



December 18, 2020

Via ECFS

The Honorable Chairman Ajit Pai
The Honorable Commissioner Brendan Carr
The Honorable Commissioner Jessica Rosenworcel
The Honorable Commissioner Geoffrey Starks
The Honorable Commissioner Nathan Simington
Federal Communications Commission
45 L Street NE
Washington, DC 20554

Re: ***Ex Parte* Filing by NTCA–The Rural Broadband Association and the Fiber Broadband Association in WC Docket No. 20-269 – Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion**

Dear Chairman Pai and Commissioners Carr, Rosenworcel, Starks, and Simington:

The COVID-19 pandemic has revealed just how essential high-performance and high-quality¹ broadband is to participate in today’s society. Yet, the Section 706 Notice of Inquiry (“NOI”) issued by the Federal Communications Commission (“FCC” or “Commission”) persists in positing that a fixed broadband benchmark of 25/3 Mbps – the same benchmark it has used for the last five years – is good enough.² By any measure, this benchmark does not reflect what American consumers need today, let alone tomorrow. Accordingly, NTCA–The Rural Broadband Association (“NTCA”) and the Fiber Broadband Association (“FBA”)³ urge the Commission to rethink its proposal and, while all Americans would be best served by the Commission adopting a gigabit symmetric benchmark (including overhead

¹ “U.S. Broadband Internet Access In The 2020 Pandemic: Broadband Importance, Shifts, Differences, Stresses, and Divides,” 2020 Consumer Broadband Study, Fiber Broadband Association and RVA Research, at 9-11 (May 2020) (“RVA 2020 Consumer Broadband Study”).

² *Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, GN Docket No. 20-269, Sixteenth Broadband Deployment Report Notice Of Inquiry, FCC 20-112 ¶ 11 (rel. Aug. 19, 2020) (“NOI”); 47 U.S.C. § 1302(b).

³ Our members, collectively represent more than 1,000 community-based and small business broadband providers who live and work in the communities they serve, are focused on delivering future-proof connectivity for the next generations, and we believe policymakers should join us in supporting fiber-based solutions wherever possible. See www.fiberbroadband.org; www.ntca.org.

allowances) as the national objective for broadband deployment and availability, it should at least raise the minimum broadband performance benchmark for the Sixteenth Broadband Deployment Report to 100/100 Mbps.

The Broadband Digital Divide

The challenges of the prolonged COVID-19 pandemic have caused all of us to think again about what we value most — connections with family and friends, a reliable job, our health and safety — and technologies that make it all possible. Unfortunately, when it comes to accessing critical technologies, especially high-performance and high-quality broadband Internet access service, too many Americans remain on the wrong side of the digital divide.⁴

While the digital divide is not a phenomenon brought on by the pandemic, the pandemic crystalized the vital role broadband plays in allowing Americans to participate in today's society and how some Americans are being left behind. Broadband allows children to engage in remote learning and adults in skills training. It supports our livelihoods by connecting us to job opportunities, office virtual private networks, precision agriculture equipment, and customers and suppliers.⁵ Broadband enables us to consult with doctors through video calls and access remote surgery. It keeps us connected to family and friends across the country and around the world. And, broadband gives us access to news, entertainment, and social media that allow us to build cultural connections and contribute to the political discourse. The critical nature of broadband applies to everyone, but it is especially important for rural Americans who rely more than their urban counterparts on online access for education, telehealth, civic engagement, and other important uses.⁶

Most of these activities need reliable broadband connections with robust downstream and upstream bandwidth and low latency for normal use by just one person on one device in one household. But the reality is that the typical household connects multiple users, using multiple devices at the same time, requiring higher-performance connections.⁷ Americans on the wrong side of the digital divide do not have access to these connections, which keeps them from engaging in these activities today. Our studies show that consumers in the lowest 20% broadband performance tier are required to do in-home rationing of their broadband service 48.7% of the time, losing 11.0 hours per

⁴ See Winslow, Joyce, *America's Digital Divide*, Pew Charitable Trusts (Jul. 26, 2019), pewtrusts.org/en/trust/archive/summer-2019/americas-digital-divide.

⁵ For example, the FCC's Office of Economic and Analytics recently released a working paper showing that rural broadband connectivity leads to significant benefits in farm productivity. See *Impact of Broadband Penetration on U.S. Farm Productivity*, OEA Working Paper 50, FCC (Dec. 15, 2020).

