According to several WTA members, they estimate that as much as 95 percent of their trouble calls result in determinations that the problem was caused by the defects in or degradation of the customer's equipment. It is customary for the customer service agent to advise the customer to upgrade his or her equipment, but the customer could choose not to do so. WTA members have also found that customers who purchase high quality modems and routers, but then connect and use multiple devices with high bandwidth needs simultaneously report lower than expected

speeds. This is caused by the congestion of all those devices forcing the test packet to either not be accepted or so delayed that slower results are inaccurately reported.<sup>13</sup>

Similarly, some RLECs have struggled acquiring adequate middle mile service that can connect to an otherwise healthy and functioning network. RLECs are regularly forced to connect to poor middle mile connections at less favorable rates and meet points because there are no other alternative options and/or they lack the bargaining power to negotiate better terms. For many, middle mile is a “take it or leave it” agreement in part because Universal Service support cannot be spent on middle mile service. However, even when good middle mile service is attained by an RLEC, it has no control over how the traffic is routed, potentially going to multiple exchange points across the country, which could result in less than optimal test results.<sup>14</sup>

Considering these details, crowdsourcing is not the most suitable route to decide whether or not a provider actually delivers on the speeds and latency it purports to offer and would unfairly impact RLECs who could potentially lose Universal Service support for exchanges resulting from factors outside of their control. Crowdsourced data should thus only be used to identify areas for further investigation purposes and should not be used to reshape submitted map coverage. WTA believes that the value of crowdsourced information is to launch inquiries over coverage and quality of service when there have been a number of tests submitted suggesting that a provider has overstated its coverage. The Commission could then pressure the provider to change the map. This data would also be very valuable to those entities that are considering challenging coverage via a formal challenge process. It would also be beneficial to potential

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<sup>13</sup> Application for Review of WTA – Advocates for Rural Broadband, WC Docket No. 10-90, filed on September 19, 2019, at 15-20.

<sup>14</sup> Id.

competitors who may see this an opportunity to enter a market and offer services to customers who lack quality service..

If the Commission is determined to use crowdsourced data to change maps. WTA agrees with Connected Nation that feedback from the Commission should come at a scheduled time for all providers.<sup>15</sup> This ensures that providers have notice of a potential action from the Commission or another challenger. It also helps ensure that no challenge via crowdsourcing goes unnoticed and unresponded to. WTA notes that its members have limited staff and resources. As such, they agree with ACA Connects that small providers may be overwhelmed if they were forced to respond to each and every test submitted by customers.<sup>16</sup> WTA also agrees with NTCA's assertion that "crowdsourced reports should not be treated the same as general consumer complaints, requiring a provider response in all cases."<sup>17</sup> Rather, a provider should only be forced to respond when "material trends develop in vetted information that indicate a systemic problem with a provider's reporting in a given area."<sup>18</sup>

If the Commission finds that at least 75% of submitted results in an area suggest that coverage is overstated, the Commission should contact the provider with the results of each test and allow 60 days for customers to be reached so that the provider can propose solutions to their customers who may have easily solvable problems (e.g. customer needs a new router). The provider would then report back to the Commission with its findings either disputing or accepting the allegations. If the allegations are accepted, the provider should update its coverage map within one week. If the allegations are disputed, the Commission should decide the merits

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<sup>15</sup> Report and Order and Second Further Notice at ¶ 90.

<sup>16</sup> Id.

<sup>17</sup> Id. at ¶ 95; Ex parte letter of NCTA – Rural Broadband Association, WC Docket Nos. 10-90, 19-195, filed on July 23, 2019.

<sup>18</sup> Id.

of the case using a clear and convincing evidence standard, which strikes the balance between being rigorous enough but not overly stringent.

As noted above, WTA believes that crowdsourcing is not the most suitable way to verify coverage and that a formal challenge process is a more effective way for providers and localities to dispute coverage. WTA agrees with NTCA that crowdsourcing should be “considered as a complement to, and will not be considered a substitute for, robust and meaningful evidentiary challenge processes that should be used in considering new awards of universal service support or the denial of universal service support.”<sup>19</sup> Together, a challenge process and crowdsourcing can be an effective “one-two punch” that can verify maps that have the inherent risk of being inaccurate.

#### **IV**

#### **The Commission Should Adopt New Rules for Fixed Wireless Reporting that Depicts Coverage with Highest Certainty**

In the Further Notice, the Commission seeks comment on “establishing standards for reporting coverage polygons for terrestrial fixed wireless broadband service.”<sup>20</sup> Of note, it requests information regarding whether or not fixed wireless providers should report their coverage using mobile wireless standards and whether there are fundamental differences between fixed wireless and mobile technologies that would caution against using those standards. It also requests factors that should be considered for staff to independently verify fixed wireless mapping.<sup>21</sup>

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<sup>19</sup> Ex parte of NTCA at 2.

<sup>20</sup> Report and Order and Second Further Notice at ¶ 80.

<sup>21</sup> Id.

