

**Before the  
Federal Communications Commission  
Washington, DC 20554**

In the Matter of	)	
	)	
Inquiry Concerning the	)	GN Docket No. 14-126
Deployment of Advanced	)	
Telecommunications Capability to	)	
All Americans in a Reasonable	)	
and Timely Fashion, and Possible	)	
Steps to Accelerate Such	)	
Deployment Pursuant to Section	)	
706 of the Telecommunications	)	
Act of 1996, as Amended by the	)	
Broadband Data Improvement Act	)	

**JOINT COMMENTS OF  
NTCA – THE RURAL BROADBAND ASSOCIATION  
WTA – ADVOCATES FOR RURAL BROADBAND  
EASTERN RURAL TELECOM ASSOCIATION  
and  
THE NATIONAL EXCHANGE CARRIER ASSOCIATION, Inc.**

September 4, 2014

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**I. INTRODUCTION AND SUMMARY**

NTCA–The Rural Broadband Association (“NTCA”), WTA -- Advocates for Rural Broadband (“WTA”), Eastern Rural Telecom Association (“ERTA”), and the National Exchange Carrier Association, Inc. (“NECA”) (jointly, the “Rural Associations”)<sup>1</sup> submit these comments in

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<sup>1</sup> NTCA represents nearly 900 rural rate-of-return regulated telecommunications providers. All of NTCA’s members are full service local exchange carriers and broadband providers, and many of its members provide wireless, cable, satellite, and long distance and other competitive services to their communities. WTA is a national trade association representing more than 250 rural telecommunications providers offering voice, broadband and data services in rural America. WTA members service some of the most rural and hard-to-serve communities in the country and are providers of last resort to those communities. ERTA is a trade association representing rural community based telecommunications service companies operating in states east of the Mississippi River. NECA is responsible for preparation of interstate access tariffs and administration of related

response to the above referenced Tenth Broadband Progress Notice of Inquiry (“Inquiry”) released by the Federal Communications Commission (“Commission”) on August 5, 2014. In its Inquiry, the Commission seeks data and information to help determine whether advanced telecommunications is being deployed to all Americans in a reasonable and timely fashion.<sup>2</sup> In particular, the Commission seeks information about the availability of service to elementary and secondary schools and classrooms<sup>3</sup> and how to improve the evaluation of mobile and satellite services data.<sup>4</sup> The Commission also “welcome[s] innovative ideas” on how it can best increase and accelerate broadband availability throughout the nation.<sup>5</sup>

Data collected by the Rural Associations demonstrates that rural local exchange carriers (“RLECs”) have made commendable progress in deploying broadband to rural areas, but as important as measuring broadband availability to schools, businesses, and other consumers is, it is equally critical to carefully consider the concept of broadband sustainability. More work remains to be done to fill gaps in existing coverage by pushing fiber deeper into networks, and also to ensure that services provided on top of existing deployments remain high-quality and affordable over time.

The Rural Associations urge the Commission to adopt a definition of advanced telecommunications capability that is independent of geographic location. *All* Americans, regardless of where they happen to live, should have access to advanced capabilities and

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revenue pools, and collection of certain high-cost loop data. *See generally*, 47 C.F.R. §§ 69.600 *et seq.*; *MTS and WATS Market Structure*, CC Docket No.78-72, Phase I, Third Report and Order, 93FCC 2d 241 (1983).

<sup>2</sup> Inquiry, ¶ 1.

<sup>3</sup> *Id.*

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

<sup>5</sup> *Id.*, ¶¶ 49-50.

services, The Rural Associations also urge the Commission to adopt benchmarks that apply, regardless of technology.

The Commission should increase and accelerate broadband availability in areas served by small carriers by taking immediate action to implement the new Connect America Fund (“CAF”). The current rules significantly undermine consumer freedom of choice, deter broadband adoption, inhibit technological evolution, and frustrate the objectives of universal service – ensuring that consumers in rural areas have access to comparable services at reasonably comparable rates.

