

**Before the
Federal Communications Commission
Washington, DC 20554**

In the Matter of)
)
Inquiry Concerning Deployment of Advanced) GN Docket No. 19-285
Telecommunications Capability to All)
Americans in a Reasonable and Timely)
Fashion)

To: The Commission

**COMMENTS OF NEW AMERICA’S OPEN TECHNOLOGY INSTITUTE AND
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I. Introduction & Summary

New America’s Open Technology Institute and Access Now (“commenters”) hereby submit these comments in response to the Federal Communications Commission’s (“the Commission”) Notice of Inquiry (“NOI”) in the above-captioned proceeding.¹ The Commission’s annual Section 706 proceeding is of the utmost importance—not only does it show policymakers and the public the full extent of broadband availability in the United States, but it also empowers the Commission to improve that access if the report provides a negative finding.² Accordingly, commenters submit the following recommendations and responses to the Commission’s proposals for this year’s report.

First, mobile broadband is not a functional substitute for fixed broadband, and the Commission should continue to consider the two as *complements* and not *substitutes*. The Commission has reached this conclusion in the past two reports and there have been no substantive changes to consumer behavior, technology, or the market that should alter this conclusion. Mobile broadband is more expensive than fixed broadband, less reliable (particularly in rural regions), slower, and vulnerable to data caps and costly overage charges. Further, mobile broadband *relies* on fixed broadband for offload and backhaul, so it is difficult to argue that it can serve as a substitute for a service on which it depends. Additionally, consumers do not see the two as functional equivalents. Those who only use mobile broadband are generally lower-income, and likely cannot afford both services. Mobile broadband remains an unusable substitute for fixed in the context of work and education, and consumers on average use much more data on fixed broadband than they would be able to if they relied solely on a mobile broadband

¹ Fifteenth Broadband Deployment Report Notice of Inquiry, GN Docket No. 19-285 (Rel. Oct. 23, 2019), <https://docs.fcc.gov/public/attachments/FCC-19-102A1.pdf> (“Section 706 NOI”).

² 47 U.S.C. §151.

connection. Additionally, the Commission should not consider the prospect of future 5G networks as sufficient reason to declare mobile a substitute for fixed. Carriers have not yet deployed 5G on a nationwide basis and the Commission does not have an adequate sample size to judge whether these networks will offer the capabilities of fixed broadband. 5G networks are also likely to be deployed only in high-density, high-income urban areas.

Second, the Commission cannot continue to depend solely on Form 477 for this proceeding. Form 477, by the Commission's own admission, overstates coverage and lacks granularity. The Commission recently adopted a new broadband mapping regime specifically to address the lack of granularity in the Commission's current broadband availability data. A report based on inaccurate information provides little value to policymakers and the public interest.

Third, the Commission should consider affordability as part of its Section 706 review. Cost remains one of the biggest barriers to broadband adoption for Americans, and the fact that this Commission does not collect any information on the pricing of broadband creates an enormous gap in the Commission's understanding of the digital divide. Simply put: broadband is not truly available if people cannot afford it. Further, high costs could deter providers from building out their networks to serve lower income communities. The Commission must analyze the effects of cost on broadband availability and adoption to truly understand whether broadband is being deployed in a reasonable and timely manner.

Finally, the Commission should increase the threshold for its definition of high-speed broadband from the current standard of 25 Megabits per second download speed by 3 Megabits per second upload speed. The trends in the United States show that the average speeds are increasing every year, and have long surpassed the 25 Mbps/ 3 Mbps scale. The Commission

should increase the benchmark for advanced telecommunications capability to ensure that the definition adequately matches the average speed consumed by Americans.

II. Mobile Broadband Is Not a Substitute For Fixed Broadband

The Commission, as it has done for the past two iterations of its Section 706 inquiries, requests comment regarding the substitutability of mobile broadband for fixed broadband.³ The Commission further requests comment on whether the anticipated deployment of 5G wireless services should factor into this analysis.⁴ As OTI has argued in previous years, mobile is not a substitute for fixed broadband, and there have been no technological or market changes to alter this fundamental fact.⁵ Further, 5G services have not yet been deployed in a widespread manner so as to make any impact on the Commission’s conclusion. Moreover, to the extent that there could be 5G deployments in the coming year or two, these networks will largely benefit urban areas and wealthier consumers. For its 2020 Section 706 Report, the Commission should uphold its conclusion from the past two years that neither mobile service nor anticipated 5G availability are functional substitutes for fixed broadband service.⁶

Specifically, mobile broadband is not a substitute for fixed broadband due to the functional difference in how consumers use the services. Mobile broadband is typically higher cost, less reliable (especially in rural areas), slower, and subject to data caps and expensive

³ Section 706 NOI ¶ 10.

