DEPARTMENT OF THE TREASURY
Washington, DC 20220

CORONAVIRUS STATE AND	)	**RIN 1505-AC77**
LOCAL RECOVERY FUNDS	)	**31 CFR Part 35**
INTERIM FINAL RULE	)	

COMMENTS OF

NTCA–THE RURAL BROADBAND ASSOCIATION

TO THE DEPARTMENT:

I.   INTRODUCTION

NTCA–The Rural Broadband Association (NTCA) hereby submits these comments in the

above-captioned docket.[1] NTCA represents approximately 850 locally-operated, facilities-based

broadband service providers throughout rural areas of the United States. All NTCA members are

fixed voice and broadband providers; many also provide mobile, video, and other advanced

communications services to their customers. NTCA members and small rural providers like them

operate in over one-third of the U.S. landmass while serving approximately 5% of the U.S.

population; the average population density of an NTCA member service area is seven people per

square mile, equal to roughly the density of Montana. On average, NTCA members serve about

4,500 customers. Despite the challenges of terrain and small populations that upend ordinary

economies of scale, the most recent survey data of NTCA members reveals that nearly 70% of

NTCA members' customer locations are served by fiber optic facilities, and nearly 70% of

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[1] *Coronavirus State and Local Fiscal Recovery Funds: Request for Information,* Department of the
Treasury, 31 CFR Part 35, RIN 1505-AC77, 86 Fed. Reg. 26786 (May 17, 2021) (ARPA RIN).

NTCA members' customer locations can obtain broadband service at 100 Mbps.[2] These accomplishments reflect the committed, locally operated nature of these companies and their strategic insight to deploy next-generation networks that ensure the viability of their rural communities.

As the Department considers the final form of the interim proposed rule, NTCA submits that fidelity to three overarching principles is necessary to ensure fulfilment of the goals envisioned by the American Rescue Plan Act (ARPA).[3]

1. Scalable, future-proof networks are necessary to meet forecasted broadband demands efficiently and economically.

2. Targeted funding and coordination among Federal agencies is necessary to ensure broadband deployment occurs where it is needed most and without the risk of overbuilding existing robust networks.

3. The deployment record and ongoing work of locally operated rural providers *irrespective of corporate organization* must be recognized without preference for not-for-profit or government entities.

Final rules that conform to these principles will ensure that critical ARPA resources build networks that are best positioned to meet current and future broadband demands, strategically and without waste.

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[2] *See, Broadband/Internet Survey Availability Report,* NTCA–The Rural Broadband Association, at 2 (Dec. 2020) (https://www.ntca.org/sites/default/files/documents/2020-12/2020%20Broadband%20Survey%20Report.pdf) (visited Jul. 12, 2021).

[3] American Rescue Plan Act of 2021, Pub. L. 117-2, codified at 42 U.S.C. 802 *et seq.*

II.   THE DEPARTMENT SHOULD PROMOTE FUTURE-PROOF NETWORKS, ENSURE COORDINATION AMONG FEDERAL AGENCIES, AND RECOGNIZE THE <u>ACCOMPLISHMENTS OF LOCALLY OPERATED BROADBAND PROVIDERS.</u>

A.   FUTURE-PROOF NETWORKS REPRESENT SOUND PUBLIC INVESTMENT STRATEGY TO MEET FUTURE NEEDS.

ARPA investments should strive to deliver the strongest return on long-term investment. Consistent with prior trends, future broadband demand is expected to continue to increase dramatically in the future. Building networks today that can meet the demands of tomorrow will drive the greatest value from current resources. Toward these ends, support for future proof networks contemplates several factors: (i) increasing user demand; (ii) which network platform is capable of supporting that demand; and (iii) the relative costs of deploying that network, as well useful life and economic life of the network. As described below, the largest cost component of network deployment is labor. And, as described below, the nominal cost of expanding capacity of a fiber network is dramatically less than the cost of design, permitting, construction, and other costs associated with initial deployment. Therefore, the most efficient long-term strategy is to "dig once," *i.e.,* to deploy a network that has long-term durability and whose capacity can be expanded at nominal cost to meet future demand. Fiber optic broadband meets those parameters in the overwhelming majority of deployment scenarios.

Network Demands are Increasing

Anecdotal and empirical evidence indicate that demand for broadband will only increase in the near-term and long-term future. The Federal Communications Commission (FCC) reports the average broadband speed in 2019 was 146.1 Mbps.[4] In less than a decade since the FCC's

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[4] *Tenth Measuring Broadband America: Fixed Broadband Report,* Office of Engineering and Technology, Federal Communications Commission (Jan. 4, 2021) (https://www.fcc.gov/reports-research/reports/measuring-broadband-america/measuring-fixed-broadband-tenth-report) (visited Jul. 12, 2021).

first report in 2012, the average speed increased annually 35%. In just the last two years (2017-2019), average broadband speeds increased 54% annually. CISCO predicts that in less than two years, 92% of the North American population will be online.[5] And, these increases are not limited to downstream usage: OpenVault reports that upstream data usage increased 63% between December 2019 and December 2020.[6] While certain of these data may reflect increased demand during the COVID pandemic, numerous reports indicate that post-COVID demand for broadband will exceed pre-pandemic levels. Accordingly, building today for the needs of tomorrow is a strategy that is informed and supported by the accumulated data. An examination of trends in telework, distance education, and telehealth inform the imperatives of this discussion.

