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SUMMARY

As borne out in press reports since mid-March 2020, the Commission's efforts to close the digital divide have been unsuccessful. As the ongoing the COVID-19 pandemic has pushed more Americans to work, study, see their doctors, and stay connected to friends and loved ones through broadband connections, it serves to underscore the importance of closing the divide and ensuring that people throughout the country have access to digital opportunity.

Broadband internet access service is a necessary prerequisite for those who may be seeking employment. It also disqualifies those individuals from seeking one of the increasing number of jobs where work from home is necessary or desirable. The consequent reduction in the employment pool cause significant harms to businesses and impedes economic growth.

Amid the coronavirus pandemic, more of the nation's medical care is being delivered by videoconference, as in-person care becomes a last resort for both doctors and patients. That's a problem for tens of millions of Americans without smartphones or speedy home internet connections. This is a life and death matter for many.

To combat the spread of COVID-19, schools throughout the country closed in 2020. As schools shifted to online instruction, the 'Homework Gap' evolved into a full-fledged learning gap. For families living in areas where broadband service is unavailable, not robust, or unaffordable, it is nearly impossible for students to keep up with schoolwork from home.

As these comments demonstrate, the Commission must find that continuing shortcomings in broadband deployment cause grievous harm to individuals as well as to the nation in general and that advanced telecommunications capability is being not deployed to all Americans in a reasonable and timely fashion.

INTRODUCTION: SECTION 254 OF THE TELECOMMUNICATIONS ACT OF 1996 REQUIRES THE COMMISSION TO CLOSE THE DIGITAL DIVIDE

The NOI opens, “Closing the digital divide...continues to be the Commission’s top priority.”³ The Commission minimizes the issue: it is not a mere goal, but the Commission’s Congressional mandate⁴ to ensure that access to advanced telecommunications and information services are provided in all regions of the Nation; that 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; that quality services are available at just, reasonable, and affordable rates; and that elementary and secondary schools and classrooms, health care providers, and libraries should have access to advanced telecommunications services. (The Commission should note that since many elementary and secondary schools remain closed for in-person classes, classrooms are now only available online for millions of U.S. students.)

As the ongoing COVID-19 pandemic has pushed more Americans to work, study, see their doctors, and stay connected to friends and loved ones through broadband connections, it serves to underscore the importance of closing this divide and ensuring that people throughout the country have access to digital opportunity.

³ NOI at ¶ 1.

⁴ 47 U.S.C § 254(b).

These comments provide extensive documentation of deficiencies in broadband service throughout the nation, in urban, suburban and Tribal areas. They support a conclusion that broadband service is NOT being timely deployed in the United States as of this time.

I. COMMISSION EFFORTS TO CLOSE THE DIGITAL DIVIDE CONTINUE TO BE UNSUCCESSFUL

The Commission seeks comment on its efforts to close the digital divide. Those efforts have been unsuccessful.

- According to the Census Bureau, over 19 million people in the U.S. live in a household without broadband.⁵
- According to 2018 data from Microsoft, 162.8 million people in the U.S. are not using the internet at the Commission's benchmarks for broadband speeds.⁶
- Less than two-thirds of Americans in rural areas have a broadband internet connection at home.⁷
- 82% of the 14.2 million residents in tribal zip codes have access to a wired broadband connection, compared to 94% of non-tribal zip codes. Only 33% of these residents have

⁵ Types of Internet Subscriptions By Selected Characteristics. American Community Survey (2019). <https://data.census.gov/cedsci/table?q=S28&d=ACS%201-Year%20Estimates%20Subject%20Tables&tid=ACSST1Y2019.S2802>.

⁶ Smith, Brad, The rural broadband divide: An urgent national problem that we can solve. Microsoft (December 3, 2018) <https://blogs.microsoft.com/on-the-issues/2018/12/03/the-rural-broadband-divide-an-urgent-national-problem-that-we-can-solve/>.

⁷ Perrin, Andrew, Digital gap between rural and nonrural America persists. Pew Research Center (May 31, 2019) <https://www.pewresearch.org/fact-tank/2019/05/31/digital-gap-between-rural-and-nonrural-america-persists/>.

access to a low-price wired broadband plan under \$60 per month, compared to 51% of non-tribal residents.⁸

- Approximately one-third of Texan households do not have broadband service.⁹ There are places — the woods of East Texas and the empty expanses of West Texas — where internet and even cellphone service are unavailable. Most of those are rural. About 21% of Bexar County, Texas, households do not have broadband internet, 2017 estimates from the U.S. Census Bureau show.¹⁰ In Brownsville, only half of all households have any type of broadband connection, and 11% of households only have a cellular connection.¹¹
- In rural areas of Virginia, nearly a third of households have no access to broadband.¹² Over 600,000 Virginians have only one wired service provider, leaving them with no option to switch if they are dissatisfied with their service.¹³ In urban communities where

⁸ Tanberk, Julia and Tyler Cooper, 82% of Residents in Tribal Zip Codes Have Broadband Internet Access, Compared to 94% of Non-Tribal Residents. BroadbandNow (August 18, 2020) <https://broadbandnow.com/research/tribal-broadband>.

⁹ Ramsey, Ross, A digital divide with dire consequences for Texas. Texas Tribune (April 1, 2020) <https://news4sanantonio.com/news/local/a-digital-divide-with-dire-consequences-for-texas>

¹⁰ Malik, Alia, Digital divide suddenly wider. San Antonio Express-News (March 22, 2020) <https://www.expressnews.com/news/education/article/San-Antonio-s-digital-divide-gapes-wider-as-15147022.php>

¹¹ Fishbane, Lara and Adie Tomer, Trust and entrepreneurship pave the way toward digital inclusion in Brownsville, Texas. Brookings Institute (April 8, 2020) <https://www.brookings.edu/blog/the-avenue/2020/04/08/trust-and-entrepreneurship-pave-the-way-toward-digital-inclusion-in-brownsville/>

¹² Virginia Commonwealth Connect, Report on Commonwealth Connect 2.0: Governor Northam's 2020 Plan to Connect Virginia, *available at* <https://commonwealthconnect.virginiainteractive.org/sites/default/files/CIT%20Documents/Commonwealth%20Connect%20Report.pdf>.