⁴ *Id.*

⁵ Comments of New America’s Open Technology Institute, GN Docket No. 17-199 (Sep. 21, 2017), <https://ecfsapi.fcc.gov/file/10921256530521/OTI%20FCC%20Section%20706%20Comments.pdf> at 4-22; Comments of New America’s Open Technology Institute, GN Docket No. 18-238 (Sep. 17, 2018), <https://ecfsapi.fcc.gov/file/109170024011310/2018-09-17%20OTI%20Section%20706%20Comments.pdf> at 20-30 (“OTI 2018 Section 706 Comments”).

⁶ 2019 Broadband Deployment Report, GN Docket No. 18-238 (Rel. May 29, 2019), ¶ 11.

verage fees in comparison to fixed broadband.⁷ Further, mobile broadband is increasingly reliant on fixed broadband for backhaul and offloaded traffic.⁸ It would make no sense for the Commission to deem mobile broadband a substitute for fixed broadband when the former service is dependent on the latter.

Further, mobile broadband is primarily accessed through smartphones and tablet devices that are limited in their functionality. These devices are particularly poor for employment and education-related activities. Completing homework, typing essays, and conducting comprehensive research necessary for school is immensely more difficult on a smartphone or tablet than on a computer—not only due to the challenges of typing and conducting research on smaller devices, but also and significantly due to latency issues, lower speeds, and data caps that come with mobile broadband. In general, students living in lower-income households tend to rely on smartphones to complete their homework at higher rates—specifically, 45 percent of U.S. teenagers living in households making less than \$30,000 annually said they often or sometimes have to do their homework on a cellphone compared to 29 percent of those living in households making \$75,000 or more per year.⁹ Further illustrating the importance of being able to afford and access a computer and an internet connection, 24 percent of U.S. teenagers surveyed living in households making less than \$30,000 per year said they often or sometimes cannot complete homework due to a lack of a reliable computer or internet connection compared to just 9 percent

⁷ OTI 2018 Section 706 Comments at 20-21.

⁸ Cisco, “Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2017–2022 White Paper” (Feb. 18, 2019), <https://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/white-paper-c11-738429.html> (“Cisco VNI”).

⁹ Monica Anderson and Andrew Perrin, Nearly one-in-five teens can’t always finish their homework because of the digital divide, Pew Research Center (Oct. 26, 2018), <http://www.pewresearch.org/facttank/2018/10/26/nearly-one-in-five-teens-cant-always-finish-their-homework-because-of-the-digitaldivide/>

of those living in households making \$75,000 or more annually.¹⁰ For those seeking employment, mobile broadband is an insufficient substitute as well—47 percent of Americans who have used a smartphone to search for a job reported they experienced difficulties where content did not display properly on their mobile device and 38 percent reported problems entering large amounts of text using a phone.¹¹

Further, consumers do not see mobile broadband as an adequate substitute for fixed broadband. Low-income Americans are much more likely to rely exclusively on mobile broadband for internet access compared to those who can afford to have both services—26 percent of U.S. adults making less than \$30,000 annually are smartphone-only broadband users compared to just 6 percent of those who make \$75,000 or more per year.¹² Half of those surveyed who do not have broadband access at home cited the high cost of monthly broadband service—not functional similarity—as the reason for that lack of access.¹³

Mobile broadband also cannot be viewed as a substitute for fixed broadband because the volume of data most households consume through fixed broadband services on a monthly basis is much higher than what could be consumed through most mobile broadband providers' plans. Comcast and Charter, two of the largest providers of fixed broadband in the country, have

¹⁰ *Id.*

¹¹ Andrew Burger, "Pew: Smartphone-Only Internet Users Find Them an Incomplete Home Broadband Substitute," *Telecompetitor* (Oct. 6, 2016), <https://www.telecompetitor.com/pew-smartphone-only-internet-users-find-them-an-incomplete-home-broadband-substitute/>.