During the middle period of the COVID-19 pandemic (December 2020), it was determined that more than half of middle-income and upper-income workers could work from home. More than 80% of those workers reporting using video or online conferencing services to connect to co-workers, with nearly two-thirds finding those platforms to be good substitutes for in-person meetings.[7] The range of industries that provide telework opportunities is expansive, and is fueling a new-found outlook of "work anywhere, from anywhere," a maxim that bodes

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[5] Cisco Annual Internet Report (2018-2023), Cisco, at 8 (updated Mar. 9, 2020) (https://www.cisco.com/c/en/us/solutions/collateral/executive-perspectives/annual-internet-report/white-paper-c11-741490.pdf) (visited Jul. 12, 2021).

[6] Dan O'Shea, *Pandemic Drove Upstream Broadband Traffic Boom: OpenVault,* Fierce Telecom (Apr. 1, 2021) (https://www.fiercetelecom.com/telecom/pandemic-drove-upstream-broadband-traffic-boom-openvault) (visited Jul. 5, 2021).

[7] Jim Parker, Julianna Menasce Horowitz, and Rachel Minkn, "How the Coronavirus Outbreak Has – and Hasn't – Changed the Way Americans Work," Pew Research Center (Dec. 9, 2020) (https://www.pewresearch.org/social-trends/2020/12/09/how-the-coronavirus-outbreak-has-and-hasnt-changed-the-way-americans-work/) (visited Jul. 12, 2021).

well for rural spaces with robust broadband as workers consider new residential opportunities.[8]

Telework is expected to experience evolutionary increases post-COVID-19 in both government

and private sectors.[9] These trends are expected to extend to other sectors.

For example, during the pandemic, 55 million American students were affected by

COVID-related school closures.[10] Even as schools prepare to return to in-person learning,

increased use of broadband capabilities for in-school and outside-school assignments is expected

to endure.[11] Like telework, these functions can be expected to continue to rely upon synchronous

and asynchronous learning. It is instructive, as well, to consider the potential number of

simultaneous users in a household and how that will affect demand for capacity at residential

locations. U.S. Census data reveal that 63.8 million households have children 18 years old and

younger; 35.8 million households have children between the ages of six and 18, *i.e.,* school-aged

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[8] *See,* Chip Cutter and Catherine Dill, "Remote Work is the New Signing Bonus," Wall Street Journal (Jun. 26, 2021) (https://www.wsj.com/articles/remote-work-is-the-new-signing-bonus-11624680029) (visited Jul. 8, 2021); Chip Cutter, "Many Companies Want Remote Workers – Except from Colorado," Wall Street Journal (Jun. 17, 2021) (https://www.wsj.com/articles/many-companies-want-remote-workersexcept-from-colorado-11623937649) (visited Jul. 8, 2021); Wall Street Journal, "Remote Work Has Two-Thirds of Americans Considering Moving from Cities to the Country," NextGov.com (Oct. 27, 2020) (https://www.nextgov.com/cio-briefing/2020/10/remote-work-has-two-thirds-americans-considering-moving-cities-country/169598/) (visited Jul. 8, 2021).

[9] *See, e.g.,* Natalie Alms, "OPM Official: No Going Back to Pre-COVID Status Quo," Federal Computer Week (Mar. 24, 2021) (https://fcw.com/articles/2021/03/24/opm-post-covid-no-going-back.aspx) (visited Jul. 6, 2021); Susan Lund, Anu Madgavkar, James Manyika, Sven Smit, Kweilin Ellingrud, Mary Meaney, and Olivia Robinson "The Future of Work After COVID-19," McKinsey Global Institute (Feb. 18, 2021) (https://www.mckinsey.com/featured-insights/future-of-work/the-future-of-work-after-covid-19) (visited Jul. 6, 2021).

[10] Map: Coronavirus and School Closures in 2019-2020, Education Week (updated June 30, 2021) (https://www.edweek.org/leadership/map-coronavirus-and-school-closures-in-2019-2020/2020/03) (visited Jul. 12, 2021).

[11] "The Evolution of Distance Education in 2020," School of Education and Human Sciences, University of Kansas (Sep. 17, 2020) (https://educationonline.ku.edu/community/distance-education-evolution-in-2020) (visited Jul. 12, 2021).

children.[12] When combined with employment and telework data, it is estimated that 12.6 million U.S. households would need to support multiple simultaneous workers and students.[13] To be sure, it is yet unknown how extensive telework and distance education will be as a "new normal" is achieved. But, when considering that tech experts recommend 10-20 Mbps for video calls (which would not include simultaneous running of "basic" email or web-browsing functions),[14] it can hardly be argued that setting low upload speed requirements bodes well for a "future proof" philosophy.

In similar vein, telehealth usage during the pandemic increased dramatically, and data reveal increased public interest in telehealth. In 2015, a Nielsen survey reported that 22 percent of physicians saw telemedicine as an important step toward reducing health care costs, while 39

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[12] "America's Families and Living Arrangements: 2019, U.S. Census Bureau, Table A-3: Parents With Coresident Children Under 18, By Living Arrangement, Sex, and Selected Characteristics (2019) (https://www.census.gov/data/tables/2019/demo/families/cps-2019.html) (visited Jul. 12, 2021).

