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Timely Action Will Expand Broadband Amidst the Pandemic

by

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I. Introduction and Summary

The FCC is preparing to release a Notice of Inquiry for its *2021 Broadband Deployment Report*. Between now and the report's release next year, Congress and the FCC should take decisive steps to counteract the pandemic-related disruptions to investment and to accelerate deployment of broadband Internet services to all Americans. Congress should fund broadband coverage maps to identify unserved areas. And the Commission should conduct reverse auctions to award universal service funds for broadband build-outs targeted to unserved areas. The Commission, along with the Trump Administration where appropriate, also should keep spectrum auctions on schedule, identify new spectrum for commercial use in the 3.1-3.55 GHz band, and clarify rules to streamline and facilitate pole attachments as well as wireless equipment and infrastructure siting.

Section 706 of the Telecommunications Act of 1996 charges the FCC with responsibility to annually prepare a report to ascertain whether broadband Internet services are being deployed on a reasonable and timely basis to all Americans. The Commission's upcoming *2021 Broadband Deployment Report* will focus on developments from 2019. In addition, the

Report will consider the connection between those developments and broader investment and network deployment trends.

Publicly available data for 2019, with the authorities cited in the body of this *Perspectives*, shows significant progress was made in extending broadband Internet access to all Americans. For instance, by June 2019 the U.S. and Canada grew to 130% 4G LTE market penetration or 1.3 LTE subscriptions per person. LTE connections in the U.S. and Canada constituted 88% of all mobile connections, up from 82% a year before. Additionally, it is reported that at year-end 2019, 94.8% of the U.S. population had access to wired broadband services with download speeds of at least 25 Mbps, and 91.4% had access to wired broadband services with speeds of at least 100 Mbps. It also is reported that, in 2019 alone, fiber broadband became available to 6.5 million additional U.S. homes.

It is expected that the pandemic will reduce broadband investment and deployment in 2020. But reports and estimates from early this year indicate that next-generation broadband services will continue to reach unserved and underserved Americans. For example, the U.S. and Canada combined reportedly had 1.18 million 5G connections and 494 million LTE connections at the end of the first quarter of 2020. In the U.S., T-Mobile announced on August 4 that it has achieved nationwide coverage on its 5G standalone network, and AT&T announced in late July that its 5G service is effectively nationwide. Verizon's 5G network reportedly operates in parts of 35 cities and is scheduled to reach 60 cities by year's end.

As of early 2020, gigabit broadband service is available to 85% of U.S. homes, up from 6% of homes a few years ago. Cable operators Comcast and Charter Communications, as well as wireline broadband providers such as AT&T, CenturyLink, and Verizon continue to deploy fiber to homes and buildings. Comcast reportedly invested $12 billion to build over 33,330 route miles of new fiber since 2017. And cable broadband providers are now developing multi-gig delivery technologies.

These positive data points regarding next-generation broadband network buildout are impressive. But prompt action is needed to help prevent the pandemic-related harm to infrastructure investment and network buildout efforts. Congress and the Commission should follow through on several pending proposals to remove regulatory barriers to investment and to help ensure reasonable and timely deployment of broadband Internet services to all Americans:

- Congress should promptly fund modernized broadband coverage mapping efforts by the FCC to identify unserved areas and target them for broadband service subsidies. The Rural Broadband Acceleration Act (S. 4201) would dedicate funds for mapping.

- The FCC should implement its Rural Digital Opportunity Fund (RDOF) and its proposed 5G Fund, using reverse auctions to award universal service money to the lowest-bidding service providers willing to offer service in unserved areas.

- Congress and the FCC should ensure that universal funds target areas that lack access to broadband service with 25 Mbps/3 Mbps capabilities and that subsidies are not diverted to overbuilds in areas already served by existing providers.

- The FCC should auction C-Band spectrum as scheduled for December 2020.

- The Commission should adopt its proposal to reallocate the lower 45 MHz of the 5.9 GHz band for unlicensed flexible use, including Wi-Fi6e, and combine it with spectrum in the adjacent 5 GHz band to create a contiguous 160 MHz channel.

- The Commission (and the Trump Administration) should identify as much spectrum within the 3.1-3.55 GHz band as may reasonably be reallocated for licensed commercial usage and prepare it for auction. On August 10, 2020, the Trump Administration announced that it had reached agreement with the Department of Defense to allow commercial sharing of spectrum in the 3450-3550 MHz band. This is a positive development that should facilitate 5G deployment when this spectrum is auctioned.

- The Commission should issue a declaratory ruling requiring utility pole owners to share the costs of replacing old poles with new ones. Broadband providers should have to pay only the incremental costs that they cause in hastening the replacement of old poles. And pole attachment complaints in unserved areas should be resolved on the agency's accelerated docket.

