

**HOW TO REMEDY POST-COVID-19 PANDEMIC SETBACKS IN
BRIDGING THE DIGITAL DIVIDE**

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Quality of life challenges presented by the COVID-19 pandemic emphasized the importance of making access to voice and broadband data services widespread and affordable. The virus forced nearly everyone to shelter in place and to rely on wired and wireless technologies for remote access to education, telehealth, government services, social networks, ecommerce, entertainment, and communications.

During the COVID-19 pandemic, many rural locales in the United States (“U.S.”) had no terrestrial broadband option or lacked a critical mass of residents with sufficient discretionary income and digital literacy skills. Service providers, as well as federal, state, and local government agencies, achieved significant progress in bridging this “Digital Divide,” thanks to generous grants, subsidies, and loan guarantees. Additionally, during the pandemic, Congress acted with uncharacteristic speed and allocated billions of dollars to make voice and data services more accessible, with much of the funding quickly available as one-time monetary transfers. While there was considerable success in combatting the Digital Divide during the COVID-19 pandemic, unfortunately, few legislators, regulators, and policy makers have considered what to do after the pandemic when emergency funding programs wind down.

This Article assesses post-pandemic universal service sustainability issues arising when both service providers and subscribers must bear a higher percentage of ongoing operational expenses and necessary investments in network upgrades. Even before the onset of the COVID-19 pandemic, existing universal

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service funding programs risked unsustainability because of the growing subsidy burden. Much of this growth was largely due to government decisions specifying new beneficiaries and mandating subsidies for both basic voice and enhanced data service, such as high-speed broadband access to the internet. Additionally, existing law imposed a hefty monthly Universal Service Fund (“USF”) contribution burden on carriers generating revenues from voice services, which the telephone companies could lawfully pass onto subscribers with inclusion of a billing line item. Because ventures providing data services qualified for a subsidy burden exemption, customers of “plain old telephone services” largely bear a growing financial burden that many consider unfair and burdensome.

This Article identifies how Congress, the federal Executive Branch, state and local governments, and carriers can forestall likely, measurable declines in broadband geographical penetration and subscription rates achieved during the COVID-19 pandemic. The Article specifies reforms needed to make ongoing universal service subsidy programs sustainable and more effective in achieving additional progress in bridging the Digital Divide as emergency grant programs wind down.

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I. INTRODUCTION

The next phase in the decades-long quest for ubiquitous access to affordable telecommunications and information services began with the official declaration on May 5, 2023, that the COVID-19 public health emergency had ended.¹ Post pandemic, approximately 24 million U.S. households still did not have broadband² access,³ despite the massive infusion of government grants and subsidies that fund initiatives, such as the U.S. Government’s “Internet for All” program.⁴

The substantial infusion of funds for “shovel ready” infrastructure installation projects⁵ achieved significant, measurable

¹ See *End of Public Health Emergency*, CTRS. FOR DISEASE CONTROL & PREVENTION, <https://www.cdc.gov/coronavirus/2019-ncov/your-health/end-of-phe.html> [<https://perma.cc/C99F-W9PG>] (last updated Sept. 12, 2023).

² See Telecommunications Act, Pub. L. No. 104-104, § 706, 110 Stat. 56, 153 (1996) (amended in part by Broadband Data Improvement Act, Pub. L. No. 110-385, 122 Stat. 4096 (2008) (codified as 47 U.S.C. § 1302(b)) (requiring the FCC annually to “initiate a notice of inquiry concerning the availability of advanced telecommunications capability to all Americans (including, in particular, elementary and secondary schools and classrooms).”).

³ OFF. INTERNET CONNECTIVITY & GROWTH, NAT’L TELECOMMS. & INFO. ADMIN., U.S. DEP’T COM., 2022 ANNUAL REPORT 3 (2022) (“Approximately 24 million U.S. households, or one in five, lack high-speed Internet service, preventing them from fully participating in modern life. Reliable, high-speed Internet service is vital to work, learn, and thrive in the 21st century. The COVID-19 pandemic highlighted what many already knew: broadband access is not a luxury; it is a necessity. As hybrid work, education, and other online services have become the norm, the need to provide high-speed Internet for all is imperative. Connecting the country will ensure that everyone can participate in the modern economy, facilitate inclusive growth, and enhance U.S. competitiveness on the global stage.”).

⁴ See *Internet for All*, NAT’L TELECOMMS. & INFO. ADMIN., <https://www.internetforall.gov> [<https://perma.cc/FPD9-DAZ8>] (last visited Sept. 17, 2023) (“We’re bringing high-speed internet to everyone in America. Because everyone needs a connection to stay connected.”).

⁵ Kevin Taglang, *Federal Broadband Support During the COVID-19 Pandemic*, BENTON INST. BROADBAND & SOC’Y (Apr. 23, 2021), <https://www.benton.org/blog/show-us-money-federal-broadband-support-during-covid-19-pandemic> [<https://perma.cc/Q36M-N2XE>]. See also *Broadband*, NAT’L GOVERNORS ASS’N, <https://www.nga.org/broadband> [<https://perma.cc/64UH-VGNB>] (last visited Sept. 17, 2023); *Funding Opportunities*, CONNECTED

progress⁶ in reducing the gap between individuals and regions that have access to essential services, such as broadband, and those that do not.⁷ Although there are individuals that technically have access to the internet via satellite, these types of services are usually too expensive for low-income households, due to their initial equipment costs and their high monthly subscription charge.⁸

A variety of data market penetration reports and maps show a significant increase in demand for internet services,⁹ broadband

NATION, <https://connectednation.org/funding-opportunities> [<https://perma.cc/578N-NSQ8>] (last visited Sept. 17, 2023).

⁶ See Luísa Nazareno et al., *Changes in Mobile Broadband Infrastructure in Georgia During the COVID–19 Pandemic*, 12 J. INFO. POL’Y 321, 321–52 (2022) (finding that the per capita antenna gap between fewer rural and more metropolitan areas has drastically dropped during the pandemic).

⁷ See *21 Million Americans Still Lack Broadband Connectivity*, PEW CHARITABLE TRS. (July 10, 2019), <https://www.pewtrusts.org/en/research-and-analysis/fact-sheets/2019/07/21-million-americans-still-lack-broadband-connectivity> [<https://perma.cc/53FA-ZSRL>]; see also FED. COMM’NS COMM’N, 2020 BROADBAND DEPLOYMENT REP. (2020).

⁸ *Economic Effects of the Digital Divide: Unlocking Growth with Equitable Access*, IEEE, <https://ctu.ieee.org/impact-of-the-digital-divide-economic-social-and-educational-consequences> [<https://perma.cc/GNH4-SYZM>] (last visited Sept. 17, 2023) (“The digital divide has an overall negative impact on the economy and deepens income inequality. Without digital skills and knowledge of advanced technologies, citizens are unable to progress in their careers and contribute less to the country’s economy. As a result, the economy becomes less competitive. Companies that require advanced digital skills may outsource their positions to other regions, taking money away from a country’s economy. The result is more people living in poverty, which in turn impacts the financial health of their nations. Perpetuating exclusionary systems like the digital divide hinders future growth and societal harmony. To tap into a country’s full economic potential, it is in the best interest of governments to take advantage of digital technologies and help citizens understand how to use them.”).

⁹ Mark Beech, *COVID-19 Pushes Up Internet Use 70% And Streaming More Than 12%*, FORBES (Mar. 25, 2020, 3:49 PM), <https://www.forbes.com/sites/markbeech/2020/03/25/covid-19-pushes-up-internet-use-70-streaming-more-than-12-first-figures-reveal/?sh=3e30db243104> [<https://perma.cc/5KGF-37KD>]; see also Tyler Clifford, *Web Traffic Spiked 20% in One Week Amid Coronavirus Shutdown, Verizon CEO Says*, CNBC (Mar. 19, 2020, 10:31 PM), <https://www.cnbc.com/2020/03/19/verizon-ceo-web-traffic-up-20percent-in-one-week-amid-coronavirus-shutdown.html> [<https://perma.cc/L3R7-NUXH>]; Colleen McClain et al., *The Internet and the Pandemic*, PEW RESCH. CTR. (Sept. 1, 2021), <https://www.pewrese>

subscribership, and reduction in unserved geographical locations in the last few years.¹⁰ The most recent Federal Communications Commission (“FCC”) statistical compilation, assessing market conditions in January 2019,¹¹ reported that 98.2% of the census blocks in the country had access to at least one network providing bit transmission speeds at or above the minimum benchmark level for what constitutes broadband (i.e., at least 25 megabits per second (“Mbps”) for downstream transmissions and 3 Mbps upstream).¹²

Penetration reached 99.5% in urban areas, 92.3% in rural locales, and 90.9% in tribal lands.¹³ Faster service tiers generated significantly lower penetration rates, as did wireless broadband service. While the FCC statistics appear quite favorable, some credible analysts assert much more needs to be done,¹⁴ including

[arch.org/internet/2021/09/01/the-internet-and-the-pandemic](https://perma.cc/6ERZ-Q8QN) [<https://perma.cc/6ERZ-Q8QN>].

¹⁰ FED. COMM’NS COMM’N, INTERNET ACCESS SERVICES: STATUS AS OF DECEMBER 31, 2021, at 2 (2023) (“Internet connections increased by about 3.9% between December 2020 and December 2021 to 510 million. Mobile Internet connections increased 4.0% year-over-year to 384 million in December 2021, while fixed connections grew to 126 million—up about 3.7% from December 2020.”).

¹¹ See FED. COMM’NS COMM’N, INQUIRY CONCERNING THE DEPLOYMENT OF ADVANCED TELECOMMUNICATIONS CAPABILITY TO ALL AMERICANS IN A REASONABLE AND TIMELY FASHION (2021) [hereinafter INQUIRY CONCERNING THE DEPLOYMENT].

¹² FED. COMM’NS COMM’N, 2022 COMMUNICATIONS MARKETPLACE REPORT 197 (2022).

¹³ *Id.* at 207.

¹⁴ See, e.g., Kathryn de Wit, *Congressional Action Needed to Boost Efforts to Expand Broadband Access*, PEW CHARITABLE TRS. (Apr. 6, 2023), <https://www.pewtrusts.org/en/research-and-analysis/articles/2023/04/06/congressional-action-needed-to-boost-efforts-to-expand-broadband-access> [<https://perma.cc/KF2B-JGFK>]; see also Anna Read & Kelly Wert, *Broadband Access Still a Challenge in Rural Affordable Housing*, PEW CHARITABLE TRS. (Dec. 8, 2022), <https://www.pewtrusts.org/en/research-and-analysis/articles/2022/12/08/broadband-access-still-a-challenge-in-rural-affordable-housing> [<https://perma.cc/G6ET-CX8P>].

improvements in the accuracy¹⁵ of mapping broadband accessibility at specific mailing addresses.¹⁶

Other statistical compilations present a somewhat less favorable report on broadband accessibility, affordability,¹⁷ and knowledge about government programs that discount monthly subscription rates and support computer training.¹⁸ For example, the U.S.

¹⁵ Diana Goovaerts, *FCC Broadband Map Challenges Top 350K as Deadline Looms*, FIERCE TELECOM (Jan. 12, 2023), <https://www.fiercetelecom.com/broadband/fcc-broadband-map-challenges-near-350k-deadline-looms> [<https://perma.cc/C2ZL-HV8T>] (“States have already submitted more than 300,000 location challenges since the Federal Communications Commission (FCC) opened the door for them to request corrections to its new and improved broadband map.”); Kris B. Mamula, *Pennsylvania Marks Thousands of Gaps on FCC Broadband Map*, GOVERNING (Jan. 12, 2023), <https://www.governing.com/now/pennsylvania-marks-thousands-of-gaps-on-fcc-broadband-map> [<https://perma.cc/Z94A-WNRK>] (reporting that Westmoreland County alone identified 14,527 sites not appearing on the FCC map).

¹⁶ See, e.g., *FCC National Broadband Map*, FED. COMM’NS COMM’N, <https://broadbandmap.fcc.gov/home> (last visited Sept. 17, 2023); Heather King et al., *New Digital Equity Act Population Viewer Shows Broadband Access and Demographic Characteristics*, U.S. CENSUS BUREAU (May 13, 2022), <https://www.census.gov/library/stories/2022/05/mapping-digital-equity-in-every-state.html> [<https://perma.cc/D2Q8-24N9>]; Broadband Data Improvement Act, Pub. L. No. 110-385, 122 Stat. 4096 (2008) (codified as 47 U.S.C. § 1302(b)) (requiring the FCC to compare the data transmission speeds and price for broadband service capability in a total of 75 communities in at least 25 countries abroad for each of the bitrate benchmarks for broadband service used by the Commission to reflect different speed tiers).

¹⁷ *21 Million Americans Still Lack Broadband Connectivity*, *supra* note 7; see also FED. COMM’NS COMM’N, *supra* note 7.

¹⁸ See, e.g., Natalie Campisi, *Millions of Americans Are Still Missing Out on Broadband Access and Leaving Money On The Table—Here’s Why*, FORBES (May 26, 2023, 1:58 PM), <https://www.forbes.com/advisor/personal-finance/millions-lack-broadband-access> [<https://perma.cc/R93H-EENP>]; *CostQuest Counts 23-25M Homes, Businesses Unserved or Underserved by Broadband*, LIGHTREADING (June 16, 2022), <https://www.lightreading.com/digital-divide/costquest-counts-23-25m-homes-businesses-unserved-or-underserved-by-broadband/v/d-id/778290> [<https://perma.cc/8WRQ-JQGU>]; Michelle Cao & Rafi Goldberg, *Switched Off: Why Are One in Five U.S. Households Not Online?*, NAT’L TELECOMMS. & INFO. ADMIN., <https://ntia.gov/blog/2022/switched-why-are-one-five-us-households-not-online> [<https://perma.cc/TQ7X-79C4>] (last visited Sept. 17, 2023) (acknowledging that between February 2022 and July

Government Accountability Office (“GAO”) reports that only one-third of the households qualifying for discounted broadband access have applied.¹⁹ One can infer that most of these low-income households remain offline due to inability to afford the unsubsidized average retail rate (estimated to be \$36.33 by a major industry trade association),²⁰ insufficient interest in having internet access, or inadequate knowledge about government and carrier programs that reduce out-of-pocket costs for computers, wireless handsets, and broadband monthly service subscriptions.

The unprecedented proliferation of grants, subsidies, and loan guarantees during the COVID-19 pandemic achieved progress in narrowing the gap between people, households, and communities with access to affordable telecommunications and information services, including high speed, broadband data, and those that do not.²¹ However, the pandemic exacerbated the gap between

2022, the U.S. ranked 24th out of 26 representative nations in terms of wired and wireless broadband service costs).

¹⁹ *Closing the Digital Divide for the Millions of Americans Without Broadband*, U.S. GOV’T ACCOUNTABILITY OFF. (Feb. 1, 2023), <https://www.gao.gov/blog/closing-digital-divide-millions-americans-without-broadband> [<https://perma.cc/CXA8-HJ68>] (“Nearly a third of Americans who do not have broadband say the reason is because it costs too much. There are federal programs designed to help. For example, the FCC’s Affordable Connectivity Program offers monthly discounts on broadband service to eligible households. As of September 2022, more than 14 million households had enrolled—about a third of the estimated eligible households. We looked at this disconnect and found that the FCC could strengthen the program with better consumer outreach (including to those with limited English proficiency) and better fraud protection. Taking these steps may make more eligible households aware of the program and how to receive the discounts on their monthly internet service bills.”).