[13] *See,* Employment Characteristics of Families Summary, U.S. Bureau of Labor Statistics (Apr. 21, 2021) (https://www.bls.gov/news.release/famee.nr0.htm) (visited Jul. 12, 2021). The employment rate among families with children in 2020 was 95.3% (at least one parent working; in 59.8% of two-parent households, both parents worked. Multiplying the employment rate by the number of households with school age children (children ages 6-18) yields 34.1 million (it bears note that Census Bureau figures and Bureau of Labor Statistics (BLS) figures from time-to-time do not match exactly but are within range of each other). The BLS reports that 37% of U.S. jobs can be teleworked (*see,* Maureen Soyars Hicks, "The Number of People Who Can Telework is Higher than Was Estimated," Monthly Labor Review, U.S. Bureau of Labor Statistics (Jun. 2020) (https://www.bls.gov/opub/mlr/2020/beyond-bls/the-number-of-people-who-can-telework-is-higher-than-was-estimated.htm) (visited Jul. 12, 2021). When multiplied by the number of households with (i) school age children and (ii) at least one working parent, we identify 12.617 million U.S. households that could be expected to support multiple broadband users during at least some part of the school/work week.

[14] *See,* Kristen Bolden, "Internet Speed: How Much Do You Really Need," cnet.com (Mar. 17, 2021) (https://www.cnet.com/home/internet/how-much-internet-speed-do-you-really-need/) (visited Jul. 13, 2021). The FCC proposes lower thresholds, and these are in fact referenced in the cnet article. *See,* Household Broadband Guide (Feb. 5, 20202) (https://www.fcc.gov/consumers/guides/household-broadband-guide) (visited Jul. 13, 2021). However, cnet distinguishes between minimum and recommended service levels, noting that households can include numerous connected devices that demand bandwidth, including computers, phones, security systems, smart TVs, gaming consoles.

percent agreed that telemedicine would be good for patient outcomes.[15] Overall, even while a

sizeable representation revealed their concerns that telemedicine would not be good for practice

revenue or income, 42 percent of physicians characterized telehealth as "an important evolution in

the practice of medicine."[16] The COVID-19 pandemic was a tipping point. In 1Q20, telehealth

encounters increased 50% over the same period in 2019.[17] In April 2020, telehealth for inpatient

and outpatient interactions was 78 times higher than in February 2020. And, while that rate

declined over the next quarter (2Q20), it increased again at the end of 2020 before plateauing at

roughly a 38x increase from February 2020 to February 2021.[18] Government regulations evolved

alongside telehealth adoption: several states waived licensure requirements and permitted out-of-

state doctors to treat patients across state lines.[19] Federal regulations also evolved to enable

greater telehealth engagement as Medicare implemented changes to permit additional

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[15] "Better Together: High Tech and High Touch: Consumer Health Care Survey Results," Council of Accountable Physician Practices, Washington, D.C., at 37 (Nov. 4, 2015) (http://accountablecaredoctors.org/wp-content/uploads/2015/11/CAPP-SHP-ConsumerSurvey_Full-Presentation_103015.pdf) (visited Jul. 16, 2021).

[16] *Id.*

[17] Koonin, Lisa M., *et al, Trends in the Use of Telehealth During the Emergence of the COVID-19 Pandemic – United States, January-March 2020,* Morbidity and Mortality Weekly Report, Centers for Disease Control (Oct. 30, 2020) (https://www.cdc.gov/mmwr/volumes/69/wr/mm6943a3.htm) (visited Jul. 13, 2021).

[18] Oleg Bestsennyy, Greg Gilbert, Alex Harris, and Jennifer Rost, "Telehealth: A Quarter-Trillion-Dollar Post-COVID-19 Reality?," McKinsey & Company (Jul. 9, 2021) (https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/telehealth-a-quarter-trillion-dollar-post-covid-19-reality) (visited Jul. 13, 2021).

[19] *See,* "U.S. States and Territories Modifying Requirements for Telehealth in Response to COVID-19," Federation of State Medical Boards (Jul. 9, 2021) (https://www.fsmb.org/siteassets/advocacy/pdf/states-waiving-licensure-requirements-for-telehealth-in-response-to-covid-19.pdf) (visited Jul. 13, 2021).

reimbursement opportunities for telehealth, adding 135 services to the eligible services list.[20] The

results were striking.

The data indicate a positive public response to telehealth availability. The Department of

Health and Human Services reports that 43.5% of Medicare primary care visits in April 2020

were conducted via telehealth, a remarkable increase from the previous February in which only

0.1% of primary care visits were via telehealth. Of particular interest to the instant discussion,

demand in rural areas surged: 33% increases in telehealth usage were documented in Iowa

33.5%), South Dakota (32.8%), and Oklahoma (34.7%). The most modest increase recorded was

a yet stunning 22% (occurring in Nebraska).[21] And, data point not only to acceptance of

telemedicine among younger Americans, but in older populations, as well.[22] Even as patients and

physicians are returning to office visits, it is expected that demand for telehealth will enjoy

higher-than-pre-pandemic rates.[23] While this shift will implicate responsive action across several

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[20] Seema Verma, "Early Impact of CMS Expansion of Medicare Telehealth During COVID-19," Health Affairs, (Jul. 15, 2020) (https://www.healthaffairs.org/do/10.1377/hblog20200715.454789/full/) (visited Jul. 13, 2021).

