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"10G" Can Help Future-Proof Broadband Infrastructure

by

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I. Introduction and Summary

It is not surprising that, during these trying times, heightened support has emerged for government action to ensure that all Americans have access to broadband on an expedited basis. Prudent fiscal policy, meanwhile, counsels in favor of targeting subsidies to the construction of facilities not just able merely to connect unserved areas, but to do so at speeds that are likely to meet consumers' needs for the foreseeable future.

Given proper regulatory conditions, cable broadband providers, which both compete with and complement different facilities-based technology platforms, can assist on both fronts. Their networks, which offer ample speeds to much of the country, with fairly relative ease could be extended into rural and other areas as yet unserved. In addition, in order to remain competitive and respond to ever-increasing consumer needs, the cable industry has developed the "10G" platform, a collection of technologies that will allow operators to deliver faster, multi-gigabit speeds over existing infrastructure.

As things currently stand, however, cable providers confront obstacles that may discourage them from participating fully in efforts to deploy future-proofed facilities in rural areas. Congress and

the FCC have before them proposals that could help address the situation. Specifically, passage of legislation that eliminates the Eligible Telecommunications Carrier requirement would encourage cable operators to take part in Universal Service Fund programs targeting broadband deployment. Greater cable operator participation in such reverse auctions would lead to two benefits. One, by involving providers with proven track records, it would increase the likelihood that funded projects are completed as promised and on time. Two, by expanding the number of bidders, it would apply additional downward pressure to the amount of the winning bids. In addition, FCC action on a pending petition for expedited declaratory ruling would rationalize pole-replacement cost sharing between owners and attachers in rural areas, thereby reducing costs and, as a consequence, encouraging additional investment and construction.

Home-bound existence over the past several months has served as a stress test for existing Internet infrastructure. U.S. broadband networks, which are designed to satisfy expected customer requirements 18-24 months into the future, have passed the test with flying colors. The ability of high-speed Internet access to ameliorate the fallout from the COVID-19 pandemic, however, has intensified attention on those rural, low-population-density, and geographically challenged locations where, to date, the economics have been unable to justify private investment.

To be sure, it is important to emphasize that those areas lacking access are the exception, not the rule. Providers have invested nearly \$2 trillion to date on broadband infrastructure. As a consequence, the FCC in April found that, at the end of 2018, 94.4 percent of the overall population had access to fixed service at speeds of at least 25/3 Mbps. The cable industry alone has spent nearly \$300 billion over the past twenty years, enabling operators to offer service to over 93 percent of U.S. homes. This widespread, existing cable footprint creates a strong foundation from which to extend networks into high cost areas.

In addition to being well positioned to extend their networks to locations currently unserved, cable operators today deliver gigabit access to 80 percent of homes, speeds far greater than required for existing use cases. Moreover, the emerging "10G" platform promises to make available even faster data rates – by as much as a factor of 10 – and other advanced capabilities, and to do so over existing infrastructure.

Of course, cable operators are by no means the only actors focused on the next iteration of broadband connectivity. Competitive pressures; emerging bandwidth-intensive innovations such as gaming, augmented reality, virtual reality, and other immersive virtual environments; and consumers' ever-increasing appetite for bits collectively impel broadband providers to upgrade their network facilities continually. Wired network operators are deploying fiber to the home (FTTH), laying a physical-layer foundation that will remain viable for years to come. Wireless carriers are deploying 5G networks, which, given their dramatically higher data rates, already may serve as a competitive substitute to fixed offerings in certain instances. Manufacturers of unlicensed devices are selling equipment that supports Wi-Fi 6, the latest wireless networking specification. "Wi-Fi 6E" equipment, which can operate in the 1200 MHz of spectrum in the 6 GHz band that the Commission in April 2020 unanimously voted to make available for unlicensed use, is expected to be on store shelves by the end of the year.

The cable "10G" platform, FTTH, 5G, and Wi-Fi 6/6E all share many improvements over existing technologies: higher data rates, of course, but also lower latency, greater reliability, support for more devices, and improved security. This common feature set will enable them to compete with one another for customers. At the same time, each has unique strengths and weaknesses that allow them, in certain scenarios, not only to compete against the others but, importantly, also to complement them. 5G can provide a mobile alternative to the fixed "10G" platform. Cable operators can utilize the expanded capacity enabled by "10G" to provide backhaul capacity for 5G. And Wi-Fi 6/6E devices can redistribute 5G and "10G" signals within homes and businesses using unlicensed spectrum.