²⁰ USTELECOM, 2022 BROADBAND PRICING INDEX: BROADBAND PRICES DROP WHILE VALUE INCREASES 8 (2022).

²¹ Charlie Muller & Joao Paulo de Vasconcelos Aguiar, *What Is the Digital Divide?*, INTERNET SOC’Y (Mar. 3, 2022), <https://www.internetsociety.org/blog/2022/03/what-is-the-digital-divide> [<https://perma.cc/6FT4-SKLJ>] (“There is no one digital divide. At a high level, the digital divide is the gap between those with Internet access and those without it. But the digital divide is multifaceted and includes many factors such as access, affordability, quality, and relevance. Some of the things that lead to disparities in Internet access include: availability: Is there available access to the Internet in your area? Is there a nearby point of connection to the Internet? If yes, this is just the first step to having Internet

homebound residents that were largely able to manage the challenges of having to shelter in place²² and those individuals and households that lacked the finances, digital skills, and access to broadband networks to remain comfortably at home. Broadband network access became an essential lifeline²³ for virtual classrooms, healthcare, remote working, online shopping, and a host of other activities. “The pandemic . . . opened the door to the use of digital technology in ways never before imagined and g[ave] real meaning to the prefixes ‘e-,’ ‘remote,’ ‘virtual,’ ‘online’ and ‘distance.’”²⁴

The pandemic exposed the severe consequences²⁵ that occur when households lack the financial resources to afford a broadband subscription or have no viable access options. In some cases, individuals had the means to pay but no way of accessing broadband due to the absence of any carrier willing to operate in the area.²⁶ Commercial telecommunications ventures will not provide service in any locality where projected subscription revenues do not recoup the sizeable initial investment associated with installing equipment,

access. affordability: Is that access affordable? How does the cost compare to other essential goods? What percentage of your income do you need to pay for access? quality of service: Are the upload and download speeds sufficient for the local needs of Internet users? relevance: Does the connected community have the necessary skills and technologies? Is there local interest and understanding of the relevance of Internet access? Are there locally available mobile apps? Is there content in the local language and relevant to the people in the community? additional divides: Other areas that can create digital inequality include security, interconnectivity, digital literacy, and access to equipment.”)

²² See, e.g., Office of Governor Gavin Newsom, Exec. Order N-33-20 (Mar. 19, 2020) (becoming the first state mandate to shelter in place).

²³ See, e.g., Jamie Greig & Hannah Nelson, *Shifting Perspectives: How COVID-19 and In-Home Information and Communication Technology Impacted U.S. Residential Internet Perceptions*, 12 J. INFO. POL’Y 128 (2022).

²⁴ INT’L TELECOMM. UNION, FINANCING UNIVERSAL ACCESS TO DIGITAL TECHNOLOGIES AND SERVICES 1 (2021).

²⁵ See, e.g., Rebecca Ruiz, *How a Year of Living Online has Changed Us*, MASHABLE (Mar. 11, 2021), <https://mashable.com/article/covid-19-pandemic-internet-use> [<https://perma.cc/295M-U48G>].

²⁶ See *What’s on the National Broadband Map*, FED. COMM’NS COMM’N, <https://help.bdc.fcc.gov/hc/en-us/articles/13532984820379-What-s-on-the-National-Broadband-Map> [<https://perma.cc/F47J-VVJM>] (last updated July 7, 2023) (providing access to a map identifying broadband access options by specific address).

managing operating expenses, and accruing a reasonable profit margin.²⁷

This dilemma also triggers concerns about unresolved issues regarding digital equity and inclusion. Ideally, “all individuals and communities [should] have the information technology capacity needed for full participation in our society, democracy, and economy.”²⁸ Affordable broadband “is necessary for civic and cultural participation, employment, lifelong learning, and access to essential services.”²⁹

With the winding down of emergency funding programs, several questions arise about the proper future course for universal service programs and the sustainability of progress generated by COVID-19 funding³⁰ and preexisting universal service funding programs. A key issue is whether and how progress can be sustained as government subsidies revert to pre-pandemic levels, with an emphasis on defraying carrier infrastructure costs at the pre-pandemic level of subsidies.

When considering this issue, it is necessary to keep in mind that the vast majority of COVID-19 initiatives concentrated on funneling a one-time allocation of funds for installation of broadband

²⁷ Jason Fernando, *Return on Investment (ROI): How to Calculate it and What it Means*, INVESTOPEDIA, <https://www.investopedia.com/terms/r/returnoninvestm ent.asp> [<https://perma.cc/EC8P-34HH>] (last updated May 24, 2023) (“Return on investment (ROI) is a performance measure used to evaluate the efficiency or profitability of an investment or compare the efficiency of a number of different investments. ROI tries to directly measure the amount of return on a particular investment, relative to the investment’s cost.”).

²⁸ *Digital Equity*, NAT’L DIGIT. INCLUSION ALL., <https://www.digitalinclusion.org/definitions/> [<https://perma.cc/M545-52RR>] (last visited Sept. 17, 2023).

²⁹ *Id.*

³⁰ Blair Levin, *Washington May be About to Take a Giant Step Backward in Closing the Digital Divide*, BROOKINGS INST. (May 13, 2023), <https://www.brookings.edu/blog/the-avenue/2023/03/13/washington-may-be-abo ut-to-take-a-giant-step-backward-in-closing-the-digital-divide/> [<https://perma.cc/CA9D-AYUD>] (“The North Star of communications policy should be to make services faster, better, and cheaper for all. Yet, next year, about 50 million Americans could find that their access to the core communications service of our time—broadband—has become slower, worse, and more expensive, with many even likely to be disconnected. That shift would constitute the biggest step any country has ever taken to widen, rather than close, its digital divide.”).

infrastructure in locations lacking adequate access.³¹ Now, even with the billions of dollars invested, there are still millions of Americans that are interested in accessing broadband but lack an affordable service option.

The global pandemic surfaced both the importance and availability of online connectivity as millions obliged the calls for physical social distancing and transitioned online for remote work, school, health care, [sic] government services, and regular communications with friends and family members. Yet, millions of other people still struggle with sustaining consistent access to broadband internet, especially low-income and rural populations. . . . Rural residents were more likely to be impacted by the disruption in their access to these very basic functions, and as a result, experienced higher rates of COVID-19 deaths due to the medical and social isolation they experienced before and throughout the pandemic.³²

COVID-19 emergency funding made it possible for private and public ventures to make substantial capital investments in geographical locations not previously served by anything other than

³¹ *What Makes a Broadband Project Shovel Ready?*, NOANET (Sept. 28, 2021), <https://www.noanet.net/insights/noanet-shovel-ready/> [<https://perma.cc/M5C5-WCNY>] (“The past year brought America unparalleled federal and state grant opportunities for broadband infrastructure deployment. One common denominator? They all looked for applicants to bring projects that were ready for action.”). See also *Federal Funding*, BROADBANDUSA, <https://broadbandusa.ntia.doc.gov/resources/federal/federal-funding> [<https://perma.cc/AVF7-7VHB>] (last visited Sept. 22, 2023) (listing funding programs primarily requiring infrastructure installation projects).

³² Nicol Turner Lee et al., *Why the Federal Government Needs to Step Up Efforts to Close the Rural Broadband Divide*, BROOKINGS INST. (Oct. 4, 2022) (first citing *Hearing on Connecting Americans to Prosperity: How Infrastructure Can Bolster Inclusive Economic Growth Before the Select Comm. on Econ. Disparity & Fairness in Growth*, 117th Cong. 2 (2022) (statement of Nicol Turner Lee, Director, Center for Technology Innovation, Brookings Institution); then citing Nicol Turner Lee, *Why America Needs a “Tech New Deal” to Build Back Better*, BROOKINGS INST. (Jan. 12, 2021), <https://www.brookings.edu/articles/why-america-needs-a-tech-new-deal-to-build-back-better/> [<https://perma.cc/NC6P-NKJB>]; and then citing *COVID Incidence, Mortality Rates Remain Much Higher in Rural Areas*, IOWA COLL. PUB. HEALTH (Dec. 8, 2021), <https://www.public-health.uiowa.edu/news-items/covid-incidence-mortality-rates-remain-much-higher-in-rural-areas/> [<https://perma.cc/7D6Q-LDN6>]), <https://www.brookings.edu/research/why-the-federal-government-needs-to-step-up-their-efforts-to-close-the-rural-broadband-divide> [<https://perma.cc/D2W3-N6CP>].

satellite service.³³ Carriers must incur high sunk infrastructure installation costs to build out a broadband network. They cannot charge subscribers for service until after making their initial investment. Thus, sometimes carriers could not justify extending extraordinarily expensive infrastructure into most rural and other high-cost areas³⁴ absent external inducements (e.g., government grants and recurring subsidies).³⁵

COVID-19 programs worked to address the perennial carrier reluctance to serve high-cost areas by making emergency funds available to offset the higher costs incurred.³⁶ However, government absorption of these startup costs did not take into account the sustainability of such projects on an ongoing basis. In the absence of additional subsidization by government, can these ventures adequately handle ordinary operating expenditures, as well as future

³³ Geosynchronous satellites, located 22,300 miles above earth, have a transmission footprint that can provide “carrier of last resort” service to remote regions not served by any terrestrial wired or wireless operator. For example:

HughesNet is available where you live, even where fiber and cable Internet are not. HughesNet lets you do more of everything you love, wherever you are in the contiguous United States, Puerto Rico, and Alaska! As long as you have a clear view of the Southern sky, you have access.

Satellite Internet Coverage Areas, HUGHESNET, <https://www.hughesnet.com/satellite-internet-coverage-areas> [<https://perma.cc/LQ76-249Z>] (last visited Sept. 22, 2023).

³⁴ Diana Goovaerts, *The Cost of Running Fiber in Rural America: \$200,000 Per Passing*, FIERCE TELECOM (Sept. 26, 2022, 4:46 PM), <https://www.fiercetelecom.com/broadband/cost-running-fiber-rural-america-200000-passing> [<https://perma.cc/6MQ9-A48L>].

³⁵ See DELOITTE, UNDERSTANDING THE SECTOR IMPACT OF COVID-19: TELECOMMUNICATIONS (2020).

³⁶ For a summary of the federal and state programs subsidizing affordable and accessible broadband created during the COVID-19 pandemic, see *Funding Programs*, NAT’L TELECOMMS. & INFO. ADMIN., <https://www.ntia.gov/category/funding-programs> [<https://perma.cc/8X4S-9K4Z>] (last visited Sept. 17, 2023); *Federal Broadband Support During the COVID-19 Pandemic*, BENTON INST. FOR BROADBAND & SOC’Y (Apr. 23, 2021), <https://www.benton.org/blog/show-us-money-federal-broadband-support-during-covid-19-pandemic> [<https://perma.cc/W3VE-NL3B>]; *State Government COVID-19 Digital Inclusion Response*, NAT’L DIG. INCLUSION ALL., <https://www.digitalinclusion.org/state-covid-19-digital-inclusion-response/> [<https://perma.cc/ZE7G-Y4JT>] (last visited Sept. 23, 2023).

capital expenses in network upgrades needed to provide even faster bit transmission rates and higher monthly data allotments to accommodate bandwidth intensive applications such as video streaming? Can they offer affordable rates, possibly subsidized by ongoing, pre-COVID-19 universal service funding programs? Will subscribers, who questioned the benefits in broadband access, continue their subscriptions even after they no longer must shelter in place?

Without recurring subsidies disbursed to carriers, or as monthly credits on subscriber bills, the answer to the aforementioned questions appears to be “NO” and progress in bridging the Digital Divide³⁷ seems quite unlikely. New technologies having lower operating costs, even in rural areas, could provide a partial solution. The recent deployments of low Earth-orbiting satellite constellations with signals covering the entire globe may eventually support a new business case for ubiquitous and affordable access.³⁸ However, these services have not yet reached a critical mass where a large global subscriber base can defray substantial start-up costs. Currently, satellite carriers transmit content far more slowly and expensively than terrestrial options available in urban locales.³⁹

³⁷ *Digital Divide*, STAN. UNIV., <https://cs.stanford.edu/people/eroberts/cs181/projects/digital-divide/start.html> [<https://perma.cc/Q5F6-358R>] (last visited Sept. 17, 2023) (“The idea of the ‘digital divide’ refers to the growing gap between the underprivileged members of society, especially the poor, rural, elderly, and handicapped portion of the population who do not have access to computers or the internet; and the wealthy, middle-class, and young Americans living in urban and suburban areas who have access.”).

³⁸ See, e.g., COLBY LEIGH RACHFAL, CONG. RSCH. SERV., R46896, *LOW EARTH ORBIT SATELLITES: POTENTIAL TO ADDRESS THE BROADBAND DIGITAL DIVIDE* (2021); NILS PACHLER ET AL., *UPDATED COMPARISON OF FOUR LOW EARTH ORBIT SATELLITE CONSTELLATION SYSTEMS TO PROVIDE GLOBAL BROADBAND* (2021); John Garrity & Arndt Husar, *Digital Connectivity and Low Earth Orbit Satellite Constellations: Opportunities for Asia and the Pacific* (Asian Dev. Bank, Working Paper No. 76, 2021); Steven S. Ross, *Bandwidth Hawk: Low-Earth Orbit Satellites: Great Idea But Not for Everything – and Not Cheap*, BROADBAND CMTYS. MAG., Nov.-Dec. 2020, at 8; *5 Reasons Fiber Internet Is Better Than LEO Satellites*, FIBERRISE, <https://www.fiber-rise.com/5-reasons-fiber-internet-is-better-than-leo-satellites> [<https://perma.cc/3EXN-Q6NF>] (last visited Sept. 17, 2023).

³⁹ Starlink offers residential broadband service for \$120 monthly with download speeds between 25 and 220 Mbps, and upload speeds between 5 and 20

Bridging the Digital Divide has become a lengthy, complicated, and costly process, now compounded by the global pandemic. COVID-19 helped focus attention by governments to the acute challenges presented by nonexistent or inadequate broadband, but without the retention of subsidy programs post pandemic, progress may stop, and regression ensue.

Nearly every nation in the world has a government-mandated program aiming to make telecommunications service more widely available and affordable.⁴⁰ Universal service funding subsidies have garnered popular support largely based on the shared view that society and individuals benefit⁴¹ from progress in achieving ubiquitous and affordable access.⁴² Technological developments and changes in consumer requirements have garnered support for expanding the universal service mission to include broadband access to the internet and to identify a growing number of subsidy beneficiaries, including: schools, libraries, healthcare facilities, telephone companies operating in high-cost areas, and households with low incomes.⁴³

Mbps. The company also charges a one-time \$599 equipment fee. STARLINK, <https://www.starlink.com> [<https://perma.cc/7F5W-C64N>] (last visited Aug. 25, 2023). Viasat offers residential broadband service for \$70-\$300 monthly with 12-150 Mbps transmission speed. It also charges a monthly \$12.99 equipment rental fee, or \$299.99 if prepaid. An additional one-time installation fee is \$300. VIASAT, <https://www.viasat.com/cf/responsive> [<https://perma.cc/5ECT-NRRE>] (last visited Aug. 25, 2023). HughesNet offers broadband service for \$50-150 with 15-50 Mbps transmission speed. It also has a \$15 monthly equipment lease fee with a one-time \$99 set up charge. Alternatively, subscribers can pay \$250 for the equipment with a \$200 installation fee. HUGHESNET, <https://internet.hughesnet.com> [<https://perma.cc/999X-KAEK>] (last visited Aug. 25, 2023).