¹³ "Internet Access in Virginia," Broadband Now, *available at* <https://broadbandnow.com/Virginia>, accessed on June 18, 2020.

broadband is available, it may not be affordable. In fact, the census tracts with the lowest broadband adoption rates in the Commonwealth are not in rural Virginia, but in Richmond.¹⁴ Even though Arlington County is one of the wealthiest areas in the country, roughly 10 percent of its 230,000 residents lack a home Internet connection.¹⁵

- In Alabama, less than 1% of Perry County’s roughly 9,100 residents have broadband at home.¹⁶
- More than a million Georgians lack access to reliable high-speed internet service; of the more than 507,000 homes and businesses lacking, nearly 70% of these locations are in rural parts of Georgia.¹⁷
- According to the Commission’s data, 70 of Michigan’s 83 counties have connectivity rates below the national average. Counties with the worst rates of connectivity (as low as 36% of households, or more than 4,000 homes) are rural Michigan. This lack of access is a function both of rural poverty and inadequate infrastructure. In Wayne County, home of Detroit, 23,000 households lack high-speed internet access. In Ingham County, home to Lansing, it’s 22,000 households; in Bay County, 3,599; in Saginaw County,

¹⁴ United States Census Bureau, “Types of Computers and Internet Subscriptions,” American Community Survey – 2018, available at <https://tinyurl.com/ACSInternetSubs2018>.

¹⁵ Natanson, Hannah, Schools are some families’ best hope for Internet access, but Virginia laws are getting in the way. Washington Post (May 26, 2020) https://www.washingtonpost.com/local/education/schools-are-some-families-best-hope-for-internet-access-but-virginia-laws-are-getting-in-the-way/2020/05/22/520cc46c-95f3-11ea-82b4-c8db161ff6e5_story.html#comments-wrapper.

¹⁶ In rural western Alabama, less than 1% of Perry County’s roughly 9,100 residents have high-quality internet at home. Associated Press (April 4, 2020) <https://www.staradvertiser.com/2020/04/04/breaking-news/americans-without-broadband-struggle-in-a-stuck-at-home-nation/>

¹⁷ State Launches Broadband Availability Map. Georgia Broadband Deployment Initiative (July 2020) <https://broadband.georgia.gov/node/341>.

5,584; and in Genesee County, home to Flint, over 4,000 households aren't wired. These lower rates of access reflect the legacy of formerly thriving manufacturing communities, which have faced decades of institutionalized racism, concentrated poverty, and crippled public education, particularly for people of color.¹⁸

- More than 40 percent of rural residents lack access to high speed internet, according to the Public Service Commission of Wisconsin.¹⁹
- An estimated 324,000 rural Marylanders don't have access to broadband.²⁰ In 2018, 96,000 households in Baltimore (40.7%) did not have broadband service. In Baltimore City, nearly 20,000 households with children under the age of 17 do not have wireline broadband or computers at home. 19,200 households with children in the city do not have wireline broadband at home, or 34.7% of such households. 64% of homes without broadband service are in the lower 40% of the city's income distribution for households with children. For home wireline broadband, 73.3% of white households in Baltimore City have this service compared with 50.2% of African American households and 46.4% of Hispanic households. With respect to income, just 33.8% of low-income Baltimoreans

¹⁸ Austin, John, In Michigan, closing the digital divide can unite the 'red' and the 'blue.' Brookings (July 23, 2020) <https://www.brookings.edu/blog/the-avenue/2020/07/23/in-michigan-closing-the-digital-divide-can-unite-the-red-and-the-blue/>.

¹⁹ Cameron, Peter, Stuck with lousy internet? SWNews4U (September 3, 2020) <https://www.swnews4u.com/local/public-safety/stuck-lousy-internet/>.

²⁰ Task Force Report Task Force on Rural Internet, Broadband, Wireless and Cellular Service (January 2, 2019) https://rural.maryland.gov/wp-content/uploads/sites/4/2019/01/2018_MSAR11544_Task-Force-for-Rural-Internet-Broadband-Wireless-and-Cellular-Service-Report-1.pdf.

(those whose annual household incomes are less than \$25,000) have home wireline service compared with 83% for households whose annual incomes exceed \$75,000.²¹

- Approximately 1.5 million residents of New York City have neither a home broadband connection nor a mobile connection on a phone or other device.²² Bronx County in New York, the poorest of New York City's five boroughs, has witnessed a sharp drop in broadband speeds during the pandemic. More than 1.41 million people live in The Bronx, a 42.4 sq mile (110 sq km) area, and their median broadband speed dropped 10Mbps.²³
- Only 47 percent of households in Philadelphia's low- and moderate-income (LMI) tracts subscribe to broadband, well below households in middle- and upper-income neighborhoods (63 percent and 77 percent, respectively). Households in predominantly Latinx neighborhoods have the lowest subscription rates (47 percent), followed by 52 percent of households in predominantly Black neighborhoods and 76 percent of households in predominantly white tracts. The neighborhoods that show the highest subscription rates are concentrated in the center and northwest parts of Philadelphia, which are generally upper-income and predominantly white tracts. Low subscription

²¹ Horrigan, John, Baltimore's Digital Divide: Gaps in Internet Connectivity and the Impact on Low-Income City Residents. Abell Foundation (May 2020) [https://abell.org/sites/default/files/files/2020_Abell_digital%20divide_full%20report_FINAL_web%20\(dr\).pdf](https://abell.org/sites/default/files/files/2020_Abell_digital%20divide_full%20report_FINAL_web%20(dr).pdf).