In order for all Americans to reap the benefits generated by this competitive/complementary scenario, however, they must have access to broadband facilities that are not likely to become obsolete in the next several years. Ensuring that scarce public resources target builds that can evolve alongside consumer requirements therefore is a top policy priority, one that helped define the bidding procedures for Phase I of the FCC's \$20.4 billion Rural Digital Opportunity Fund. Thanks to the "10G" platform, cable infrastructure constructed today can check that box.

As Free State Foundation scholars have explained, however, the obligation to obtain an Eligible Telecommunications Carrier designation from state Public Utility Commissions serves as a disincentive for cable operators, and other ISPs not already subject to state-level oversight, to pursue the difference-making Universal Service Fund dollars that would facilitate the extension of cable broadband infrastructure, and the associated benefits described above, to areas currently unserved. Passage of any one of a number of pending pieces of legislation would ensure the optimal operation of reverse auctions, make the most of finite resources, and, as a direct result, close remaining digital divides.

Additionally, targeted FCC intervention to rationalize the sharing of pole-replacement costs between owners and attachers in rural areas would reduce the cost of network expansion into low-population-density areas, thereby encouraging additional construction via an improved return-on-investment outlook.

II. Cable Operators Can Help Bridge Remaining Digital Divides and Future Proof Broadband Networks Using Existing Infrastructure and the "10G" Platform

One of the many lessons learned over the past several months is the extent to which high-speed Internet access performs an essential function in our pandemic-transformed lives. Broadband networks have proven that they are more than capable of handling the increased traffic generated by a public kept largely at home.¹ That is to be expected. ISPs have invested over \$1.7 trillion to

¹ See, e.g., Jonathan Spalter, "Designed for Demand: How Networks Keep Your Data Flowing," *Medium* (April 23, 2020), available at <https://medium.com/@USTelecom/designed-for-demand-how-networks-keep-your-data-flowing-b21d74d8df0c> (reporting that "one month in, the data shows that U.S. networks are more than prepared to accommodate a prolonged reliance on telework, distance learning, and other forms of high bandwidth communications" and noting that "the ability to absorb this additional traffic isn't just good luck or the avoidance of a worst-case scenario. It is, in fact, a design feature of America's modern broadband networks."); Ashley Murray, "Internet companies handled 'dramatic surge' during pandemic because of infrastructure investments, industry says," *Pittsburgh Post-Gazette* (August 9, 2020), available at <https://www.post-gazette.com/local/region/2020/08/09/Internet-companies-infrastructure-upgrade-pandemic-isp-armstrong-cranberry->

date on broadband infrastructure.² As a result, 94.4 percent of the overall population had access to fixed service at speeds of at least 25/3 Mbps at the end of 2018.³ That was over a year and a half ago, and it is likely that that percentage has risen even further in the interim.

Now fall approaches, and the beginning of the 2020-21 school year, for the first time, involves a mix of in-person and remote learning experiences, if not an entirely online start. The plight of areas currently unserved – whether rural, geographically challenged, or characterized by low population density levels – is receiving renewed focus. Without question, the novel coronavirus has upped the broadband-deployment stakes dramatically.

However, government-led efforts to expedite network construction involve limited resources: whether the Universal Service Fund, made up of contributions from the steadily dwindling pool of subscribers to "telecommunications" services, or taxes collected from the public at large. Such scarce assets should be used in the most efficient manner possible. That is why, for example, the FCC has structured Phase I of the Rural Digital Opportunity Fund program to prioritize infrastructure able to deliver faster speeds and lower latency, rather than focus solely on price, thereby maximizing long-term utility.⁴

Two top-level broadband policy priorities, then, are (1) expediting the deployment of broadband to currently unserved areas, and (2) investing only in facilities able to remain viable for several years. Along with other market participants, cable broadband providers can help advance both of these goals.