⁴⁰ See *Digital Divide*, INT'L TELECOMM. UNION, <https://www.itu.int/hub/category/digital-divide> [<https://perma.cc/L7NH-KEKK>] (last visited Sept. 17, 2023).

⁴¹ See, e.g., George W. Zuo, *Wired and Hired: Employment Effects of Subsidized Broadband Internet for Low-Income Americans*, 13 AM. J. ECON. POL'Y 447 (2021).

⁴² Blair Levin, *COVID-19 Proves We Need to Continue Upgrading America's Broadband Infrastructure*, BROOKINGS INST. (Mar. 30, 2020), <https://www.brookings.edu/articles/covid-19-proves-we-need-to-continue-upgrading-americas-broadband-infrastructure> [<https://perma.cc/YT7G-55LZ>].

⁴³ *Id.*

Most people and governments support the concept of universal service, including the view that society benefits when residents in rural, high-cost areas have similar opportunities to access telecommunications and information networks like that available to residents in densely populated locations.⁴⁴ Efforts to achieve equitable, inclusive, sustainable, affordable, and ubiquitous access to telecommunications and information services accrue ample individual and societal benefits.⁴⁵ These include enhanced national security, increased consumer welfare, better economic viability of rural business ventures, and more efficient government services.⁴⁶

Several analyses of universal service programs report a measurable enhancement in productivity and economic output when remote localities secure broadband access. For example, a study by the consulting firm Deloitte found that “closing the digital divide clearly shows the criticality of broadband infrastructure to the US economy A 10-percentage-point increase of broadband access in 2014 would have resulted in more than 875,000 additional US jobs and \$186[billion] more in economic output in 2019.”⁴⁷

Telecommunications networks generate what economists classify as a “positive networking externality,” which is an increase

⁴⁴ See, e.g., Luyi Han, Timothy R. Wojan & Stephan J. Goetz, *Experimenting in the Cloud: The Digital Divide’s Impact on Innovation*, 47 TELECOMMS. POL’Y, Aug. 2023, at 1; Brian Whitacre, Roberto Gallardo & Sharon Strover, *Broadband’s Contribution to Economic Growth in Rural Areas: Moving Towards a Causal Relationship*, 38 TELECOMMS. POL’Y 1011–23 (2014); James E. Prieger, *The Broadband Digital Divide and the Economic Benefits of Mobile Broadband for Rural Areas*, 37 TELECOMMS. POL’Y 483–502 (2013).

⁴⁵ See INT’L TELECOMM. UNION, ICT INFRASTRUCTURE BUSINESS PLANNING TOOLKIT (2019); INT’L TELECOMM. UNION, FROM ELECTRICITY GRID TO BROADBAND INTERNET: SUSTAINABLE AND INNOVATIVE POWER SOLUTIONS FOR RURAL CONNECTIVITY (2023); BROADBAND COMM’N FOR SUSTAINABLE DEV., 21ST CENTURY FINANCE MODELS FOR BRIDGING BROADBAND CONNECTIVITY GAPS (2021).

⁴⁶ ICT INFRASTRUCTURE BUS. PLAN. TOOLKIT, *supra* note 45; FROM ELECTRICITY GRID TO BROADBAND INTERNET: SUSTAINABLE AND INNOVATIVE POWER SOLS. FOR RURAL CONNECTIVITY, *supra* note 45.

⁴⁷ JACK FRITZ & DAN LITTMANN, DELOITTE, BROADBAND FOR ALL: CHARTING A PATH TO ECONOMIC GROWTH 6 (Apr. 2021). See Catherine Isley & Sarah A. Low, *Broadband Adoption and Availability: Impacts on Rural Employment During COVID-19*, 46 TELECOMM. POL’Y, Feb. 2020, at 2–3.

in value as the number of connections and subscribers rises.⁴⁸ Networks typically achieve economies of scale when expanded geographical coverage results in lower costs per subscriber served.⁴⁹ However, such savings do not occur when only remote, high-cost service options remain. For this reason, carriers wisely opt to continue serving only high-density locations, because any further expansion would raise both capital and operating costs without receiving full recoupment from additional subscription revenues. Connectedness for all promotes access to public and private services by subscribers with emphasis on parity, with less regard for the costs incurred in serving specific subscribers and locales.

To achieve equitable access, private actors like telephone companies and public actors such as legislatures and national regulatory authorities have relied on market countervailing or augmenting initiatives throughout the world. A key universal service tactic used throughout many different decades creates a pool of funds from the general treasury, or a small portion of carrier revenues, to subsidize and reduce the price of services deemed worthy of such promotional pricing.

⁴⁸ Jason Gordon, *Network Externalities – Explained*, BUS. PROFESSOR (Mar. 27, 2023), https://thebusinessprofessor.com/en_US/economic-analysis-monetary-policy/network-externalities-defined [<https://perma.cc/54HC-YHHS>] (“Network externalities is an economics concept that describes the circumstances where the value of a product or service changes as the number of users increases or decreases. According to the traditional economic theory, as the supply of a product increases the price of the product falls and becomes less valuable. In certain circumstances the opposite might happen, the value of a product or service may rise with the increase in the number of users. This is called the positive network externalities or the network effect. A mobile network is an example where this concept applies. The more users a mobile service provider has the higher its value. The telephone is a classic example where a greater number of users increases the value to each. When a customer purchases a telephone, a positive externality is created. The online social network is another example where the value is increased with each new user.”).

⁴⁹ *Achieving Economies of Scale*, MINDTOOLS, <https://www.mindtools.com/af/djhej/achieving-economies-of-scale> [<https://perma.cc/9BGV-ELXH>] (last visited Sept. 23, 2023) (“Economies of scale are cost savings that a company (and, by default, its customers) can reap as a result of efficient production processes. Generally, these cost savings are achieved because the average cost of producing something falls as the volume being produced increases.”).

Universal service has constituted a fundamental goal of federal telecommunications regulation since the passage of the Communications Act of 1934. A key mission of the FCC lies in “mak[ing] available, so far as possible, to all the people of the United States . . . a rapid, efficient, Nation-wide, and world-wide wire and communication service with adequate facilities at reasonable charges.”⁵⁰ In 1996, Congress amended the Communications Act of 1934 to state explicitly that residents in rural, high-cost areas have a right to relative price parity with residents in cheaper to serve urban locales:

Consumers in all regions of the Nation, including low-income consumers and those in rural, insular, and high-cost areas, should have access to telecommunications and information services, including interexchange services and advanced telecommunications and information services, that are reasonably comparable to those services provided in urban areas and that are available at rates that are reasonably comparable to rates charged for similar services in urban areas.⁵¹

The Telecommunications Act of 1996 also supported the goal of ubiquitous access to broadband and other advanced information services. The Act states that the Federal Communications “Commission and each State commission with regulatory jurisdiction over telecommunications services shall encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans (including elementary and secondary schools and classrooms).”⁵²

By explicitly establishing a national policy of universal access to affordable basic and advanced telecommunications and information services, Congress codified a subsidy mechanism into law. Achieving progress in satisfying a congressional mandate for relative parity in cost of service between high- and low-cost regions cannot occur without subsidies flowing to carriers operating in remote areas. An additional universal service strategy involves direct monetary discounts to subscribers in high-cost areas who

⁵⁰ *Alenco Commc’ns, Inc. v. F.C.C.*, 201 F.3d 608, 614 (5th Cir. 2000) (quoting 47 U.S.C. § 151 (as amended)) (citing *Texas Office of Pub. Util. Counsel v. F.C.C.*, 183 F.3d 393, 405–06 n.2 (5th Cir. 1999)).

⁵¹ Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 (1996) (codified at 47 U.S.C. § 254(b)(3)).

⁵² 47 U.S.C. § 1302(a).

otherwise would face comparatively higher monthly service rates they would be unable to afford.⁵³

The universal service funding burden has increased significantly because Congress expanded the types of universal service beneficiaries and established a goal that everyone should have affordable access to both basic voice telephone services and advanced data services such as broadband.⁵⁴ In turn, the FCC has broadly interpreted its Telecommunications Act of 1996 mandate to include an ongoing assessment of what services qualify for subsidization and what constitutes minimally acceptable quality of service.⁵⁵ Significant upward pressure on subsidy cost occurs when

⁵³ For example, an analysis of the self-sustaining viability of broadband networks owned and operated by a municipal government confirms the need for ongoing subsidization:

[T]he economics predict (and the evidence confirms) that municipal broadband is in almost all scenarios *subsidized entry*, covering capital costs and losses with tax dollars and other internal transfers. Advocates of municipal broadband do not generally contest this fact. In Chattanooga, Tennessee, for example, the city's system received a federal grant equal to about \$2,000 per subscriber, and millions more in subsidies from the city's electric ratepayers. In Bristol, Virginia, direct subsidies received from various sources equaled about \$7,000 per subscriber.

T. Randolph Beard et al., *The Law and Economics of Municipal Broadband*, 73 FED. COMM. L.J. 1, 10 (2020).

⁵⁴ 47 U.S.C. § 1302(b)(3) (“Consumers in all regions of the Nation, including low-income consumers and those in rural, insular, and high cost areas, should have access to telecommunications and information services, including interexchange services and advanced telecommunications and information services, that are reasonably comparable to those services provided in urban areas and that are available at rates that are reasonably comparable to rates charged for similar services in urban areas.”).

⁵⁵ Currently, the Commission deems 25 Mbps as the threshold rate for downstream data services and 3 Mbps for upstream service. “We find that the current speed benchmark of 25 Mbps/3 Mbps remains an appropriate measure by which to assess whether a fixed service provides advanced telecommunications capability.” INQUIRY CONCERNING THE DEPLOYMENT, *supra* note 11. The FCC may raise this baseline for carriers, a decision that would substantially increase the required universal service subsidy. Recently, the FCC established the Enhanced Alternative Connect America Cost Model (“A-CAM”) program that “provides universal service high-cost support to participating carriers for deployment of 100/20 Mbps or faster broadband service to all locations served by

the FCC established a higher benchmark rate of bit transmission speed that qualifies for classification as broadband service.⁵⁶

Requiring a higher benchmark for broadband transmission speed⁵⁷ satisfies an increasingly widespread expectation that broadband networks support simultaneous access to video streaming services and other bandwidth intensive applications by two or more household residents.⁵⁸ However, such usage will generate even higher universal service funding requirements because broadband carriers will have to make substantial additional plant investment to upgrade their networks, perhaps much earlier than anticipated, in light of ever-growing demand for high speed delivery of bandwidth intensive content, such as streaming video.⁵⁹ Similar upward

the program, including some of the most difficult-to-reach areas of the country.” FED. COMM’NS COMM’N, FACT SHEET: BRINGING CONNECTIVITY TO RURAL COMMUNITIES, 1 (2023). *See* FED. COMM’NS COMM’N, FCC-23-60, REPORT AND ORDER, NOTICE OF PROPOSED RULEMAKING, AND NOTICE OF INQUIRY (2023).

⁵⁶ FACT SHEET: BRINGING CONNECTIVITY TO RURAL COMMUNITIES, *supra* note 55.

⁵⁷ According to Jonathan Sallet:

For any new deployment funding, governments should require at least 100/100 Mbps service with no usage limits and latency low enough to run interactive video applications (like videoconferencing). Good policy demands that performance criteria—like low latency, symmetry, and the amount of data that can be received and sent each month—be treated as importantly as speed alone. Such speed and other standards should be updated as programs are implemented or expanded.

JONATHAN SALLET, BENTON INST. FOR BROADBAND & SOC’Y, BROADBAND FOR AMERICA’S FUTURE: A VISION FOR THE 2020s, at 41 (2019). *See also*, *Chairwoman Rosenworcel Proposes to Increase Minimum Broadband Speeds*, FED. COMM’NS COMM’N (July 15, 2022); <https://www.fcc.gov/document/chair-woman-rosenworcel-proposes-increase-minimum-broadband-speeds> [<https://perma.cc/8YUB-CB3T>]; *Rosenworcel Proposes Goal of 100% Access to Affordable Broadband*, FED. COMM’NS COMM’N (July 15, 2023) (proposing a goal of 100 Mbps downstream and 500 Mbps upstream) <https://www.fcc.gov/document/rose-nworcel-proposes-goal-100-access-affordable-broadband> [<https://perma.cc/QD84-KHMT>].

⁵⁸ *See* U.S. GOV’T ACCOUNTABILITY OFF., GAO-21-494, FCC SHOULD ANALYZE SMALL BUS. SPEED NEEDS 17–20 (2021) (identifying significant gaps in broadband access and quality of service required by small business ventures).

⁵⁹ *See* U.S. GOV’T ACCOUNTABILITY OFF., GAO-23-105655, BROADBAND SPEED: FCC SHOULD IMPROVE ITS COMMUNICATION OF ADVANCED

pressure on network capital investment would occur if the FCC established a minimum amount of data a broadband subscriber could download and upload on a monthly basis, or if it required carriers to eliminate all data caps.⁶⁰

Universal service funding currently provides subsidies for carriers to extend services into high-cost rural areas and to provide service discounts for schools, libraries, healthcare facilities, and people with low incomes. The services now covered combine basic, wired, and wireless voice telephone service and advanced information services, such as broadband data carriage.

II. PRE-COVID-19 UNIVERSAL SERVICE PROGRAMS

Before the proliferation of funding programs triggered by the COVID-19 pandemic, three federal agencies shared jurisdiction with limited duplication, overlap, or confusion.⁶¹ In 2020, the FCC bore responsibility for managing the collection and allocation⁶² of \$8.3 billion⁶³ to fund the primary universal service programs

TELECOMMUNICATIONS CAPABILITY ASSESSMENTS (2023) (noting lack of transparency in how the FCC establishes broadband speed benchmarks).

⁶⁰ See *Chairwoman Rosenworcel Proposes to Investigate How Data Caps Affect Consumers and Competition*, FED. COMM'NS COMM'N (June 15, 2023), <https://docs.fcc.gov/public/attachments/DOC-394416A1.pdf> [<https://perma.cc/X7HJ-QXKE>].

⁶¹ For more extensive coverage of the core universal service programs, see Rob Frieden, *Remedies for Universal Service Funding Compassion Fatigue*, 39 SANTA CLARA COMPUT. & HIGH TECH. L.J. (forthcoming 2023).

⁶² Rather than adding substantially more employees, in 1997, the FCC delegated many of the daily administrative duties related to managing the universal service funding programs to the Universal Service Administrative Company. See *Changes to Board of Directors of the National Exchange Carrier Association, Inc.*, 62 Fed. Reg. 41294 (Aug. 1, 1997). Several Circuit Courts of Appeals have or soon will consider the lawfulness of the FCC's delegation of universal service administrative duties to USAC. See *Consumers' Rsch. v. F.C.C.*, 63 F.4th 441 (5th Cir. 2023) (finding that the Telecommunications Act of 1996 and the FCC did not unlawfully delegate administration of universal service funding collection and distribution to the Universal Service Administrative Company); *Consumers' Rsch. v. F.C.C.*, No. 21-3886, 2023 WL 3244274 (6th Cir. May 04, 2023).

