

Before the  
**DEPARTMENT OF COMMERCE**  
**NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION**  
Washington, DC 20230

Request for Comments on Improving the Quality )  
and Accuracy of Broadband Availability Data )      Docket No. 180427421-8421-01

**COMMENTS OF OOKLA**

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**COMMENTS OF OOKLA®**

Ookla respectfully submits these comments in response to the National Telecommunications and Information Administration (“NTIA”) Request for Comments in the above-captioned proceeding.<sup>1</sup> By its RFC, NTIA seeks ways “to improve the quality and accuracy of the nation’s broadband availability data, particularly in rural areas.”<sup>2</sup> Specifically, NTIA requests input 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.”<sup>3</sup>

Broadband connectivity affects every aspect of our society—education, economic development, productivity, innovation, equality, and public welfare all improve with increased access to internet service. The availability of broadband networks and the quality of consumer experiences are leading indicators of the health of the nation’s broadband infrastructure.

Recognizing the essential role that broadband connectivity plays in the United States’ economic

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<sup>1</sup> See Improving the Quality and Accuracy of Broadband Availability Data, 83 Fed. Reg. 24747, 24748 (May 30, 2018) (“RFC”).

<sup>2</sup> *Id.*

<sup>3</sup> *Id.* at 24749.

growth and social advancement, NTIA, along with Congress, the Federal Communications Commission (“FCC”), and other federal agencies, is diligently evaluating how to best incentivize or directly fund broadband networks.<sup>4</sup> Timely and accurate information about service availability is crucial to these efforts. Although progress has been made to improve fixed and mobile deployment data sets used to evaluate broadband availability, there are considerable untapped opportunities that will benefit public policy decisions resulting from better information.

Ookla® supports NTIA’s objective to improve the reach of fixed and mobile broadband networks to unserved and underserved parts of the United States. As the global leader in internet testing, data and analysis, Ookla® welcomes the opportunity to offer suggestions on how to improve the quality and accuracy of broadband availability data while ensuring that state and federal government agencies have access to this important information.

**I. OOKLA IS UNIQUELY POSITIONED TO ASSIST NTIA AND OTHER AGENCIES IN IMPROVING THE QUALITY AND ACCURACY OF THE NATION’S BROADBAND AVAILABILITY DATA**

Given the complexity of the U.S. telecommunications landscape, multi-layered, high quality data sets are required to properly analyze the broadband marketplace; no single source or type of information can capture the entire landscape. Further, the pace of investment and innovation by carriers, and those dependent on broadband network access, requires data sets that are as up-to-date as possible. Along with being better stewards of taxpayer dollars invested in America’s broadband infrastructure, the nation’s economic prosperity and global competitiveness are on the line. As an expert in mobile and fixed broadband data sets, Ookla fully appreciates the difficulty collecting comprehensive network availability data. Ookla, along

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<sup>4</sup> See *BroadbandUSA: Guide to Federal Funding of Broadband Projects* (June 2017), NTIA, [goo.gl/CX3Z EQ](http://goo.gl/CX3Z EQ).

with recently acquired Mosaik, are sources of comprehensive and up-to-date network availability information that can be used to improve the factual analyses informing public policy and broadband investments at the federal and state levels.

**A. Ookla**

Ookla is the global leader in internet testing, data, and analysis. Speedtest®, the company's flagship platform,<sup>5</sup> is the most accurate way to measure internet performance and execute network diagnostics today. Every day, approximately 10 million unique tests are actively initiated globally by Speedtest, with 1.3 million of those initiated in the United States by some of Speedtest's more than 100 million active U.S. users. Since its founding in 2006, Speedtest users have performed an unparalleled total of more than 20 billion consumer-initiated tests. Furthermore, Speedtest is not limited to native applications running on desktops and mobile devices. Speedtest also offers an embedded solution that extends Ookla's testing capability to routers and other network appliances, with active integrations on several flagship brands of consumer routers and gateways.

Ookla has an unprecedented network of more than 7,200 test servers in 190 countries, with over 1,100 test servers deployed in the United States. The geographic distribution of these servers is significant because local test servers produce more accurate network performance metrics and the vast server network reinforces Ookla's commitment to accuracy.