The cable industry has invested substantially in broadband infrastructure over the past two decades, in excess of \$290 billion.⁵ As a consequence, operators today are able to offer service over hybrid fiber-coaxial (HFC) networks to more than 90 percent of all homes in the United States.⁶ Currently deployed technology, based upon Data Over Cable Service Interface Specification (DOCSIS) 3.1, allowed cable operators to make gigabit downstream speeds available to 93 percent of homes passed as of December 2018.⁷

comcast/stories/202008050131 ("I can't tell you we planned for a pandemic, that would not be accurate, but we do plan for 18 to 24 months in the future for sure," said David Wittmann, vice president of cable marketing for Armstrong, a Pittsburgh-area ISP.).

² See Mike Saperstein, "USTelecom Industry Metrics and Trends 2020: Update" (April 27, 2020), available at <https://www.ustelecom.org/research/ustelecom-industry-metrics-and-trends-2020-update/>.

³ See *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 20-50 (released April 24, 2020), available at <https://docs.fcc.gov/public/attachments/FCC-20-50A1.pdf>, at ¶ 36.

⁴ See *Rural Digital Opportunity Fund; Connect America Fund*, WC Docket No. 19-126, WC Docket No. 10-90, Order, 35 FCC Rcd 686, at ¶ 21 (2020) ("In Phase I, however, once the budget has cleared, we will prioritize bids with lower tier and latency weights, thereby encouraging the deployment of networks that will be sustainable even as new advancements are made and which will be capable of delivering the best level of broadband access for many years to come, all while keeping funding within the Phase I budget.... In other words, our goal to close the digital divide is balanced against our goal to support the deployment of future-proof networks by this auction.").

⁵ See NCTA – The Internet & Television Association, "Broadband by the Numbers," available at <https://www.ncta.com/broadband-by-the-numbers>.

⁶ *Id.*

⁷ "10G: The Next Great Leap in Broadband," *INFORM[ED] INSIGHTS* (Summer 2019), available at https://www.10gplatform.com/sites/default/files/2019-05/cable_labs_white_paper_10G_the_next_great_leap_in_broadband.pdf, at 2 (*10G INFORM[ED] INSIGHTS*).

Gigabit speeds are more than adequate for existing use cases. But if history is any guide, innovative applications and new services – including advanced gaming, augmented reality, and virtual reality – soon may entice consumers to seek even higher speeds. The subsequent availability of those higher speeds, in turn, may drive further bandwidth-intensive innovation. The emerging "10G" platform is the cable industry's response to that anticipated future demand.⁸

For those more familiar with "5G" than "10G,"⁹ it may be useful first to define these terms. As CTIA explains, "5G is shorthand for the next generation of wireless."¹⁰ But while the "G" in "5G" thus stands for "generation," the "G" in "10G," by contrast, stands for "gigabit." In other words, cable's 10G platform promises speeds up to 10 gigabits per second (Gbps) – a significant jump from today's 1 Gbps. Crucially, the 10G platform leverages a collection of technologies and standards, including DOCSIS 4.0,¹¹ to deliver higher and symmetric speeds, lower latency, improved security, and greater reliability *over current infrastructure*.¹² And, as CableLabs highlights, "[b]ecause the 10G platform utilizes the existing hybrid fiber coaxial network, there is no need to dig new trenches or lay new fiber."¹³

But it is not just the cable industry that is looking to the future. Every sector of the connectivity ecosystem has its sights on that approaching horizon. Mobile carriers are deploying 5G technology, capable of delivering speeds 100x faster than 4G/LTE.¹⁴ Wireline providers, including cable operators,¹⁵ are deploying fiber to the home (FTTH).¹⁶ Networking equipment

⁸ See NCTA – The Internet & Television Association, "Pandemic or Not, 10G is Coming" (July 14, 2020), available at <https://www.ncta.com/whats-new/pandemic-or-not-10g-is-coming> ("[E]ven as we speak, cable ISPs are focused on the future and bringing 10G to U.S. homes to enhance connectivity and prepare for whatever the next decade might bring. Pandemic or not, ISPs are constantly staying ahead of consumer demand and technological advancements, and 10G is the industry's commitment to provide fast and reliable networks that will enable everything from high-definition gaming, artificial intelligence, virtual reality, 4k streaming and more as each year introduces new and immersive digital experiences for consumers.").

⁹ See generally <https://www.10gplatform.com>. See also Mariam Sorond, "The Path to 10G: 2020 Update," *INFORM[ED] BLOG* by CableLabs (January 2, 2020), available at <https://www.cablelabs.com/path-10g-2020-update> (describing progress made during the previous year toward the "10G" milestone).