²² Reardon, Marguerite, COVID-19 shines light on 'digital divide' across the US. C|Net (March 18, 2020) <https://www.cnet.com/news/covid-19-shines-light-on-digital-divide-across-the-us/>

²³ Holpuch, Amanada, US's digital divide 'is going to kill people' as Covid-19 exposes inequalities. The Guardian (April 13, 2020) <https://www.theguardian.com/world/2020/apr/13/coronavirus-covid-19-exposes-cracks-us-digital-divide>

rates appear to be concentrated in West, Southwest, and central North Philadelphia, which are lower-income, high-poverty, and predominantly Black and Latinx neighborhoods.²⁴

- Census estimates from 2018 show 29% of Cleveland households have no Internet access.²⁵
- About 952 households (22.8%) in Dayton’s Philadelphia Woods, Fairview, Hillcrest, Dayton View, Mount Vernon and Santa Clara do not have internet access.²⁶
- Households living in cities with the highest poverty rates are up to 10 times more likely than those in communities with higher levels of income not to have broadband at home.²⁷
- John B. Horrigan, research director for the development of the Commission’s 2010 National Broadband Plan, estimates that somewhere around 18.5 million households

²⁴ Sanchez, Alvaro and Adam Scavette, Broadband Access, Computer Use, and Labor Market Attachment in Philadelphia. Federal Reserve Bank of Philadelphia (August 2020)

<https://philadelphiafed.org/-/media/covid/community-development/broadband-access-computer-use-and-labor-market-attachment-in-philadelphia.pdf>.

²⁵ Dissell, Rachel and Jordyn Grzelewski, Phone, internet providers extend service yet some still disconnected from lifelines during coronavirus pandemic. Cleveland Plain Dealer (April 8, 2020)

<https://www.cleveland.com/coronavirus/2020/04/phone-internet-providers-extend-service-yet-some-still-disconnected-from-lifelines-during-coronavirus-pandemic.html>

²⁶ Frolik, Cornelius, 1,000 homes in northwest Dayton have no Internet. City wants to change that. Dayton Daily News (September 23, 2020) <https://www.daytondailynews.com/news/1000-homes-in-northwest-dayton-have-no-internet-city-wants-to-change-that/K47HXBIVEZFT5NSDSJWN2D4EOU/>.

²⁷ Reardon, Marguerite, Comcast expands Internet Essentials to all low-income households. C|Net (August 6, 2019) citing U.S. Census data <https://www.cnet.com/news/comcast-expands-internet-essentials-to-all-low-income-households/>

lack broadband due to the high cost of service.²⁸ In 2019, the Pew Research Center estimated four in ten Americans making less than \$30,000 a year lack either a home broadband connection or a computer.²⁹ Nearly 60% of people without broadband at home cite the cost of the subscription as the leading barrier to adoption.³⁰

- Black, Indigenous, and people of color (BIPOC) communities lack access at higher rates than their white counterparts due to longstanding policies that have furthered systemic racism.³¹ Blacks and Hispanics are 10 years behind Whites in levels of broadband access and almost 4 times more Blacks have poor Tech connectivity than Whites.³²
- Over half of those 65+ have a broadband connection at home, and about 67 percent use the internet.³³

II. LACK OF INTERNET ACCESS HARMS AMERICANS SEEKING EMPLOYMENT AND THE BUSINESSES THAT WOULD SEEK TO EMPLOY THEM

²⁸ Bode, Karl, Many Americans Can't Afford Broadband, But the FCC Doesn't Care. Vice (February 13, 2020) https://www.vice.com/en_us/article/k7e3vw/42-million-americans-cant-afford-broadband-but-the-fcc-doesnt-care

²⁹ <https://www.pewresearch.org/fact-tank/2019/05/07/digital-divide-persists-even-as-lower-income-americans-make-gains-in-tech-adoption/>

³⁰ <https://www.pewresearch.org/internet/2015/12/21/3-barriers-to-broadband-adoption-cost-is-now-a-substantial-challenge-for-many-non-users/>

³¹ Turner, S. Derek, Digital Denied: The Impact of Systemic Racial Discrimination on Home-Internet Adoption. Free Press (December 2016) [https://www.freepress.net/sites/default/files/legacy-policy/digital denied free press report december 2016.pdf](https://www.freepress.net/sites/default/files/legacy-policy/digital%20denied%20free%20press%20report%20december%202016.pdf).

³² Ravindran, Sai, America's Racial Gap & Big Tech's Closing Window. Deutsche Bank (September 2, 2020) [https://www.dbresearch.com/PROD/RPS_EN-PROD/PROD0000000000511664/America%27s Racial Gap %26 Big Tech%27s Closing Window.PDF?&undefined&reaload=TswBIbcuvU4yvWTIVhwbNSthGISBB3w9ghlUm9mC7z8SECUU2rZJ4clGysR/Xs9Ybt5UWDzjimH2EXsA8eA3sA==](https://www.dbresearch.com/PROD/RPS_EN-PROD/PROD0000000000511664/America%27s%20Racial%20Gap%26%20Big%20Tech%27s%20Closing%20Window.PDF?&undefined&reaload=TswBIbcuvU4yvWTIVhwbNSthGISBB3w9ghlUm9mC7z8SECUU2rZJ4clGysR/Xs9Ybt5UWDzjimH2EXsA8eA3sA==).