⁶ See Comments of the Fiber Broadband Association, GN Docket No. 20-269, at 15 (Sept. 8, 2020) ("Comments of FBA").

⁷ The U.S. Census Bureau estimates there are an average of 2.62 people per household, and bandwidth needs increase with each additional user. See *QuickFacts: Families and Living Arrangements*, U.S. Census Bureau, <https://www.census.gov/quickfacts/fact/table/US/HCN010212> (last visited Dec. 18, 2020); Household Broadband Guide, FCC, <https://www.fcc.gov/consumers/guides/household-broadband-guide> (last visited Dec. 17, 2020) ("FCC Household Broadband Guide").

week of productivity due to online time waiting.⁸ Without smart investments, they will be stuck without these opportunities for many years to come.

The pandemic shined a spotlight on the fact that we need to connect all Americans with the best possible – and not just good enough – broadband, regardless of whether they live in urban or rural areas or upper or lower-income neighborhoods. We need to plan ahead, building networks that are both useful now and will remain useful in more than a decade when Americans will rely upon them to an even greater extent for so many aspects of everyday life. To achieve a fully connected future and avoid perpetuating digital divides, we cannot afford to resign some Americans to second-class service – we need to aim higher and do better.

Setting a New Benchmark

With the Sixteenth Broadband Deployment Report, the Commission has an opportunity to put the nation on a path that will ensure all Americans have fixed broadband service that is capable of meeting their needs. As we look back, the Commission has significantly and repeatedly underestimated consumers’ need for robust broadband service, opting for “here and now” short-term metrics that could not conflict more squarely with long-term objectives and the long-term nature of infrastructure deployment. The 4/1 Mbps benchmark adopted in 2011 and the 10/1 Mbps benchmark adopted a few years later quickly became antiquated. And, based on the record in this proceeding, the 25/3 Mbps speed metric does not reflect today’s reality.

Residential demand for both upstream and downstream bandwidth has skyrocketed, growing at a rate of 20-25% annually for over two decades.⁹ Growth in demand is expected to continue such that peak demand for a family of four should exceed 400 Mbps symmetric in roughly seven years, with bandwidth needs accelerating in the years after that.¹⁰ These near-future increases are anticipated due to an array of new technologies, including 8K video, augmented reality (“AR”), and virtual reality (“VR”). These innovations hold substantial promise for consumers and businesses, such as greatly improved virtual education, telemedicine, work from home, business, security, and entertainment. AR and VR applications will require much higher symmetric bandwidths than available to most Americans today – up to 5000 Mbps – to deliver a realistic experience to end users, due to the cloud-based processing that enables cost-effective consumer equipment.¹¹ For AR in particular, upstream bandwidth needs can match or even exceed downstream requirements.¹² The Fiber Broadband Association Technology Committee research shows that the projected peak bandwidth requirements for a household of four is 85 Mbps downstream and 48 Mbps upstream in 2020 and that will increase

⁸ RVA 2020 Consumer Broadband Study at 9.

⁹ See Comments of FBA at 9-10.

¹⁰ *Id.* at 12-14.

¹¹ “VR and AR Pushing Connectivity Limits,” Qualcomm Technologies, Inc. (Oct. 2018), <https://www.qualcomm.com/media/documents/files/vr-and-ar-pushing-connectivitylimits.pdf>.

¹² “Cloud AR/VR Whitepaper,” GSMA Future Networks (Oct. 26, 2019), <https://www.gsma.com/futurenetworks/wiki/cloud-ar-vr-whitepaper/>.

to over 2 Gbps symmetric bandwidth by the end of the decade.¹³ Consumers will only be able to seize opportunities to use these applications if they have access to the high-performance symmetric bandwidth that all-fiber networks provide.