⁶³ *Frequently Asked Questions*, UNIVERSAL SERVS. ADMIN. CO., <https://www.usac.org/about/universal-service/faqs/general> [<https://perma.cc/B9FB-KQWP>] (last visited Sept. 17, 2023). USAC recently disbursed approximately \$2.0 billion

discussed below.⁶⁴ Subscribers of wired and wireless telecommunications service paid the carriers a monthly fee based on an FCC calculation of what percentage of telecommunications service revenues would generate the necessary amount to meet ongoing universal service funding requirements.⁶⁵

The National Telecommunications and Information Administration (“NTIA”), an agency of the U.S. Department of Commerce, dispersed taxpayer-supplied funds from the general treasury for specific projects authorized by Congress. The most significant pre-pandemic programs of this type occurred in 2010 when NTIA disbursed \$4 billion for 233 projects under its Broadband Technology Opportunities Program, as authorized in the American Recovery and Reinvestment Act of 2009.⁶⁶ NTIA also awarded a total of \$293 million in grants to state entities, or non-profit organizations working at their direction, to facilitate the integration of broadband and information technology into various localities.⁶⁷ It also awarded \$121.5 million in a formula-based grant program to assist regional, state, local, and tribal government entities in planning a nationwide public safety broadband network.⁶⁸

for the E-Rate program subsidizes for voice and broadband access at schools, libraries, and health care facilities, \$5.0 billion in subsidies for carriers operating in localities with above average service cost, \$850 million in discounts for low-income subscribers, and \$297 million in rural health care initiatives.

⁶⁴ See *Universal Service*, FED. COMM’NS COMM’N, [hereinafter *Universal Service Funding Summary*] <https://www.fcc.gov/general/universal-service> [<https://perma.cc/7E2E-7W6M>] (last visited Sept. 17, 2023).

⁶⁵ *Contribution Factor & Quarterly Findings – Universal Service Fund (USF) Management Support*, FED. COMM’NS COMM’N, <https://www.fcc.gov/general/contribution-factor-quarterly-filings-universal-service-fund-usf-management-support> [<https://perma.cc/ST5X-APKP>] (last visited Sept. 23, 2023) (“Telecommunications companies must pay a percentage of their interstate end-user revenues to the Universal Service Fund. This percentage is called the contribution factor. The contribution factor changes four times a year (quarterly) and is increased or decreased depending on the needs of the Universal Service programs.”).

⁶⁶ American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, 123 Stat. 115 (2009).

⁶⁷ *Funding Programs*, *supra* note 36.

⁶⁸ *Id.*

Additionally, the United States Department of Agriculture (“USDA”) has primarily supported universal service through loan guarantees, initially earmarked for voice telephone service expansion into rural farming areas.⁶⁹ In 2018 and 2019, Congress allocated \$1.1 billion for USDA’s ReConnect Program to expand high-speed broadband infrastructure in unserved rural areas and tribal lands.⁷⁰

Prior to the onset of COVID-19 emergency funding, the FCC managed the bulk of universal service funding responsibilities. The Telecommunications Act of 1996 codified the universal service mandate and required the FCC to establish an explicit subsidy mechanism.⁷¹ Section 254 of the 1996 Act required the Commission, in consultation with a Federal-State Joint Board comprised of the FCC, State Public Utility Commissioners, and consumer representatives, to establish a comprehensive universal service financial support system to ensure that the largest possible number of U.S. residents had access to high-quality telephone service regardless of their household income or geographic location.⁷² The 1996 Act required transparency in universal service funding and specified that only revenues generated by providers of telecommunications services must contribute to universal service funding,⁷³ even though subsidies now support broadband services

⁶⁹ See *Broadband*, U.S. DEPT. OF AGRIC., <https://www.usda.gov/broadband> [<https://perma.cc/LC8F-GZUS>] (last visited Sept. 17, 2023).

⁷⁰ *Id.*

⁷¹ See *Universal Service Funding Summary*, *supra* note 64 (describing the principles adopted by the 1996 Act, including promoting the availability of quality services at just, reasonable and affordable rates for all consumers; increasing nationwide access to advanced telecommunications services; advancing the availability of such services to all consumers, including those in low income, rural, insular, and high cost areas, at rates that are reasonably comparable to those charged in urban areas; increasing access to telecommunications and advanced services in schools, libraries and rural healthcare facilities; and providing equitable and non-discriminatory contributions from all providers of telecommunications services for the fund supporting universal service programs).

⁷² See Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 (1996) (codified at 47 U.S.C. § 254(b)(3)).

⁷³ See 47 U.S.C. § 254(d) (noting, however, that the FCC can expand the universal service funding obligation to include both providers of interstate telecommunications services and other ventures that provide telecommunications

used to provide access to video, data, and other non-voice, telephone services.

The 1996 Act requires the FCC to use universal service funding to support “advanced telecommunications capability.”⁷⁴ The Commission interprets this mandate to include broadband service available to qualifying carriers operating in high-cost areas, low-income subscribers, schools, libraries, and rural healthcare providers.⁷⁵

The FCC oversees four subsidy programs: the Connect America Fund, the Lifeline program, the E-Rate program, and the Rural Health Care Support program.⁷⁶ The Connect America Fund subsidizes qualifying telephone companies that serve high-cost areas, thereby ensuring that the residents of these regions have access to both service and rates comparable to urban areas.⁷⁷ The Lifeline program assists low-income customers by providing a \$9.25 discount of the monthly telephone service charge.⁷⁸ The

as an integral part of another type of service: “Any other provider of interstate telecommunications may be required to contribute to the preservation and advancement of universal service if the public interest so requires.”)

⁷⁴ 47 U.S.C. § 1302(a) (“The Commission and each State commission with regulatory jurisdiction over telecommunications services shall encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans (including, in particular, elementary and secondary schools and classrooms).”); *See also* FCC Clarifies Use of CAF Phase II Support, Modifies RBE Requirements, 81 Fed. Reg. 21272 (Apr. 11, 2016).

⁷⁵ *See Universal Service Funding Summary*, *supra* note 64 (summarizing the four core universal service programs that preceded additional pandemic funding). *See also Universal Service Support Mechanisms*, FED. COMMC’NS COMM’N, <https://www.fcc.gov/consumers/guides/universal-service-support-mechanisms> [<https://perma.cc/S6RJ-W938>] (last visited Sept. 17, 2023).

⁷⁶ *Universal Service Funding Summary*, *supra* note 64; *Universal Service Support Mechanisms*, *supra* note 75.

⁷⁷ *Connect America Fund (CAF)*, FED. COMMC’NS COMM’N, <https://www.fcc.gov/general/connect-america-fund-caf> [<https://perma.cc/RA35-WMLD>] (last updated Feb. 2, 2017).

⁷⁸ *Lifeline Support for Affordable Communications*, FED. COMMC’NS COMM’N, <https://www.fcc.gov/lifeline-consumers> [<https://perma.cc/K37W-5H3Z>] (last updated Sept. 19, 2023) (“Lifeline provides up to a \$9.25 monthly discount on service for eligible low-income subscribers and up to \$34.25 per month for those on Tribal lands. Subscribers may receive a Lifeline discount on either a wireline or a wireless service, but they may not receive a discount on both services at the

“E-Rate” program provides grants to schools and libraries to defray the cost of equipment and monthly subscriptions for accessing voice and data services.⁷⁹ Finally, the Rural Health Care Support program offers subsidies to rural healthcare providers so that their cost of service, including telehealth broadband links, approximates the rate paid by their urban counterparts.⁸⁰

same time. Lifeline also supports broadband Internet service and broadband-voice bundles.”). This level of discounting falls well below the FCC's Affordable Connectivity Program, created during the pandemic, that provides a \$30 monthly discount for internet service by eligible households and up to \$75 per month for households on qualifying Tribal lands. Eligible households can also receive a one-time discount of up to \$100 to purchase a laptop, desktop computer, or tablet from participating providers if they contribute more than \$10 and less than \$50 toward the purchase price. *Affordable Connectivity Program*, FED. COMMC’NS COMM’N, <https://www.fcc.gov/acp> [<https://perma.cc/C2XG-DU62>] (last updated Sept. 21, 2023).

⁷⁹ *E-Rate – Schools & Libraries USF Program*, FED. COMMC’NS COMM’N, <https://www.fcc.gov/general/e-rate-schools-libraries-usf-program> [<https://perma.cc/TN2T-VNEC>] (last updated Sept. 13, 2023).

⁸⁰ *The FCC’s Universal Service Rural Health Care Programs*, FED. COMMC’NS COMM’N, <https://www.fcc.gov/guides/universal-service-program-rural-health-care-providers> [<https://perma.cc/AN2Y-HX58>] (last updated Dec. 31, 2019).

III. UNIVERSAL SERVICE FUNDING INITIATIVES DURING THE COVID-19 PANDEMIC

Congress⁸¹ and the Executive Branch, including NTIA⁸² and the FCC,⁸³ vigorously responded to the COVID-19 pandemic with emphasis on mitigating the cost and difficulty in accessing essential services.⁸⁴ One example of such a service was healthcare provided via a broadband link.⁸⁵ Congress allocated billions of dollars from the Treasury in a dizzying array of authorizations⁸⁶ on top of the

⁸¹ See, e.g., Coronavirus Aid, Relief, and Economic Security Act, Pub. L. No. 116-36, 134 Stat. 281 (2020); Consolidated Appropriations Act, Pub. L. No. 116-260, 134 Stat. 1182 (2020); American Rescue Plan Act of 2021, Pub. L. No. 117-2, 135 Stat. 4 (2021) (allocating \$350 billion in infrastructure funding for state, local and tribal governments, including broadband); Infrastructure Investment and Jobs Act, Pub. L. No. 117-58, 135 Stat. 429 (2021) (allocating more than \$5 billion for broadband-related programs including the Emergency Broadband Benefit, Secure and Trusted Communications Networks Act to help telephone companies replace equipment manufactured by Huawei deemed a national security risk, and the Broadband Infrastructure Program and Connecting Minority Communities Pilot Program).

⁸² See, e.g., *Grants Overview*, BROADBANDUSA, <https://broadbandusa.ntia.doc.gov/resources/grant-programs>, [https://perma.cc/MVA2-3Z3E] (last visited Sept. 17, 2023); *Broadband Infrastructure Program*, BROADBANDUSA, <https://broadbandusa.ntia.doc.gov/broadband-infrastructure-program> [https://perma.cc/L9JU-E66Y] (last visited Sept. 17, 2023).

⁸³ See *Coronavirus Response and Relief*, FED. COMM'NS COMM'N, <https://www.fcc.gov/coronavirus-response-and-relief> [https://perma.cc/J87E-4GKR] (last visited Sept. 17, 2023). See also *Coronavirus*, FED. COMM'NS COMM'N, <https://www.fcc.gov/coronavirus> [https://perma.cc/4JZU-GT2F] (last visited Sept. 17, 2023).

⁸⁴ For a compilation of other funding initiatives, see *Broadband Federal Funding Programs*, NAT'L GOVERNORS ASS'N, <https://www.nga.org/broadband> [https://perma.cc/64UH-VGNB] (last visited Sept. 17, 2023); *Funding Programs*, BROADBANDUSA, <https://broadbandusa.ntia.doc.gov/funding-programs> [https://perma.cc/W34X-Q8EB] (last visited Sept. 17, 2023); *ReConnect Loan and Grant Program*, U.S. DEP'T. AGRIC., <https://www.usda.gov/reconnect#anchor1> [https://perma.cc/8A9H-4G8G] (last visited Sept. 17, 2023).

⁸⁵ *Summary of the Rural Health Care Program*, FED. COMM'NS COMM'N, <https://www.fcc.gov/general/rural-health-care-program> [https://perma.cc/6YJF-B8CZ] (last updated Sept. 6, 2023).

⁸⁶ See Infrastructure Investment and Jobs Act, Pub. L. No. 117-58, 135 Stat. 429 (2021) (allocating a total of \$65 billion for broadband improvements). Funded programs include \$42.45 billion for a new Broadband Equity, Access, and Deployment ("BEAD") program focused on connecting underserved areas by

pre-existing subscriber-funded core universal service programs, with the goal of achieving speedy progress in bridging the Digital Divide. This progress was primarily to be achieved through subsidies for rural telehealth and broadband projects of qualifying telecommunications companies. The government agencies also worked to improve the mapping of broadband availability, as well as the accuracy and specificity in compiling current statistics on broadband subscribership and availability.⁸⁷

For its part, the FCC sought to support current Lifeline subscribers and increase enrollment opportunities,⁸⁸ modifying the E-Rate program rules to allocate \$7.171 billion to help schools and libraries provide the tools and services their communities needed for remote learning.⁸⁹ The Commission also created the Rural Digital Opportunity Fund in 2020 by designating \$20.4 billion in core universal service funding to be used for rural infrastructure projects

funneling money through state grants managed by NTIA, and \$14.2 billion for an FCC Affordable Connectivity Program, offering a \$30 discount off the monthly broadband subscription rate incurred by low-income households. Other programs include \$2.75 billion for a Digital Equity program; \$2 billion for a Tribal Broadband Connectivity Program; \$2 billion for the Rural Utilities Service Distance Learning, Telemedicine and Broadband Program; and \$1 billion for a new Middle Mile grant program designed to fuel the construction, improvement, or acquisition of middle-mile infrastructure by eligible entities. *See also* PATRICIA MOLONEY FIGLIOLA, CONG. RSCH. SERV., R46780, OVERVIEW OF THE UNIVERSAL SERVICE FUND AND SELECTED FEDERAL BROADBAND PROGRAMS (2021).

⁸⁷ *See* Jessica Rosenworcel, *National Broadband Map: It Keeps Getting Better*, FED. COMM'NS COMM'N, <https://www.fcc.gov/national-broadband-map-it-keeps-getting-better> [<https://perma.cc/LRD4-6VCE>] (last visited Sept. 17, 2023) (“We’ve learned a lot over the past few months, and there’s even more to learn from the new National Broadband Map itself. Here are a few key takeaways: More than 8.3 million U.S. homes and businesses lack access to high-speed broadband. If we want everyone, everywhere to have access to high-speed internet service, we will need to deploy broadband service to 8.3 million new locations. On net, the improvements to the map since November helped to identify nearly 330,000 more unserved locations.”).

⁸⁸ *See* Link Up Reform and Modernization, 35 FCC Rcd. 2950 (2020); Emergency Broadband Benefit Program, 36 FCC Rcd. 4612 (2021).

⁸⁹ Establishing Emergency Connectivity Fund to Close the Homework Gap, 36 FCC Rcd. 8696 (2021); *see also* *Emergency Connectivity Fund*, FED. COMM'NS COMM'N, <https://www.fcc.gov/emergency-connectivity-fund> [<https://perma.cc/4MRF-4CQW>] (last visited Sept. 17, 2023).

awarded on a reverse auction basis, with the winner agreeing to serve a specific locality with the lowest amount of government grant funding.⁹⁰ Additionally, the FCC promoted installation of fifth generation wireless networks in rural locales,⁹¹ and created the Rural Health Care Program⁹² to subsidize access by rural healthcare providers to telecommunications and broadband networks capable of carrying telemedicine traffic.