³³ Anderson, Monica and Andrew Perrin, Tech Adoption Climbs Among Older Adults. Pew Research Center (May 17, 2020) <https://www.pewresearch.org/internet/2017/05/17/tech-adoption-climbs-among-older-adults/>

Broadband internet access service is a necessary prerequisite for those who may be seeking employment. It also disqualifies those individuals from seeking one of the increasing number of jobs where work from home is necessary or desirable. The consequent reduction in the employment pool cause significant harms to businesses and impedes economic growth.

- 76% of Blacks and 62% of Hispanics could get shut out or be under-prepared for 86% of jobs in the US by 2045. If this digital racial gap is not addressed, in one generation alone, digitization could render the country's minorities into an unemployment abyss.³⁴
- Job candidates who self-identify as Black/African American or Hispanic/Latinx are 145% more likely to feel concerned about whether they are capable of doing a job remotely than White candidates. These numbers are a stark representation that minority candidates are significantly more worried about having the appropriate setup at home to be able to work remotely. Female candidates were 70% more likely to say having the right technology and resources was a concern.³⁵

III. **INADEQUATE INTERNET ACCESS HARMS HEALTH AND INCREASES COST OF HEALTHCARE**

³⁴ Ravindran, Sai, America's Racial Gap & Big Tech's Closing Window. Deutsche Bank (September 2, 2020) https://www.dbresearch.com/PROD/RPS_EN-PROD/PROD000000000511664/America%27s Racial Gap %26 Big Tech%27s Closing Window.PDF?&undefined&reload=TswBIbcuvU4yvWTIVhwbNStHGISBB3w9ghlUm9mC7z8SECUU2rZJ4clGysR/Xs9Ybt5UWDzjH2EXsA8eA3sA==.

³⁵ Berry, Liam, How Diverse Candidates Looking For Jobs Are Affected By COVID-19. WayUp (2020) <https://www.wayup.com/employers/blog/how-diverse-candidates-looking-for-jobs-are-affected-by-covid-19>.

Amid the coronavirus pandemic, more of the nation's medical care is being delivered by videoconference, as in-person care becomes a last resort for both doctors and patients. That's a problem for tens of millions of Americans without speedy home internet connections. For them, the digital divide is exacerbating preexisting disparities in access to health care. This is a life and death matter for many. In addition, it makes the entire health care system less efficient and leads to increased insurance premiums for everyone.

- The National Bureau of Economic Research published research³⁶ examining the role of the diffusion of high-speed Internet on an individual's ability to self-isolate during a global pandemic. Researchers discovered that while income is correlated with differences in the ability to stay at home, the unequal diffusion of high-speed Internet in homes across regions drives much of this observed income effect. Devices in regions with either high-income or high-speed internet are less likely to leave their homes after shelter-in-place orders go into effect. However, the combination of having both high income and highspeed Internet appears to be the biggest driver of the propensity to stay at home. The digital divide appears to explain much inequality in people's ability to self-isolate.
- Many rural health advocates say that lack of broadband access is a social determinant of health. Researchers have a name for areas that have both low rates of home broadband

³⁶ Chiou, Leslie and Catherine Tucker, Social Distancing, Internet Access and Inequality. National Bureau of Economic Research (April 2020) <https://www.nber.org/papers/w26982.pdf>

and higher-than-national-average mortality rates for cancer and other diseases:

“double-burdened counties.”³⁷

- Patients unfamiliar with or lacking access to technology already tend not to use online tools that can improve health outcomes and allow them to request appointments and prescription refills, as well as message their doctors directly. Telemedicine was supposed to increase access to health care during a national medical emergency, says Jorge Rodriguez, a physician at Boston’s Brigham and Women’s Hospital who also studies health care technology disparities. But for some, it’s just another barrier. “It’s become a lifeline,” he says, “but not across the board.”³⁸
- Deutsche Bank saw significantly higher mobility during peak COVID lockdowns in Black neighborhoods than in White neighborhoods. The average of the three is a breathtaking figure for the month of April, the peak of COVID lockdowns. Blacks had to venture out of their homes 135% more than Whites compared to pre-COVID levels, during the riskiest of times across the cities. Deutsche Bank believes this is an accurate representation of the state of the racial digital divide in the country. Clearly, poor access to Tech connectivity & work-from-home jobs rendered minorities with few choices but to venture out of home to make a living, even with peril to their lives.³⁹

³⁷ Rath, David, Expanding Internet Access Improves Health Outcomes. Government Technology (June 2020) <https://www.govtech.com/network/Expanding-Internet-Access-Improves-Health-Outcomes.html>.

³⁸ Ibid.

³⁹ Ravindran, Sai, America’s Racial Gap & Big Tech’s Closing Window. Deutsche Bank (September 2, 2020) https://www.dbresearch.com/PROD/RPS_EN-PROD/PROD000000000511664/America%27s_Racial_Gap_%26_Big_Tech%27s_Closing_Window.PDF?&undefined&reload=TswBlbcuvU4yvWTIVhwbNStHGISBB3w9ghIUm9mC7z8SECUU2rZJ4clGysR/Xs9Ybt5UWDzjH2EXsA8eA3sA==.