**II. RECENT MEMBER COMPANY SURVEYS SHOW RLECs HAVE MADE COMMENDABLE PROGRESS TO DATE IN DEPLOYING BROADBAND TO RURAL AREAS, BUT THE MISSION OF FULFILLING UNIVERSAL SERVICE IS NOT A “ONE-TIME” INITIATIVE AND REQUIRES ONGOING EFFORT AND SOUND POLICIES AND PROGRAMS.**

For well over a decade, the Rural Associations have surveyed their members as to their progress in deploying broadband service throughout their service areas. The most recent NTCA survey<sup>6</sup> was conducted in late 2013, with the results published in May 2014. NTCA sent an electronic survey form to each of the companies in NTCA’s e-mail database; 171 members responded. The most recent NECA survey of NTCA, WTA and ERTA members was conducted in early 2014, with the results published September 4, 2014, the date of these comments.<sup>7</sup> NECA surveyed the 1,072 members in NECA’s Traffic Sensitive Pool, with over 900 members responding.

Respondents to the NTCA survey indicated they use a variety of technologies within their respective serving areas to provide at least basic levels of broadband to their customers. Forty-

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<sup>6</sup> 2013 NTCA Internet/Broadband Availability Survey, May 2014. Available online at <http://www.ntca.org/images/stories/Documents/Advocacy/SurveyReports/2013ntcabroadbandsurveyreport.pdf>.

<sup>7</sup> *Trends*, (September, 2014) [https://www.neca.org/Trends\\_Report.aspx](https://www.neca.org/Trends_Report.aspx).

six percent of respondents' broadband customers are served via DSL on copper loops, 29% fiber to the home (FTTH), 12% fiber to the node (FTTN), 12% cable modem, 0.6% unlicensed fixed wireless, 0.4% licensed fixed wireless, and 0.1% satellite.

Deployment costs remain the most significant barrier to widespread deployment of fiber, followed by regulatory uncertainty, long loops, current regulatory rules, low customer demand, obtaining financing, and obtaining cost-effective equipment. Throughout the history of the survey, deployment costs have been respondents' most significant concern.

Approximately 1.6% of NTCA survey respondents' customers can receive a maximum downstream speed of between 200 and 768 kilobits per second (kbps), 0.7% 768 kbps to 1.0 megabits per second (Mbps), 2.4% 1.0 to 1.5 Mbps, 2.4% 1.5 to 3.0 Mbps, 4.4% 3.0 to 4.0 Mbps, 10.5% 4.0 to 6.0 Mbps, 12.6% 6.0 to 10.0 Mbps, and 65.5% greater than 10.0 Mbps. The overall take rate for broadband service is 72% (up from 69% in 2012.)

Thirty-four percent of NTCA survey respondents' customers taking broadband subscribe to service between 3.0 Mbps and 4.0 Mbps. The next most popular speed tiers are greater than or equal to 10 Mbps (8.5%), followed by 6.0 Mbps to 10.0 Mbps (8.2%), and 4.0 Mbps to 6.0 Mbps (6.2%). Non-broadband subscribers make up 27.6% of survey respondents' customer base. The typical NTCA respondent is 77 miles from its primary Internet connection. Eighty-three percent of those who had recently changed backbone providers did so for price reasons. Eighty-eight percent of respondents indicated they are generally satisfied with their current backbone access provider, while 12% are generally dissatisfied.

Analysis of NECA's survey results also indicates that NECA TS Pool participants use a variety of technologies within their respective serving areas to provide broadband to their customers. Seventy-one percent of NECA respondents' broadband customers are served via

DSL on copper loops; 24% fiber to the home (FTTH); 0.5% fixed wireless; and the remaining 4.5% on cable modem, satellite, and other broadband technologies.