The Commission should adopt rules for fixed wireless reporting that more accurately depict coverage and capability. WTA also believes that there are fundamental differences between mobile wireless and fixed wireless that makes using mobile wireless standards to be wholly inadequate. Further, regardless of the method used, there is no substitute for collecting data on the ground.

Some WTA members employ fixed wireless to serve portions of their service territories, but realize that the technology has its limitations. Notably, issues with propagation, terrain, and foliage could lead to customers being unable to receive fixed wireless signals. The Wireless Internet Service Providers Association (WISPA) has stated that is not possible to determine with any certainty what potential customers will be or would be readily served using fixed wireless technology until an on-site technical assessment is made”<sup>22</sup> and that they “often cannot determine with certainty whether [their] service is ‘available’ until a skilled installer is working on the potential customer’s premises.”<sup>23</sup>

However, it has become commonplace for some fixed wireless providers to ignore those realities and overstate their coverage. With the current Form 477 census block regime, it is easy for a WISP to purport to serve an entire census block because it may be able to serve a few locations therein that are close to its nearest tower even though many locations within the census block are unable to get a reliable signal from the tower. In fact, WTA members report that it is a common business practice for fixed wireless providers to visit homes already considered to be served to determine the cost of an installation and to see if providing service is even possible. If the location is serviceable, the installation fee is credited to the customer’s account. If the

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<sup>22</sup> Comments of the Wireless Internet Service Providers Association, WC Docket No. 11-10, filed October 10, 2017, at 11.

<sup>23</sup> Id., at p. iii.

location cannot be served, the fee is then refunded to the customer. However, it is not clear whether any change is noted for reporting and funding purposes. Thus, a combination of improved mapping software and “on-location” data collection must be used in order to have accurate fixed wireless reporting.

WTA is opposed to the adoption of using mobile wireless standards for fixed wireless reporting because there are significant differences that make mobile wireless standards wholly inadequate for fixed wireless reporting. Mobile wireless and fixed wireless are used at different times and for different purposes. Most people use mobile technologies away from their home and while traveling from one place to the next. Whereas, customers typically use fixed technologies at home and have come to expect a higher quality of service in terms of speed, latency, and capacity.

A review of the record in the Mobility Fund Phase II proceeding reveals that the mobile wireless maps lack the certainty that should be expected for fixed wireless service. The Competitive Carriers Association noted that the “70% cell edge probability and 30% cell loading metrics as put forth by the Commission appear to overstate actual coverage by as much as 45%.”<sup>24</sup> The Rural Wireless Association added that one carrier has “overstated its coverage by more than 50 percent in the Oklahoma Panhandle.”<sup>25</sup> Considering that fixed wireless uses a less powerful signal and usually requires a direct line of sight between the tower and antenna, such a broad definition of coverage would undoubtedly lead to an even larger overstatement of coverage.

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<sup>24</sup> Ex parte letter of Competitive Carriers Association, WT Docket No. 10-208, WC Docket No. 10-90, filed on July 27, 2017, at 2.

<sup>25</sup> Rural Wireless Association Informal Petition at 6.

Regardless of the method used, there is always the chance that the data provided may be inaccurate. Therefore, the single best method outside of more accurate modeling is a challenge process that will allow providers to check and verify the coverage of fixed wireless providers. Until then, there is always the chance that some locations will be considered served when reality they do not have service.

## V

### **Latency Is a Critical Measure of Network Performance and Should Be Included in the Collection Along with Data Usage**

The Commission requests comment on whether “fixed broadband providers should include latency levels along with the other parameters in reporting their coverage polygons.”<sup>26</sup> WTA believes that latency is an important factor in determining the quality of service. As such, WTA believes that latency should be a required measurement to be reported and should be done so by tier.

Latency is “the time it takes for a data packet to travel across a network from one point on the network to another.”<sup>27</sup> Networks that are high in latency cause a delay in packets being sent and can be easily seen by users of the network. For example, users of a Voice Over Internet Protocol (“VOIP”) service on a high latency network will struggle communicating with each other as there will be long delays, echoes, and overlapping voices.<sup>28</sup> The future is likely to revolve around real-time applications such as digital classrooms and telemedicine that will require a low latency connection to be used. It should be the goal of the Commission to advance the deployment of networks that are future proof, meaning that they can support new

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<sup>26</sup> Report and Order and Second Further Notice at ¶ 81.

<sup>27</sup> Id.

<sup>28</sup> Nadeem Unuth, What Is VoIP Latency, and How Can It Be Reduced?, Lifewire, updated July 10, 2019, <https://www.lifewire.com/what-is-latency-and-how-it-can-be-reduced-3426314>.

technologies with high bandwidth and low latency requirements without having to make major upgrades over time. Collecting information that differentiates networks with these qualities will help close the digital divide because it provides a more accurate picture of the overall quality of our nation's networks.