[21] "Medicare Beneficiary Use of Telehealth Visits: Early Data from the Start of the COVID-19 Pandemic, "Assistant Secretary for Planning and Evaluation, U.S. Department of Health and Human Services, at 22 (Jul. 28, 2020) (https://aspe.hhs.gov/system/files/pdf/263866/hp-issue-brief-medicare-telehealth.pdf) (visited Jul. 16, 2020).

[22] *See, e.g.,* Greenwald, P., Stern, ME, Clark, S., Sharma, R., "Older Adults and Technology: In Telehealth, They May Not Be Who You Think They Are," International Journal of Emergency Medicine (2018) (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5752645/) (viewed Sep. 14, 2020).

[23] *See, e.g.,* Oleg Bestsennyy, Greg Gilbert, Alex Harris, and Jennifer Rost, "Telehealth: A Quarter-Trillion-Dollar Post-COVID-19 Reality?," McKinsey & Company (May 29, 2020) (https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/telehealth-a-quarter-trillion-dollar-post-covid-19-reality#) (visited Jul. 6, 2021); Todd Shyrock, "Digital Doctors: What Role Will Telehealth Play After COVID-19?," 97 Medical Economics Journal 15 (Nov. 2, 2021); "Virtual Care's Post-COVID-19 Future Comes into Focus," American Hospital Association (https://www.aha.org/aha-center-health-innovation-market-scan/2020-08-11-virtual-cares-post-covid-19-future-comes-focus) (visited Jul. 6, 2021).

sectors, including the health insurance industry, Medicare and Medicaid programming, and physician licensing, the primary enabler of this looming evolution will remain broadband capability.

Rural entrepreneurship also relies on robust broadband networks. Numerous reports cite migration from big cities to rural spaces.[24] A recent article predicts these trends bode well for rural tech entrepreneurship and a new focus to leverage technology to address needs in rural spaces. The article explains:

> The nation's tech workers likely won't work on the same types of projects that dominated their time when they were ensconced in their hubs. . . . Entrepreneurs are innately curious, looking to bump into ideas and people that can unearth problems to solve and opportunities to seize. . . . And that is why the geographic diffusion of tech will change the industry to its core. It is much harder to understand what bedevils the lives of people living in, say, Fayetteville, Ark., if your life rarely exposes you to people living outside the social and commercial networks of places like San Francisco or Cambridge, Mass.[25]

ARPA funding promises the opportunity to support these important trends.

These manners of increased usage are notable because they contemplate not only download speeds but require robust *upload* capabilities, as well. While significant download capabilities are required to support customer demand for asynchronous streaming or entertainment platforms, school, telework, and telemedicine require the ability to send large data

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[24] *See, i.e.,* Ben Popken, "Millions of Americans Moved During the Pandemic – and Most Aren't Looking Back," NBC News (Dec. 31, 2020) (https://www.nbcnews.com/business/business-news/millions-americans-moved-during-pandemic-most-aren-t-looking-back-n1252633) (visited Jul. 15, 2021), *and* Jeff Rose, "Time to Move? Data Suggests Americans May Flee to Rural Areas Post-COVID," Forbes (Aug. 6, 2020) (https://www.forbes.com/sites/jrose/2020/08/06/time-to-move-data-suggests-americans-may-flee-to-rural-areas-post-covid/?sh=2a9c5d0c7161) (visited Jul. 15, 2021). *See, also,* Marie Patino, Aaron Kessler, and Sarah Holder, "More Americans Are Leaving Cities, But Don't Call it an Urban Exodus," Bloomberg CityLab (Apr. 26, 2021) (https://www.bloomberg.com/graphics/2021-citylab-how-americans-moved/) (visited Jul. 15, 2021). Patino, *et. al.,* observe that most people who moved relocated to a place within the regional economic area, and that "Those Americans who did move accelerated a trend that predates the pandemic: Dense core counties of major U.S. metro areas saw a decrease in flow into the cist, while other suburbs and some smaller cities saw net gains."

[25] Steve Case, "Innovation Moves to Middle America," Wall Street Journal, p.A-17 (Jul. 14, 2021).

files and engage synchronous video. Moreover, ag tech, which relies upon an interlacing network of wired and wireless facilities, similarly requires uninhibited upload capabilities to enable "on-the-go" machine decisions enabled by artificial intelligence (AI) and cloud-based solutions.[26] Residential consumer demand for symmetrical broadband increased 20%-to-25% annually over more than 20 years.[27] Projections forecast peak demands of 400 Mbps symmetrical by 2028.[28] A recent report demonstrates the increase in broadband demand and observes, "In many ways, the United States is entering a new broadband era . . . the fallout from the COVID-19 pandemic has increased the sense of urgency to bring connectivity within reach of all Americans."[29] Notions that asymmetrical broadband will meet future demands ignore a rich set of anecdotal and empirical evidence. A successful broadband future relies on robust symmetrical capabilities and ARPA mechanisms should be calibrated to support them.

Fiber Provides Greater Capabilities and More Favorable Economics Over the Useful Life of the Network

Given industry forecasts of increased broadband demand alongside experiential evidence of increased use for commerce, education, and health care, it is clear that investments in broadband infrastructure should strive to deploy networks that will "stand the test of time."

