

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

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| 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             | ) |                      |
|  | ) |                      |

**Reply Comments of  
Communications Workers of America**

Hooman Hedayati  
Brian Thorn  
Debbie Goldman  
501 Third Street, NW  
Washington, DC 20001  
(202) 434-1198 (phone)  
[hhedayati@cwa-union.org](mailto:hhedayati@cwa-union.org)

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The Communications Workers of America (CWA) submits these Reply Comments in response to the Federal Communications Commission’s (FCC or Commission) *Fifteenth Broadband Deployment Report Notice of Inquiry* (NOI).<sup>1</sup>

## **I. Introduction**

The Communications Workers of America represents working men and women in telecommunications, customer service, media, airlines, health care, public service and education, and manufacturing. Since launching our Speed Matters program a decade ago, CWA has supported Commission policies that accelerate deployment of affordable, high-speed broadband to all Americans.<sup>2</sup> Chairman Pai noted in his very first speech as Chairman: “[T]here is a digital divide in this country – between those who can use cutting-edge communications services and those who do not. I believe one of our core priorities going forward should be to close that divide... We must work to bring the benefits of the digital age to all Americans.”<sup>3</sup> CWA agrees, and believes that ubiquitous fiber deployment is necessary to close the digital divide, create a competitive broadband marketplace, and prepare for next-generation wireless networks. An accurate assessment of the deployment and adoption of advanced telecommunications capability to all Americans is essential to develop policies to close the digital divide and promote digital equity for all Americans.

There is broad consensus that high-speed broadband is the essential infrastructure of the 21<sup>st</sup> century. It provides the platform for economic development, jobs, education, health care, public safety, energy efficiency, civic participation, entertainment, and communications among

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<sup>1</sup> Federal Communications Commission, *Fifteenth Broadband Deployment Report Notice of Inquiry*, GN Docket No. 19-285 (rel. Oct. 23, 2019) (“NOI”).

<sup>2</sup> SpeedMatters.org is a project of CWA and other labor unions and public interest organizations that support the expansion of broadband access in the United States. The Speed Matters project recognizes that high-speed Internet is essential for economic growth and global competitiveness, and is an essential component to make improvements in health care, education, public safety, energy, civic participation, and independent living for people with disabilities and senior citizens.

<sup>3</sup> Remarks of Chairman Ajit Pai to FCC Staff, Jan. 24, 2017.

friends and family. Given the importance of high-speed broadband, the Commission’s annual evaluation of whether advanced telecommunications services are being deployed in a reasonable and timely fashion is of critical importance to the economic and social well-being of our nation. In this NOI, the Commission seeks comment on questions vital to ensure an accurate assessment of broadband deployment and to craft policies to close the digital divide. The Commission proposes maintaining its 25/3 Mbps benchmark for fixed services,<sup>4</sup> asks whether mobile broadband should be treated as a functional substitute for fixed wireline broadband,<sup>5</sup> and seeks comments on the use of Form 477 data.<sup>6</sup> CWA offers its responses to these questions below as well as general recommendations for analyzing the state of advanced telecommunications capability deployment.

## **II. Broadband is Not Being Deployed in a Reasonable and Timely Fashion**

As Public Knowledge, Common Cause, and Next Century Cities state in their initial Comments,<sup>7</sup> the Commission was wrong to conclude that broadband was being deployed in a reasonable and timely fashion in its 2018 and 2019 Broadband Deployment Reports.<sup>8</sup> According to the NOI, over 21 million households still lack access to fixed terrestrial 25 Mbps/3 Mbps broadband services.<sup>9</sup> This includes 26 percent of households living in rural areas and 32 percent of those on Tribal Lands.<sup>10</sup>

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<sup>4</sup> NOI at 4.

<sup>5</sup> *Id.*

<sup>6</sup> *Id.* at 7-8.

<sup>7</sup> Comments of Public Knowledge, Common Cause, and Next Century Cities, *Fifteenth Broadband Deployment Report Notice of Inquiry*, GN Docket No. 19-285 (Nov. 22, 2019) (“Comments of Public Knowledge, Common Cause, and Next Century Cities”)

<sup>8</sup> Federal Communications Commission, *2018 Broadband Deployment Report*, GN Docket No. 17-199 (rel. Feb. 2, 2018) (“2018 Broadband Deployment Report”); Federal Communications Commission, *2019 Broadband Deployment Report*, 40, GN Docket No. 18-238 (rel. May 29, 2019) (“2019 Broadband Deployment Report”).