¹² Monica Anderson, "Mobile Technology and Home Broadband 2019," Pew Research Center (June 13, 2019), <https://www.pewresearch.org/internet/2019/06/13/mobile-technology-and-home-broadband-2019/>.

¹³ *Id.* The Pew survey found that 45 percent of non-broadband users said that the reason they do not have that access at home is because a smartphone does everything they need. As evidenced elsewhere, the lack of interest in fixed home broadband is inextricably linked to the cost—someone who cannot afford both services is likely to see having both services as unnecessary, particularly if they have to choose between having home broadband or a smartphone, which gives both mobile broadband and mobile phone service. See Benton Institute for Broadband & Society, *The Complexity of 'Relevance' as a Barrier to Broadband Adoption*, (2016), <https://www.benton.org/blog/complexity-relevance-barrier-broadband-adoption>; Benton Institute for Broadband & Society, *The Ability to Pay for Broadband* (2019), <https://www.benton.org/blog/ability-pay-broadband>.

reported that customers of their companies consume roughly 200 gigabytes (GB) per month.¹⁴ For broadband-only users—who do not have a pay TV subscription as well and therefore access all video content using their fixed broadband connection—these numbers are even higher. Charter reports that the average customer who receives fixed broadband-only service consumes 400GB a month.¹⁵ A study by OpenVault found that on average, fixed broadband-only households consume 395.7 GB per month.¹⁶

Mobile broadband service cannot reasonably support these levels of monthly data consumption, particularly for an entire household or small business. Consumers would not be able to use a mobile broadband connection as a substitute for a fixed broadband connection, as they would be subject to overage fees for going over a certain data cap or would be subject to throttled and slow service after reaching whatever arbitrary cap that provider has set for their “unlimited” plan’s offering. Even with AT&T’s recent announcement of new “unlimited” plans, the best they offer is an “Unlimited Elite” plan with 100GB of data before the company throttles your service.¹⁷ Most mobile carriers offer less than 100GB before throttling data or charging overage fees. And even 100GB is much less than the average amount used by fixed broadband customers. This fact reflects mobile broadband’s inability to serve as a functional substitute for

¹⁴ Jon Brodtkin, “Comcast usage soars 34% to 200GB a month, pushing users closer to data cap,” Ars Technica (April 26, 2019), <https://arstechnica.com/information-technology/2019/04/comcast-usage-soars-34-to-200gb-a-month-pushing-users-closer-to-data-cap/>; Daniel Frankel, “Charter: Broadband-Only Users Average 400GB of Monthly Data Usage,” Multichannel News (May 2, 2019), <https://www.multichannel.com/news/charter-says-average-cord-cutter-uses-400gb-of-data-per-month>.

¹⁵ *Id.*

¹⁶ Joan Engebretson, “Broadband Data Usage Report: Internet-only Homes Use Almost Twice as Much Data as Bundled Homes,” Telecompetitor (May 22, 2019), <https://www.telecompetitor.com/broadband-data-usage-report-internet-only-homes-use-almost-twice-as-much-data-as-bundled-homes/>.

¹⁷ Jon Brodtkin, “AT&T’s priciest “unlimited” plan now allows 100GB+ of un-throttled data,” Ars Technica (October 31, 2019), <https://arstechnica.com/information-technology/2019/10/atts-priciest-unlimited-plan-now-allows-100gb-of-un-throttled-data/>.

fixed broadband, due to the fact that it simply cannot do the same things for consumers that a fixed connection can do.