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[26] *See,* Seidemann, Joshua, *From Fiber to Field: The Role of Rural Broadband in Emerging Agricultural Technology,* Smart Rural Community, at 5, 17 (2021) (https://www.ntca.org/sites/default/files/documents/2021-07/06.14.21%20SRC%20Ag%20Tech%20Final.pdf) (visited Jul. 12, 2021).

[27] *Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion: Comments of Fiber Broadband Association,* Docket No. 20-269, Federal Communications Commission, at 9 (Sep. 18, 2020).

[28] *Id.* at 9, 10.

[29] "Broadband Today: Rural America's Critical Connection," Foundation for Rural Service, Arlington, VA, at 28 (2021) (https://www.ntca.org/sites/default/files/documents/2021-02/Rural%20America%27s%20Critical%20Connection%20--%20FRS%20White%20Paper.pdf) (visited Jul. 7, 2021).

Indeed, the FCC articulated this vision in its most recent large-scale effort to bridge the digital divide.[30] This vision affirmed the goals of Congressional leaders, who articulated the need to ensure that robust broadband networks meet consumer needs "now and in[to] the future."[31] The Department must set no lower goals. Accordingly, NTCA urges the Department to focus its efforts and resources on networks that are scalable for the future and which enable *now and into the future* high-capacity, low-latency capabilities to support advanced applications.

With these targets in sight, it is critical that the Department be steadfast in its commitment to ensure that funding distributions support networks that can support future customer demands over the life of the network. Rational investment principles dedicate critical resources to network platforms whose useful life lasts for at least the duration of their economic life. It is imperative that consumer experience, usefulness, and overall network capability for "now and into the future" must stand at the forefront as distribution decisions are made. Fiber optic broadband networks provide resilient, scalable, and future-proof platforms, and programmatic policies and guidelines should avoid diluting ultimate consumer experience and usefulness by serving short-term interests that result in the deployment of platforms that will suffer obsolescence as consumer demands outpace network capabilities.

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[30] " . . . ensure that networks stand the test of time by prioritizing higher network speeds and lower latency, so those benefitting from these networks will be able to use tomorrow's Internet applications as well as today's." *Rural Digital Opportunity Fund; Connect America Fund: Report and Order,* Docket Nos. 19-126, 10-90, Federal Communications Commission, FCC 20-5, at para. 2 (2020).

[31] Letter from Senator John Thune et al., U.S. Senate, to Ajit Pai, Chairman, FCC (Dec. 9, 2019) (on file in Federal Communications Commission Docket No. 19-126) (emphasizing "the importance of sustainable networks that meet the needs of consumers now and in the future"); Letter from Peter Welch et al., Members of Congress, to Ajit Pai, Chairman, FCC (Dec. 13, 2019) (on file in Federal Communications Commission Docket No. 19-126) (requesting "further steps be taken to promote the deployment of sustainable networks that are capable of meeting consumer demands now and into the future").

Fiber and towers (used in wireless networks) generally have a useful life of 30 years.[32] However, the cost of deploying a wireless network must contemplate the cost of spectrum (purchased by the provider at auction or on the secondary market) and power (constant electric and back-up generators) that must be connected to each tower facility. The full cost of the network, however, must also contemplate (a) the useful life of the network and (b) opportunity costs incurred when networks are unable to support user demands. As described above, broadband demand is projected only to increase. The primary path to expand the capability of a wireless network is to add spectrum *if* additional spectrum can be obtained on either the primary (government auction) or secondary market. In contrast, the capacity of a fiber network can be expanded efficiently and relatively expeditiously with the addition of turn-key electronics that generally have generally have a useful life of about one decade.[33] Finally, the ultimate capacity of fiber networks is yet unmeasured, and truly has been designated as "future proof" by a community of experts.[34]

Broadband networks typically contemplate useful and economic life in durational units of decades. Fiber optic networks are the best strategy to ensure scalable, future proof networks for long-term goals. Maintenance costs for fiber are comparatively lower than other technologies,[35] and the capacity of a fiber network can be expanded by installing electronic components that

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[32] "Future Proof: Economics of Rural Broadband," Vantage Point Solutions, at 4 (2021) (https://www.ntca.org/sites/default/files/documents/2021-05/Future%20Proof%20--%20Economics%20of%20Rural%20Broadband%20FINAL_0.pdf) (visited Jul. 15, 2021) (Vantage Point).

[33] *Id.* at 10.

[34] *See, generally,* Vantage Point.

[35] *See, generally,* "Operational Expenses for All-Fiber Networks are Far Lower Than for Other Access Networks," Fiber Broadband Association (Jun. 2020) (https://www.fiberbroadband.org/p/cm/ld/fid=978) (visited Jul. 5, 2021).

expand the capabilities of the already-deployed fiber. Rational investors in capital-intensive infrastructure should aim to ensure that the useful life of the infrastructure extends beyond the economic life of the network, *e.g.,* that initial capital costs are recovered before the network is functionally obsolete. Broadband presents unique but surmountable challenges in these regards. The deployment of advanced broadband infrastructure contemplates numerous cost events, from network design, permitting, materials, and construction; the latter itself includes, *inter alia,* detailed analyses of soil type; existing terrestrial or underground facilities that must be accommodated; pole attachments; and rights of way. Finally, labor remains the largest cost component of rural network deployment.[36] In these regards, fiber enables not only robust capabilities but also enables a "dig once" approach wherein the backbone of the network can be deployed, and future expansion can be accomplished through turnkey electronics.