<sup>9</sup> 2019 Broadband Deployment Report at 16, Fig. 1.

<sup>10</sup> 2019 Broadband Deployment Report at 16, Fig. 1.

Broadband use and adoption remains below optimal levels because of competition and service affordability problems – which are related to broadband deployment. According to the most recent Census Bureau data, only two-thirds (68.8 percent) of people in the US have a wired broadband subscription (cable, fiber optic, or DSL).<sup>11</sup> For households earning \$20,000 a year or less, 41 percent do not have a broadband Internet subscription and for households earning between \$20,000 and \$75,000, 18 percent do not have a broadband Internet subscription.<sup>12</sup> The Census Bureau’s county specific Internet subscription data shows that “households in both rural and lower-income counties trail the national average by 13 points.”<sup>13</sup> There are still far too many school children who must sit on the library steps or go to McDonald’s for wifi access to do their homework.

Internet use rates are also low for Hispanic and African-American communities. According to the National Telecommunications and Information Administration (NTIA), the 2017 Internet use rate was 72 percent for Hispanic-Americans and for 73 percent for African-Americans, trailing the non-Hispanic white population Internet use rate of 80 percent.<sup>14</sup>

Advanced wired and wireless telecommunication services require ubiquitous fiber deployment. As of December 31, 2017, only 13 million of the 99 million wired Internet

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<sup>11</sup> 2017 American Community Survey, *1-Year Estimates, Types of Computers and Internet Subscriptions*, S2801, available at [https://factfinder.census.gov/bkmk/table/1.0/en/ACS/17\\_1YR/S2801](https://factfinder.census.gov/bkmk/table/1.0/en/ACS/17_1YR/S2801).

<sup>12</sup> *Id.*

<sup>13</sup> United States Census Bureau, “For the First Time, Census Bureau Data Show Impact of Geography, Income on Broadband Internet Access” (Dec. 6, 2018), available at: <https://www.census.gov/library/stories/2018/12/rural-and-lower-income-counties-lag-nation-internet-subscription.html>.

<sup>14</sup> National Telecommunications and Information Administration, “Digital Divide is Shrinking for America’s Hispanic Population, NTIA Data Show,” (October 2019), available at: <https://www.ntia.doc.gov/blog/2019/digital-divide-shrinking-america-s-hispanic-population-ntia-data-show>.

connections to residential customer locations were fiber.<sup>15</sup> For a significant number of Americans, broadband is not being deployed in a reasonable and timely fashion.

The need for ubiquitous affordable high-speed broadband for residential, business, and community institutions is paramount. Robust fiber backhaul provides essential infrastructure to power next-generation networks – wired and wireless – which in turn support economically feasible ways to provide residential high-speed Internet, 5G, and the Internet of Things (IoT), including “Smart City” technologies. Fiber deployment is not only important to communities, it is essential to the United States’ competitiveness in the global, digital age.

### **III. The Commission Should Raise Its Broadband Benchmark to 100/10 Mbps**

The United States is falling behind other nations in terms of broadband speed. Several initial commenters including Public Knowledge, Common Cause, Next Century Cities, Benton Institute, New America’s Open Technology Institute, and Access Now recommend increasing the benchmark.<sup>16</sup>

In the October 2019 Speedtest Global Index report, the United States ranked 10<sup>th</sup> in the world for average connection speed.<sup>17</sup> Our current broadband benchmark falls short of the Commission’s goals in the 2010 Broadband Plan.<sup>18</sup> This is due in part to an outdated broadband speed benchmark. “The United States must lead the world in the number of homes and people

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<sup>15</sup> FCC Industry Analysis Division, *Internet Access Services: Status as of December 31, 2017*, at 33, fig. 34 (Rel. Aug. 2019), available at: <https://docs.fcc.gov/public/attachments/DOC-359342A1.pdf>.

<sup>16</sup> See Comments of Benton Institute for Broadband & Society, *In the Matter of Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, GN Docket No. 19-285, at 5 (Nov. 22, 2019) (“Comments of Benton Institute”); Comments of New America’s Open Technology Institute and Access Now, *In the Matter of Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, GN Docket No. 19-285, at 13 (Nov. 21, 2019) (“Comments of OTI and Access Now”); Comments of Public Knowledge, Common Cause, and Next Century Cities at 2-8.