IV. THE EDUCATIONAL INFRASTRUCTURE SUFFERS WHEN FEWER AMERICANS HAVE ACCESS TO THE INTERNET

To combat the spread of COVID-19, schools throughout the country closed in 2020. As schools shifted to online instruction, the 'Homework Gap' evolved into a full-fledged learning gap. For families living in areas where broadband service is unavailable, not robust, or unaffordable, it is nearly impossible for students to keep up with schoolwork from home.⁴⁰

- As early as March 16, 2020, the Wall Street Journal was reporting on how 35 states had already mandated that all schools close in an effort to stem the spread of the novel coronavirus, affecting at least 69,000 schools and about 35.9 million public-school students in kindergarten through 12th grade.⁴¹
- Louisiana, Kentucky, Mississippi, West Virginia and Washington, DC, have the largest percentage of unconnected students, ranging from 26% to 28%, more than the national average of about 20%.⁴² The issue affects a disproportionately high percentage of Black,

⁴⁰ Hudspeth Blackburn, Piper, 'I just worry that they'll be so far behind': Rural families without internet face tough choice on school. Associated Press (August 14, 2020) <https://www.usatoday.com/story/tech/2020/08/14/rural-families-without-internet-face-tough-choice-school/5582511002/>.

⁴¹ Koh, Yoree. U.S. Schools Deploy Remote Learning on Unprecedented Scale. Wall Street Journal (March 16, 2020) <https://www.wsj.com/articles/u-s-schools-deploy-remote-learning-on-unprecedented-scale-11584393501>. Brookings later estimated 104,000 school closing impacted 47.9 million students (see As classes move online during COVID-19, what are disconnected students to do? At <https://www.brookings.edu/blog/the-avenue/2020/03/20/as-classes-move-online-during-covid-19-what-are-disconnected-students-to-do/>). Time reported that, by late March, 46 states had closed all schools, and at least 54.8 million K-12 students were either trying remote learning or not getting any instruction at all, according to Education Week. <https://time.com/5810503/coronavirus-achievement-gap-schools/>

⁴² Hobbs, Tawnell and Lee Hawkins, The Results Are In for Remote Learning: It Didn't Work. Wall Street Journal (June 5, 2020) <https://www.wsj.com/articles/schools-coronavirus-remote-learning-lockdown-tech-11591375078>.

Latino and Native American households — with nearly one-third of students lacking high-speed Internet at home. Students in Southern states and in rural communities also were particularly overrepresented. In Mississippi and Arkansas, about 40 percent of students lacked high-speed Internet.⁴³

- One in four K-12 households in California do not have a desktop or laptop computer and a high-speed Internet connection. This represents about 870,000 families whose child or children are likely to fall behind in educational attainment during the COVID-19 crisis. If households with mobile broadband service are included, the share of households lacking resources for distance learning falls to 17%, which represents about 610,000 families. Only about half of the K-12 families in the bottom 20% of the income distribution have a desktop or laptop computer and subscribe to high-speed internet. This compares to over 90% of families in the top income quintile. Students eligible for free/reduced price meals are significantly less likely to have access to distance learning resources at home. While the gap is larger for high-speed internet and PC availability, it is only slightly smaller when families with mobile broadband are included. Households in coastal metro areas are generally better equipped than those in the rural communities of the Central Valley, Southeast and Northern California. However, large concentrations of under-resourced households exist within metro areas. As an example, the availability of an internet-enabled PC at home for students in South LA is only slightly above that for

⁴³ Balingit, Moriah, 'A national crisis': As coronavirus forces many schools online this fall, millions of disconnected students are being left behind. Washington Post (August 16, 2020) https://www.washingtonpost.com/education/a-national-crisis-as-coronavirus-forces-many-schools-online-this-fall-millions-of-disconnected-students-are-being-left-behind/2020/08/16/458b04e6-d7f8-11ea-9c3b-dfc394c03988_story.html.

students in Tulare County, which has the lowest availability rate in the state. After controlling for income, the chances that an urban household has a PC and high-speed Internet are almost twice as large as those for a rural household. When the indicator includes wireless broadband, the relative odds for urban households are still about 75% higher. These results reflect the fact that rural students, regardless of income, are more likely to attend under-resourced schools where technology initiatives are less likely to be adopted. Black and Hispanic students are at greater risk of falling behind due to lack of distance learning resources at home. The chances that a Hispanic student lives in a household with a PC and high-speed internet are only about half relative to those for a non-Hispanic student, regardless of income and location. Similarly, the chances for a Black student are about 70% relative to those of non-Black students.⁴⁴

- The Los Angeles Unified School District (LAUSD), the nation's second-largest school system attended by roughly 670,000 students across 900 campuses, estimated at the time that 25% of its families did not have internet access at home.⁴⁵ Researchers at the University of Southern California estimate that about 1 in 4 families with school-age children in Los Angeles County lack the technology resources for distance learning. This represents approximately 250,000 families whose children are likely to fall behind in educational attainment during the crisis. The gap is even larger for LAUSD families, as 1 in 3 lack high-speed Internet access or a desktop/laptop device. Only about half of the K-

⁴⁴ The Distance Learning Gap in California. University of Southern California (April 2020) <http://arnicusc.org/wp-content/uploads/2020/04/Policy-Brief-6.pdf>.

⁴⁵ Koh, Yoree. U.S. Schools Deploy Remote Learning on Unprecedented Scale. Wall Street Journal (March 16, 2020) <https://www.wsj.com/articles/u-s-schools-deploy-remote-learning-on-unprecedented-scale-11584393501>.

12 households in the bottom 20% of the income distribution are equipped for distance learning. This compares to about 90% in the top 20%. Households lacking distance learning resources are clustered in South and East Los Angeles. In these communities, less than half of all families have the technology resources for distance learning. Regardless of income, students of color are less likely to have the technology resources for distance learning. For example, the gap between Hispanic and non-Hispanic students at the same income level is as high as 20 percentage points. The reason is that minority students, regardless of income, tend to live in communities with underfunded schools and less advanced broadband infrastructure.⁴⁶

- Although 90 percent of city and suburban districts have high levels of broadband connectivity, only a quarter of the 112 rural districts in Colorado have high levels of connectivity, and many have low or very low levels, according to an analysis by the Regional Educational Laboratory Central at Centennial-based Marzano Research. Ninety-four percent of the 28,200 students within Mesa County Valley School district have broadband internet. But across the state on the far eastern plains, only 18 percent of the 61 students in the Plainview School District have broadband. It's not just a rural problem. Low-income neighborhoods such as Denver's Montbello and Green Valley Ranch have spotty coverage and many students are trying to use their phones as hotspots.⁴⁷

⁴⁶ Galperin, Hernan, COVID-19 and the Distance Learning Gap. University of Southern California (April 2020) <http://arnicusc.org/wp-content/uploads/2020/04/Policy-Brief-5-final.pdf>.