While many of the pandemic-triggered initiatives created by legislation and implemented by the FCC focused on enhancing the geographical reach of broadband service, some programs focused on making existing service more affordable. For example, on December 27, 2020, the Consolidated Appropriations Act was enacted, which allocated \$3.2 billion for the creation of the Emergency Broadband Connectivity Fund (“EBB”) to discount the monthly internet subscription cost for low-income households during the pandemic.⁹³ On November 15, 2021, Congress replaced the EBB with a longer-term Affordable Connectivity Program (“ACP”), initially funded at \$14 billion.⁹⁴ Subsequently, Congress enacted a bipartisan infrastructure enhancement law that included \$42.5 billion in funding for high-speed internet access in locations lacking any broadband or having access below the FCC benchmark rate.⁹⁵

⁹⁰ FCC Launches \$20 Billion Rural Digital Opportunity Fund to Expand Rural Broadband Deployment, 35 FCC Rcd. 686 (2020) (adopting a reverse auction format for a ten-year period of subsidization for carrier service in high-cost rural locales); The Rural Digital Opportunity Fund Auction (Auction 904), 35 FCC Rcd. 10820 (2020) (order on reconsideration).

⁹¹ Establishing a 5G Fund for Rural America, 35 FCC Rcd. 12174 (2020); Erratum – Establishing a 5G Fund for Rural America, 36 FCC Rcd. 143 (2020).

⁹² *Summary of the Rural Health Care Program*, *supra* note 85.

⁹³ *Emergency Broadband Benefit Program*, FED. COMM’NS COMM’N, <https://www.fcc.gov/emergency-broadband-benefit-program> [<https://perma.cc/CL9S-XVSQ>] (last updated Jan. 17, 2023); *Emergency Broadband Benefit*, FED. COMM’NS COMM’N, <https://www.fcc.gov/broadbandbenefit> [<https://perma.cc/X6HW-HU3H>] (last updated May 25, 2023).

⁹⁴ *Affordable Connectivity Program*, *supra* note 78.

⁹⁵ Infrastructure Investment and Jobs Act, Pub. L. No. 117-58, 135 Stat. 429 (Nov. 15, 2021); *see also Broadband Equity Access and Deployment Program*, BROADBANDUSA, <https://broadbandusa.ntia.doc.gov/funding-programs/broadband-equity-access-and-deployment-bead-program> [<https://perma.cc/WUM4->

Both the EBB and ACP targeted low-income households for discounted broadband access and offered grants to organizations seeking to promote participation. Households can qualify for funding by showing income at or below 200% of the Federal Poverty Guidelines, issuance of a Federal Pell Grant for college tuition assistance, participation in federal assistance programs including free and reduced-price school meals, Medicaid, food stamps (officially known as the Supplemental Nutrition Assistance Program), Federal and Tribal housing assistance, and the lifeline Universal Service Fund.⁹⁶ ACP provides a discount of \$30-\$75 per month toward broadband service for eligible households.⁹⁷ They also can receive a one-time discount of up to \$100 to purchase a laptop, desktop computer, or tablet from participating providers if they contribute more than \$10 and less than \$50 toward the purchase price.⁹⁸

COVID-19 exacerbated the burdens and disadvantages borne by people unable or unwilling to incur higher broadband access costs that resulted from their residency in a location lacking the population density to attract private investment. The pandemic provided clear evidence of the harms resulting from costly, inferior, or nonexistent access to essential internet services such as education, government and commercial transactions, healthcare, self-expression, and entertainment.⁹⁹ The efforts undertaken by

D2WB] (last visited Sept. 17, 2023); *Biden-Harris Administration Announces State Allocations for \$42.45 Billion High-Speed Internet Grant Program as Part of Investing in America Agenda*, INTERNET FOR ALL (June 26, 2023), <https://internetforall.gov/news-media/biden-harris-administration-announces-state-allocations-4245-billion-high-speed-internet> [<https://perma.cc/PN73-HHCH>].

⁹⁶ *Affordable Connectivity Program*, *supra* note 78; *Emergency Broadband Benefit*, *supra* note 93.

⁹⁷ *Affordable Connectivity Program*, *supra* note 78; *Emergency Broadband Benefit*, *supra* note 93.

⁹⁸ *Affordable Connectivity Program*, *supra* note 78; *Emergency Broadband Benefit*, *supra* note 93. The FCC recently raised the monthly discount up to \$75 for subscribers with the most expensive broadband rates. *Affordable Connectivity Program*, WC Docket No. 21-450, Sixth Report and Order (FCC Aug. 3, 2023).

⁹⁹ *Impact of the Digital Divide: Economic, Social, and Educational Consequences*, IEEE: CONNECTING THE UNCONNECTED, <https://ctu.ieee.org/imp-act-of-the-digital-divide-economic-social-and-educational-consequences>

people lacking a home broadband connection to seek a wireless option elsewhere dramatically display the necessity of the universal service mission.¹⁰⁰

Universal service subsidies help carriers extend their networks into the hinterland where incremental costs remain high because of low population density, difficult terrain, harsh climate, lack of other utilities, and additional factors.¹⁰¹ Serving high-cost areas vastly exceeds the average per subscriber cost for service to areas with high population density.¹⁰² If the government decides that residents in unserved or underserved areas have a right to affordable access, then a subsidy regime must operate until a specific service territory can become self-sustaining.

A subsidy-free outcome appears quite unlikely for most high-cost areas if one considers sustainability both in terms of initial start-up capital expenditures and ongoing operating expenses. Even

[<https://perma.cc/3EU3-W7WH>] (last visited Sept. 23, 2023) (“The digital divide, or the split between those with and without reliable internet connectivity and related technologies, has profound implications on society. Lack of internet access affects the economy, social opportunities, and educational equity, and many other areas. The impact of the digital divide can be severe, but some solutions exist that can help bridge the gap.”). Kiara Taylor, *The Digital Divide: What It Is, and What's Being Done to Close It*, INVESTOPEDIA (Aug. 16, 2023), <https://www.investopedia.com/the-digital-divide-5116352> [<https://perma.cc/55DV-EFW8>] (“The consequences of the digital divide include isolation, which can affect mental health, educational barriers as postsecondary education increasingly moves online, and worsening gender discrimination.”).

¹⁰⁰ Alisha Ebrahimji, *School Sends California Family a Hotspot After Students Went to Taco Bell to Use Their Free WiFi*, CNN (Aug. 31, 2020, 10:28 PM), <https://www.cnn.com/2020/08/31/us/taco-bell-california-students-wifi-trnd/index.html> [<https://perma.cc/XFR3-JW2Q>].

¹⁰¹ See, e.g., Ryan Tracy, *The \$53,000 Connection: The High Cost of High-Speed Internet for Everyone*, WALL ST. J. (Sep. 5, 2023), <https://www.wsj.com/us-news/the-53-000-connection-the-high-cost-of-high-speed-internet-for-everyone-c903163f> [<https://perma.cc/9NQY-5D2B>].

¹⁰² Stacy Madden, *Stretching Broadband Internet Through Rural America*, PVIT (Aug. 9, 2021), <https://info.pivitglobal.com/en/customer-updates/stretching-broadband-internet-into-rural-america> [<https://perma.cc/APY4-Y78Q>] (“Stringing fiber optic cable costs about \$20,000 per mile. That’s a lot of money to spend when some rural areas may only have a few houses for every mile of cable, which is the same problem that had to be overcome in the 1930’s with rural electrification.”).

after initial expenditures, carriers need to be able to retain earnings or have the financial viability to qualify for loans to invest in future network upgrades. As the FCC states, “with respect to infrastructure deployment, even in areas that receive Infrastructure Act funding or money from other federal programs, providers serving some of these locations will continue to have operational expenses that will be difficult to recover from end-user revenues alone.”¹⁰³ Further, “USF support may be necessary to cover operating costs for some providers in the highest-cost areas even where they receive additional federal deployment dollars.”¹⁰⁴

The \$42 billion Broadband Equity, Access, and Development (“BEAD”) program requires project applicants to develop a five-year plan that presumably requires proof of sustainability over that period.¹⁰⁵ Additionally, BEAD project applicants must explain how they will promote digital equity (including direct subscriber subsidies) in addition to exceeding the monthly discount provided by the FCC’s Affordable Connectivity Program.¹⁰⁶ Project applicants need to explore sustainability and affordability support separate from government subsidies because “the amount of money in the BEAD Program is not enough to support long-term network maintenance, affordability subsidies, and digital skills training.”¹⁰⁷

¹⁰³ Comments of USTelecom – The Broadband Association, WC Docket No. 21-476, at 3 (FCC Feb. 17, 2022) [hereinafter USTA Comments on the Future of Universal Service Funding].

¹⁰⁴ *Id.*

¹⁰⁵ NAT’L TELECOMMS. & INFO. ADMIN., U.S. DEP’T COM., INTERNET FOR ALL: FREQUENTLY ASKED QUESTIONS AND ANSWERS DRAFT VERSION 2.0 – BROADBAND, EQUITY, ACCESS, AND DEPLOYMENT (BEAD) PROGRAM 24 (2022) (“At a minimum, the Five-Year Action Plan should address an Eligible Entity’s goals and approaches to broadband access, affordability, equity, and adoption.”).

¹⁰⁶ *Id.* at 28 (“Examples of ways an Eligible Entity can use BEAD funds to support digital equity activities include but are not limited to: . . . [d]irect subsidies for use toward broadband subscription, where the Eligible Entity shows the subsidies will improve affordability for the end user population (and to supplement, but not to duplicate or supplant, the subsidies provided by the Affordable Connectivity Program).”). See also *Affordable Connectivity Program*, *supra* note 78.

¹⁰⁷ Kathryn de Wit, *What States Need to Know About Federal BEAD Funding for High-Speed Internet Expansion*, Considerations, PEW CHARITABLE TRS. (Feb. 8, 2023); <https://www.pewtrusts.org/en/research-and-analysis/issue-briefs/2023/>

As such, “[s]tate and territorial lawmakers should begin planning for these long-term costs now and work with their broadband offices to help build a meaningful foundation that can support these needs after the federal funds are spent.”¹⁰⁸

Recognizing the severe handicaps occurring when households and businesses cannot access affordable broadband service during the pandemic, Congress launched an aggressive and financially generous campaign to achieve quick progress. The haste in disbursing funds created opportunities for fraud, likely overlapping government programs, inefficiency, and less than optimal outcomes.¹⁰⁹ Now that the health emergency appears manageable, the federal agencies disbursing universal funds need to find ways to capture efficiency gains, because the total level of universal service funding likely will decline unless Congress extends COVID-era programs.

IV. CHALLENGES TO THE SUSTAINABILITY OF UNIVERSAL SERVICE PROGRAMS POST-PANDEMIC

The billions of dollars earmarked during the pandemic for broadband projects evidenced an understanding by legislators and regulators of the severe deprivations experienced by households and businesses confronting inferior, unreliable, unaffordable, and even unavailable broadband access. The potential for post-pandemic frustration and hardship remains high absent a serious and thorough assessment of what adjustments to government programs and policies will enhance the likelihood that COVID-era progress does not regress. Such consideration requires an appreciation that

01/what-states-need-to-know-about-federal-bead-funding-for-high-speed-internet-expansion [https://perma.cc/R4SL-5KFR].

¹⁰⁸ *Id.*

¹⁰⁹ See, e.g., Tony Room, *U.S. Aid Program to Keep People Online Was Riddled With Deception, Fraud*, WASH. POST (Oct. 25, 2022, 3:30 PM), <https://www.washingtonpost.com/business/2022/10/25/broadband-subsidies-coronavirus-aid/> [https://perma.cc/KAG2-LP2U]; Rachel Greszler, *9 Reasons Not to Pass Yet Another Federal COVID-19 “Relief” Spending Package*, HERITAGE FOUND. (Jan. 18, 2022), <https://www.heritage.org/budget-and-spending/commentary/9-reasons-not-pass-yet-another-federal-covid-19-relief-spending> [https://perma.cc/49V3-W8D8].

aggregate universal service subsidies will decline just as broadband carriers have to find ways to generate sufficient revenues to meet operating costs and prepare for future network upgrades. Without ongoing broadband subscription discounts, a sizeable portion of low-income households may have to reduce or abandon service. This Section addresses what government, carriers, broadband subscribers, and other stakeholders can do to retain the progress achieved when COVID-19 funding was plentiful.

A. Migration from Supply-Side to Demand-Side Emphasis

The winding down of supply-side project grants necessitates transition to a demand-side emphasis on increasing broadband affordability,¹¹⁰ promoting computer ownership¹¹¹ and digital literacy skills,¹¹² improving public outreach to promote knowledge about universal service programs, and enhancing the value in broadband subscriptions. Many residents in localities having pre-pandemic broadband options as well as places with newly available service have not subscribed because they are unaware of available government subsidies that would lower their monthly out

¹¹⁰ See Colleen McClain, *34% of Lower-Income Home Broadband Users Have Had Trouble Paying for Their Service Amid COVID-19*, PEW RSCH. CTR. (June 3, 2021), <https://www.pewresearch.org/short-reads/2021/06/03/34-of-lower-income-home-broadband-users-have-had-trouble-paying-for-their-service-amid-covid-19> [<https://perma.cc/D4RQ-MZ45>].

¹¹¹ Currently, The Affordable Connectivity Program “provides a one-time device discount of up to \$100 for a laptop, desktop computer, or tablet purchased through a participating provider. The one-time discount requires a consumer co-payment of more than \$10 and less than \$50.” *Affordable Connectivity Program*, UNIVERSAL SERVS. ADMIN. CO., <https://www.usac.org/about/affordable-connectivity-program> [<https://perma.cc/AX3F-UAP3>] (last visited Sept. 17, 2023).

¹¹² NTIA’s Broadband Technology Opportunities Program “has invested roughly \$200 million in public computer centers that provide [i]nternet access for those who don’t have it at home, and roughly \$250 million in broadband adoption programs that cover everything from how to navigate the Web and set up an email account to how to post a resume online and conduct an online job search.” *Promoting the Benefits of Digital Literacy*, NAT’L TELECOMMS. & INFO. ADMIN., <https://ntia.gov/blog/promoting-benefits-digital-literacy> [<https://perma.cc/JNQ3-AU2J>] (last visited Sept. 17, 2023); see also *EveryoneOn*, EVERYONEON, <https://www.everyoneon.org> [<https://perma.cc/TXK9-58ZD>] (last visited Sept. 17, 2023).

of pocket cost.¹¹³ For example, Evan Marwell, CEO of EducationSuperHighway, stated that while past emphasis has been placed on a lack of infrastructure, “affordability is now really the primary issue inhibiting people from getting on the internet.”¹¹⁴ Additionally, “there are still 7 million households without any infrastructure available to them, but there are 18 million that have internet available but can't afford it.”¹¹⁵ The lack of affordable home internet during the pandemic left underserved families at a major disadvantage. Marwell added, “when the pandemic hit, 50 million students got sent home, 15 million of them did not have internet access, and therefore didn't have a seat in the classroom.”¹¹⁶

Further, many low-income households are hard-pressed to afford broadband subscription costs even with an available monthly discount of \$30-\$75.¹¹⁷

[T]he digital divide is not amenable to a one-time fix. Research shows that not all households who have a broadband subscription can maintain it. 'Subscription vulnerability' captures how maintaining access is fragile for many households. For lower-income households (i.e., those whose annual incomes are \$50,000 or less), half (49%) live near the precipice of disconnection in that they have lost connectivity due to economic hardship (during the pandemic), live at or below the poverty line, or say it is very difficult for them to fit broadband service into their household budgets. For low-income households, scarce resources often result in trade-offs that many people in the United States do not face. What goes if hours at work go down or a job layoff occurs? The internet connection at home may have to take a hiatus.¹¹⁸

Broadband subscription rates typically decrease as the technology matures and carriers serve more subscribers, thereby

¹¹³ *Half of ACP-Eligible Households Still Unaware of the Program*, BENSON INST. BROADBAND & SOC'Y (Mar. 17, 2023), <https://www.benton.org/blog/half-acp-eligible-households-still-unaware-program> [<https://perma.cc/NVW7-S79K>].