<sup>17</sup> See Speedtest, “Speedtest Global Index,” (October 2019), available at: <https://www.speedtest.net/global-index>.

<sup>18</sup> Federal Communications Commission, *Connecting America: The National Broadband Plan* (rel. Mar. 2010).

with access to affordable, world-class broadband connections,” the Broadband Plan reads. “As such, 100 million US homes should have affordable access to actual download speeds of at least 100 Mbps and actual upload speeds of at least 50 Mbps by 2020. This will create the world’s most attractive market for broadband applications, devices and infrastructure.”<sup>19</sup> However, it does not appear that the United States will meet the 2010 Broadband Plan goals. As of December 31, 2017, there were only 39 million residential fixed connections providing 100 or more Mbps.<sup>20</sup> Only 4.4 percent of those connections were fiber to the premise.<sup>21</sup>

Furthermore, Internet usage has exponentially increased since the Commission’s adoption of the current 25/3 Mbps benchmark five years ago. This Commission should update its benchmark to keep pace with changes in data usage. The Cisco Visual Networking Index estimates that there were approximately eight networked devices per person in the United States at the end of 2017 and Cisco predicts this will increase to 13 networked devices per person by 2022.<sup>22</sup> Cisco also predicts that the monthly per capita data traffic in the United States will triple to 305 GB a month in 2022 from 120 GB in 2017.<sup>23</sup> A 25/3 Mbps broadband subscription will no longer be sufficient for a family’s day to day activities. For example, Netflix recommends 25 Mbps for 4K streaming.<sup>24</sup> The current 25/3 Mbps benchmark therefore will not provide sufficient capacity for additional individuals in a household to stream 4K video or use other data-intensive

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<sup>19</sup> *Id.* at 9.

<sup>20</sup> FCC Industry Analysis Division, *Internet Access Services: Status as of December 31, 2017*, at 26, fig. 29 (Rel. Aug. 2019), available at: <https://docs.fcc.gov/public/attachments/DOC-359342A1.pdf>.

<sup>21</sup> *Id.*

<sup>22</sup> Cisco, “VNI Complete Forecast Highlights,” 2017, available at: [https://www.cisco.com/c/dam/m/en\\_us/solutions/service-provider/vni-forecast-highlights/pdf/United\\_States\\_2017\\_Year\\_in\\_Review.pdf](https://www.cisco.com/c/dam/m/en_us/solutions/service-provider/vni-forecast-highlights/pdf/United_States_2017_Year_in_Review.pdf).

<sup>23</sup> *Id.*

<sup>24</sup> See Netflix, “Can I stream Netflix in Ultra HD?” (last visited Dec. 4, 2019), available at: <https://help.netflix.com/en/node/13444>. See also Comments of Next Century Cities, *In the Matter of Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, GN Docket No. 19-285, at 5 (“Comments of Next Century Cities”).

applications simultaneously. The Commission’s current upload speed of 3 Mbps will fall short as more households engage in upstream, data-intensive activities, such as HD video conferencing, telework, online education, and the use of smart devices such as doorbells, security cameras, and personal assistants.<sup>25</sup>

The Commission should raise its broadband benchmark to 100/10 Mbps to encourage high-speed broadband deployment that will ensure the United States leads the world in Internet speeds and deployment instead of simply struggling to keep up with global speeds.

#### **IV. Mobile Service is Not a Functional Substitute for Fixed Broadband Today**

The Commission was correct to conclude in its 2019 Broadband Report that “despite the increasing ubiquity and capabilities of mobile services, there is insufficient evidence in the record to conclude that mobile and fixed broadband services are full substitutes in all cases.”<sup>26</sup>

As Public Knowledge, Common Cause, Next Century Cities, Benton Institute for Broadband & Society, Open Technology Institute, and Access Now state in their initial comments, technology has not advanced significantly enough since May 2019 to warrant a departure from this conclusion in the Commission’s 2020 report.<sup>27</sup>

The conclusions in the expert report that CWA submitted with its 2017 Reply Comments remain true today.<sup>28</sup> The report, prepared by CTC Technology & Energy, an independent communications and IT engineering consulting firm with more than 30 years of experience, analyzed the current and emerging generation of mobile wireless technologies and compared those technologies to wireline technologies such as fiber-to-the-premises (FTTP), cable

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<sup>25</sup> *Id* at 4-5.