The overall adoption rate for broadband service among NECA survey respondents is 80% (up from 67% in 2012.) Non-broadband (voice only) subscribers make up 20% of survey respondents' customer base. Thirty-six percent of NECA survey respondents' customers taking broadband subscribe to services from 4.0 Mbps to less than 10.0 Mbps. The next most popular speed tiers are 1.5 Mbps to less than 4.0 Mbps (29%), followed by 10.0 Mbps and higher (22%), 1.0 Mbps to less than 1.5 Mbps (7%), and speeds less than 1.0 Mbps (6%). Eighty-seven percent of middle mile facilities in use by NECA TS Pool members are Ethernet, 8% are DS1 and DS3, and 5% are SONET.

TS Pool members provide substantial quantities of Tariffed High Capacity and Ethernet facilities to mobile wireless carriers in their service areas. Between 2012 and 2013, TS Pool members reported a steady increase in Ethernet, used mostly for mobile backhaul. This use of Ethernet technology has resulted in a 42 percent increase in total bandwidth provisioned by TS Pool members for use by CMRS operators.

The NECA TS Pool experienced a decline in voice access lines over the last year. This trend is part of an industry-wide decline in voice access lines. Contributing to the decline is competition from providers offering Voice over Internet Protocol (VoIP) and customers substituting mobile service for land lines. Customers increasingly are seeking broadband-only service offerings at a reasonable price.

Twenty-two percent of NECA survey respondents currently offer VoIP service, up from 18% the previous year. Seventy-two percent of NECA survey respondents now offer video service to their customers.

While the statute compels the Commission to annually review the status of broadband deployment to all Americans, it singles out schools for particular attention.<sup>8</sup> A separate NTCA survey completed in September 2013<sup>9</sup> demonstrates that RLECs have in large part delivered on the vision of connectivity (at least “to the schoolhouse door”) contemplated by the recent *E-Rate Modernization NPRM*.<sup>10</sup> Specifically, the study found that:

- Of the 1,208 K-12 schools identified by NTCA members as located within their serving areas, 907 (75%) of those are already connected by Fiber to the Premises (“FTTP”) and another 132 (11%) are connected by FTTN. Only 60 such schools (5%) are not connected at all to the telco network, although it is quite possible that they could be served by another provider.
- Of those connected schools, NTCA members reported offering maximum speeds of 912 Mbps (mean) and 100 Mbps (median), while the average speed purchased is 128 Mbps (mean) and 20 Mbps (median).

But as important as measuring broadband *availability* to schools, businesses, and other consumers might be, it is equally critical to carefully consider the concept of broadband *sustainability*. The network and service capabilities described above have been achieved in rural areas only through an effective pairing of private capital and Rural Utilities Service loans that help build networks with complementary universal service support and intercarrier compensation policies that then helped to keep the services provided on those networks reasonably comparable in price and quality over the life of the networks once they were built.

This being said, changes in some of the programs and policies in recent years have called into question both the ability to invest and the ability to charge consumers reasonably

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<sup>8</sup> 47 U.S.C. § 1302(b), requiring the Commission annually to “initiate a notice of inquiry concerning the availability of advanced telecommunications capability to all Americans (including, in particular, elementary and secondary schools and classrooms). . . .”

<sup>9</sup> The survey sent to the NTCA membership was completed by 238 companies, many serving multiple study areas, across 38 states.

<sup>10</sup> *Modernizing the E-Rate Program for Schools and Libraries*, WC Docket No. 13-184 (rel. Mar. 6, 2014) (*E-Rate Modernization NPRM*).

comparable rates for services. And it is important that we once again “get these policies right,” as the sustainability of the success to date described above and the ability to build upon that success very much depend upon doing so. Much more work remains to be done in realizing our national broadband vision, both to fill gaps in existing coverage by pushing fiber deeper into networks, and also to ensure that services provided on top of existing deployments remain high-quality and affordable over time. In short, rural broadband is not just about deployment; universal service policies aimed at that objective alone risk creating significant stranded investments and inefficient uses of resources over time. Good broadband policy must be about keeping pace with urban areas over the lives of the networks built – reasonably comparable services at reasonably comparable rates. Success in broadband should not be measured by a snapshot of *availability*, but rather by progress over time and policies that ensure the *sustainability* of networks and services.