¹⁰ Riley Davis, "What is 5G: A Brief Explainer." *CTIA Blog* (February 1, 2018), available at <https://www.ctia.org/news/what-is-5g-a-brief-explainer>.

¹¹ See CableLabs, "DOCSIS® 4.0 Technology," available at <https://www.cablelabs.com/technologies/docsis-4-0-technology>.

¹² *10G INFORM[ED] INSIGHTS* at 2 ("The 10G platform is a combination of technologies that will deliver symmetric multi-gigabit Internet speeds. It will be 10 times faster than today's networks and 100 times faster than what most consumers currently experience, and it will offer lower latencies, enhanced security and greater reliability.").

¹³ CableLabs, "What is 10G?" available at <https://www.cablelabs.com/10g>. See also *10G INFORM[ED] INSIGHTS* at 2 ("In essence, the same cable networks that deliver 1G today will scale to 10G over the next few years, incrementally increasing speed and capacity as new innovations make their way to the network.").

¹⁴ See Riley Davis, "What is 5G: A Brief Explainer." *CTIA Blog* (February 1, 2018), available at <https://www.ctia.org/news/what-is-5g-a-brief-explainer>.

¹⁵ See, e.g., Martha DeGrasse, "Comcast touts network performance and Wall Street takes note," *FierceTelecom* (June 29, 2020), available at <https://www.fiercetelecom.com/operators/comcast-touts-network-performance-and-wall-street-takes-note> (reporting that "[S]ince 2017, the company has invested \$12 billion to build more than 33,330 route miles of new fiber into the network and to increase network automation and artificial intelligence.").

¹⁶ See *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 20-50

vendors are selling devices based upon Wi-Fi 6, the latest iteration of the wireless networking technical standard – and "Wi-Fi 6E" equipment, which can operate in the 1200 MHz of spectrum in the 6 GHz band recently made available by the FCC to unlicensed devices, is expected to appear on store shelves by year's end.¹⁷

Similar to the "10G" platform, these successor technologies will deliver not just markedly faster speeds, but also additional advanced capabilities, such as lower latency, greater reliability, support for more devices, and heightened security.¹⁸ As a consequence, they will both compete with and complement one another. Examples as to how that will play out in practice include the following:

- 5G mobile broadband today offers an in-home alternative to traditional wireline services.¹⁹
- 5G will provide comparable capabilities to the "10G" platform to consumers on the move.²⁰
- Wi-Fi 6 provides the throughput necessary to redistribute within the home 5G and next-generation wireline offerings.²¹

(released April 24, 2020), available at <https://docs.fcc.gov/public/attachments/FCC-20-50A1.pdf>, at ¶ 2 ("In 2019 alone, fiber broadband networks became available to roughly 6.5 million additional unique homes, the largest one-year increase ever, with smaller providers accounting for 25% of these new fiber connections.") (citation omitted).

¹⁷ See Ry Crist, "Wi-Fi 6 is the fastest standard yet. Wi-Fi 6E will take it to another level," *CNET* (July 29, 2020), available at <https://www.cnet.com/how-to/wi-fi-6-is-the-fastest-yet-but-wi-fi-6e-will-take-it-to-another-level-6-ghz/>.

¹⁸ See, e.g., Riley Davis, "What is 5G: A Brief Explainer." *CTIA Blog* (February 1, 2018), available at <https://www.ctia.org/news/what-is-5g-a-brief-explainer> (explaining that 5G will reduce latency and support "100x the number of connected devices, enabling the Internet of Things and smart cities") (citation omitted); Andrew Long, "Wi-Fi 6E Can Modernize Unlicensed Wireless," *Perspectives from FSF Scholars*, Vol. 15, No. 7 (February 7, 2020), available at <https://freestatefoundation.org/wp-content/uploads/2020/02/Wi-Fi-6E-Can-Modernize-Unlicensed-Wireless-020720.pdf>, at 3 ("Wi-Fi 6 offers more bandwidth (speeds up to 10 Gbps), less latency, and lower power consumption. It also performs better in high-congestion locations (e.g., stadiums and airports) and provides improved support for the exploding number of consumer and IoT devices.") (citation omitted).