<sup>26</sup> *See* 2019 Broadband Deployment Report at 5.

<sup>27</sup> *See* Comments of Benton Institute at 9-10; Comments of New America’s Open Technology Institute and Access Now at 4-9; and Comments of Public Knowledge, Common Cause, and Next Century Cities at 16-21.

<sup>28</sup> Reply Comments of Communications Workers of America, GN Docket No. 17-199 (Oct. 2017); CTC Technology & Energy, “Mobile Broadband Service Is Not an Adequate Substitute for Wireline,” (Oct. 2017). (“CTC Report”)

broadband, and copper DSL across a range of technical parameters, including reliability, resilience, scalability, capacity, and latency. The report also evaluated wireless carriers' mobile pricing and usage structures – including so-called “unlimited” data plans – as those policies play a significant role in whether consumers can substitute mobile for wireline service. The CTC report concluded that “for both technical and business reasons, wireless technologies are not now, and will not be in the near to medium future, adequate alternatives or substitutes for wireline broadband.”<sup>29</sup>

According to the CTC Report, “modern wireline broadband services are superior to wireless services in terms of capacity, reliability, and scalability. While cutting-edge wireless technologies may surpass the theoretical bandwidth capabilities of some wireline products, FTTP networks easily surpass even the best of all planned or deployed wireless technologies.”<sup>30</sup>

Mobile broadband cannot deliver performance as consistent as wireline services. The CTC report explains that “even a well-engineered mobile broadband network cannot provide entirely consistent service within a service area.”<sup>31</sup> Speeds degrade as one moves farther from the antenna, distance increases, or more obstructions block the antenna and the user. Wireless signals are degraded by natural features such as mountains, valleys, trees, and weather; buildings and other structures; and interference from other radio frequency (RF) signals in the area.

Moreover, the shift in mobile pricing models from data caps to so-called “unlimited” plans has not changed this outcome, as even though the product is not capped, users experience significant degradation of speeds via throttling after certain levels of use. Mobile providers dramatically limit customer usage and exert significant control over how applications run on

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<sup>29</sup> *Id.* at 1.

<sup>30</sup> *Id.* at 11.

<sup>31</sup> CTC Report at 14.

their networks; these policies may have good technical or business justification, but they impact the mobile service by making it far inferior and less usable for consumers than wireline broadband service.<sup>32</sup>

While 5G technology has the potential to provide high-speed Internet, it is premature to consider it a full substitute for wired broadband today. The millimeter wave frequency's high-capacity 5G potential is limited to dense urban areas, faces precarity of the signal, and requires large-scale densification of small cells in order to transmit the signal widely and without interference. Two of the major wireless providers have stated that millimeter wave is not a "coverage" spectrum<sup>33</sup> and will "never materially scale beyond small pockets of 5G hotspots in dense urban environments."<sup>34</sup> In some cities where 5G has been deployed with millimeter wave spectrum, researchers found that the 5G deployments touted by major wireless carriers are extremely limited in geographic coverage, often covering only pockets of neighborhoods and not available inside buildings.<sup>35</sup> The Verge and CNET's network tests of Verizon's 5G service in Chicago, which the company markets as a "5G City" resulted in disappointing and inconsistent result.<sup>36</sup>

The low/mid-band frequencies face capacity constraints. They are only expected to provide an increase of 15-20 percent in speed and capacity lift.<sup>37</sup> T-Mobile estimates that its

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<sup>32</sup> *Id.* at 21.

<sup>33</sup> Verizon 1Q 2019 Quarter Earnings Conference Call Webcast 1Q19 (Apr. 23, 2019), available at:

<https://www.verizon.com/about/investors/quarterly-reports/1q-2019-quarter-earnings-conference-call-webcast>.

<sup>34</sup> Neville Ray, T-Mobile Chief Technology Officer. "The 5G Status Quo is Clearly Not Good Enough" (Apr. 22, 2019), available at: <https://www.t-mobile.com/news/the-5g-status-quo-is-clearly-not-good-enough>.

<sup>35</sup> Brodtkin, J. Ars Technica. "In Verizon 5G launch city, reviewers have trouble even finding a signal" (Apr. 8, 2019), available at: <https://arstechnica.com/information-technology/2019/04/in-verizon-5g-launch-city-reviewers-have-trouble-even-finding-a-signal/>.