**III. THE COMMISSION SHOULD ENSURE THAT ADVANCED SERVICES OFFER CONSUMERS AND BUSINESSES A ROBUST EXPERIENCE THAT CAN FULFILL REASONABLY ANTICIPATED DEMANDS AND EXPECTATIONS.**

The Commission seeks comment on the appropriate definition of “advanced telecommunications capability” for purposes of its next Section 706 Report to Congress, and whether and how it should take into account differences in broadband deployment, particularly between urban areas versus non-urban and Tribal areas.

While “advanced telecommunications capabilities” may primarily relate to the speed of the broadband service (e.g., 4/1 Mbps, 10/1 Mbps, 25/10 Mbps), other characteristics are just as important, as they can affect the user’s ability to employ the service for increasingly advanced

applications, including those identified in section 706.<sup>11</sup> The Commission itself has acknowledged that “latency can be a major factor in overall performance of Internet services.”<sup>12</sup> The Rural Associations agree it may be reasonable for the Commission to update the speed benchmark for “advanced” services from 4/1 Mbps to 10/1 Mbps for the purposes of this Report, and agree that latency and capacity benchmarks should be adopted as well.

The Rural Associations further urge the Commission to adopt a definition of advanced telecommunications capability that is independent of geographic location. *All* Americans, regardless of where they happen to live, should have access to advanced capabilities and services, for this objective supports the principle of equal opportunities long held dear by the American people. Moreover, section 254 of the statute requires that in rural, high-cost, and insular areas specifically such services should be “reasonably comparable” in both quality and price to services offered in urban areas. If the Commission establishes lower benchmarks for determining whether advanced services are being deployed in certain areas, it will have failed to uphold the requirements of the statute.

Moreover, the same benchmarks should apply regardless of technology for purposes of determining whether there is access to “advanced telecommunications capabilities.” Section 706 defines advanced telecommunications capability “without regard to any transmission media or technology . . . .”<sup>13</sup> Such access is required for consumers to participate in the modern economy, in civic discourse, in civic and social organizations, and in modern education and health

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<sup>11</sup> See 47 U.S.C. § 1302(d)(1), which defines “advanced telecommunications capability” as providing the capability for users “to originate and receive high-quality voice, data, graphics, and video telecommunications using any technology.”

<sup>12</sup> *2014 Measuring Broadband America Fixed Broadband Report: A Report On Consumer Fixed Broadband Performance in the U.S.*, at 16 (2014) (*Fourth Measuring Broadband America Report*).

<sup>13</sup> See 47 U.S.C. § 1302(d)(1).

applications. Because computerized applications increasingly reside in “the cloud” and are accessed only via the Internet (public or private), users should have reasonably comparable access to these applications wherever they reside or travel in the U.S.

To the extent particular broadband technologies are not able to meet the same speed, latency and capacity/usage limitation benchmarks established by the Commission in this proceeding such that residential and business users are unable “to originate and receive high-quality voice, data, graphics, and video telecommunications using any technology,” as required by section 706, they should not be considered “advanced” telecommunications capabilities. Such services may well provide real value in the form of mobility or other features, but they must be considered only complementary to, rather than substitutes for, more robust advanced telecommunications services.

Indeed, as the Rural Associations noted in their comments on the CAF Program FNPRM, mobile services are a useful and highly desirable complement to fixed broadband, but recent experiences call into question whether such services can provide a truly functional equivalent for fixed voice and broadband even if the mobile offerings can otherwise meet some basic service performance criteria.<sup>14</sup> Mobile providers themselves have argued wireless broadband services face “unique technical and operational challenges”<sup>15</sup> due to “the shared nature of finite spectrum resources and the challenges related to mobility,”<sup>16</sup> and therefore they should be treated differently than wireline services.<sup>17</sup>

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<sup>14</sup> Comments of the Rural Associations, WC Docket No. 10-90, at 36 (filed Aug. 8, 2014).