¹⁹ See, e.g., "Verizon 5G Home Internet," available at <https://www.verizon.com/5g/home/>.

²⁰ See, e.g., Edward C. Baig, "Ready for 10G? As wireless carriers push 5G, cable industry makes a case to keep broadband," *USA TODAY* (January 9, 2019), available at <https://www.usatoday.com/story/tech/columnist/baig/2019/01/09/5-g-10-g-cable-industry-makes-case-keep-broadband-your-home/2514506002/> (quoting Michael Powell, president and CEO of NCTA – The Internet & Television Association, as stating that "[t]he reality is the country and the world will always have and always need both a really powerful wireless network and a really powerful fixed network.... They really work in tandem with each other to deliver consumer experiences.").

²¹ See, e.g., Mike Robuck, "Tale of the tape: Verizon's 5G Home vs. AT&T's fiber-fed broadband service," *FierceTelecom* (July 24, 2020), available at <https://www.fiercetelecom.com/telecom/tale-tape-verizon-s-5g-home-vs-at-t-s-fiber-fed-broadband-service> (noting that Verizon's "5G Home service comes with the latest Wi-Fi 6 router with typical download speeds of around 300 Mbps and, depending on location, peak speeds of up to 1 Gbps."); Andrew Long, "Wi-Fi 6E Can Modernize Unlicensed Wireless," *Perspectives from FSF Scholars*, Vol. 15, No. 7 (February 7, 2020), available at <https://freestatefoundation.org/wp-content/uploads/2020/02/Wi-Fi-6E-Can-Modernize-Unlicensed-Wireless-020720.pdf>, at 3 (noting that Wi-Fi 6 supports speeds up to 10 Gbps). "Wi-Fi 6E" is the consumer-facing brand name for Wi-Fi 6 operating in the 6 GHz band. See *id.* at 4. See also Mike Dano, "With 6GHz boost, expect Wi-Fi 6 to encroach on 5G's aspirations," *LightReading* (April 29, 2020), available at <https://www.lightreading.com/5g/with-6ghz-boost-expect-wi-fi-6-to-encroach-on-5gs-aspirations/a/d-id/759292> (describing how Wi-Fi 6/6E could "carve out some of the revenue opportunities currently targeted by the 5G industry").

- The cable "10G" platform will be able to provide backhaul support to 5G providers.²²

III. Congress and the FCC Should Remove Disincentives to Cable Operator Infrastructure Construction in Rural Areas

Generally speaking, the broadband marketplace is defined by multiple competitive options. In certain rural and other less-populated or geographically daunting areas, however, the economics prove challenging. As a result, privately funded infrastructure, while nearly ubiquitous, has yet to reach every American. The COVID-19 pandemic has brought a heightened sense of urgency to additional actions that could advance this policy priority, as well as ongoing efforts, such as the FCC's Rural Digital Opportunity Fund (RDOF),²³ designed to address it.

Later this year, Phase I RDOF reverse auctions will distribute \$16 billion from the Universal Service Fund (USF) to subsidize network construction in unserved areas. Reverse auctions, in which the provider that offers to build for the least amount wins, are an efficient method to distribute this money. However, the optimal operation of reverse auctions depends on broad participation: more bidders equals more downward price pressure. That includes cable operators, which, given their collective footprint, are in a good position to expand their existing infrastructure into rural and other areas presently unserved.

But as Free State Foundation President Randolph May²⁴ and I²⁵ have pointed out on multiple occasions, the requirement that broadband providers obtain an Eligible Telecommunications Carrier (ETC) designation discourages cable operators from participating in USF-based programs like RDOF.

Indeed, as Commissioner Michael O'Rielly observed in a June 18 blog post:

The [ETC] requirement is especially an obstacle for companies that might be interested in leveraging FCC subsidies to edge out to areas that are *just* outside their service territories but wouldn't be seeking USF support to massively expand their footprint. While this calculation may indeed prove to be prudent from a business perspective, it creates unfortunate consequences.²⁶

²² See *10G INFORM[ED] INSIGHTS* at 6 ("[B]ecause cable is available to over 90 percent of U.S. households and more than half of all European households, its robust networks make for a cost-effective xhaul solution that will continue to meet the latency and speed requirements of LTE, 4G, 5G and beyond.").