⁴⁷ Internet Connectivity Across Colorado. Institute for Education Services (2020) <https://ies.ed.gov/ncee/edlabs/projects/covid-19/documents/pdf/CO-internet-connectivity-508.pdf> and Brundin, Jenny, As Colorado Schools Reopen, Thousands Of Students Still Don't

- Roughly 25,000 Minnesota students didn't have computers or internet at home by late spring, about 3% of the state's K-12 students, the Minnesota Department of Education estimated. Low-income students, rural students and students of color are disproportionately likely to lack reliable internet access, raising concerns that the digital divide will worsen Minnesota's educational disparities, which are already some of the worst in the nation. The issue isn't just a rural one — advocates worry low-income urban families will be left behind this fall too. Thousands of Twin Cities residents can't afford traditional internet packages, which can run to \$100 per month.⁴⁸
- Across Alaska, about 31% of students don't have adequate high-speed internet connections at home.⁴⁹
- In rural areas of North Carolina, more than 75,000 students have no access to broadband at any price. In urban areas, Internet providers have laid the infrastructure, but the average monthly cost of \$60 is too steep for some. State public instruction leaders estimate that about 290,000 students live in homes without a subscription to Internet service.⁵⁰

Have Reliable Internet. Colorado Public Radio (August 26, 2020)

<https://www.cpr.org/2020/08/26/colorado-schools-reopening-internet-access-inequality/>.

⁴⁸ Eischens, Rilyn, Thousands of Minnesota students still don't have internet for distance learning. Minnesota Reformer (August 17, 2020)

<https://minnesotareformer.com/2020/08/17/thousands-of-minnesota-students-still-dont-have-internet-for-distance-learning/>.

⁴⁹ Tibken, Shara, In remote Alaska, broadband for all remains a dream. So a school district got creative. C|Net (August 27, 2020) <https://www.cnet.com/news/in-remote-alaska-broadband-for-all-remains-a-dream-so-a-school-got-creative/>.

⁵⁰ Bose, Devna, Digital Divide Underscores Inequity in Urban North Carolina. Gaston Gazette (August 28, 2020) <https://www.govtech.com/network/Digital-Divide-Underscores-Inequity-in-North-Carolina-Cities.html>.

- One in 5 (more than 110,000 total) children under the age of eighteen in Chicago lack access to broadband.⁵¹
- Between 30% and 50% of K-12 students in the state lack internet access.⁵²
- Roughly 30% of Washington (DC) public school students lack internet access in their homes.⁵³
- Atlanta Public Schools, which serves about 55,000 students, estimates that more than half of student families in the district have a connectivity issue of some type.⁵⁴
- About 90% of the 51,000 students in the predominantly Black Detroit Public Schools Community District couldn't participate in online learning initially because they did not have access to internet or technology at home.⁵⁵

⁵¹ Digital Equity in education in the Coronavirus Era. Kids First Chicago (April 2020) <https://static1.squarespace.com/static/5b212dce5417fcd9ddec5349/t/5ea198c8f3110c4651d9db54/1587648715787/2-2020-Internet+Connectivity-FINAL.pdf>.

⁵² Maher, Kris, Remote Schooling Out of Reach for Many Students in West Virginia Without Internet. Wall Street Journal (September 13, 2020) <https://www.wsj.com/articles/remote-schooling-out-of-reach-for-many-students-in-west-virginia-without-internet-11599989401>. See similar concerns about telehealth in the state: Severino, Joe, Telehealth is here to stay. WV doesn't have the broadband capability to support it. Charleston Gazette-Mail (August 15, 2020) https://www.wvgazettemail.com/news/health/telehealth-is-here-to-stay-wv-doesnt-have-the-broadband-capability-to-support-it/article_97b24e24-aacb-55a0-8ba4-c5f769cea683.html.

⁵³ Baca, Nathan, DC Public Schools to broadcast lessons on TV. WUSA9 (March 24, 2020) <https://www.wusa9.com/article/news/health/coronavirus/dc-public-schools-to-broadcast-classes-online/65-85e73fdd-4231-4124-baa9-e57a2d057a6d>

⁵⁴ Pressgrove, Jed, Students, Schools Navigate the Inequity of the Digital Divide. GovTech (March 23, 2020) <https://www.govtech.com/education/k-12/Students-Schools-Navigate-the-Inequity-of-the-Digital-Divide.html>

⁵⁵ Strauss, Valerie, Coronavirus pandemic shines light on deep digital divide in U.S. amid efforts to narrow it. Washington Post (April 29, 2020) <https://www.washingtonpost.com/education/2020/04/29/coronavirus-pandemic-shines-light-deep-digital-divide-us-amid-efforts-narrow-it/>.