Finally, the burgeoning 5G ecosystem is not a substitute for fixed broadband. 5G networks have not been deployed in a widespread or consistent manner; most deployments to date have been experimental or designed to showcase the future potential of 5G. None of this enhances mobile broadband's *current* viability to serve as a functional substitute to fixed broadband. Further, mobile carriers have acknowledged that the most "revolutionary" 5G networks—those that utilize millimeter wave spectrum that can carry vast amounts of data very quickly—will never scale beyond urban and high-density areas; rural and other historically underserved areas of the country will be left behind.¹⁸ Further, the 5G services that mobile carriers are set to deploy to rural areas, on low-band spectrum, are likely to merely resemble "good 4G service," as a Verizon executive noted earlier this year.¹⁹ The Commission cannot deem mobile a functional replacement for fixed broadband based on technology that has not been deployed to all Americans in a reasonable and timely basis. Currently, 5G is too nascent—and, in most of the country, nonexistent—for the Commission to reach this conclusion.

¹⁸ Jon Brodtkin, "Millimeter-wave 5G will never scale beyond dense urban areas, T-Mobile says," Ars Technica (April 22, 2019), <https://arstechnica.com/information-technology/2019/04/millimeter-wave-5g-will-never-scale-beyond-dense-urban-areas-t-mobile-says/>; Sean Hollister, "Verizon and T-Mobile agree much of the US won't see the fast version of 5G," The Verge (April 24, 2019), <https://www.theverge.com/2019/4/24/18514905/verizon-t-mobile-agree-rural-united-states-dont-get-millimeter-wave-5g>.

¹⁹ Jon Brodtkin, "Verizon: 5G speeds on low-spectrum bands will be more like "good 4G"," Ars Technica (Aug. 8, 2019), <https://arstechnica.com/information-technology/2019/08/verizon-5g-speeds-on-low-spectrum-bands-will-be-more-like-good-4g/>.

III. The Commission’s Form 477 Data Is Insufficient To Support a Conclusion on Broadband Availability

The Commission has conceded that Form 477 data overestimates the availability of broadband, making it a particularly inapt resource to rely upon in this proceeding.²⁰ In the NOI, the Commission acknowledges the “limitations” of the Form 477 data, and notes, “We consider the shortcomings and challenges of the dataset when those data are used to inform our funding and policy decisions.”²¹ The Commission’s 2019 Broadband Deployment Report also highlighted the fact that Form 477 data might overstate deployment figures, and in the NOI, the Commission cites one statistic that suggests that Form 477 data might overstate deployment by 3 percent.²² Most significantly, the Commission recently passed an Order aimed at improving the granularity of the Form 477 data collection regime through its *Establishing the Digital Opportunity Data Collection* proceeding, marking the most explicit acknowledgment of Form 477’s shortcomings.²³

There have been several independent reports that have reflected the inability of Form 477 data on its own to reflect broadband deployment and availability. The Government Accountability Office detailed how Form 477 data overstates broadband access on Tribal lands.²⁴ Last year, there was a massive error in the Form 477 reporting that the Commission failed to

²⁰ Section 706 NOI ¶ 16; Report and Order and Second Further Notice of Proposed Rulemaking, WC Docket No. 19-195, WC Docket No. 11-10 (Rel. Aug. 6, 2019), <https://docs.fcc.gov/public/attachments/FCC-19-79A1.pdf>.

²¹ Section 706 NOI ¶ 17.

²² *Id.*; 2019 Report, paras. 22, 26, 28; 2018 Report, 33 FCC Rcd at 1677-78, 1681, paras. 43, 45, 51 & ns.128, 132, 148; Dr. George S. Ford, Quantifying the Overstatement in Broadband Availability from the Form 477 Data: An Econometric Approach, at 6 (2019), <http://www.phoenix-center.org/perspectives/Perspective19-03Final.pdf>.

²³ Report and Order and Second Further Notice of Proposed Rulemaking, WC Docket No. 19-195, WC Docket No. 11-10 (Rel. Aug. 6, 2019), <https://docs.fcc.gov/public/attachments/FCC-19-79A1.pdf> ¶ 10 (“It has become increasingly clear that the fixed and mobile broadband deployment data collected on the Form 477 are not sufficient to support the specific imperative of our USF policy goals.”).