²³ See generally "Auction 904: Rural Digital Opportunity Fund," available at <https://www.fcc.gov/auction/904>.

²⁴ Randolph J. May, "A Legacy Communications Act Requirement Hamstrings Rural Broadband Deployment," *FedSoc Blog* (July 13, 2020), available at <https://fedsoc.org/commentary/fedsoc-blog/a-legacy-communications-act-requirement-hamstrings-rural-broadband-deployment>.

²⁵ See Andrew Long, "The ETC Requirement for Accessing Broadband Funds Should Be Eliminated," *Perspectives from FSF Scholars*, Vol. 15, No. 34 (June 19, 2020), available at <https://freestatefoundation.org/wp-content/uploads/2020/06/The-ETC-Requirement-for-Accessing-Broadband-Funds-Should-Be-Eliminated-061920.pdf>; Andrew Long, "Legislative 'Best Practices' to Expand and Accelerate Broadband Coverage," *Perspectives from FSF Scholars*, Vol. 15, No. 42 (July 29, 2020), available at <https://freestatefoundation.org/wp-content/uploads/2020/07/Legislative-Best-Practices-to-Expand-and-Accelerate-Broadband-Coverage-072920.pdf>.

²⁶ Commissioner Michael O'Rielly, "Removing Unnecessary Barriers and Maximizing Competition in USF Auctions" (June 18, 2020), available at <https://www.fcc.gov/news-events/blog/2020/06/18/removing-unnecessary-barriers-and-maximizing-competition-usf-auctions>.

Fortunately, several pieces of pending legislation would eliminate that requirement. They include the Rural Broadband Acceleration Act,²⁷ the Expanding Opportunities for Broadband Deployment Act,²⁸ and even the Moving Forward Act.²⁹

In addition, my colleague Seth Cooper wrote recently³⁰ about a petition for expedited declaratory ruling filed by NCTA – The Internet & Television Association (NCTA) regarding pole replacement costs in rural areas.³¹ In its request, NCTA seeks from the FCC declarations that:

- (1) pole owners must share in the cost of pole replacements in unserved areas pursuant to section 224 of the Communications Act, section 1.1408(b) of the Commission's rules, and Commission precedent;
- (2) pole attachment complaints arising in unserved areas should be prioritized through placement on the Accelerated Docket under section 1.736 of the Commission's rules; and
- (3) section 1.1407(b) of the Commission's rules authorizes the Commission to order any pole owner to complete a pole replacement within a specified period of time or designate an authorized contractor to do so.³²

In its submission, NCTA asserts that "[t]he time and expense required to replace aging poles is a significant obstacle to broadband deployment in unserved areas" and that "[c]larification of the

²⁷ A bill to direct the Federal Communications Commission to take certain actions to accelerate the Rural Digital Opportunity Fund Phase I auction, and for other purposes, S. 4201, available at <https://www.congress.gov/116/bills/s4201/BILLS-116s4201is.pdf>, at § 1(b)(7) ("Notwithstanding any other provision of law, the Commission shall not require any short-form or long-form applicant to be designated as an [ETC] in order to receive Phase I support or Phase II support.").

²⁸ See the Expanding Opportunities for Broadband Deployment Act, H.R. 7160, available at <https://www.congress.gov/116/bills/hr7160/BILLS-116hr7160ih.pdf>, at § 2(e)(2) (amending Section 254(e) of the Communications Act of 1934, as amended, 47 U.S.C. § 254(e), so that "[a] provider of broadband service, and any affiliate thereof, that has not been designated as an eligible telecommunications carrier . . . shall be eligible to receive specific Federal universal service support for the provision of broadband service, if such provider or affiliate meets the applicable Commission legal, financial, and technical requirements for receiving such support.").

²⁹ The Moving Forward Act, H.R. 2, available at <https://www.congress.gov/116/bills/hr2/BILLS-116hr2eh.pdf>, at § 723(a)(2).