<sup>36</sup> Warren, G. CBS 13 Sacramento. "Research Firm Believes Verizon 5G Home in Sacramento May Not Succeed" (Mar. 22, 2019), available at: <https://www.cbs.com/2019/04/23/analyst-craig-moffett-sees-no-chance-of-5g-becoming-ubiquitous-by-2021.html>.

<sup>37</sup> See RBC Capital Markets Equity Research, "Bring on the Bandwidth: A Primer on Wireless/

launch of "America's first nationwide 5G network" on its 600MHz low-band spectrum will on average provide a 20 percent download speed boost compared to what is delivered by its current LTE network.<sup>38</sup> While 5G has potential to contribute to the development of public infrastructure and economic growth, it has technological limitations that prevent it from becoming a substitute to fixed broadband today, with many open questions about the timeline for deployment and use cases.<sup>39</sup>

“There is a zero chance that 5G is a ubiquitous technology” by 2021, according to analyst Craig Moffet of MoffettNathanson.<sup>40</sup> This is because there is not enough spectrum commercially available to be deployed to provide high-speed wireless connectivity.<sup>41</sup>

Additionally, there is skepticism over the practicality of the aggressive small cell deployment required for next-generation wireless network deployment, especially when cities are not treated as partners in negotiating the complex logistics of this massive undertaking. For example, in Los Angeles, one expert estimated that a single carrier would need to deploy a “minimum of 5,000 sites and more like 10,000 additional sites” in order for the mobile 5G network to be seamless and accessible.<sup>42</sup>

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Broadband/Video,” 7 (January 15, 2019). *See also* J. P. Morgan North America Equity Research, “The State of US Broadband: Shifting Competitive Dynamics Across Cable, Fiber, Copper, and Wireless,” at 1 (Jan. 22, 2019).

<sup>38</sup> ARSTechnica, “T-Mobile touts ‘nationwide 5G’ that fails to cover 130 million Americans” (Dec. 2, 2019), available at: <https://arstechnica.com/information-technology/2019/12/t-mobile-touts-nationwide-5g-that-fails-to-cover-130-million-americans>.

<sup>39</sup> *See* Electronic Frontier Foundation’s Ex Notice response to arguments that wireless broadband can substitute for wireline broadband, GN Docket No. 18-238 (Oct. 12, 2018). *See also*, Electronic Frontier Foundation, “The Case for Fiber to the Home, Today: Why Fiber is a Superior Medium for 21st Century Broadband” (Oct. 11, 2019), available at: <https://www.eff.org/document/case-fiber-home-today-why-fiber-superior-medium-21st-century-broadband>.

<sup>40</sup> Warren, G. CBS 13 Sacramento. “Research Firm Believes Verizon 5G Home in Sacramento May Not Succeed (March 22, 2019), available at: <https://www.cnb.com/2019/04/23/analyst-craig-moffett-sees-no-chance-of-5g-becoming-ubiquitous-by-2021.html>.

<sup>41</sup> *Id.* *See also* Fierce Wireless, “Pai chooses public auction of C-band spectrum” (Nov. 18, 2019), available at: <https://www.fiercewireless.com/wireless/pai-280-mhz-c-band-spectrum-to-be-auctioned-by-fcc> (While there are plans to auction additional mid-band spectrum, they are not currently available).

<sup>42</sup> *See* Earl Lum, EJM Wireless Research, “US 5G Fixed Wireless Access Case Study, Verizon Wireless & City of

The United States also currently lacks the fiber infrastructure needed to support wireless network densification. Small cells need connections to fiber backhaul to realize wireless network capacity and speed potential. Without additional deep fiber, carriers will be unable to make 5G's promises available to most of the US population. And while wireless carriers may have existing fiber backbone in many locations and fiber to the premises in a smaller set of geographies, existing FTTH and DOCSIS broadband networks follow a different architecture and require less fiber count than what is needed to support widespread small cell densification.<sup>43</sup> A 2017 Deloitte analysis estimated that the United States requires between \$130-\$150 billion in investments between approximately 2018-2024 to adequately support broadband competition, rural coverage, and wireless densification.<sup>44</sup> Furthermore, the FCC's recent orders affecting small cell deployment<sup>45</sup> have hampered 5G efforts by making it more difficult for cities and industry to effectively collaborate.<sup>46</sup>

The extremely high cost of U.S. mobile hotspots also makes mobile an unrealistic competitor to fixed broadband. For example, Verizon charges subscribers \$710 a month for its

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Los Angeles" at 5 (Mar. 2019).