¹¹⁴ *Pandemic Response Programs for Internet Access*, PANDEMIC OVERSIGHT (Dec. 15, 2021, 2:15 PM), <https://www.pandemicoversight.gov/news/events/pandemic-response-programs-internet-access> [<https://perma.cc/WK8K-M3JW>].

¹¹⁵ *Id.*

¹¹⁶ *Id.*

¹¹⁷ JOHN B. HARRIGAN, BROADBAND BENEFIT PROGRAMS ARE HELPING TO CLOSE THE DIGITAL DIVIDE: FOUR LESSONS FOR POLICYMAKERS 6 (Benton Inst. Broadband & Soc'y 2022).

¹¹⁸ *Id.*

promoting economies of scale and the ability to spread fixed costs over a larger user base.¹¹⁹ However, Internet Service Providers (“ISPs”) have recently raised their retail broadband rates in response to rising operating costs and declining subscriber growth.¹²⁰ Additionally, carriers in mature telecommunications markets typically have to raise rates to recoup network upgrades that provide faster bit transmission speeds.¹²¹ Carriers increasingly offer multiple tiers of service at different price points based on transmission speeds.¹²² The greatest speed improvement occurs in wired networks that can handle simultaneous use of personal computers with large display screens and Wi-Fi connected handsets and tablets by two or more users in the same household.¹²³ However, a significant percentage of low-income subscribers cannot afford both wireless and wired broadband services.¹²⁴

¹¹⁹ Jason Shevik, *Broadband Pricing Changes: 2016 to 2022*, BROADBANDNOW, <https://broadbandnow.com/internet/broadband-pricing-changes> [<https://perma.cc/EU33-NQYQ>] (last updated on May 5, 2023).

¹²⁰ Camryn Smith, *ISPs to increase prices before the end of the year*, ALLCONNECT (Dec. 16, 2022), <https://www.allconnect.com/blog/internet-price-increase> [<https://perma.cc/Z4HC-A2NT>] (reporting significant rate increased by major ISPs such as Comcast and Charter Communications).

¹²¹ Doug Dawson, *What's the Trend for Broadband Prices?*, CCG CONSULTING: POTS & PANS (Sept. 26, 2022), <https://potsandpansbyccg.com/2022/09/26/whats-the-trend-for-broadband-prices/> [<https://perma.cc/BR8H-XBB8>] (“For years, cable companies have been raising broadband prices every year. These annual rate increases meant a huge boost the earnings of the largest cable companies like Comcast and Charter. Most of the annual price increases of \$3 to \$5 went straight to the bottom line.”).

¹²² Jon Brodtkin, *Charter Raises Base Internet to \$80 a Month; Price Hikes to Hit 9.5M Users*, ARS TECHNICA (Nov. 1, 2022, 1:30 PM), <https://arstechnica.com/tech-policy/2022/11/charter-spectrum-raises-internet-prices-5-a-month-cheapest-tier-now-80> [<https://perma.cc/85C7-AXLL>]; *Hidden Costs: Why Internet Service Providers Regularly Raise Their Prices*, BROADBANDSEARCH, <https://www.broadbandsearch.net/blog/internet-providers-raising-prices> [<https://perma.cc/VER3-M28C>] (last visited Sept. 17, 2023).

¹²³ See *Measuring Fixed Broadband – Twelfth Report*, FED. COMM’NS COMM’N (Jan. 6, 2023), <https://www.fcc.gov/reports-research/reports/measuring-broadband-america/measuring-fixed-broadband-twelfth-report> [<https://perma.cc/CTR7-GASX>].

¹²⁴ Emily A. Vogels, *Digital Divide Persists Even as Americans with Lower Incomes Make Gains in Tech Adoption*, PEW RSCH. CTR. (June 22, 2021), <https://www.pewresearch.org/short-reads/2021/06/22/digital-divide-persists-eve>

Demand-side emphasis concentrates on consumers of basic and advanced services rather than the technologies that deliver them. During the pandemic, legislators and policy makers had to consider which initiatives could bolster geographical penetration of essential services in the shortest amount of time, but not necessarily in the most efficient manner. Critics understandably took issue with the number of initiatives, the haste in making funds available, the potential for waste, fragmentation, duplication, and overlapping initiatives by a multiplicity of government agencies, inefficiency in project rollouts, as well as fraud and other criminal conduct.¹²⁵

B. Reforms to the Pre-Pandemic Core Universal Service Programs

Similar concerns have been expressed about the core universal service funding mechanism that provides subsidies for carriers to extend services into high-cost rural areas and to provide service discounts for schools, libraries, healthcare facilities, and people with low incomes.¹²⁶ Even the most sympathetic subscriber may

n-as-americans-with-lower-incomes-make-gains-in-tech-adoption/ [https://perma.cc/H4KK-X7ZS] (“With fewer options for online access at their disposal, Americans with lower incomes are relying more on smartphones. As of early 2021, 27% of adults living in households earning less than \$30,000 a year are smartphone-only internet users – meaning they own a smartphone but do not have broadband internet at home.”).

¹²⁵ Tony Romm, *U.S. Aid Program to Keep People Online was Riddled with Deception, Fraud*, WASH. POST (Oct. 25, 2022, 3:30 PM), <https://www.washingtonpost.com/business/2022/10/25/broadband-subsidies-coronavirus-aid/> [https://perma.cc/5YXX-Y9LV]; THOMAS M. JOHNSON JR., AM. ENTER. INST., *THE FUTURE OF UNIVERSAL SERVICE* (2022).

¹²⁶ U.S. GOV'T ACCOUNTABILITY OFF., GAO-23-106818, *BROADBAND: A NATIONAL STRATEGY NEEDED TO COORDINATE FRAGMENTED, OVERLAPPING FEDERAL PROGRAMS* (2023), [hereinafter GAO-23-106818]; U.S. GOV'T ACCOUNTABILITY OFF., GAO-22-104611, *BROADBAND: NATIONAL STRATEGY NEEDED TO GUIDE FEDERAL EFFORTS TO REDUCE DIGITAL DIVIDE* (2022) [hereinafter GAO-22-104611], Scott Wallsten & Gregory L. Rosston, *How to Fix the Universal Service Fund*, TECH. POL'Y INST. (May 10, 2023), <https://techpolicyinstitute.org/publications/broadband/digital-divide/how-to-fix-the-universal-service-fund> [https://perma.cc/J3RX-8MGM]; Greg Guice, *The Time for Can-Kicking Has Passed: Fix Universal Service Contribution Now*, PUB. KNOWLEDGE (Aug. 30, 2022), <https://publicknowledge.org/the-time-for-can-kicking-has-passed-fix-universal-service-contribution-now> [https://perma.cc/7U KQ-5AHN]; Juan Londoño, *The Debate on Universal Service Fund Reform: A*

experience “compassion fatigue” at having to pay what many perceive as a double-digit monthly tax that appears as a line item on their wired and wireless telephone bills.¹²⁷

Federal and state legislatures, along with regulatory agencies, need to address the sustainability of the core universal service funding regime¹²⁸ that preceded the pandemic and, absent new legislation, will again become the primary financial mechanism for bridging the Digital Divide. While this Article concentrates on the universal service funding initiatives triggered by the pandemic, a summary of the need to reform the prior universal service funding regime can offer insights on necessary adjustments in both types of programs.

When Congress codified the universal service mission, it identified new beneficiaries and created a mandate that the FCC could lawfully interpret as requiring subsidization of broadband data service in addition to voice telephony. While this mission expansion generated substantial upward pressure on the annual funds determined by the FCC as necessary to comply with statutory mandates, language in the Telecommunications Act of 1996 still

Primer, AM. ACTION F. (Jan. 12, 2022), <https://www.americanactionforum.org/insight/the-debate-on-universal-service-fund-reform-a-primer> [<https://perma.cc/2M3T-487B>]; Daniel Lyons, *A Common-Sense Opportunity to Reform the Universal Service Fund*, AM. ENTER. INST. (Jan. 28, 2021), <https://www.aei.org/technology-and-innovation/a-common-sense-opportunity-to-reform-the-universal-service-fund> [<https://perma.cc/KCW9-FUTL>].

¹²⁷ Will Yopez, *The Universal Service Fund Is On The Brink, But It's Not Too Late To Save It*, NAT'L TAXPAYERS UNION (April 15, 2021), <https://www.ntu.org/publications/detail/the-universal-service-fund-is-on-the-brink-but-its-not-too-late-to-save-it> [<https://perma.cc/RZ5R-9FEX>] (“The USF provides important funding to help close the digital divide, but the unstable funding base puts this program in peril. Will the USF collapse tomorrow? No. However, the longer this program limps on without reform, the more consumers will be on the hook to pay increasingly outrageous taxes. The contribution factor is on track to hit 40 percent by the end of the year. That means for every dollar spent by the consumer, they are billed an additional 40 cents, which would be an astronomical tax in almost any context.”).

¹²⁸ See Report on the Future of the Universal Service Fund, WC Docket No. 21-476, ¶ 88–111 (FCC Aug. 15, 2022).

limited the source of funding.¹²⁹ The Act specifies that telephone companies and their subscribers must contribute while other beneficiaries of a widely available and affordable broadband infrastructure are exempt.¹³⁰ This narrowing of compulsory funders arguably made sense in 1996, as it exempted cable television companies, so-called edge providers of content, software, and applications transmitted to users via the internet cloud,¹³¹ and ISPs offering broadband data services.

However, the current restriction on who must contribute places the entire burden on a declining number of contributors, because many consumers of legacy services have opted to replace their wireline voice telephone subscription with data services not subject to any universal service contribution requirement. The increasing total universal service funding burden, which is borne by a smaller group of telecommunications subscribers, has resulted in a substantial rise in the monthly contributions¹³² that subscribers must

¹²⁹ Section 254(d) of the Telecommunications Act of 1996 specifies that interstate telecommunication carriers alone must contribute to the advancement of universal service based on a cost recovery mechanism established by the FCC. See PATRICIA MOLONEY FIGLIOLA, BRIAN E. HUMPHREYS & COLBY LEIGH RACHFAL, CONG. RSCH. SERV., R47621, THE FUTURE OF THE UNIVERSAL SERVICE FUND AND RELATED BROADBAND PROGRAMS (2023).

¹³⁰ *Id.*

¹³¹ William Jeremy Robison, Note, *Free at What Cost?: Cloud Computing Privacy Under The Stored Communications Act*, 98 GEO. L.J. 1195, 1199 (2010). The internet cloud refers to the vast array of interconnected networks that make up the internet and provide users with seamless connectivity to these networks and the content available via these networks. “The increasing functionality of the [i]nternet is decreasing the role of the personal computer. This shift is being led by the growth of ‘cloud computing’—the ability to run applications and store data on a service provider’s computers over the internet, rather than on a person’s desktop computer.” *Id.* at 1199.

¹³² While the \$8-8.5 billion annual universal service funding contribution burden on households has been relatively stable in recent years, [t]he contribution factor, however, has increased in recent years, from 16.7% in the first quarter of 2017, to 25.2% in the first quarter of 2022, 23.8% in the second quarter of 2022, and 33.0% in the third quarter of 2022. These increases are due in large part to a decline in the contributions revenue base, i.e., reported revenues from interstate telecommunications services, which decreased from \$65.9 billion in 2011 to \$41.4 billion in 2020. The decline does not generally appear to

make. “Under the current contributions system that primarily assesses services in demand in 1996, not 2022, we are in a race to \$0, a race that effectively involves declining obsolete service revenues from less than ten companies to cover the vast majority of the bill.”¹³³ Moreover, “[t]his is no surprise since, while the Commission has taken significant steps to reorient the distribution side of USF toward broadband and the 21st century [i]nternet economy, the contribution side remains firmly anchored in the legacy analog economy of the 20th century.”¹³⁴

Congress could bolster the sustainability of the core universal service programs in two ways. First, it could revise the Telecommunications Act of 1996 and annual budgeting legislation to establish funding from the national treasury. Alternatively, Congress could expand the funding contributors to include present day beneficiaries of an improving and more widely available

be a result of service providers reclassifying telecommunications revenues from interstate to intrastate; rather, providers are reporting a declining share of telecommunications revenues and an increasing share of non-telecommunications revenues.

Report on the Future of the Universal Service Fund, WC Docket No. 21-476, at ¶ 91 (citations omitted).

¹³³ USTA Comments on the Future of Universal Service Funding, *supra* note 103, at 5–6. To further support its contention, USTelecom has stated:

We also know that the rapid and unending rise of the contribution factor in recent years provides indisputable evidence that without intervention the USF is not financially sustainable for current expenses, let alone additional future needs ... The root of the problem is that USF as it is currently configured assesses revenues on the types of telecommunications services that have been dramatically declining, particularly over the last decade, and not assessing other substantially similar services that have increasing revenues.

The Commission’s own data shows that the contribution base has fallen by nearly \$25 billion dollars since 2011. The drop in assessable revenues is attributable to a decline in traditional voice revenue. Instead of traditional voice services, consumers are using broadband data services to access a variety of digital services not contemplated when the USF was created in 1996. This marketplace shift has created the untenable predicament of a system that is now backwards looking instead of forward looking.

Id. at 6–7 (citations omitted).

¹³⁴ *Id.*

broadband infrastructure. The most likely candidates include carriers providing broadband links, such as ISPs, and the ever-increasing number of ventures that use broadband networks to deliver content, software, advertising, and applications to consumers.

Taxpayer funding of universal service programs re-establishes Congress as the authority with oversight powers to investigate criminal conduct, inefficiencies, overlapping programs, waste, and ways to improve and incorporate best practices. This arrangement would also help to avoid the likely disputes, litigation, and lobbying by potential funding contributors keen on avoiding having to pay.

V. THE IMPORTANCE OF TIMELY AND EFFECTIVE ACTION BY THE FCC, NTIA, AND USDA

The legislative and regulatory responses to the COVID-19 pandemic have many aspects worthy of praise. However, the benefit of hindsight offers clear evidence of wasteful, costly, ineffective, and ill-conceived initiatives. Federal and state governments acted with extraordinary speed and generosity. Such quick responsiveness risked the real or perceived sense that the government was “throwing money at the problem” without adequate safeguards and oversight.¹³⁵ While a retrospective analysis has the benefit of time and the ability to assess the efficacy of project grants, federal, state, and municipal governments faced an unprecedented calamity that justified emphasizing speed at the possible risk of wasteful duplication of efforts, inefficiency, insufficient evaluations of proposals, and inadequate oversight.