³⁰ See Seth L. Cooper, "Timely Action Will Expand Broadband Amidst the Pandemic," *Perspectives from FSF Scholars*, Vol. 15, No. 44 (August 11, 2020), available at <https://freestatefoundation.org/wp-content/uploads/2020/08/Timely-Action-Will-Expand-Broadband-Amidst-the-Pandemic-0811020.pdf>, at 6 (arguing that grant of NCTA's request would reduce barriers and allow cable operators to reach unserved areas); Seth L. Cooper, "FCC Action on Pole Attachments Would Accelerate Broadband Access to Unserved Areas," *FSF Blog* (July 28, 2020), available at <https://freestatefoundation.blogspot.com/2020/07/fcc-action-on-pole-attachments-would.html> (concluding that "saddling providers with the entire expense of replacing old poles is unreasonable and it significantly impedes efforts to reach unserved Americans" and suggesting that "the Commission can take a modest, but important, step to reduce infrastructure cost barriers that otherwise impede bringing broadband more quickly to all Americans.").

³¹ NCTA – The Internet & Television Association, Petition for Expedited Declaratory Ruling, *In the Matter of Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment*, WC Docket No. 17-84 (filed July 16, 2020), available at https://ecfsapi.fcc.gov/file/107161552527661/071620%2017-84%20NCTA%20Petition_for_Declaratory_Ruling.pdf (NCTA Petition).

³² Public Notice, "Wireline Competition Bureau Seeks Comment on a Petition for Declaratory Ruling Filed by NCTA – The Internet & Television Association," *In the Matter of Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment*, WC Docket No. 17-84, DA 20-763 (released July 20, 2020), available at <https://ecfsapi.fcc.gov/file/07201413526875/DA-20-763A1.pdf> (citations omitted).

Commission's orders and pole replacement cost allocation rules will facilitate investment and result in expanded broadband access for more people, more quickly, and at more affordable prices."³³ In support of its request, NCTA provides the following revealing data point involving one of its members: "[i]n a major expansion to over 57,000 rural homes and small businesses, pole replacement costs *alone* have accounted for approximately 25 percent of the total cost of construction (including applications, surveys, permitting, labor, and material)."³⁴

Mr. May and Mr. Cooper recently submitted comments on behalf of the Free State Foundation in response to NCTA's petition, arguing that "saddling service providers with the entire expense of replacing old poles results in imposing unjustifiable high-cost barriers to timely deployment of broadband Internet services to all Americans"³⁵ and concluding that "[c]able operators and wireline telco providers should be obligated to pay only the incremental costs that they cause in hastening the replacement of old utility poles with new ones."³⁶

IV. Conclusion

Connecting rural Americans to the Internet with robust networks able to withstand the test of time is a top priority. Cable operators – given their expansive footprints, existing capabilities, and technical ability to upgrade their offerings without additional construction – are ideally suited to help achieve that goal: current technology enables gigabit speeds, and the "10G" platform soon will deliver rates up to 10 Gbps over existing infrastructure. But rural locations often face practical barriers, such as a lack of sufficient population density, that make it difficult for cable operators to justify the private investment needed to close remaining digital divides – particularly given certain existing policies that discourage their participation in subsidy programs and inequitably raise construction costs.

Elimination of the ETC requirement for participation in broadband-specific universal service fund programs, and an FCC ruling that broadband providers seeking to attach equipment to utility poles are not required to bear 100 percent of pole replacement costs, would realign appropriately financial incentives for cable operators to expand the reach of their networks to areas that today lack high-speed Internet access. Given the promise of the "10G" platform, along with the technological advances that are benefitting other broadband market participants, it also would help ensure that those locations remain connected at speeds which meet consumer demands for many years.

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³³ *NCTA Petition* at 1. *See also id.* at 16 ("Demands by pole owners that attachers bear the entire cost of pole replacements have the potential to impair the expansion of broadband into unserved areas due to the high cost of pole replacements and the heightened frequency with which they are required in sparsely populated areas.").

³⁴ *NCTA Petition* at 6 (emphasis in original).

³⁵ Comments of the Free State Foundation, *Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment*, WC Docket 17-84 (submitted September 1, 2020), available at <https://freestatefoundation.org/wp-content/uploads/2020/09/FSF-Comments-Removing-Barriers-to-Pole-Replacements-and-Attachments-to-Accelerate-Broadband-Deployment-090120.pdf>, at 2.

³⁶ *Id.* at 3-4. *See also id.* at 4 ("In addition to reducing cost barriers, the Commission should accelerate broadband deployment by expediting pole attachment disputes through its complaint procedures. The Commission should put pole attachment complaints involving unserved areas on the agency's Accelerated Docket.").