<sup>43</sup> See Deloitte, "Communications infrastructure upgrade, the need for deep fiber" (July 2017), available at: <https://www2.deloitte.com/content/dam/Deloitte/us/Documents/technology-media-telecommunications/us-tmt-5GReady-the-need-for-deep-fiber-pov.pdf> ("Conversely, fiber to the home is architected to maximize the amount of fiber shared between subscribers. Without access to additional high-speed broadband and fiber tailored for small cells, carriers lack the economic incentive to deploy small cells.").

<sup>44</sup> *Id* at 13.

<sup>45</sup> *Accelerating Wireless Broadband Deployment by Removing Barriers to Infrastructure Investment*, Declaratory Ruling and Third Report and Order, WT Docket No. 17-79, WC Docket No. 17-84, 33 FCC Rcd. 9088 (2018); *Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment*, Third Report and Order and Declaratory Ruling, WC Docket No. 17-84, WT Docket No. 17-79, 33 FCC Rcd. 7705 (2018).

<sup>46</sup> See, for example, Letter from the National Association of Telecommunications Officers and Advisors, the National League of Cities, the National Association of Counties, the United States Conference of Mayors and the National Association of Regional Councils regarding *Accelerating Wireless Broadband Deployment by Removing Barriers to Infrastructure Investment*, WT Docket No. 17-79 and *Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment*, WC Docket No. 17-84, September 19, 2018, available at <https://www.natoa.org/documents/FCCInfrastructureFiling.pdf>.

100 gigabyte mobile hotspot plan<sup>47</sup> and AT&T charges \$500 for a hot spot and \$70 for only 15 gigabytes of usage (plus access fees just to connect to the network).<sup>48</sup> U.S. consumers pay among the highest prices in the world for the 4G LTE network data.<sup>49</sup>

## V. Form 477 Data is Flawed and Overestimates Broadband Deployment

Finally, CWA agrees with the initial comments of Public Knowledge, Common Cause, Next Century Cities, Benton Institute for Broadband & Society, Open Technology Institute, and Access Now that the current Form 477 data contains a number of problems.<sup>50</sup> While CWA commends the Commission for opening a proceeding to address the data's shortcomings, more must be done.<sup>51</sup> The Commission should refine its 477 methodology to provide more granular and accurate data to show where broadband is actually deployed, with what technology, and at what speeds. Form 477 asks fixed broadband carriers to report the maximum *advertised* speed available to at least *one household* in each census block. This distorts the results in three ways. First, it allows the carrier to report a service that may not be available to the majority of households in the census block. For example, a June 2019 analysis by the Center for Rural Pennsylvania concluded that while the Commission's maps showed 100 percent statewide coverage at 25 Mbps, in reality, no county in Pennsylvania had such coverage. There were zero counties in Pennsylvania where at least 50 percent of the population received 25/3 Mbps

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<sup>47</sup> See <https://www.verizonwireless.com/plans/>; Similar plans costs between €10 and €20 (between \$11 and \$23) per month in several European countries. See also Rewheel Research, "The State of 4G Pricing – 2H2018" (October 2018), available at:

[http://research.rewheel.fi/downloads/The\\_state\\_of\\_4G\\_pricing\\_DFMonitor\\_10th\\_release\\_2H2018\\_PUBLIC.pdf](http://research.rewheel.fi/downloads/The_state_of_4G_pricing_DFMonitor_10th_release_2H2018_PUBLIC.pdf).

<sup>48</sup> See [https://about.att.com/story/2018/att\\_brings\\_5g\\_service\\_to\\_us.html](https://about.att.com/story/2018/att_brings_5g_service_to_us.html)

<sup>49</sup> Rewheel, "The State of 4G Pricing – 2H2018" (October 2018),

[http://research.rewheel.fi/downloads/The\\_state\\_of\\_4G\\_pricing\\_DFMonitor\\_10th\\_release\\_2H2018\\_PUBLIC.pdf](http://research.rewheel.fi/downloads/The_state_of_4G_pricing_DFMonitor_10th_release_2H2018_PUBLIC.pdf).

(The study found that US mobile data pricing was four times more expensive than prices in many four-competitor European Union countries, and sixteen times more expensive than large, competitive four-competitor European markets. Rewheel Research.)

