

DEPARTMENT OF COMMERCE

National Telecommunications and Information Administration

Improving the Quality and Accuracy of Broadband Availability Data

Docket No. 180427421-8421-01

COMMENTS OF CTIA

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I. CTIA Supports NTIA’s Evaluation of Broadband Availability Data to Facilitate Informed Policy Decisions that Further Mobile Wireless Broadband Deployment in Unserved Rural Areas.

CTIA¹ submits these comments in response to the National Telecommunications and Information Administration’s (NTIA) Request for Comments (RFC) on developing accurate data on broadband availability.² NTIA seeks comment “on ways to improve the nation’s ability to analyze broadband availability, with the intention of identifying gaps in broadband availability that can be used to improve policymaking and inform public investments.”³ Rather than create a new map by collecting and analyzing *new* data sources, NTIA appropriately recognizes that Congress directed NTIA to update the nation’s broadband availability maps using *existing* data sources.⁴

CTIA supports NTIA’s goals and recognizes that the right data are key to making informed choices about how to further promote broadband deployments, both as a matter of federal policy and from the perspective of private sector decision-making. That is why CTIA continues to work with its member companies and the Federal Communications Commission’s (FCC or

¹ CTIA® (ww.ctia.org) represents the U.S. wireless communications industry and the companies throughout the mobile ecosystem that enable Americans to lead a 21st-century connected life. The association’s members include wireless carriers, device manufacturers, suppliers as well as apps and content companies. CTIA vigorously advocates at all levels of government for policies that foster continued wireless innovation and investment. The association also coordinates the industry’s voluntary best practices, hosts educational events that promote the wireless industry, and co-produces the industry’s leading wireless tradeshow. CTIA was founded in 1984 and is based in Washington, DC.

² See *Improving the Quality and Accuracy of Broadband Availability Data*, 83 Fed. Reg. 24,747, 24,748 (May 30, 2018). NTIA is requesting such comments as part of the activities directed by Congress in the Consolidated Appropriations Act of 2018 that allocated funds to NTIA “to update the national broadband availability map in coordination with the [FCC] and using partnerships previously developed with the States.” Pub. L. No. 115-141, 132 Stat. 348, 403.

³ 83 Fed. Reg. at 24,748 (seeking recommendations and feedback on “sources of broadband availability data, mechanisms to validate broadband availability data using multiple data sources or new techniques, and approaches to leverage such data and techniques to inform broadband planning at the state and national levels by promoting the most efficient use of state or federal funding to areas that are insufficiently served by broadband.”)

⁴ *Id.* at 24,748 (observing that “this is not a new program to fund the primary collection of broadband availability or subscription data, nor to fund specific data collection activities by states or third parties,” but rather a program “to acquire and display available third-party data sets to the extent it is able to negotiate inclusion to augment data from the FCC, other federal government agencies, state government, and the private sector”).

Commission) to ensure policymakers have the right tools to determine the availability of mobile wireless services and how to appropriately allocate scarce public resources, such as the federal Universal Service Fund (USF), to reach unserved rural areas.

As explained below, there are three primary sources of mobile coverage data on which NTIA can and should rely in developing a new national broadband map which includes mobile wireless services: (1) the FCC Form 477; (2) the Commission's Mobility Fund Phase II one-time data collection and funding eligibility map; and (3) third-party commercial data sets. While each of these data sources has its roles, together these datasets paint a robust picture of where mobile broadband is presently available (and where it is not) and at what speeds.

II. The FCC's Form 477 Data Remain a Valuable Source of Information about Mobile Broadband Coverage.

Form 477 is the FCC's primary tool for gathering information about mobile broadband coverage. Mobile wireless providers submit propagation maps depicting the geographic areas where consumers can expect to receive mobile wireless service at minimum advertised upload and download speeds for each mobile wireless transmission technology that the provider deploys in each frequency band.⁵ In addition, providers submit a list of all census tracts in which its mobile wireless service "is advertised and available to actual and potential subscribers."⁶

As NTIA observes in its Request for Comments, "the Form 477 data program is impressively large and useful, and benefits broadband policy research and decision-making, as

⁵ FCC, *FCC Form 477 Instructions* at 24 (Dec. 5, 2016), <https://transition.fcc.gov/form477/477inst.pdf> ("FCC Form 477 Instructions"). NTIA notes that a proceeding is currently underway at the FCC to evaluate whether to make changes to the Form 477 for fixed and mobile providers in a manner that minimizes burdens on providers. See *In re Modernizing the FCC Form 477 Data Program*, Further Notice of Proposed Rulemaking, 32 FCC Rcd 6329, 6329-30 ¶ 1 (2017) ("*Form 477 Modernization FNPRM*").