- The Commission should issue a declaratory ruling to clarify when modifications or excavations outside an existing cell tower site receive streamlined approval for non-substantial modifications under Spectrum Act Section 6409(a).

- The Commission should update its Over-the-Air Device (OTARD) rule to include hub and relay antennas for 5G fixed wireless and prohibit restrictions on their use within a property user's control.

II. Data Shows Reasonable and Timely Deployment of Broadband in 2019

The upcoming *2021 Broadband Deployment Report* will focus on progress made in deploying fixed and mobile broadband Internet access services in 2019. Publicly available deployment data and analyst reports for 2019 indicate that broadband Internet services continue to be reasonably and timely deployed to all Americans:

- At year-end 2019, 94.8% of the U.S. population had access to wired broadband services with download speeds of at least 25 Mbps and 91.4% had access to wired broadband services with speeds of at least 100 Mbps. (BroadbandNow)
- "[F]iber deployment in the United States [is] now passing 46.5 million unique homes, a 16% increase in homes passed by fiber since 2018. In 2019 alone, fiber broadband networks became available to roughly 6.5 million additional unique homes, the largest

one-year increase ever, with smaller providers accounting for 25% of these new fiber connections." (FCC's 2020 Report)

- At mid-year 2019, the U.S. grew to 130% 4G LTE market penetration or 1.3 LTE subscriptions per person, and LTE connections in the U.S. and Canada constituted 88% of all mobile connections, up from 82% a year before. (5G Americas)
- At year-end 2019, on-network 4G availability increased to 95.9% for subscribers of Verizon, 95.4% for T-Mobile, 92.9% for AT&T, and 92.5% for Sprint. (Opensignal)
- At the end of 2019, 5G connections in the U.S. and Canada grew to 587,000, including a 284% fourth quarter growth. (5G Americas)

III. Despite Pandemic-Related Challenges, Data Shows Reasonable and Timely Deployment of Broadband in Early 2020

Many service providers and analysts expect that the global pandemic will reduce overall investment and deployment progress in 2020 compared to pre-pandemic forecasts. However, recent reports and estimates indicate that next-generation broadband services will still reach more Americans this year in what previously were unserved or underserved areas. Analyst and news reports available so far identify new service technology buildouts and increasing speeds:

- In June 2020, average U.S. fixed broadband upload/download speeds stood at 143.28/56.04 Mbps. (Ookla)
- In June 2020, average U.S. mobile broadband speeds reached 44.94/9.68 Mbps. (Ookla)
- "[B]y the end of Q1 2020, North America [the U.S. and Canada] had 1.18 million 5G connections and 494 million LTE connections. This amounted to 100% growth in 5G, a gain of 591 thousand 5G connections over the quarter and 2.34% growth in LTE, a gain of 11.3 million LTE connections over the quarter…" (5G Americas)
- "5G connections will reach 238 million globally by the end of 2020, of which North America [the U.S. and Canada] will account for 10 million connections." (5G Americas)
- A survey found that mobile users of the four major providers experienced 4G availability an average of 94.6% of the time. "4G Availability continues to be important in a 5G world because current non-standalone 5G services require a 4G connection in order to work." (OpenSignal)
- "[T]elecom capex outlook remains favorable, even with increased uncertainty caused by the COVID-19 pandemic," with "worldwide telecom capex – the sum of wireless and wireline telecom investments – to grow at a 1 percent CAGR between 2019 and 2022." (BBC Magazine)
- Gigabit Internet service is available to at least 85%, whereas 1 Gbps service was available to 6% of U.S. homes three-and-a-half years ago. (USTelecom)
- Although total wireless infrastructure revenue is forecasted to decline 4.4% to $38.1 billion in 2020, "[w]orldwide 5G network infrastructure market revenue will almost double in 2020 to reach $8.1 billion," and North America "will reach 5G coverage across 95% of national populations by 2023." (Gartner)

Major broadband providers have also announced progress being made in ongoing 5G network buildouts and service availability:

- AT&T announced on July 23 that its 5G network is available nationwide, covering 205 million U.S. consumers, up from 179 million at the end of June of this year. (AT&T)
- T-Mobile announced on August 4 that it has launched standalone 5G service nationwide, and thus "immediately increased its 5G footprint by 30 percent – now covering 1.3 million square miles in more than 7,500 cities and towns across the country." (T-Mobile)
- Verizon's 5G network, it was reported on July 24, is providing service in parts of 35 cities, with plans to be in 60 cities with its Ultra Wideband 5G service by year's end. Verizon plans on being in 10 markets with its 5G Home fixed wireless service this year, and Verizon announced in late July that it will offer "LTE Home Internet" in select rural areas. (Fierce Wireless, Light Reading)
- Charter's Spectrum Mobile announced on March 6 that its unlimited data plans include access to 5G service in select areas, and Comcast's Xfinity Mobile announced on May 18 that it is offering 5G service at no extra cost across all its data plans. (Charter, Comcast)

Rapidly expanding 5G networks coverage will bring increased mobile data capacity compared to 4G networks. Average speeds are up to 10 times faster for 5G networks than 4G and peak speeds are up to 100 times faster.