Providing transparency about the performance of networks is what drives Ookla. Whether helping consumers assess the speed of their individual connections through the

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<sup>5</sup> Speedtest applications are currently available for the web at Speedtest.net and for download on iOS, Android, macOS, Windows, Google Chrome, and Apple TV. Consumers download Speedtest 100,000 times per day.

Speedtest application, or publishing analysis on the state of global markets and related trends, Ookla is always working to provide data that will help improve the internet for everyone.

## **B. Mosaik**

As a strategic partner to mobile operators and network-dependent solution providers, Mosaik builds world-class applications, which are backed by comprehensive, global network intelligence. Over the past three decades, Mosaik has served large and small carriers, mobile virtual network operators, and Internet of Things and telematics companies with unbiased data and comprehensive geospatial solutions, and developed competencies that span geospatial analytics, graphic design and data visualization, software engineering, cloud-based big-data management, and mobile application development.<sup>6</sup>

Policymakers look to Mosaik when they need reliable mobile network coverage information. The FCC, for example, has often used Mosaik's mobile network coverage data to assess the competitiveness of the wireless marketplace.<sup>7</sup> Twice in 2017, Bryan Darr, the founder and former CEO of Mosaik, testified about improving broadband data before the House Energy and Commerce Subcommittee on Communications and Technology and highlighted these partnerships.<sup>8</sup>

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<sup>6</sup> *Broadband: Deploying America's 21st Century Infrastructure: Hearing Before the Subcomm. on Commc'ns and Tech. of the H. Comm. on Commerce*, 115th Cong. 2-3 (2017) (statement of Bryan Darr, President and CEO, Mosaik) ("Darr Testimony").

<sup>7</sup> See, e.g., *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services*, Twentieth Report, 32 FCC Rcd. 8968, ¶ 69 n.247 (2017) ("Twentieth Report"); FCC, *20th Mobile Wireless Report Web Appendices*, <https://goo.gl/C2Gtb6> (last updated July 2017); *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions with Respect to Mobile Wireless, Including Commercial Mobile Services, Nineteenth Mobile Wireless Competition Report*, Nineteenth Report, 31 FCC Rcd. 10534, ¶ 33 (2016).

<sup>8</sup> See Darr Testimony at 2; *Defining and Mapping Broadband Coverage in America: Hearing Before the Subcomm. on Commc'ns and Tech. of the H. Comm. on Commerce*, 115th Cong. 2 (2017) (statement of Bryan Darr).

Mosaik maintains one of the largest mobile network coverage, spectrum and infrastructure databases in the world. As of July 2018, Mosaik’s mobile-coverage database in the United States included 238 networks from 91 carriers and its infrastructure database included more than 390,000 assets and sites. Mosaik has also made considerable investments to augment its core network coverage database with data collection technologies that leverage end-user devices to measure customer network performance across mobile and Wi-Fi networks.

Understanding the tremendous value generated by the synergies between the two organizations, Ookla acquired Mosaik in June 2018.<sup>9</sup> Ookla is now able to enhance its product offerings and further strengthen its position as the global leader in both fixed and mobile network analysis by leveraging Mosaik’s data and visualization capabilities. Ookla and Mosaik are highly complementary organizations that are now working together to build the next generation of wireless industry research tools. Each organization shares a commitment to providing the most reliable and accurate insights into network availability and performance to the consumers and enterprises that rely upon those networks to succeed. Ookla is uniquely positioned—and ready—to assist the NTIA, the FCC, and other policymakers understand the telecommunications marketplace and to help effectively increase access to reliable broadband in unserved and underserved areas.