Broadband demand has increased dramatically over the past several decades and shows no signs of slowing down. Therefore, the deployment of "future proof" facilities is necessary to ensure that the useful life of the network does not expire before its economic life has been realized. Rational investment should ensure that networks built today can accommodate the anticipated demands of tomorrow. This will obviate the need to redeploy costly networks in order to keep pace with expanding market demands.

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[36] For a detailed discussion of labor cost inputs in rural broadband network deployment, *see, Connect America Fund; ETC Annual Reports and Certifications; Establishing Just and Reasonable Rates for Local Exchange Carriers; Developing a Unified Intercarrier Compensation Regime: Comments of NTCA–The Rural Broadband Association,* Federal Communications Commission, Docket Nos. 10-90, 14-58, 07-135, 01-92, at 15-23 (May 25, 2018). In brief, labor costs for telecommunications deployment over the past decade has grown at a rate equal to or greater than the rate of inflation. Moreover, compliance with the Davis-Bacon Act as well as persistent labor shortages in the industry create regressive economic impacts inasmuch as increasing labor costs are not mitigated by productivity offsets.

NTCA also takes this opportunity to note that special regional conditions warrant consideration and departure from certain conclusions presented by the interim final rule. Specifically, the interim rule provides, "recipients are encouraged to focus on projects that deliver a physical broadband connection by prioritizing projects that achieve last-mile connections."[37] In Alaska, however, this preference would have the effect of diminishing opportunities to provide high-capacity broadband to remote users. The underling cause of high middle mile transport costs in Alaska has been recognized by Federal policymakers. In creating the "Alaska Plan," a Universal Service Fund plan crafted specially to meet the state's unique needs, the FCC observed, "Alaska's large size, varied terrain, harsh climate, isolated populations, shortened construction season, and lack of access to infrastructure make it challenging to deploy voice and broadband capable networks."[38] These conditions affect not only last mile networks, but middle-mile networks, as well, which in fact must traverse thousands of miles of rough country. Consumers have noted the blunt impact of high middle mile costs on consumer rates.[39] The Alaska Regulatory Commission has studied the issue in depth, concluding that the characteristics of geography and population settlement in Alaska "makes deployment of the terrestrial network facilities, currently required to provide broadband Internet access, not only a difficult technical proposition but potentially a an unrealistic economic proposition unless

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[37] ARPA RIN at 86 Fed. Reg. 26806 (emphasis added).

[38] *See, Connect America Fund; Universal Service Reform – Mobility Fund; Connect America Fund – Alaska Plan: Report and Order and Further Notice of Proposed Rulemaking,* Docket Nos. 10-90, 10-208, 16-271, FCC 16-115, at para. 5 (2016).

[39] *See,* Jeannette Lee Falsey, "For Rural Alaska Broadband, the 'Middle Mile' is Everything," Anchorage Daily News (Mar. 8, 2017) (https://www.adn.com/features/business-economy/2017/03/18/for-rural-alaska-broadband-the-middle-mile-is-everything/) (visited Jul. 15, 2021).

massive additional subsidies are provided."[40] The Department should accordingly recognize the

unique situation of Alaska and elevate among prioritized projects those that would support

terrestrial middle-mile facilities. This will complement last mile efforts and facilitate more

affordable and more capable broadband service in Alaska.

B.   COORDINATION AMONG FEDERAL AGENCIES WILL BE NECESSARY TO DIRECT RESOURCES STRATEGICALLY AND WITHOUT WASTE.

New, substantial steps toward resolving the "digital divide" are being taken by many

interested agencies. But these favorable progressions will realize their fullest potential only if the

administering agencies work in concert. Such a coordinated approach will at once ensure that

each agency can focuses its particular expertise where it is most beneficial while also avoiding

wasteful and duplicative overbuilding of existing networks that promise the ability to expand. In

the instant discussion, the ARPA broadband efforts will work best when coordinated with FCC,

USDA, and NTIA efforts. Moreover, it can be only useful for Federal agencies to remain

apprised and consider the role of the Federal-State Joint Board on Universal Service.[41] In the

case of NTCA members, especially, many work with the Rural Utilities Service (RUS) to deploy

advanced communications networks. Using a mix of RUS and private capital to support cap-ex

commitments, and USF to mitigate ongoing op-ex, these small, locally operated carriers support

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[40] "Legislative Report: Alaska's Current and Future Broadband Coverage," Regulatory Commission of Alaska, Broadband Report to Alaska Legislature (Dec. 1, 2017) (http://www.akleg.gov/basis/get_documents.asp?session=30&docid=39163) (visited Jul. 15, 2021). To be sure, Alaska companies rely on a mix of middle-mile platforms, including fiber, microwave, satellite. Notwithstanding a preference for fiber where it is practicable, all entail per-unit costs that are magnitudes higher than those faced by providers in the continental United States.