<sup>50</sup> See Comments of Benton Institute at 3; Comments of New America's Open Technology Institute and Access Now at 9-11; and Comments of Public Knowledge, Common Cause, and Next Century Cities at 9-16.

<sup>51</sup> Establishing the Digital Opportunity Data Collection, 34 FCCRcd 7505 (released Aug. 6, 2019).

service.<sup>52</sup> The Commission has acknowledged that this is a problem<sup>53</sup> and NTIA recently announced a partnership with eight states to collect more granular data.<sup>54</sup> The carriers' mapping problems are not limited to the 477 Form data. On December 4, 2019, Chairman Pai announced the plans to scrap its Mobility Fund Phase II proceeding after FCC staff determined that carriers including T-Mobile, Verizon and U.S. Cellular submitted overstated coverage maps.<sup>55</sup>

Second, the advertised speed often differs significantly from the actual speed of the broadband service. CWA-represented technicians report instances in which they are dispatched to install a broadband order at a specified speed profile that was advertised to and purchased by a customer, only to discover that the network cannot deliver that speed.

Third, the self-reported data used by broadband providers in Form 477 are not subject to independent audits and vulnerable to error. For example, the Commission's 2019 Broadband Deployment Report included over-reported coverage data by a carrier that decreased the number of Americans without access to broadband at the end of 2017 from the actual 21 million to 19 million.<sup>56</sup>

The Commission's 2019 Order to reevaluate its broadband data collection processes is a positive step.<sup>57</sup> However, until we have accurate broadband coverage data, the Commission's

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<sup>52</sup> See Sascha D. Meinrath, Hannah Bonestroo, Georgia Bullen, Abigail Jansen, Steven Mansour, Christopher Mitchell, Chris Ritzo, and Nick Thieme, "Broadband Availability and Access in Rural Pennsylvania," The Center for Rural Pennsylvania (June 2019), available at: [https://www.rural.palegislature.us/broadband/Broadband\\_Availability\\_and\\_Access\\_in\\_Rural\\_Pennsylvania\\_2019\\_Report.pdf](https://www.rural.palegislature.us/broadband/Broadband_Availability_and_Access_in_Rural_Pennsylvania_2019_Report.pdf). See also Comments of Benton Institute at 5.

<sup>53</sup> NOI at 7.

<sup>54</sup> See National Telecommunications and Information Administration, "NTIA Partners with 8 States on Improvements to Broadband Availability Map" (Feb. 12, 2019), available at: <https://www.ntia.doc.gov/press-release/2019/ntia-partners-8-states-improvements-broadband-availability-map>. See also Comments of Benton Institute at 3 (Nov. 22, 2019).

<sup>55</sup> FierceWireless, "FCC to ditch flawed Mobility Fund II over unreliable 4G LTE coverage maps" (Dec. 5, 2019).

<sup>56</sup> 2019 Broadband Deployment Report, 34 FCCRcd 3857, 4131 (2019) (Commissioner Starks, dissenting), at 327. Comments of Benton Institute at 3.

<sup>57</sup> Establishing the Digital Opportunity Data Collection, 34 FCCRcd 7505 (rel. Aug. 6, 2019).

Broadband Deployment Reports must be conditioned with the understanding that the underlining data is flawed and the Commission's findings may be wrong.

## **VI. Conclusion**

CWA has a longstanding commitment to the deployment of affordable, high-speed Internet for all because robust broadband deployment creates vital public benefits, including economic development, jobs, education, health care, public safety, civic participation, and others. As part of that commitment, CWA submits the above responses to the Commission's NOI. The Commission should find that advanced telecommunications services are not being deployed in a reasonable and timely fashion, raise the broadband benchmark to 100/10 Mbps, recognize – as it has in the past – that mobile services are not a functional substitute for fixed broadband today or in the near future, and condition the 2020 Broadband Deployment Report with the understanding that the underlying Form 477 data is flawed. Ubiquitous fiber deployment is necessary to close the digital divide, create a competitive broadband marketplace, and prepare for next-generation wireless networks. An accurate assessment of the deployment and adoption of advanced telecommunications capability is essential to craft policies to close the digital divide and promote digital equity for all Americans.

Respectfully Submitted,

*/s/ Hooman Hedayati*  
Communications Workers of America  
501 Third Street, NW  
Washington, DC 20001

December 9, 2019