⁶ *FCC Form 477 Instructions* at 25.

well as the FCC’s internal needs.”⁷ The Commission has used the Form 477 data, among other things, to determine the percentages of U.S. consumers with and without access to 4G LTE coverage, including in rural areas, to calculate the percentage of consumers served by multiple providers,⁸ and to compare coverage among mobile carriers,⁹ and between rural and non-rural areas.¹⁰ Such insights have, in turn, allowed the Commission to make more informed decisions about how best to advance mobile broadband deployment,¹¹ and to better assess the state of competition in the market for mobile services.¹²

Given the nature of mobile wireless broadband services when compared to fixed broadband services,¹³ the FCC has not established a static definition of mobile wireless broadband and for good reason. Consumer demands for mobile wireless service are constantly evolving along with advances in mobile technology. The Form 477 accounts for this dynamic and fast-changing environment by giving providers the flexibility to report coverage using the same methods that they use to compete and advertise their coverage in the competitive mobile wireless marketplace.

⁷ 83 Fed. Reg. at 24,748.

⁸ *In re Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993*, Twentieth Report, 32 FCC Rcd 8968, 9022-23 ¶ 77 (2017) (“*Twentieth Mobile Competition Report*”); *In re Inquiry Concerning the Deployment of Advance Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act*, 2016 Broadband Progress Report, 31 FCC Rcd 699, 734-35 ¶¶ 82-83 (2016) (“*2016 Broadband Progress Report*”).

⁹ *Twentieth Mobile Competition Report*, 32 FCC Rcd at 9023-24 ¶ 78.

¹⁰ *Id.* at 9025-30 ¶¶ 81-84.

¹¹ *2016 Broadband Progress Report*, 31 FCC Rcd at 709 ¶ 22 (noting that improvements to the Form 477 data have helped the Commission “better analyze mobile broadband deployment than in years past”).

¹² *Twentieth Mobile Competition Report*, 32 FCC Rcd at 9042-55, Appendix III.

¹³ *In re Inquiry Concerning the Deployment of Advance Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act*, 2015 Broadband Progress Report and Notice of Inquiry on Immediate Action to Accelerate Deployment, 30 FCC Rcd 1375, 1403 ¶ 45 (2015) (finding that a 25 Mbps/3 Mbps benchmark reflects “advanced” telecommunications capability within the meaning of Section 706 of the Telecommunications Act of 1996).

The FCC has recognized that “streamlining the collection in this manner [gives] the Commission greater flexibility to group and analyze broadband speed data in useful ways”¹⁴ and “enable[s] the Commission to analyze the extent of deployment in different spectrum bands, and technologies.”¹⁵ Thus, NTIA should consider the FCC’s Form 477 a valuable source of mobile wireless coverage data upon which to base a new national broadband map, and consider additional data sources that may help NTIA further refine the map.¹⁶

III. The FCC’s Mobility Fund Phase II Data and Funding Eligibility Map May Further NTIA’s Understanding of Mobile Broadband Availability.

In Mobility Fund Phase II (MF-II), the Commission determined to allocate scarce federal USF support “to promote the deployment of 4G LTE in all areas where it would not be offered by the private sector in the absence of universal service support.”¹⁷ To accomplish this goal, the Commission first had to decide what level of coverage counts as 4G LTE for the purpose of identifying areas eligible for MF-II support, which it did by examining “the mobile speeds generally reported by nationwide carriers on their Form 477 submissions.”¹⁸ Based on this review,

¹⁴ *In re Modernizing the FCC Form 477 Data Program*, Report and Order, 28 FCC Rcd 9887, 9888 ¶¶ 3-4 (2013).

¹⁵ *Id.* at 9910 ¶ 45.

¹⁶ Some commenters have suggested that this flexibility to decide which propagation parameters or assumptions to use when mapping mobile broadband coverage limits the Form 477’s value as a tool for targeting areas for limited universal service support. *In re Connect America Fund*, Report and Order and Further Notice of Proposed Rulemaking, 32 FCC Rcd 2152, 2176 ¶ 58 & n.146 (2017) (“*Connect America Fund Order*”) (observing that “[s]ome commentators have questioned the accuracy of the Form 477 coverage data”). In response to these concerns, the Commission recently sought comments on whether to adopt standardized propagation mapping parameters “with the goal of allowing more meaningful comparisons among service providers’ mobile broadband deployment.” *Form 477 Modernization FNPRM*, 32 FCC Rcd at 6333 ¶ 12. While CTIA is generally supportive of the Commission’s efforts to improve the Form 477, CTIA has urged the FCC to defer any decision about whether to standardize the propagation map parameters until after it has had a chance to study and analyze the results of the Mobility Fund Phase II one-time data collection (discussed below). Comments of CTIA, WC Docket No. 11-10 at 5-7 (Oct. 10, 2017).

¹⁷ *Connect America Fund Order*, 32 FCC Rcd at 2173 ¶ 51.