- About 21,500 kids in Philadelphia do not have an internet subscription.⁵⁶
- In the Symmes Valley Local School District in Lawrence County, in southern Ohio, Superintendent Darrell Humphreys estimates that less than 15% of his 800 students have “good internet,” capable of streaming video.⁵⁷
- 4,500 students of the Jefferson County Public School District (Louisville, Kentucky) disappeared from distance-learning programs after the COVID-19 outbreak kept children home. The vast majority of them are poor. Some are homeless. Many lack the high-speed access necessary to "attend" online classes, or take and turn in school assignments.⁵⁸
- Thousands of Aiken County residents lacked access to even the most basic internet service as of late 2018, according to a study by the Center for Applied Innovation and Advanced Analytics at the University of South Carolina in Columbia.⁵⁹

⁵⁶ Hetrick, Christian and Dylan Purcell, Thousands of Philly students are stuck at home without internet after coronavirus closed schools. Philadelphia Inquirer (April 3, 2020) <https://www.inquirer.com/education/coronavirus-students-digital-divide-philadelphia-comcast-20200403.html>.

⁵⁷ Narciso, Dean, Erin Mansfield and Shelly Conlon, Coronavirus for kids without internet: Quarantined worksheets, learning in parking lots. (The Columbus Dispatch) <https://stagenr.build.dispatch.com/news/20200417/coronavirus-for-kids-without-internet-quarantined-worksheets-learning-in-parking-lots>. Harrison, Heath, Ending the digital divide. Ironton Tribune (May 23, 2020) <https://www.irontontribune.com/2020/05/23/ending-the-divide/>.

⁵⁸ Editorial Board, In a pandemic, the digital divide separates too many Americans from relief. USA Today (May 7, 2020) <https://www.usatoday.com/story/opinion/todaysdebate/2020/05/07/during-coronavirus-crisis-expand-access-high-speed-internet-our-view/5177172002/>.

⁵⁹ Demarest, Colin, Coronavirus crisis highlights digital divide in S.C., state education superintendent says. Aiken Standard (April 25, 2020) https://www.postandcourier.com/aikenstandard/education/coronavirus-crisis-highlights-digital-divide-in-s-c-state-education-superintendent-says/article_077ac19e-1f8d-5f3d-ae66-05697efbef3f.html.

- A 2019 estimate found that approximately 18% of U.S. students do not have broadband internet at home, according to an Associated Press analysis of census data.⁶⁰ According to the Pew Research Center,⁶¹ roughly one-third (35%) of households with children ages 6 to 17 and an annual income below \$30,000 a year do not have a high-speed internet connection at home, compared with just 6% of such households earning \$75,000 or more a year. These broadband gaps are particularly pronounced in black and Hispanic households with school-age children – especially those with low incomes.
- According to the U.S. Census Bureau’s Household Pulse Survey:⁶²
 - Approximately 1 in 10 of the poorest children in the U.S. has little or no access to technology for learning. 12.2 percent of respondents from households earning less than \$25,000 a year said a digital device was rarely or never available for a child to use for learning and 9.8 percent said the same of the internet.
 - Poor children living in poor states are even more likely to be at a disadvantage. Across the U.S., 4.3 percent of households earning less than \$35,000 per year say

⁶⁰ Melia, Michael, Jeff Amy, and Larry Fenn, 3 million US students don’t have home internet. Associated Press (June 10, 2019) https://apnews.com/7f263b8f7d3a43d6be014f860d5e4132?mod=article_inline (See also U.S. Congress Joint Economic Committee estimate that nearly 12 million children do not live in homes with a broadband connection https://www.jec.senate.gov/public/_cache/files/ff7b3d0b-bc00-4498-9f9d-3e56ef95088f/the-digital-divide-.pdf)

⁶¹ Auxier, Brooke and Monica Anderson, As schools close due to the coronavirus, some U.S. students face a digital ‘homework gap.’ Pew Research Center (March 16, 2020) <https://www.pewresearch.org/fact-tank/2020/03/16/as-schools-close-due-to-the-coronavirus-some-u-s-students-face-a-digital-homework-gap/>

⁶² Vegas, Emiliana, Unequally disconnected: Access to online learning in the US. Brookings (June 22, 2020) <https://www.brookings.edu/blog/education-plus-development/2020/06/22/unequally-disconnected-access-to-online-learning-in-the-us/>.

a device is never available for a child's learning. For the same income bracket in the five poorest states, this jumps to 6.3 percent, while in the five richest, it drops to 1.6 percent.

- Nine in 10 children of employed caregivers have access to both a device and the internet for learning always, or most of the time. This on demand availability drops around five percentage points for children living in households where caregivers are unemployed.
- 9.5 percent of respondents across the U.S. who did not finish high school say there is rarely or never a device available for learning in their home, compared with just 1.2 percent of those with a bachelor's degree or higher qualification.
- On average for the five poorest states, only 34.2 percent of respondents who did not finish high school say the internet is always available for learning at home. By comparison, the children of 47.4 percent of respondents from the five richest states who also did not complete high school can get online on demand.
- Children's access to online learning is strongly correlated with race. 8.7 percent of Black respondents say their children rarely or never have access to a device for learning, four percentage points higher than for the full sample including all races. Similarly, 6.7 percent of Black respondents say there is rarely or never internet access available in their homes, 3.1 percentage points above the full sample.
- While just 0.1 percent of white respondents in Los Angeles say a device is rarely or never available for learning at home, 13.2 percent of Black respondents

surveyed in the same city reported rarely or never having access to a device for learning. In Detroit, this form of educational disadvantage affects children in almost 1 in 5 households that identified as Black.

- Roughly six-in-ten parents with lower incomes said it's likely their homebound children would face at least one digital obstacle to doing their schoolwork (1 Have to do schoolwork on a cellphone, 2 have to rely on public Wi-Fi because there is no internet access in the home, or 3 not be able to complete schoolwork because they don't have access to a computer at home).⁶³
- The digital divide impacted many students who currently are connected at home: in Philadelphia,⁶⁴ Prince George's County, Maryland,⁶⁵ Chattahoochee County, Georgia,⁶⁶ and Washington State⁶⁷ school districts at first abandoned a shift to online learning because too many students could not get online.