Meanwhile, cable operators Comcast and Charter Communications, as well as wireline broadband providers such as AT&T, CenturyLink, Verizon, and Windstream continue to deploy fiber miles and make new fiber connections to homes and buildings. Comcast reportedly has "invested $12 billion to build more than 33,330 route miles of new fiber" into its network just since 2017.

Indeed, through their 10G initiative, cable broadband providers are developing technologies to deliver multi-gigabit speeds in the near future. CableLabs has published DOCSIS 4.0® specifications that eventually will achieve 10 Gbps download speeds and 6 Gbps upload speeds. Additionally, CableLabs has approved its 25G/50G-EPON standard that eventually will deliver ultra-fast broadband Internet services. Moreover, consumers will benefit from improved capacity and reliability through unlicensed Wi-Fi6E, which is now being deployed. Wi-Fi capabilities will continue to increase now that the FCC has issued an order to make 6 GHz band spectrum available for flexible uses.

IV. Conclusion: Congress and the FCC Should Take Further Steps to Accelerate Broadband Deployment to All Americans

In the face of pandemic-related setbacks to infrastructure investment and network deployment, decisive action by Congress and by the FCC is needed to further reduce remaining digital divides. Congress and the Commission should follow through on several

pending proposals to remove regulatory barriers to infrastructure investment and to help ensure reasonable and timely deployment of broadband Internet services to all Americans.

First, Congress should follow through on the work it started in the Broadband Deployment Accuracy and Technology Act of 2020 (DATA) and promptly fund modernized broadband coverage mapping efforts. New maps are needed to identify unserved areas and target those areas for broadband service subsidies. The FCC cannot generate modernized and more precise maps without the necessary funding. The Rural Broadband Acceleration Act (S. 4201) is a bill that would dedicate funding for broadband mapping.

Second, the FCC should implement its Rural Digital Opportunity Fund (RDOF) and 5G Fund universal service initiatives while ensuring that funds are disbursed through reverse auctions rather than through arbitrary or ad hoc criteria. Through reverse auctions, subsidies are awarded to the lowest-bidding broadband service providers in exchange for their undertaking buildouts and offering service in targeted areas in accordance with Commission specifications.

Third, Congress and the FCC should ensure that universal service funds target unserved areas and not overbuilds in areas already served by existing providers. By definition, unserved geographic areas should be limited to those places where Americans do not have access to broadband services with 25 Mbps/3 Mbps capabilities.

Fourth, the Commission should auction C-Band spectrum as scheduled for December 2020, with proper incentives for incumbent operators to expeditiously vacate spectrum being vacated for terrestrial mobile use.

Fifth, the Commission should adopt its proposal to reallocate the lower 45 MHz of the 5.9 GHz band for unlicensed flexible use, including Wi-Fi6e, and combine it with spectrum in the adjacent 5 GHz band to create a contiguous 160 MHz channel.

Sixth, the Commission should seek to identify as much spectrum within the 3.1-3.55 GHz band as may reasonably be reallocated for licensed commercial usage. Once it has done so, the Commission should undertake efforts that will be needed to relocate existing users and free up that spectrum for public auction. On August 10, 2020, the Trump Administration announced that it had reached agreement with the Department of Defense to allow commercial sharing of spectrum in the 3450-3550 MHz band. This is a positive development that should facilitate 5G deployment when this spectrum is auctioned.

Seventh, the Commission should issue a declaratory ruling that would require utility pole owners to share in the cost of new poles in those areas. Cable operators and wireline telco providers should be obligated to pay only the incremental costs that they cause in hastening the replacement of old utility poles with new ones. The Commission also should put pole attachment complaints in unserved areas on the Commission's accelerated docket for faster resolution. Such a declaratory ruling would reduce barriers to fiber cables attachments to utility poles needed to reach unserved areas.

Eighth, the FCC should follow up its June 2020 *5G Upgrade Order* by issuing a declaratory ruling to clarify when modifications or excavations outside an existing cell tower site receive streamlined approval for non-substantial modifications under Spectrum Act Section 6409(a). Such a ruling would provide certainty to infrastructure providers as well as local governments and reduce local government barriers to upgrading wireless infrastructure for next-gen services.

And finally, the FCC should update its Over-the-Air Device (OTARD) rule to include hub and relay antennas for 5G fixed wireless and prohibit restrictions on their use within a property user's control. Updating the OTARD rule would allow for more rapid and efficient deployment of equipment needed to provide wireless network coverage and densification.

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Further Reading

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