## **II. EXISTING AND PROPOSED DATA COLLECTION EFFORTS DO NOT PRESENT A SUFFICIENTLY ACCURATE PICTURE OF BROADBAND AVAILABILITY**

In the Consolidated Appropriations Act, Congress directed NTIA “to update the national broadband availability map in coordination with the FCC and using partnerships previously

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<sup>9</sup> See *Mosaik is Joining Ookla*, Speedtest, <https://goo.gl/76wX5D> (last visited July 14, 2018).

developed with the States.”<sup>10</sup> The RFC notes that this effort “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. Rather, Congress directed NTIA 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.”<sup>11</sup> Ookla supports Congress’s fiscally responsible decision to both leverage existing resources and new data sets to provide the government with improved visibility into the ongoing state of broadband availability in the United States.

Unfortunately, although progress has been made to improve the fixed and mobile deployment data sets used to evaluate broadband availability, many of the government’s current and proposed data collection efforts are flawed, and do not present a sufficiently accurate picture of broadband availability. As NTIA notes in its RFC, the only source of nationwide broadband availability data at this time is the information voice and broadband service providers supply in the FCC’s Form 477, where providers are asked to submit information regarding the services they offer at the census block level.<sup>12</sup> This data collection has significant limitations. First, as NTIA recognizes, collecting information at the census block level can lead to overstatements in the level of broadband availability.<sup>13</sup> Second, there is no independent validation or verification

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<sup>10</sup> Consolidated Appropriations Act, H.R. 1625, 115th Cong. 2nd Sess. (2018).

<sup>11</sup> RFC at 24748.

<sup>12</sup> RFC at 24748; *see also* *FCC Form 477 Interface*, FCC, <https://goo.gl/G2SWLA> (last visited July 14, 2018); *FCC Form 477 Local Telephone Competition and Broadband Reporting Instructions*, FCC, <https://goo.gl/VKDA25> (last visited July 14, 2018).

<sup>13</sup> *See* RFC at 24748.

process for this data.<sup>14</sup> Third, the information is dated upon release.<sup>15</sup> Finally, moving from a semi-annual to an annual collection—as the FCC has proposed<sup>16</sup>—would render the available data, which already “suffers from issues with data accuracy,”<sup>17</sup> even less timely and useful. In light of these facts, Form 477 data should not be used as a primary source to determine broadband deployment or investment planning at the state and national levels.

Although the FCC’s one-time data collection in advance of its Mobility Fund II (“MF-II”) auction may provide the agency with information that is useful for certain purposes, it is insufficient for more general broadband availability analysis and planning at the state and national levels. Data gathered to determine eligibility for MF-II support, besides being limited to a discrete service, has similar timeliness and accuracy deficiencies.<sup>18</sup> This process places the costly burden on the industry to correct overstatements of broadband coverage without necessarily generating more reliable or consistent FCC decisions.<sup>19</sup> The FCC required providers to submit data no later than January 4, 2018,<sup>20</sup> and not only will the information quickly be out of date, but also, under current rules, individual carrier files may not be released due to their

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<sup>14</sup> *Id.*

<sup>15</sup> *See, e.g.*, Letter from Trey Hanbury, Counsel to Mosaik Solutions, to Marlene H. Dortch, FCC, WT Docket No. 10-208, at 1 (Feb. 17, 2017); Darr Testimony at 4; Comments of Mosaik Solutions, WC Docket No. 10-90, WT Docket No. 10-208, at 3-4 (Apr. 26, 2017) (“Mosaik Comments”).

<sup>16</sup> The FCC is evaluating changes to Form 477 that aim to minimize burdens on carriers, but unfortunately its proposals would reduce data collection frequency and accuracy. *See Modernizing the FCC Form 477 Data Program*, Further Notice of Proposed Rulemaking, 32 FCC Rcd. 6329, ¶¶ 56-57 (2017); *Modernizing the FCC Form 477 Data Program*, Order, 32 FCC Rcd 6985 (2017).

<sup>17</sup> RFC at 24748.

<sup>18</sup> *See Mobility Fund II 4G LTE Data Collection*, FCC, <https://goo.gl/Fpf19N> (last updated Oct. 6, 2017) (“MF-II Data Collection”); *Instructions for Filing 4G LTE Coverage Data to Determine Areas Presumptively Eligible for Mobility Fund II Support*, Public Notice, 32 FCC Rcd 7023 (2017) (“MF-II Public Notice”); *Connect America Fund; Universal Service Reform – Mobility Fund*, Order on Reconsideration and Second Report and Order, 32 FCC Rcd. 6282, ¶ 29 (2017) (“MF-II Challenge Process Order or Order”).