[41] The Federal-State Joint Board on Universal Service (Joint Board) is composed of Federal and state regulators, including consumer advocates. The Joint Board is charged with the making recommendations to implement the universal service provisions of the Communications Act of 1934, as amended. *See,* 47 U.S.C. § 254(a)(1).

a range of industry sectors in their local communities, including agriculture, economic

development, education, health care and more.[42]

As is the case with other infrastructure investments, broadband deployment contemplates

both initial capital expenditures (capex) as well as ongoing operational expenditures (op-ex) to

ensure continuing maintenance and upgrading for the long-term. Moreover, broadband network

operators must also factor the costs of cyber security, which are evolving rapidly as threats from

both private and nation-state adversaries grow.[43] Ongoing operational expenditures ensure that

network capabilities keep pace, strongly and securely, with evolving and expanding user

demands. Deployment enabled by ARPA and similar measures is sustained through ongoing

administration of Universal Service Fund (USF) programs that ensure, consistent with

Congressional directives articulated in the Communications Act, that residents of rural and

insular areas of the nation can obtain telecommunications and advanced communications

services that are reasonably comparable to those that are available in urban areas, and at

reasonably comparable rates.[44] Coordination among Federal agencies charged with the

deployment and *ongoing use* of advanced networks is critical to ensure that resources are directed

strategically so that vital rural community services are ready to serve current and future needs

with advanced broadband capabilities.

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[42] For an overview and profiles of collaborative efforts among rural broadband providers and other local leaders to support local sectors, please visit www.smartruralcommunity.org.

[43] *See, i.e.,* "Executive Order on Improving the Nation's Cybersecurity," The White House, Washington, D.C. (May 12, 2021).

[44] 47 U.S.C. § 254(b)(3).

To be sure, this imperative has been recognized in the recent inter-agency agreement among the FCC, USDA and NTIA.[45] ARPA recognizes the challenge of deploying capital-intensive networks where distance and sparse population density make it difficult, if not impossible, to support an ordinary business case for network investment in that market. Congress recognized previously the result of high network costs distributed among relatively few users in the USF sections of the Communications Act; specifically, Congress established external support mechanisms to ensure that users in rural and insular parts of the nation can obtain communications services that are reasonably comparable in both quality and price to those available to residents of urban places.[46] Accordingly, ARPA funding is best aimed at *unserved areas* – those areas most lacking in broadband and seeking to build in those areas *the best broadband network that can be built* with the available funds. This process should contemplate a "build it right the first" time approach that provides long-term scalability for future needs without the prospect of wasteful overbuilding.

Additionally, distributions are best targeted by focusing first on those areas that are truly unserved and most in need of broadband, then focusing on areas that may be "behind the curve," but not as deeply. The goal to connect all Americans must include *all* Americans, and the instant ARPA effort can help meet that goal by taking this historic opportunity to reach the most remote, most unserved regions. While all rural areas, generally, are beset by the lack of economies of scale (and therefore require mechanisms beyond general market forces to enable broadband buildout), care should be taken now to reach those areas that are virtually untouched by any form

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[45] "USDA, FCC, and NTIA Announce Interagency Agreement to Coordinate Broadband Funding Deployment," USDA (Jun. 25, 2021) (https://www.usda.gov/media/press-releases/2021/06/25/usda-fcc-and-ntia-announce-interagency-agreement-coordinate) (visited Jul. 13, 2021).

[46] *See,* 47 U.S.C. § 254(b).

of mitigating factors that would ease the effort to deploy. As the Department commits historic

resources to forge broadband infrastructure further, it is important to prioritize the use of funds to

deploy networks in areas most in need and "work upward" from there, rather than to first fund

networks in some areas less in need only to later discover that finite resources have been

expended before those areas most in need have been reached. Accordingly, even as NTCA is a

vigorous and strong proponent of building the best possible networks, we support starting to do

so in the areas with the least effective networks today – those areas lacking access to even just 25

Mbps/3 Mbps broadband. Then, once those areas are served and as funding remains available,

attention should then turn next to areas lacking 50 Mbps/5 Mbps broadband and so on, such that

resources are directed before they are depleted to where they are needed most to build advanced

high-speed future-proof networks in those areas most in need.

C.   LOCALLY BASED PROVIDERS, INCLUDING BOTH COMMERCIAL AND NOT-FOR-PROFIT, DELIVER A RECORD OF EXTENSIVE BROADBAND DEPLOYMENT ALONGSIDE ABIDING ATTENTION TO COMMUNITY NEEDS

As described above, NTCA members have established formidable records of broadband

deployment, striking technological achievements that would be impressive even in more densely

populated metropolitan areas. And, NTCA members have stood resolutely with their

communities, with hundreds of NTCA members participating in the prior FCC Chairman's Keep

America Connected pledge[47] and enrolling customers for the Emergency Broadband Benefit.[48] It

is expected, as well, that NTCA members, who on average serve three public libraries and six

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[47] *See, e.g.,* "Companies Have Gone Above and Beyond the Call to Keep Americans Connection During Pandemic," Federal Communications Commission (https://www.fcc.gov/companies-have-gone-above-and-beyond-call-keep-americans-connected-during-pandemic) (visited Jul. 14, 2021).

[48] *See, Emergency Broadband Benefit: Helping Households Connect During the Pandemic,* Federal Communications Commission (https://www.fcc.gov/broadbandbenefit) (visited Jul. 14, 2021).

schools in their respective areas (with nearly two-thirds of libraries and more than 80% of those

schools served by fiber to the premise (FTTP)),[49] will provide services underlying the

Emergency Connectivity Fund.[50] And yet a broad brush risks obscuring the impressive

accomplishments of NTCA members and many other community-based providers. Specifically,

the interim final rule proposes a preference for not-for-profit organizations.[51] Yet more than 50%

of NTCA member companies, all of which are locally operated within their small communities,

are in fact commercial, for-profit companies. And, as noted above, the most recent survey data of

NTCA members reveals that nearly 70% of NTCA members' customer locations are served by

fiber optic facilities, and nearly 70% of NTCA members' customer locations can obtain

broadband service at 100 Mbps.[52] Their corporate status (cooperative vs. commercial) is *not* the

determinative factor of their local success. Rather, their success, and the success of their

communities, is fastened to the local commitment that these communications providers have to

their communities. This commitment is an outgrowth of their roots in the communities they

service, and their resolve to invest in their communities by investing in the technologies that

keep their citizens and neighbors connected.