¹⁸ *Id.*

the FCC decided to use 4G LTE at minimum download speeds of 5 Mbps as the benchmark for identifying areas eligible for MF-II support.¹⁹

Having adopted this definition of 4G LTE service, the FCC, based on a framework proposed by CTIA, established a new, one-time collection of standardized, up-to-date 4G LTE coverage data and subsequent challenge process designed specifically to identify areas lacking 4G LTE coverage at minimum download speeds of 5 Mbps and thus eligible to receive high-cost support. In submitting the data, carriers were required to submit mobile LTE coverage maps based on consistent propagation factors and to disclose the clutter data carriers used in preparing these maps.²⁰

Mobile providers filed their one-time data in January 2018. Based on these data submissions, the FCC created a preliminary map showing those areas lacking reliable 4G LTE coverage and therefore presumptively eligible for MF-II support. A robust challenge process is currently underway to ensure that the FCC targets MF-II support to primarily rural areas that lack unsubsidized 4G LTE service.²¹ Upon completion of the challenge process, the resulting map may be another useful resource for NTIA and other policymakers to use when evaluating mobile wireless broadband coverage.

¹⁹ *Id.*

²⁰ *In re Connect America Fund*, Order on Reconsideration and Second Report and Order, 32 FCC Rcd 6282, 6296 ¶ 28 (2017).

²¹ *See Id.* at 6303-14 ¶¶ 42-64. The challenge process currently closes on August 27, 2018, but Chairman Pai has announced that the agency will extend the challenge process window by 90 days. *See* Letter from Ajit V. Pai, Chairman, FCC, to Senator Roger Wicker (May 20, 2018), <https://docs.fcc.gov/public/attachments/DOC-351493A1.pdf>.

IV. A Number of Third-Party Data Sets Exist That NTIA Might Use to Supplement and Validate the Form 477 and Mobility Fund II Data.

In addition to the FCC data, there are a number of third-parties that collect, aggregate, and make commercially available data sets on mobile broadband availability. Mosaik, for one, provides coverage maps, verified and multi-level network coverage data, spectrum depth, and tower locations that provide a detailed picture of mobile broadband deployment in the U.S.²² In addition, companies like Mosaik, OpenSignal, Ookla, and RootMetrics offer speed test and other performance data designed to capture on-the-ground customer experiences in various parts of the country. The FCC has long relied on these third-party data sets to supplement and validate the Form 477 data and NTIA should consider doing the same.²³

These third-party data sets are routinely updated on shorter intervals than the FCC's Form 477 data. Whereas the Form 477 is an annual collection, Mosaik's mobile network coverage data sets are updated at least once per calendar quarter, and LTE network coverage files for the five (5) largest U.S. carriers are updated monthly. Accordingly, these third-party sources could provide NTIA with a timely snapshot of mobile wireless availability.

While useful, third-party data sets, like all data, are not without their limitations. For example, because many of these third-party datasets rely on crowdsourcing, they are necessarily limited in geographic scope and the data they do possess are not guaranteed to be evenly distributed. Moreover, speed test results can vary widely depending on a number of factors, including, among others, the time of day and amount of traffic on the network, the time of year and amount of foliage present, and the type of speed testing software used. Finally, just because

²² Mosaik was recently acquired by Ookla, and the joint company's combined datasets may create a more granular understanding of mobile broadband availability and performance.

²³ See, e.g., *Twentieth Mobile Competition Report*, 32 FCC Rcd at 8979, 8983, Charts II.B.1-4.

mobile wireless coverage is not available at a certain point within a geographical area (*e.g.*, a census block) does not necessarily mean that it is unavailable in other parts of that area. Thus, it is difficult to draw broad conclusions about the availability or non-availability of mobile wireless coverage based on isolated speed-testing results.

Despite these limitations, these third-party data sets provide another useful source of information about mobile wireless coverage and performance. However, similar to the FCC's Form 477 and Mobility Fund II datasets, the utility of these third-party data sets for NTIA's purposes will depend on how NTIA defines the scope of what a new map is measuring.

V. Any Definition of Mobile Wireless Broadband for Mapping Purposes Should Be Flexible to Account for Varying Consumer Needs.

While the above data sources provide NTIA with ample information to evaluate mobile wireless coverage, NTIA will also need to consider the inherent challenges in defining mobile wireless *broadband* service for purposes of mapping availability.

For example, if NTIA were to establish a static definition of mobile wireless broadband services for purposes of mapping, the resulting national broadband map would ignore how consumers' use and demand for mobile wireless services varies. While some consumers continue to use their mobile devices primarily to browse the internet and send email, increasingly others want and demand the ability to utilize data intensive augmented reality or gaming services for educational purposes, consistently connect to wireless networks for real-time mapping and traffic information, or to connect remotely with a medical professional using two-way, interactive video conferencing services.

As mobile wireless technology and consumers' broadband needs are constantly evolving in tandem, NTIA will have to carefully consider whether any potential definition of mobile

wireless *broadband* service would provide sufficient flexibility to account for such varying consumer needs.

VI. Conclusion.

CTIA welcomes the opportunity to work with NTIA to consider how to harness available data sources and address these definitional challenges to develop a national broadband availability map that support the diverse needs of policymakers and private industry alike.

Respectfully submitted,

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