²⁴ Government Accountability Office, “FCC’s Data Overstate Access on Tribal Lands” (Sep. 2018), <https://www.gao.gov/assets/700/694386.pdf>.

catch, which caused corresponding errors in the Commission’s calculations for its Section 706 Report. This forced the Commission to re-do the 2019 Broadband Deployment Report, greatly delaying its eventual release.²⁵

Further, reports such as the National Digital Inclusion Alliance’s (NDIA) annual “Worst Connected Cities” show that the Commission’s reliance on Form 477 as a marker for broadband availability is seriously flawed, as numerous cities contain large numbers of households that lack access to broadband of any type.²⁶ Detroit, Michigan (29.71 percent of households), Miami, Florida (32.24 percent), and Cleveland, Ohio (27.42 percent) are just a few examples of the several cities where NDIA has found large portions of the population do not have broadband access.²⁷ As detailed further below, the Commission must take into account other factors, such as pricing, to get a more complete picture of broadband availability as part of its Section 706 obligations.

The Commission offers two reasons for its continued reliance on Form 477, both of which are insufficient. The Commission first notes that it granted internet service providers six months to comply with the new broadband mapping regime under the *Establishing the Digital Opportunity Data Collection Order*.²⁸ However, a Section 706 report that does not accurately depict the state of broadband availability is of little value to lawmakers or the public.

The Commission also asserts that it should continue to rely on Form 477 data because it is “a consistent unit of measurement.”²⁹ Commenters strongly disagree with this reasoning.

²⁵ Jon Brodtkin, “Ajit Pai says he’s fixed giant FCC error that exaggerated broadband growth,” *Ars Technica* (May 1, 2019), <https://arstechnica.com/tech-policy/2019/05/ajit-pai-says-hes-fixed-giant-fcc-error-that-exaggerated-broadband-growth/>.

²⁶ National Digital Inclusion Alliance, “Worst Connected Cities 2018,” <https://www.digitalinclusion.org/worst-connected-2018/>.

²⁷ *Id.*

²⁸ Section 706 NOI ¶ 18.

²⁹ *Id.*

While consistency is important to viewing trends over time, it does not justify dependence on datasets that are widely known to be flawed. Continuing to issue reports based on flawed data would skew the Commission’s findings under Section 706 and perpetuate a consistently inaccurate view of the digital divide.

IV. The Commission’s Section 706 Analysis Must Incorporate Affordability

Cost is the most significant barrier to broadband adoption, making it inextricably linked to the question of whether broadband is being deployed in a reasonable and timely manner. Broadband service cannot reasonably be considered *available* if it is too expensive. Simply put: people will not purchase services they cannot afford. Nonetheless, the Commission does not collect pricing data nor does it analyze pricing in its annual Section 706 inquiry. This must change.

Earlier this year, the Pew Research Center revealed that 44% of adults with annual household incomes below \$30,000 do not have home broadband service, compared with 81% of households with annual incomes between \$30,000 and \$99,000.³⁰ The lack of broadband services creates further challenges for those who are already disadvantaged. For instance, the same article cites that 26% of adults living in households earning less than \$30,000 a year have mobile service on their smartphones but no residential broadband service.³¹ The U.S. Census’ American Community Survey reveals that 41% of people surveyed in the U.S. who are internet subscribers have an annual income of \$75,000 or more, whereas those earning less than \$10,000 a year made

³⁰ Monica Anderson and Madhumitha Kumar, “Digital divide persists even as lower-income Americans make gains in tech adoption,” *Pew Research Center*, May 7, 2019, <https://www.pewresearch.org/fact-tank/2019/05/07/digital-divide-persists-even-as-lower-income-americans-make-gains-in-tech-adoption/>.

³¹ Andrew Perrin, “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/>.

up only 6% of internet subscribers in the nation.³² Almost twice as many people earning more than \$75,000 a year were subscribed to the internet when compared to those earning between \$50,000 and \$74,999 a year.

Even if a broadband provider reports deployment in an area, if people cannot afford the service, that service cannot be considered available. Research suggests that low-income people can only afford to pay about \$10 per month for broadband, a cost which competes with bills for other necessary utilities like electricity, gas, water, etc.³³ The current monthly subsidy available to individuals through the Commission's Lifeline program is \$9.25 a month, while low-income plans offered by broadband carriers separate from Lifeline that are used for fixed broadband range from \$10 to \$20 per month.