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[49] *Rural Anchor Institution Survey Report,* NTCA–The Rural Broadband Association, at 3, 4, 6 (Aug. 2018) (https://www.ntca.org/sites/default/files/documents/2018-08/NTCA%20Rural%20Anchor%20Institution%20Survey%20Report_Final.pdf) (visited Jul. 14, 2021).

[50] *See, Emergency Connectivity Fund: Helping Schools and Libraries Close the Homework Gap,* Federal Communications Commission (https://www.fcc.gov/emergency-connectivity-fund) (visited Jul. 14, 2021).

[51] ARPA RIN at 86 Fed. Reg. 26806.

[52] *See, Broadband/Internet Survey Availability Report,* NTCA–The Rural Broadband Association, at 2 (Dec. 2020) (https://www.ntca.org/sites/default/files/documents/2020-12/2020%20Broadband%20Survey%20Report.pdf) (visited Jul. 12, 2021).

NTCA recognizes that a large regional or national firm lacking a direct tether to the areas it serves may well balance shareholder interests against local conditions. But the distinction that illuminates the "company that cares about its community" is intertwined with that company's roots in the community, not the company's organizational filings with the state corporation commission. Accordingly, NTCA urges the Department to "think local," and in recognizing the proven achievement of locally operated *commercial and cooperative* firms to ensure that *all* locally operated organizations, like the small rural commercial broadband providers of NTCA, enjoy an equal opportunity to access much-needed funding that is necessary to build critical future-proof networks. These companies know their customers; their geography; their local economic conditions; their local business community; and other essential aspects that enable them to deploy and serve smart. Their commitment and track records of service to their communities is not defined by their corporate organization.

This track record is reflected in data surrounding RUS loan programs. Prior to Federal Communications Commission (FCC) overhauls of high-cost support programs, RUS loan delinquencies were "effectively zero."[53] Even during a period of substantial uncertainty in these FCC programs from 2010-18 (to illustrate, Traditional Telecom Program (TTP) loans decreased dramatically from 2,257 loans ($3.8 billion outstanding principal) to 753 loans ($2.5 billion principal)), the highest rate of loan delinquencies (2014-16) averaged only 1.26%.[54] In a public notice, RUS observed, " . . . TTP dates back over 60 years and the borrowers in that program

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[53] *Servicing Regulation for RUS Telecommunications Programs: Regulatory Impact Analysis,* 7 C.F.R. Part 1752, Rural Utilities Service, Rural Development, USDA, at 7 (RUS RIA).

[54] RUS RIA at 7. TTP delinquencies in 2014, 2015 and 2016 were 2.00%, 1.97%, and 2.05%, respectively. Delinquencies fell to less than 1.5% in 2017 and 2018, but never achieved the near zero rates recorded in 2010-2013. *Id.*

have been in operation for decades. These entities have a strong historical track record coupled with years of experience in providing service in the communities where our projects are being deployed."[55] Locally operated rural providers have been and remain trustworthy stewards of public monies as they deploy next-generation communications networks.

Regardless of corporate structure, small, locally operated broadband providers have a demonstrated track record of deployment, service, and trusted stewardship of public funds. The Department should refrain from diminishing small business opportunities based only the firm's corporate structure.

III.   CONCLUSION

As set forth herein and above, Congressional intent will be fulfilled by the Department through focused attention to three principles that must define implementation of the ARPA distributions:

1.   Broadband demand is forecasted to increase. Data from a variety of public and government sources demonstrate increased usage of broadband for education, healthcare, and commercial enterprise including telework. Market analysts project these trends to continue. Therefore, scalable, future-proof fiber networks that meet both technical and economic targets are best-suited to meet future market needs efficiently and economically.

2.   Targeted funding and coordination among Federal and State agencies is necessary to ensure broadband deployment occurs where it is needed most and without the risk of overbuilding existing robust networks. The Department is urged to focus *first resources* to areas that are truly unserved, and to then apply remaining resources to areas whose broadband can be improved to levels of higher service. The Department should avoid outcomes that leave truly unserved areas without funding.

3.   The deployment record and ongoing work of locally operated rural providers *irrespective of corporate organization* must be recognized *without preference* for not-for-profit or government entities. The Department should demur preferences based on corporate organization

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[55] RUS RIA at 7, 8. Current delinquencies include loans made under the Infrastructure Program, Broadband Program, DLT and BIP. RUS RIA at 8.

(not-for-profit vs. for-profit) and instead focus on whether the applicant, like the rural communications provider members of NTCA, is a locally operated and oriented enterprise with a demonstrable record of commitment to its community.

Final ARPA rules that accord to the principles outlined above will ensure a firm path forward to bringing the benefits of broadband throughout these United States.

Respectfully submitted,

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