As the Further Notice notes, the Commission adopted two latency tiers for the CAF Phase II auction — one for  $\leq 100$  ms and another for  $\leq 750$  ms & MOS of  $\geq 4$ . While  $\leq 100$  ms of latency has generally been viewed as adequate for most applications, especially VOIP and video chat, future technologies will undoubtedly require even lower latency. Considering that much of our future broadband needs such as telemedicine, precision agriculture, and virtual/augmented reality will require a very low latency connection, the Commission should progressively establish a new latency service tier. Indeed, fiber networks, which are the most future proof, average latencies of between 12 ms to 20 ms according to the Commission.<sup>29</sup> As such, WTA recommends that the Commission create a third tier of  $\leq 25$  ms that providers can report to. This would highlight the difference between the networks and denote the highest quality of service.

On a similar note, WTA also supports the reporting of any usage limits with a provider's broadband service. Generally, WTA members have found that their customers prefer unlimited usage and as a result have seen increased broadband adoption. While at times it may be reasonable for a provider to include a usage limit, WTA believes that supporting unlimited usage

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<sup>29</sup> Eighth Measuring Broadband America Fixed Broadband Report A Report on Consumer Fixed Broadband Performance in the United States, Federal Communications Commission Office of Engineering and Technology, released December 14, 2018, <https://www.fcc.gov/reports-research/reports/measuring-broadband-america/measuring-fixed-broadband-eighth-report>.

is in the public interest and data should be collected as to how many Americans are currently limited by such a cap.

## VI

### **The New Data Collection Should Also Include Data on Existing Fiber Connections to Schools in Order to Prevent Overbuilding**

The Further Notice seeks comment on if “the maps and datasets derived from the Digital Opportunity Data Collection” should “be used in connection with the other universal service programs.”<sup>30</sup> WTA members are committed to connecting their communities with world-class broadband connections. In particular, they have placed an emphasis on making sure that anchor institutions such as schools, libraries, hospitals, government, and emergency services have adequate connections (usually with fiber) so that their towns do not fall behind the digital divide. This information would be very valuable to policymakers at all level of government as they consider providing funding to ensure that anchor institutions have an adequate connection – even if a fiber connection may already be in place. Undoubtedly, increased communication between federal programs will be critical to ensuring that every federal dollar goes to those most in need.

WTA proposes that the Commission require providers to annually report the schools they have deployed fiber connections to.<sup>31</sup> This would better inform schools and USAC as they consider the approval of special construction projects through the E-rate program. Many RLECs are seeing the unnecessary overbuilding of existing fiber connections to schools in part because a school consortium requests that they serve schools outside of their service territory. Certain instances in Texas have resulted in a group of carriers filing a Petition for Rulemaking that asks

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<sup>30</sup> Report and Order and Second Further Notice at ¶ 84.

<sup>31</sup> For the purposes of the proposal, “served” would include the ability to connect the school within ten days of the request.

the Commission to adopt new rules that would require schools and school consortiums to put their special construction requests out for public notice and give providers the opportunity to show the school or consortium that they have already installed a fiber connection to a school. If the provider can show that the school is already connected with fiber, the proposed rule would require the parties to have a reasonable negotiation for leasing of the fiber. This would discourage the Universal Service Fund from paying for duplicative fiber connections – one from the High Cost fund and the other from the E-rate program.<sup>32</sup>

WTA believes that the new data collection is an opportunity for the Commission to alleviate some of the concerns that parties on both sides of this issue have. Many WTA members state that while they connect their schools with fiber, community leaders may be unaware of the connection and may believe that they must seek state or federal funding to achieve such a connection. Oppositely, the proposed rule has been criticized for potentially causing an unneeded delay in connecting a school to a suitable network because it would require time for public notice and a reasonable negotiation before pursuing the special construction project in the end.<sup>33</sup>

If the Commission collects data on fiber connections to schools, especially when the network is built fully or partially with Universal Service funds, all parties would have knowledge of the existing connection. E-rate program administrators at USAC could turn to the data to see if an existing connection has been reported and instruct the school to negotiate in good faith before approving a special construction project. This would give providers the opportunity to negotiate to lease their fiber at a reasonable price, and it would also avoid any unnecessary delay for

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<sup>32</sup> Petition for Rulemaking of Central Texas Telephone Cooperative, Inc. et al., RM-11841, CC Docket No. 02-6, WC Docket No. 13-184, filed May 22, 2019.

<sup>33</sup> Opposition to Petition for Rulemaking of INCOMPAS, RM-11841, CC Docket No. 02-6, WC Docket No. 13-184, filed on July 1, 2019.

schools that would be caused by having to put their fiber project out for public notice. This additional reporting would be very beneficial in preventing overbuilding while also encouraging the deployment of higher quality connections to schools.

## **VII**

### **Conclusion**

Collecting more granular broadband data is an effective tool for closing the digital divide. However, the Commission must make sure there are tools to verify the more granular data, and a challenge process is the most effective tool. A challenge process, along with crowdsourcing, will ensure that there are adequate checks against a provider overstating its coverage and will also ensure that funding goes to areas in need. Similarly, the Commission must establish rules that recognize the limitations of fixed wireless and accurately capture its coverage. The Commission should also begin collecting data on network latency as it is critical to the overall experience of the customer. Further, in order to prevent overbuilding within the Universal Service Fund, the Commission should collect data on existing fiber connections to schools.

Respectfully submitted,

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