Even today's bandwidth usage by most consumers far exceeds the 25/3 Mbps speed metric. At the end of 2018 – nearly two years ago – more than 85% of Americans had access to broadband delivering 250/50 Mbps¹⁴ and median speeds for all fixed connections had reached 100/10 Mbps.¹⁵ This performance is possible in part because the number of households with access to all-fiber connections has increased 1000 times since 2003. NTCA members similarly report that their all-fiber connections are up from 58% in 2018 to nearly 70% as of 2020.¹⁶ Consumers are driving the demand for higher-performance broadband because they are using more bandwidth hungry applications, requiring both higher downstream and upstream speeds, over an increasing number of devices.¹⁷ On any given day, for example, multiple family members in a single household might connect to their home networks on separate devices at the same time to engage in remote learning on Google Classrooms, telework on Citrix, access telehealth services on Teladoc, apply for jobs through LinkedIn, chat with family on Zoom, share their views on Twitter, stream a movie on Netflix, and play Fornite with friends across the country and around the world. A 25/3 Mbps connection is not sufficient to support these activities. Indeed, the Commission has concluded that two users or devices simultaneously using the same Internet connection for a “basic” function (such as checking email) and more than one high-demand application (such as video conferencing) can require at least 25 Mbps, while adding just one more user or device would necessitate an Internet connection exceeding 25 Mbps.¹⁸

These broadband needs and uses are not just a phenomenon brought on by the COVID-19 pandemic, but the pandemic has accelerated demand and adoption. A study conducted by the National Telecommunications and Information Administration found that, in 2019, a third of Americans used the Internet to work remotely and one fifth used it to take classes or complete job training.¹⁹ An RVA, LLC study completed for FBA found that between 2019 and 2020, video conferencing increased by

¹³ Fiber Broadband Association Technology Committee: Future Applications and Network Implications 2020.

¹⁴ *Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, GN Docket No. 19-285, 2020 Broadband Deployment Report, FCC 2-50, ¶ 2 (rel. Apr. 24, 2020).

¹⁵ “Internet Access Services: Status as of December 31, 2018,” Office of Economics & Analytics, FCC, at 8 (Sept. 17, 2020).

¹⁶ “NTCA Broadband/Internet Availability Survey Report,” NTCA (Dec. 2020) <https://www.ntca.org/sites/default/files/documents/2020-12/2020%20Broadband%20Survey%20Report.pdf> (“NTCA Broadband Survey”).

¹⁷ By the end of 2019, the average U.S. household had 11 connected devices. Press Release, “Deloitte survey: Connectivity cravings drive consumer appetite for 5G, home automation, and more control of personal data” (Dec. 4, 2019), <https://www2.deloitte.com/us/en/pages/about-deloitte/articles/press-releases/deloitte-launches-connectivity-mobile-trends-survey.html>.

¹⁸ See FCC Household Broadband Guide.

¹⁹ *Nearly a Third of American Employees Worked Remotely in 2019*, NTIA Data Show, NTIA (Sept. 3, 2020), <https://www.ntia.gov/blog/2020/nearly-third-american-employees-worked-remotely-2019-ntia-data-show>.

roughly 15% for business, 13% for education, 10% for healthcare, and 20% for family.²⁰ As a result, a stay-at-home individual's broadband needs during the pandemic has often exceeded 50-100 Mbps both upstream and downstream, and this amount quickly rises when multiple people in a household seek access at once.²¹ Consumers have been opting for faster speeds to meet these changed usage habits. In May 2020, median broadband usage was up 60% from 2019 to 2020 and upstream usage "rose sharply."²² OpenVault reported that, as of the second quarter of 2020, "nearly 5% of subscribers now receive connections of 1 gigabit or faster, up 133% year-over-year and up 75% in the last six months alone. About 61% of all subscribers now have connections of 100 Mbps or faster, a one-year increase of 27%."²³ NTCA members report that, over just the past year alone, the percentage of their rural customers subscribing to services with 100 Mbps download or greater increased from 18% to more than 28%; nearly two-thirds of customers now subscribe to services with speeds in excess of 25 Mbps, up from just 50% last year.²⁴ Yet, despite the importance of having robust, reliable broadband and consumers' clearly increasing interest in obtaining such services, not all Americans have been able to access broadband connections that meet their needs, and some have had to ration access or have lost productivity due to their low-performance broadband services.²⁵

Despite the clear need for a higher performance and higher quality broadband benchmark, the contingent of "just good enough" network advocates may claim an increased benchmark will favor all-fiber networks, which would undermine the concept "technology neutrality," however dubious that concept may be.²⁶ But, just as with 5G wireless, policymakers should not sacrifice the technological superiority of all-fiber networks, especially when allocating precious government resources for those most in need of reliable, high-performance and high-quality broadband connections. Providing

²⁰ RVA 2020 Consumer Broadband Study at 5.