⁶³ Vogels, Emily, 59% of U.S. parents with lower incomes say their child may face digital obstacles in schoolwork. Pew Research Center (September 10, 2020)

<https://www.pewresearch.org/fact-tank/2020/09/10/59-of-u-s-parents-with-lower-incomes-say-their-child-may-face-digital-obstacles-in-schoolwork/>.

⁶⁴ Wolfman-Arent, Avi and Dale Mezzacappa, Philly schools forbid graded 'remote instruction' during shutdown for equity concerns. WHYY (March 18, 2020) <https://whyy.org/articles/philly-schools-forbid-remote-instruction-during-shutdown-for-equity-concerns/>

⁶⁵ Romm, Tony, 'It shouldn't take a pandemic': Coronavirus exposes Internet inequality among U.S. students as schools close their doors. Washington Post (March 16, 2020) <https://www.washingtonpost.com/technology/2020/03/16/schools-internet-inequality-coronavirus/>

⁶⁶ Amy, Jeff, Some US schools are pulling the plug on distance learning. Associated Press (May 14, 2020) <https://abcnews.go.com/Health/wireStory/us-schools-pulling-plug-distance-learning-70680972>.

⁶⁷ Hobbs, Tawnell At Schools Closed for Coronavirus, Online Work Won't Count. Wall Street Journal (March 19, 2020) <https://www.wsj.com/articles/schools-closed-for-coronavirus-online-work-wont-count-11584643049>

- New research suggests that by September 2020, most students will have fallen behind where they would have been if they had stayed in classrooms, with some losing the equivalent of a full school year's worth of academic gains. Racial and socioeconomic achievement gaps will most likely widen because of disparities in access to computers, home internet connections and direct instruction from teachers.⁶⁸
- Preliminary research suggests students nationwide will return to school in the fall with roughly 70% of learning gains in reading relative to a typical school year, and less than 50% in math, according to projections by NWEA, an Oregon-based nonprofit that provides research to help educators tailor instruction. It expects a greater learning loss for minority and low-income children who have less access to technology, and for families more affected by the economic downturn. School districts didn't realize the number of students without access to devices and the internet until they surveyed parents.⁶⁹
- 300,000 to 400,000 K-12 teachers live in households without adequate internet connectivity, roughly 10 percent of all public school teachers, and 100,000 teachers lack adequate home computing devices.⁷⁰

⁶⁸ Goldstein, Dana, Research Shows Students Falling Months Behind During Virus Disruptions. New York Times (June 5, 2020) <https://www.nytimes.com/2020/06/05/us/coronavirus-education-lost-learning.html>.

⁶⁹ Hobbs, Tawnell and Lee Hawkins, The Results Are In for Remote Learning: It Didn't Work. Wall Street Journal (June 5, 2020) <https://www.wsj.com/articles/schools-coronavirus-remote-learning-lockdown-tech-11591375078>.

⁷⁰ Chandra, Sumit et al., Closing the K–12 Digital Divide in the Age of Distance Learning. Common Sense Media (June 29, 2020) https://www.commonsensemedia.org/sites/default/files/uploads/pdfs/common_sense_media_report_final_7_1_3pm_web.pdf.

- Internet access is so central to children’s education that allowing students to go without it is like sending them to classrooms without textbooks, said Jordana Barton, who studies the digital divide in Texas as a community development adviser for the Federal Reserve Bank of Dallas. So many students being without Internet service is “a travesty,” she said.⁷¹
- Some 100,000 fewer high school seniors completed financial aid applications to attend college this year, according to a National College Attainment Network analysis of Free Application for Federal Student Aid (FAFSA) data through August. The lower enrollment figures are the latest sign of how the economic devastation unleashed by the coronavirus crisis has weighed more heavily on lower-income Americans and minorities, who have suffered higher levels of unemployment and a higher incidence of covid-19, the disease caused by the novel coronavirus. Students from families with incomes under \$75,000 are nearly twice as likely to say they “canceled all plans” to take classes this fall as students from families with incomes over \$100,000, according to a U.S. Census Bureau survey in late August. When low-income students stop attending school, they rarely return, diminishing their job and wage prospects for the rest of their lives. Enrollment trends so far show especially steep drops among Black students and rural White students. Among the reasons students are citing for not returning to school this fall: frustration or uncertainty about online classes. Students who have dropped out of

⁷¹ Balingit, Moriah, ‘A national crisis’: As coronavirus forces many schools online this fall, millions of disconnected students are being left behind. Washington Post (August 16, 2020) https://www.washingtonpost.com/education/a-national-crisis-as-coronavirus-forces-many-schools-online-this-fall-millions-of-disconnected-students-are-being-left-behind/2020/08/16/458b04e6-d7f8-11ea-9c3b-dfc394c03988_story.html.

college this fall overwhelmingly told The Washington Post that it was because of virtual classes. They preferred the supportive environment of attending in-person classes and being able to speak with teachers, fellow students and support staff. They struggled to find a quiet place at home to study and many lacked reliable Internet.⁷²

CONCLUSION

As these comments demonstrate, the Commission must find that continuing shortcomings in broadband deployment cause grievous harm to individuals as well as to the nation in general and that advanced telecommunications capability is being not deployed to all Americans in a reasonable and timely fashion. Accordingly, Section 706 requires the Commission “take immediate action to accelerate deployment” of broadband throughout the country.

Respectfully submitted,

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⁷² Long, Heather and Danielle Douglas-Gabriel, The latest crisis: Low-income students are dropping out of college this fall in alarming numbers. Washington Post (September 16, 2020) <https://www.washingtonpost.com/business/2020/09/16/college-enrollment-down/>.