Addressing affordability, which is at the heart of the issue of availability, is central to actually alleviating the concerns about broadband adoption and access the Commission claims to recognize. In the NOI, the Commission writes that, "the data demonstrates that over 21 million Americans lack access to fixed terrestrial advanced telecommunications capability of 25 Mbps/3 Mbps or greater, and we recognized that the situation is especially problematic in rural areas, where over 26% lack access, and Tribal Lands, where 32% lack access."

When considering affordability, it is clear that the digital divide is not only a rural problem, but also an urban one. For example, a recent study found that AT&T, capitalizing on its knowledge of low-income areas, deliberately excluded such neighborhoods from a fiber network

³² Household Income in the Last 12 Months (in 2018 Inflation-Adjusted Dollars) by Presence and Type of Internet Subscription in Household. *United States Census Bureau*, <https://data.census.gov/cedsci/table?q=Telephone,%20Computer,%20and%20Internet%20Access&lastDisplayedRow=24&table=B28004&tid=ACSDT1Y2018.B28004&t=Telephone,%20Computer,%20and%20Internet%20Access>.

³³ Jonathan Sallet, "Broadband for America's Future: A Vision for the 2020s," Benton Institute for Broadband & Society (Oct. 2019) at 66, <https://www.benton.org/publications/broadband-policy2020s>.

buildout, which the company limited to middle-income neighborhoods. The company has persisted in digital redlining—a discriminatory practice of service provision based on factors like income and ethnicity—despite the National Digital Inclusion Alliance’s discovery and publication of the fact that AT&T was not offering its low-cost broadband service in low-income areas of Cleveland and Detroit.³⁴ In addition to pricing out individuals, AT&T also offered service at too slow a speed to qualify for the low-cost plan —meaning consumers were ineligible for the very program that was supposed to help them get connected.

V. The FCC Should Increase the Threshold for Its Definition of Broadband

The Commission requests comment on its proposal to retain the 25 Megabits per second download / 3 Megabits per second upload threshold for fixed advanced telecommunications service.³⁵ Commenters strongly urge the Commission to increase the throughput speed reflected in this benchmark. As detailed in OTI’s 2018 Section 706 comments, the average speeds for fixed broadband service in the United States have been increasing.³⁶ Ookla reported that 2018 saw a 35.8 percent increase in download speeds and a 22 percent increase in upload speeds in the U.S. compared to 2017.³⁷ Ookla reported that the average internet download speed in the U.S. is 93.98 Mbps, as of June 2018.³⁸ Measuring internet speed is complicated and Ookla’s metrics are by no means perfect. However, these figures reflect the fact that 25 Mbps/ 3 Mbps no longer

³⁴ Angela Siefer, “Access From AT&T” Not Available to 1.5 Mbps Households,” National Digital Inclusion Alliance (Sep. 5, 2016), <https://www.digitalinclusion.org/blog/2016/09/05/access-from-att-problem/>.

³⁵ Section 706 NOI ¶ 11.

³⁶ OTI 2018 Section 706 Comments at 31.

³⁷ Rani Molla, “U.S. internet speeds rose nearly 40 percent this year,” Recode (Dec. 12, 2018), <https://www.vox.com/2018/12/12/18134899/internet-broadband-faster-ookla>.

³⁸ “Average U.S. Internet Speeds More Than Double Global Average,” NCTA Blog Post (July 27, 2018), <https://www.ncta.com/whats-new/average-us-internet-speeds-more-double-global-average>.

represents the average speed being used by fixed broadband internet users. The Commission should increase the benchmark for what it considers advanced telecommunications capability to reflect the current realities of the marketplace and consumer demand. Otherwise, the Commission cannot make an accurate assessment of whether advanced telecommunications capability has been deployed to all Americans in a reasonable and timely manner under its statutory obligations.

VI. Conclusion

This proceeding is important for the Commission, lawmakers, and the American people. The Commission must ensure that its review of broadband availability is accurate and reliable. Accordingly, the Commission should acknowledge that mobile broadband is not a substitute for fixed broadband; it should not rely solely on its Form 477 data as part of its review; it should take affordability into account when assessing broadband availability; and it should raise the threshold for high-speed broadband above 25 Mbps/ 3 Mbps. We look forward to continuing to work with the Commission to find meaningful ways to close the digital divide and bring broadband connectivity to all Americans.

Respectfully submitted,

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