²¹ See *Home Internet data usage surges amid COVID-19 crisis*, LightReading (Mar. 18, 2020), <https://www.lightreading.com/services/home-internet-data-usage-surges-amid-covid-19-crisis/d/d-id/758298>.

²² *COVID-19 Impact: Broadband Usage Jumps 47% IN Q1, Nears YE2020 Expectations*, Broadcasting+Cable (May 4, 2020), <https://www.nexttv.com/post-type-the-wire/covid-19-impact-broadband-usage-jumps-47-in-q1-nears-ye2020-expectations>.

²³ *OVBI: Upstream Broadband Usage, Faster Speeds Spike Higher in Q2 2020*, Open Vault (Aug. 11, 2020), <https://openvault.com/ovbi-upstream-broadband-usage-faster-speeds-spike-higher-in-q2-2020/>.

²⁴ NTCA Broadband Survey.

²⁵ Comments of FBA at 14.

²⁶ We note that the results of the recent Rural Digital Opportunity Fund ("RDOF") auction – with bidders using other technologies prevailing in the "Gig Tier" – appear to belie the claim that only all-fiber networks can provide gigabit performance. FBA and NTCA recognize that in ideal conditions in terms of topography, lines of sight, and other environmental factors, with appropriate engineering to address shared consumer demands across shared network resources, and with an ideal network build, including with substantial amounts of fiber and spectrum to address coverage and transmission reliability and sufficient network capacity to handle expected penetration, fixed wireless may provide 1Gbps/500Mbps performance. We look forward to the Commission conducting a thorough review of long-form applications to ensure winning bidders in the RDOF auction using fixed wireless technology are actually building such an ideal network and will actively market that network to achieve the assumed 70% penetration – and ultimately aim to serve every American in these areas if possible.

consumers with “just good enough” network technologies will not bridge the digital divide; it will only preserve or exacerbate it.

The Sixteenth Broadband Deployment Report presents an opportunity for the Commission to keep pace with broadband service that Americans both need and want – and as indicated by the results of the RDOF auction, what providers believe they need to offer.²⁷ Further, it will provide a benchmark the Commission can then use to ensure that we build our networks right the first time by driving investment in future-proof broadband infrastructure. To best “ensure that the Commission’s efforts to close the digital divide are working and . . . guide future policymaking,”²⁸ the Commission should set a benchmark – gigabit symmetric – that will promote all-fiber deployments and thereby close shut the divide. But at a minimum, the Commission should set its benchmark at a level that is satisfactory for today – at least 100/100 Mbps – while also tracking deployments at gig symmetric speeds to measure all-fiber deployments.²⁹

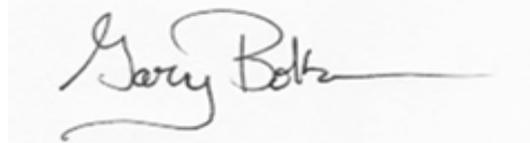
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Pursuant to Section 1.1206(b) of the Commission’s rules, this letter is being filed electronically.³⁰

Respectfully Submitted,



Shirley Bloomfield
CEO
NTCA–The Rural Broadband Association
4121 Wilson Boulevard, Suite 1000
Arlington, VA 22203
(703) 351-2030



Gary Bolton
President and CEO
Fiber Broadband Association
2001 K Street NW, 3rd Floor North
Washington, DC 20006
(202) 524-9550

²⁷ See Press Release, “Successful Rural Digital Opportunity Fund Auction to Expand Broadband to Over 10 Million Rural Americans,” FCC (Dec. 7, 2020) (“99.7% of these locations will be receiving broadband with speeds of at least 100/20 Mbps, with an overwhelming majority (over 85%) getting gigabit-speed broadband.”).

²⁸ NOI at ¶ 1.

²⁹ If the Commission increases the speed benchmark for measuring broadband deployments, that does not mean it must consider areas lacking access to speeds at the new benchmark as unserved for purposes of distributing limited broadband deployment resources. The Commission can set one benchmark to measure broadband deployment and another to identify areas that are unserved. See Reply Comments of NTCA–The Rural Broadband Association, GN Docket No. 20-269, at 5-6 (Oct. 5, 2020).

³⁰ 47 C.F.R. § 1.1206(b).