<sup>15</sup> Comments of Verizon and Verizon Wireless, GN Docket No. 09-191, at 16-18 (filed Oct. 12, 2010). *See also* Comments of AT&T, GN Docket No. 09-191, at 41 (filed Oct. 12, 2010); Comments of CTIA, GN Docket No. 09-191, at 10 (filed Oct. 12, 2010).

<sup>16</sup> *Id.*

<sup>17</sup> *Id.*

Differences in technical capabilities of satellite services have also been thoroughly documented. In a November 2013 report previously filed with the Commission,<sup>18</sup> Vantage Point Solutions identified a number of complications that arise when interactive two-way traffic is transmitted via satellite, due to the inherent limitations associated with satellite communication systems. This report indicated the “broadband performance of satellite services in terms of latency, jitter, capacity, and speed will always remain inferior to modern fixed wireline technologies. Some satellite limitations may be made less severe with technical advances, but some limitations, such as high latency and weather interference, cannot be solved.”<sup>19</sup>

#### **IV. A TAILORED AND TARGETED CONNECT AMERICA FUND IS NEEDED TO ACCELERATE AND INCREASE BROADBAND AVAILABILITY AND ADOPTION IN AREAS SERVED BY SMALLER CARRIERS.**

Current Universal Service Fund (“USF”) mechanisms provide support for high-cost, broadband-capable facilities to RLECs when consumers choose to purchase regulated plain old telephone service (“POTS”) over those facilities, but current rules preclude support when

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<sup>18</sup> See, *ex parte* letter from NTCA – The Rural Broadband Association letter to Marlene H. Dortch, In re: Connect America Fund, WC Docket No. 10-90; High-Cost Universal Service Support, WC Docket No. 05-337 (filed Nov. 7, 2013).  
<https://prodnet.www.neca.org/wawatch/wwpdf/11713ntca.pdf>

<sup>19</sup> *Id.* The Commission itself has acknowledged such differences. The FCC’s *Fourth Measuring Broadband America Report – 2014*, for example, noted “[s]atellite systems involve the transmission of information over long distances and have correspondingly higher latencies than for terrestrial technologies.” *Id.* at 16. While acknowledging the launch of a new generation of Ka band satellites represents an important advance in consumer satellite service, the report noted “[s]atellite facilities have historically had impairments which have limited their competitiveness with other broadband services. . . . Communicating with a geosynchronous satellite orbiting the earth at a distance of greater than 36,000 km results in a round trip latency of about 500 ms. The necessary signaling between the set-top box and the satellite controller, to request assignment of a communication channel, can double this to over 1000 ms, which would preclude use of many latency-sensitive services. In contrast, the maximum average latency found in our surveys for terrestrial technologies is less than 70 ms.”

customers seek to procure only broadband services (including or without interconnected VoIP services) over the same facilities.

This means that a consumer's rates for broadband in high-cost areas increase simply because that consumer might decide that he or she only wants broadband and no longer wants POTS on that line. This significantly undermines consumer freedom of choice, deters broadband adoption, inhibits technological evolution, and frustrates the objectives of universal service – ensuring that consumers in rural areas have access to comparable services at reasonably comparable rates. Rural consumers in high-cost areas will not have access to comparable broadband services at rates reasonably comparable to urban areas unless or until the Commission addresses this issue. Put another way, a policy that compels consumers to take POTS service to obtain access to robust, affordable broadband must be seen as at least a hindrance to the deployment and use of advanced services, and the Commission should seek to address this technical shortcoming in its rules as soon as possible.

## **V. CONCLUSION**

RLECs have made great strides to date in delivering on the vision of connectivity for consumers, businesses, and anchor institutions, although the sustainability of that progress and its continued expansion depend upon sound universal service policies and programs that are carefully tailored to address and help carriers overcome the challenges of deploying, and then operating, broadband-capable networks in high-cost areas. In considering how to evaluate progress in the delivery of advanced services to all Americans, the Rural Associations urge the Commission to adopt comprehensive definitions incorporating not only speed but other important factors, such as latency, jitter, and capacity. Furthermore, such standards should apply equally across geographic regions and across different technological platforms.

Respectfully submitted,

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