Now that the COVID-19 pandemic appears manageable, it is imperative that the FCC, NTIA, and USDA plan for a far less generous universal service funding commitment by Congress. The federal agencies have not adequately addressed how they can better coordinate their programs to conserve now diminished funds, reduce

¹³⁵ Richard Lardner, Jennifer McDermott & Aaron Kessler, *The Great Grift: How Billions in COVID-19 Relief Aid Was Stolen or Wasted*, AP (June 12, 2023, 12:01 AM), <https://apnews.com/article/pandemic-fraud-waste-billions-small-business-labor-fb1d9a9eb24857efbe4611344311ae78> [<https://perma.cc/JV5K-2DNW>].

overlap, prevent fraud and waste, and respond to helpful recommendations offered by stakeholders and advisory bodies. For example, the GAO reported in 2022 that federal universal service funding lacked a coherent national strategy and adequate coordination among involved government agencies:

Federal broadband efforts are fragmented and overlapping, with more than 100 programs administered by 15 agencies. Many programs have broadband as their main purpose, and several overlap because they can be used for the purpose of broadband deployment, as shown in the figure. Programs can also help with planning infrastructure, making service affordable, providing devices, and building digital skills. Despite numerous programs and federal investment of \$44 billion from 2015 through 2020, millions of Americans still lack broadband, and communities with limited resources may be most affected by fragmentation.¹³⁶

Further, the GAO emphasized the need for congressional legislation to establish a single, coherent, national broadband strategy.¹³⁷ It recommended NTIA take responsibility for identifying key statutory limitations to broadband program alignment among government agencies, and the Executive Office of the President develop and implement a national broadband strategy.¹³⁸ Andrew Von Ah, Director, Physical Infrastructure, at GAO, in congressional testimony in May 2023, reported that none of GAO's recommendations had been adopted thus far.¹³⁹

The lack of a single, comprehensive national broadband strategy and the absence of explicit congressional guidance on

¹³⁶ GAO-22-104611, *supra* note 126.

¹³⁷ *Id.*

¹³⁸ GAO-23-106818, *supra* note 126, at 10 (“In our May 2022 report, we recommended that NTIA consult with relevant agencies, as well as the Office of Management and Budget and other White House offices, and present to Congress a report that identifies the key statutory provisions that limit the beneficial alignment of broadband programs and offers legislative proposals to address the limitations, as appropriate. At the time we issued the report, the Department of Commerce agreed with our recommendation. Since then, NTIA told us it plans to solicit input about statutory limitations and legislative proposals from relevant agencies during interagency broadband meetings. NTIA also told us that it plans to provide a report to Congress by May 31, 2026 that will, among other things, identify barriers and statutory limitations that limit the beneficial alignment of broadband programs and offer potential legislative changes, as appropriate.”).

¹³⁹ *Id.*

post-pandemic implementation of universal service programming are acute problems that require immediate action. GAO reported that having multiple federal government agencies involved in universal service funding has resulted in fragmented, overlapping, and duplicative programs, often applying different standards, expectations, and grant-seeking requirements.¹⁴⁰

Additionally, beneficiaries may have acquired an expectation that grant funds, loan guarantees, recurring subsidies, and generous discounting of retail rates will persist even after the COVID-19 pandemic. It is worth noting that both AT&T and Verizon, on several occasions, have opted not to participate in the FCC's universal service funding programs based on the view that available subsidy funding was inadequate.¹⁴¹ Carriers and consumers may now have an unreasonable frame of reference for what constitutes sufficient government financial support based on the worst-case scenario of need and time sensitivity.

With the conclusion of the national health emergency, stakeholders should reassess strategies and tactics to determine what best practices will generate optimal results. This evaluation should

¹⁴⁰ GAO-22-104611, *supra* note 126 (“Agency officials said programmatic differences, including some set by statute, limit their ability to align programs. For example, programs may have differing definitions of eligible areas, populations, and broadband speeds. In 2018, the National Telecommunications and Information Administration (NTIA) led an interagency group that reviewed differing program definitions. However, NTIA did not identify which statutory provisions limit alignment nor recommend any changes. NTIA is responsible for coordinating telecommunications matters across the executive branch and at the end of 2020 gained additional responsibilities for improving broadband coordination. Improved alignment is needed to help address fragmentation and overlap. Without legislative proposals for Congress to consider, agencies may continue to face limitations in aligning programs to close the digital divide.”).

¹⁴¹ The nation's two largest telecommunications companies, Verizon and AT&T, occasionally opted not to participate in a universal service funding program based on the perceived inadequacy of the available financial inducements. *See, e.g.*, Joan Engebretson, *Verizon, AT&T Decline Broadband Connect America Funding*, TELECOMPETITOR, (July 25, 2012), <https://www.telecompetitor.com/verizon-att-decline-connect-america-funding> [<https://perma.cc/54CH-S4CZ>]; *Verizon Walks Away From \$550M+ In Federal Broadband Money*, SPEEDMATTERS.ORG (Aug. 27, 2015), <https://speedmatters.org/news/verizon-walks-away-550m-federal-broadband-money> [<https://perma.cc/3CDB-XRDK>].

also identify what reforms are necessary to manage the next national emergency, as well as confront long-ignored problems with the existing universal service regime.

All participating agencies should agree on a single set of best practices in Digital Divide reduction efforts, including a uniform baseline on what constitutes broadband service in terms of minimum bit transmission speed, downstream and upstream, and transmission delay, commonly referred to as latency. Broadband service providers should satisfy a baseline that establishes a minimum standard, but carriers should not have to provide the same tiers of higher quality service everywhere. Insisting on absolute parity between urban and rural locales could waste funds by requiring installation of best-in-class, fiber optic cable service to remote, low-density areas. Cheaper wireless options could provide adequate service, albeit slower than what urban residents might have available. Winning applicants also should meet rigorous timetables for service commencement with penalties, including disqualification, for unreasonable delays.

With or without new legislation,¹⁴² the key federal agencies should assess universal service deficiencies with an eye toward initially determining the viability of alternatives to federal or state government disbursement of funds. These alternatives include private sector investment, loan guarantees and financing by banks and other lenders, and external funding available from both government and non-government organizations, such as charitable foundations. Additionally, the agencies should take into consideration any ongoing universal service efforts by the private sector offering low-cost computers and lower broadband rates.¹⁴³

The agencies should also share their findings on whether progress can be achieved solely by private sector investment or

¹⁴² See *supra* Part IV.

¹⁴³ Starting in 2011, before the onset of the FCC's Affordable Connectivity Program, Comcast created the Internet Essential program, offering qualifying low-income households 15 Mbps broadband access for \$9.95 per month and the opportunity to buy a personal computer for \$150. Comcast reported in 2018 that it provided access to over 6 million subscribers in 1.5 million households, 90 percent newly connecting online from home. COMCAST NBCUNIVERSAL, READY FOR ANYTHING 4, 7–8 (2018).

whether private and public partnerships are also necessary. In a nutshell, governments need to determine whether, when, and how market failure necessitates intervention and subsidization in lieu of private investment, and commercial bank financing. Government agencies should establish a toolkit of options for superseding or augmenting market forces. Currently, three separate government agencies primarily emphasize only one type of stimulus: loan guarantees and other banking options by USDA, management of carrier-collected universal service funding contributions from telecommunications ratepayers by the FCC, and taxpayer-funded grants by NTIA.¹⁴⁴

Uniform and specific evaluative criteria can help Executive Branch agencies and the FCC accurately determine what support options are appropriate for an applicant, as a function of which government agency manages a particular universal service program. Rather than consider the transfer of funds directly to applicants as the primary vehicle for solving the Digital Divide, the FCC, NTIA, and other federal agencies should determine what tactics best meet specific requirements. The range of options runs the gamut from loan guarantees (to stimulate interest by private investors), public/private partnerships, one-time monetary grants, and recurring subsidies from the national treasury or other sources, such as the core Universal Service Fund supported by carrier-billed monthly payments from subscribers.

VI. THE NEED FOR ONGOING CONGRESSIONAL OVERSIGHT AND RECALIBRATION OF THE UNIVERSAL SERVICE MANDATE

Congress needs to reassess how to fund the core Universal Service Fund, which has ballooned to over \$8 billion annually,¹⁴⁵ particularly in light of the severe restrictions established by the Telecommunications Act of 1996 on the funding sources¹⁴⁶ and the

¹⁴⁴ FIGLIOLA, *supra* note 86.

¹⁴⁵ See UNIVERSAL SERVS. ADMIN. CO., 2022 ANNUAL REPORT 4–5 (2022) (reporting \$7.439 billion in disbursements and \$328.2 million in operating expenses in 2022; and \$8.55 billion in disbursements and \$251.6 million in expenses in 2021).

¹⁴⁶ *Debate Over How to Fund the Federal USF Continues with Potential Impacts for Tech Companies, ISPs, and Consumers*, COVINGTON (Aug. 4, 2022),

possibility that some COVID-19 funding programs will continue well after the conclusion of the pandemic emergency. Already, the FCC has considered modifications to the pre-pandemic universal service funding programs in recognition that wireless broadband service typically includes unlimited voice telephone calls. Additionally, the Affordable Connectivity Program¹⁴⁷ offers a more generous \$30-\$75 service discount than the \$9.25 discount provided by the Lifeline program.¹⁴⁸

If market countervailing or augmenting efforts are deemed necessary, Congress should explicitly require the agencies to allocate the lowest amount necessary. The reverse auction process promotes efficiency and least cost subsidization by requiring project applicants to calculate what lowest level of external funding they will accept to perform specified work.¹⁴⁹ In its evaluation of the core pre-pandemic universal service programs, Congress should consider replacing subscriber funding with allocations from the treasury. A second-best option would expand universal service subsidy contributors to a larger set of beneficiaries, including ventures

<https://www.cov.com/en/news-and-insights/insights/2022/08/debate-over-how-to-fund-the-federal-usf-continues-with-potential-impacts-for-tech-companies-isps-and-consumers> [<https://perma.cc/DZ6C-74SP>].

¹⁴⁷ *Affordable Connectivity Program*, *supra* note 78 (“The Affordable Connectivity Program is an FCC benefit program that helps ensure that households can afford the broadband they need for work, school, healthcare and more. The benefit provides a discount of up to \$30 per month toward internet service for eligible households and up to \$75 per month for households on qualifying Tribal lands. Eligible households can also receive a one-time discount of up to \$100 to purchase a laptop, desktop computer, or tablet from participating providers if they contribute more than \$10 and less than \$50 toward the purchase price.”).

¹⁴⁸ *Lifeline Support for Affordable Communications*, *supra* note 78 (“Lifeline provides up to a \$9.25 monthly discount on service for eligible low-income subscribers and up to \$34.25 per month for those on Tribal lands. Subscribers may receive a Lifeline discount on either a wireline or a wireless service, but they may not receive a discount on both services at the same time. Lifeline also supports broadband internet service and broadband-voice bundles. FCC rules prohibit more than one Lifeline service per household.”).

¹⁴⁹ *Auction Formats*, FED. COMM’NS COMM’N, <https://www.fcc.gov/auction-formats> [<https://perma.cc/6YYN-2BRK>] (last visited Sept. 17, 2023).

whose business plans rely on widespread and affordable broadband links.

Unfortunately, there are quite low odds for any sort of necessary, broad-sweeping congressional action because any deviation from the status quo will generate controversy, particularly if existing beneficiaries run the risk of eliminated or reduced government funding.

Nevertheless, the need for congressional action will increase over time because maintaining or achieving additional progress in bridging the Digital Divide will become even more costly. The most remote, unserved localities typically have the highest costs, both in terms of initial facilities installation and ongoing operating expenses. These areas have the lowest population density, thereby increasing the cost attributable to serving each subscriber.

Additionally, it appears that the Supreme Court will overturn or narrow case precedent¹⁵⁰ supporting judicial deference to regulatory agency expertise in crafting lawful interpretations of ambiguous statutory mandates.¹⁵¹ As such, the FCC probably will no longer have its considerable technical and regulatory expertise qualify for the “benefit of the doubt” when filling gaps in legislative authorizations as a result of technological innovation and changed

¹⁵⁰ *Chevron v. Nat. Res. Def. Council, Inc.*, 467 U.S. 837, 866 (1984). The so-called Chevron Doctrine establishes a two-prong standard for reviewing statutory interpretations by federal regulatory agencies. If Congress has provided clarity on a precise question of interpretation, the government agency must carry out and comply with the unambiguous mandate. If the statutory language is ambiguous or unclear, then the agency may use its expertise to make a reasonable statutory interpretation. *See also* Ryan D. Doerfler, *How Clear Is “Clear”?*, 109 VA. L. REV. 651 (2023); Cass R. Sunstein, *Chevron Step Zero*, 92 VA. L. REV. 187 (2006).

¹⁵¹ *See generally* James Kunhardt & Anne Joseph O’Connell, *Judicial Deference and the Future of Regulation*, BROOKINGS INST. (Aug. 18, 2022), <https://www.brookings.edu/research/judicial-deference-and-the-future-of-regulation> [<https://perma.cc/W6H3-R6ND>]; Aaron Saiger, *Derailing the Deference Lockstep*, 102 B.U. L. REV. 1879 (2022); Lawrence B. Solum, *Disaggregating Chevron*, 82 OHIO ST. L.J. 249 (2021); Jack M. Beerman, *End the Failed Chevron Experiment Now: How Chevron Has Failed and Why It Can and Should Be Overruled*, 42 CONN. L. REV. 779 (2010); Thomas W. Merrill & Kristin E. Hickman, *Chevron’s Domain*, 89 GEO. L.J. 833 (2001).

circumstances, such as the shift from analog to digital technologies and the migration from subscriptions of narrowband voice telephone service to broadband data transmission. The Commission has an extensive history of asserting ancillary jurisdiction¹⁵² in response to changed technological and marketplace conditions for which Congress has not responded with statutory amendments and new legislation.

Members of Congress typically avoid tough decision making on controversial matters that motivate powerful stakeholders to engage in vigorous and effective lobbying, leverage substantial campaign contributions, and influence the court of public opinion. These tactics can thwart creative universal service funding projects that have the potential for achieving progress at a lower cost as measured by households passed and actual subscription rates. For example, sixteen states still have laws limiting or prohibiting the ownership and operation of broadband ventures, partially or completely owned by a municipal government.¹⁵³ Incumbent carriers have vigorously

¹⁵² Ancillary jurisdiction refers to:

the agency's ability to regulate matters that are not explicitly listed in the Communications Act. Under this authority, the FCC can regulate services that were merely related (ancillary) to regulatory objectives explicitly referenced in the Communications Act. The concept of ancillary jurisdiction gave justification to the FCC's argument that the agency had expansive power to regulate technologies not mentioned, or not yet created, when the Communications Act was written.

Amy Sindik, *Administrative Law and the Federal Communications Commission*, 26 COM. L. & POL'Y 312, 327 (2021). Under this authority, the FCC could: regulate services that were merely related (or "ancillary") to regulatory objectives explicitly referenced in the Communications Act. As applied to cable [television], the Supreme Court eventually affirmed that the FCC could exercise ancillary jurisdiction over cable service because the new regulations were "reasonably ancillary" to the FCC's existing television broadcasting regulations.

John Blevins, *Jurisdiction as Competition Promotion: A Unified Theory of the FCC's Ancillary Jurisdiction*, 36 FLA. ST. U. L. REV. 585, 587 (2009) (citing *United States v. Sw. Cable Co.*, 392 U.S. 157, 178 (1968)). See also Thomas G. Krattenmaker & A. Richard Metzger, Jr., *FCC Regulatory Authority Over Commercial Television Networks: The Role of Ancillary Jurisdiction*, 77 NW. U. L. REV. 403 (1982).

¹⁵³ Tyler Cooper, *Municipal Broadband 2023: 16 States Still Restrict Community Broadband*, BROADBANDNOW (Apr. 11, 2023), <https://broadbandnow>

opposed this option as unfair competition, likely to operate at a loss.¹⁵⁴ Opponents to municipal broadband networks also consider it an ill-advised extra burden on local governments at a time when the pandemic has reduced tax revenues and increased the cost of providing existing government services.¹⁵⁵ Yet in most instances, incumbent carriers would similarly qualify for preferential treatment, including grants and loan guarantees, if they responded to pleas by residents and government officials to extend their service into less populated regions. Credible empirical evidence supports the conclusion that broadband networks operated by a municipality, electric utility, cooperative, or other types of non-traditional carrier, can accrue significant positive, economic outcomes.¹⁵⁶ Evidence of favorable outcomes from investing in municipal broadband networks parallels what occurred when the USDA helped cooperatives provide electric service in areas where incumbent public utilities had no interest in doing so.¹⁵⁷

Achieving financial self-sufficiency has no certainty and accordingly there are real risks that initially subsidized ventures

w.com/report/municipal-broadband-roadblocks [https://perma.cc/KBR9-N63N]; Pearson Cost, *A Knife in a Gunfight: Empowering North Carolina Municipalities to Close the Digital Divide*, 23 N.C. J.L. & TECH. 558 (2022).

¹⁵⁴ See, e.g., T. Randolph Beard et al., *The Law and Economics of Municipal Broadband*, 73 FED. COMM'NS. L.J. 1, 6 (2020) (arguing that the evidence of municipal broadband presents “near inevitable financial failure”).

¹⁵⁵ See Sarah Oh, *Municipal Broadband is a Bad Idea for Cash-Strapped Towns*, THE HILL (Jan. 16, 2021, 1:00 PM), https://thehill.com/opinion/technology/534437-municipal-broadband-is-a-bad-idea-for-cash-strapped-towns [https://perma.cc/E7LU-ET34]. Cf. COLBY LEIGH RACHFAL, CONG. RSCH. SERV., R47225, OVERVIEW EXPANDING BROADBAND: POTENTIAL ROLE OF MUNICIPAL NETWORKS TO ADDRESS THE DIGITAL DIVIDE (2022).

¹⁵⁶ See *Successes and Failures*, INST. FOR LOCAL SELF-RELIANCE, https://communitynets.org/content/successes-and-failures [https://perma.cc/SV99-DBGP] (last visited Sept. 17, 2023); see also Kevin Schwartzbach, *Should States Fund Municipal Broadband and Cooperatives?*, ROCKEFELLER INST. OF GOV'T (Mar. 24, 2022), https://rockinst.org/blog/should-states-fund-municipal-broadband-and-cooperatives/ [https://perma.cc/4J6V-DHYW]; Jeff Stricker, *Castig a Wider Net: How and Why State Laws Restricting Municipal Broadband Networks Must Be Modified*, 81 GEO. WASH. L. REV. 589 (2013).

¹⁵⁷ See also KATIE KIENBAUM ET AL., INST. FOR LOCAL SELF-RELIANCE, COOPERATIVES FIBERIZE RURAL AMERICA: A TRUSTED MODEL FOR THE INTERNET ERA 1 (2020).

eventually may operate at a deficit and need a taxpayer bailout or recurring subsidy.¹⁵⁸ For purposes of narrowing the Digital Divide, it makes no sense to foreclose cooperatives and governments from operating as the only venture willing to serve, just as it would be wasteful to subsidize overbuilding an area already served by a commercial enterprise that has satisfied all network performance requirements.¹⁵⁹

The likelihood of accomplishing measurable progress in narrowing the Digital Divide declines when incumbent operators, having no interest in serving costly hinterland locales, nevertheless leverage their considerable political clout to convince state legislators to block market entry or expansion by ventures ready and willing to provide service.¹⁶⁰ Congress has not enacted legislation preempting such absolute state prohibitions and restrictions, and opponents to FCC federal preemption of state law have prevailed in litigation.¹⁶¹ Notwithstanding this reality, set out below is a

¹⁵⁸ See, e.g., Christopher S. Yoo, Jesse Lambert & Timothy P. Pfenninger, *Municipal Fiber in the United States: A Financial Assessment*, 46 TELECOMMS. POL'Y (2022); CHRISTOPHER S. YOO & TIMOTHY PFENNINGER, CTR. FOR TECH., INNOVATION & COMPETITION, *MUNICIPAL FIBER IN THE UNITED STATES: AN EMPIRICAL ASSESSMENT OF FINANCIAL PERFORMANCE* (2017).

¹⁵⁹ Municipal broadband networks can offer:

invaluable consumer benefits in many circumstances—for example, where it is the only broadband ISP in a market, or where it does not materially rely on taxpayer dollars or other exogenous sources of revenue (such as monopoly electric utility fees) to fund its operations. Concerns can arise, however, when municipal broadband networks both compete with private ISPs and receive material subsidies that those private ISPs do not. . . . By shifting a portion of cost-recovery from users to taxpayers, they may create attractively low—i.e., predatory—retail prices in the short term. But over the longer term, they suppress the investment incentives of all unsubsidized competitors and potentially drive them from the market, leaving taxpayers holding the bag.

Jonathan E. Nuechterlein & Howard Shelanski, *Building on What Works: An Analysis of U.S. Broadband Policy*, 73 FED. COMM'NS L.J. 219, 256–57 (2021).

¹⁶⁰ See Claire Park, *Community Broadband, Overcoming State Laws for Municipal Broadband Networks*, NEW AM. (May 20, 2020), <https://www.newamerica.org/oti/reports/community-broadband> [<https://perma.cc/2EDP-JXLU>].

¹⁶¹ See *Tennessee v. FCC*, 832 F.3d 597, 602 (6th Cir. 2016) (discussing Telecommunications Act of 1996 provision relating to promotion of competition

“shopping list” of the areas overdue and worthy of legislative reforms to improve the odds for ongoing reduction in the Digital Divide.

As suggested by the GAO, Congress should codify a national broadband mandate and direct the FCC to establish a comprehensive plan with specific goals like those undertaken by the Commission in its 2010 National Broadband Plan¹⁶² pursuant to a congressional mandate.¹⁶³ While many of the goals articulated in that plan addressed expanding available radio spectrum for wireless broadband applications, the 2010 Plan provided a template from which to develop an updated national broadband strategy, including specific regulatory and policy initiatives to be implemented by the FCC, NTIA, and other government agencies.¹⁶⁴ It is imperative that Congress, the Executive Branch, the FCC, and other regulatory

in broadband marketplace did not preempt state statute regulating expansion of municipal broadband service networks).

¹⁶² FED. COMM’NS COMM’N, CONNECTING AMERICA: THE NATIONAL BROADBAND PLAN (2010) [hereinafter 2010 NATIONAL BROADBAND PLAN].

¹⁶³ American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, § 6001(k)(2)(D), 123 Stat. 115, 516 (2009). Section 6001(k)(2)(D) states:

The national broadband plan required by this section shall seek to ensure that all people of the United States have access to broadband capability and shall establish benchmarks for meeting that goal. The plan shall also include:

- ▶ an analysis of the most effective and efficient mechanisms for ensuring broadband access by all people of the United States,
- ▶ a detailed strategy for achieving affordability of such service and maximum utilization of broadband infrastructure and service by the public,
- ▶ an evaluation of the status of deployment of broadband service, including progress of projects supported by the grants made pursuant to this section, and
- ▶ a plan for use of broadband infrastructure and services in advancing consumer welfare, civic participation, public safety and homeland security, community development, health care [sic] delivery, energy independence and efficiency, education, worker training, private sector investment, entrepreneurial activity, job creation and economic growth, and other national purposes.

Id. See also 2010 NATIONAL BROADBAND PLAN, *supra* note 162; FED. COMM’NS COMM’N, BROADBAND ACTION AGENDA (2010).

¹⁶⁴ 2010 NATIONAL BROADBAND PLAN, *supra* note 162.

agencies have a uniform strategy offering greater specificity and granularity than a statutory encouragement to use best efforts to achieve rural and urban parity in broadband rates, access to an internet “for all” and universal “advanced telecommunication capability.”¹⁶⁵

Congress should start a comprehensive statutory reform by reexamining Section 254 of the Telecommunications Act, which codified the universal service mission and provided the FCC with a clear statutory mandate.¹⁶⁶ The language, written in 1996, needs to be amended to reflect current technological and marketplace conditions and to provide greater specificity. Section 254(b) established broad sweeping universal service principles without fully addressing how to achieve these goals, particularly for residents in the most remote and high-cost locales.¹⁶⁷ Section 254(b) attempted to contemplate unconditional, ubiquitous service, stating that “[a]ccess to advanced telecommunications and information services should be provided in all regions of the Nation.”¹⁶⁸

The approximately \$90 billion allocated during the COVID-19 pandemic¹⁶⁹ likely marked the highpoint of universal service

¹⁶⁵ *Id.*

¹⁶⁶ 47 U.S.C. § 254(b).

¹⁶⁷ *Id.*

¹⁶⁸ *Id.*

¹⁶⁹ The Biden-Harris Administration announced:

new investments from the American Rescue Plan to help provide every American with access to affordable, high-speed internet. The American Rescue Plan funding [\$25 billion] is in addition to the \$65 billion investment in high-speed [i]nternet access in the Bipartisan Infrastructure Law and recent announcements to lower the cost of high-speed internet for tens of millions of American families.

Fact Sheet: Biden-Harris Administration Announces Over \$25 Billion in American Rescue Plan Funding to Help Ensure Every American Has Access to High Speed, Affordable Internet, WHITE HOUSE (June 7, 2022), <https://www.whitehouse.gov/briefing-room/statements-releases/2022/06/07/fact-sheet-biden-harris-administration-announces-over-25-billion-in-american-rescue-plan-funding-to-help-ensure-every-american-has-access-to-high-speed-affordable-internet/> [<https://perma.cc/BS6V-YALH>]. *See also Broadband Related Funding*, CONNECTED NATION, <https://connectednation.org/current-broadband-funding/> [<https://perma.cc/8MCV-EX2U>] (last visited Sept. 17, 2023) (estimating over \$77.3 billion as of May 2022, not including past and future portion of the

funding, as it constituted an amount well above the FCC's \$23.5 billion estimate in 2010¹⁷⁰ and the \$80 billion estimate in 2017.¹⁷¹ The fact that millions of U.S. households still lack any terrestrial broadband option points to the inaccuracy of prior forecasts and the likelihood that a far higher figure constitutes a more accurate estimate. More recent calculations suggest a substantially higher cost at or above \$230 billion.¹⁷²

If Congress cannot or will not allocate the total amount of funds needed to achieve ubiquitous broadband access, then it needs to establish service priorities for the FCC, NTIA, and USDA in terms of where, when, and how to achieve access and affordability for the highest number of households, located in the widest possible expanse of geographical locations. Congress should identify which conditions warrant reliance on satellite service options that currently trail terrestrial service in terms of bit transmission speed, latency, monthly data allowances, and other qualitative criteria.

As part of this work, Congress should also revise Section 706 of the 1996 Act, which currently only requires the FCC and other commissions to “encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans.”¹⁷³ “Encouragement,” as presently written, will not suffice. Instead, Congress should require the FCC to undertake an unbiased, annual assessment of broadband accessibility and cost. Historically, FCC senior management has engaged in results-driven statistics gathering with an eye toward declaring mission

\$350 billion allocated by the American Rescue Plan Act that includes a Coronavirus State & Local Fiscal Recovery Fund that states and municipalities can use to subsidize broadband access).

¹⁷⁰ FED. COMM'NS COMM'N, THE BROADBAND AVAILABILITY GAP: OBI TECHNICAL PAPER No. 1, at 1 (2010).

¹⁷¹ See PAUL DE SA, CHIEF, FCC OFF. STRATEGIC PLAN. & POL'Y ANALYSIS, IMPROVING THE NATION'S DIGITAL INFRASTRUCTURE 2 (2017).

¹⁷² Joan Engebretson, *First Look: Study Says More Than \$200B Needed to Bring Fiber to BEAD-Eligible Locations*, TELECOMPETITOR (Apr. 17, 2023), <https://www.telecompetitor.com/first-look-study-says-more-than-200b-needed-to-bring-fiber-to-bead-eligible-locations/> [<https://perma.cc/F7HL-YWBS>] (estimating the cost to provide terrestrial broadband service to every U.S. household that NTIA considers “unserved” or “underserved”).

¹⁷³ 47 U.S.C. § 1302(a).

accomplished, or at least significant progress.¹⁷⁴ Instead, the Commission should provide a realistic, empirically driven assessment, using the most granular and accurate means available. The Commission should utilize regularly updated maps that identify actual service options available at a specific mailing address.¹⁷⁵

VII. CONCLUSION

Even with a better articulation of a national broadband strategy by Congress, much of the ongoing work to achieve progress in narrowing the Digital Divide will remain a key responsibility of the FCC, NTIA, and USDA. These agencies will have to allocate scarce resources and prioritize goals. In this environment, they must think creatively and apply best practices for identifying unserved and underserved localities that are most likely to support and sustain projects well after the startup funding has been exhausted. The agencies would better serve the national interest by considering how best to increase broadband subscribership in individuals who already have some access options and can afford the monthly rates. Demand-side stimulation, such as improved outreach and promotion of universal service subsidy programs, typically costs less than supply-side emphasis on technology solutions.

Governments should emphasize how broadband access can enrich the lives of senior citizens and others who lack the digital skills needed to operate personal computers and maneuver throughout the internet cloud. Additionally, the FCC and other

¹⁷⁴ Even the Chair of the FCC acknowledges that much work remains to improve the accuracy of mapping:

For decades, the Commission produced broadband maps based on census blocks. In practice, this meant that if there was high-speed internet service in a single location in a census block, the agency assumed there was service throughout the area. Needless to say, this methodology left a lot to be desired. It overstated service nationwide. It also provided a less than accurate picture of unserved communities because it lacked the kind of granular data policymakers need if they want to address the digital divide.

Rosenworcel, *supra* note 87.

¹⁷⁵ See, e.g., FRANCELLO OCHILLO ET AL., NEXT CENTURY CITIES, BROADBAND MAPPING ACROSS THE US: LOCAL, STATE, AND FEDERAL METHODS & CONTRADICTIONS (2021).

agencies should acquire a better understanding of whether low-income households eschew wired broadband subscriptions because they are satisfied with wireless access or because they cannot afford monthly fees for both types of broadband service.

Even though significant progress was achieved during the COVID-19 pandemic, the mission of narrowing the Digital Divide remains worthwhile. The pandemic revealed the necessity of broadband access, as well as the handicaps that arise when a household lacks access (whether by the absence of available infrastructure, insufficient discretionary funds, or inadequate digital literacy). While the COVID-19 emergency is ending, pursuing the universal service mission remains a costly but worthwhile public endeavor.