<sup>19</sup> *See* Mosaik Comments at 4.

<sup>20</sup> *See MF-II Data Collection*.

proprietary nature;<sup>21</sup> only resulting eligible area maps would be released to the public.<sup>22</sup>

Therefore, information from the MF-II one-time data collection is an important layer for internal analysis, but not a solution.

### **III. OTHER ALTERNATIVES, INCLUDING PARTNERING WITH OOKLA, WOULD RESULT IN MORE EFFICIENT AND EFFECTIVE BROADBAND PLANNING**

Fortunately, policymakers need not rely on Form 477 and MF-II data collection mechanisms exclusively. Other alternatives, including partnering with Ookla, would result in more effective and efficient data collection, which in turn will improve broadband policymaking and public investment. Ookla offers the following guideposts for evaluating market-driven alternatives to the government’s ongoing data collection efforts.

First, regardless of how broadband is defined for purposes of its analysis, NTIA should seek out more granular data to identify existing gaps in fixed and mobile connectivity and ensure that public investment maximizes Americans’ access to the internet. Accordingly, NTIA should avoid focusing too narrowly on “broadband availability” and consider other important indicators of current and forthcoming internet availability and its capabilities. Incorporating alternative data sets such as consumer network experiences, mobile radio frequency signal strength, small cell deployment data, and near-term high-frequency spectrum utilization rates into the analysis,

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<sup>21</sup> *MF-II Challenge Process Order or Order* at ¶ 29 & n.82; *MF-II Public Notice*, at 6 (“The provider-specific information submitted as part of the data collection will be treated as confidential.”).

<sup>22</sup> Federal Communications Commission, 83 Fed Reg. 13417, 13418 (Mar. 29, 2018) (to be codified at 47 C.F.R. 54).

for example, would provide more exact information about network deployments and performance, including the potential of 5G networks in urban and rural markets.

Second, the complex task of mapping broadband access must be accompanied by mechanisms to verify the data's accuracy. Fortunately, network testing capabilities are vastly more advanced and scalable today. Carrier-provided information collected through mechanisms such as the FCC Form 477 and the MF-II is useful as a baseline. Then, to increase the depth and accuracy of the data and provide a more comprehensive view of the market, agencies should layer third-party data atop their baseline data collection. As Mosaik has previously proposed, information on wireless infrastructure, including tower assets and fiber optic availability, as well as on-the-ground ground fixed broadband performance along with mobile network coverage and performance testing data, is an essential component of any broadband availability data set.<sup>23</sup> Novel key performance indicators or derivatives, such as certified coverage, time spent per network, and human and agricultural density data, among many others should also be taken into account.<sup>24</sup>

Third, drive tests and one-time data collection options are additive to understanding network availability, but inherently provide only a snapshot in time. Ongoing monitoring of U.S. broadband networks over time is also crucial to ensuring Americans stay connected and have access to the most advanced broadband services. As noted above, Ookla is well-positioned to support this endeavor and, stands ready to partner with the NTIA, the FCC, and other federal and state agencies to improve their broadband data collection efforts and offer some of the most accurate insight into network coverage and performance available today.

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<sup>23</sup> See Mosaik Comments at 5; Darr Testimony at 4.

<sup>24</sup> See Darr Testimony at 4.

Fourth, government agencies should explore alternate collection mechanisms to today's typical data-sourcing processes. For instance, the agencies could develop and evaluate novel testing approaches to reach the most rural populations by embracing an array of options. Understanding that states with varying population density, topography, income disparity, and other factors render a one-size-fits-all method inappropriate, the agencies could also roll out targeted pilot programs to test different approaches to data collection in different areas of the country. In addition, the agencies should work with stakeholders to gather information on particular industries. For example, the agencies could work with precision agriculture technology and equipment providers to gain valuable insights into the unique needs of the agriculture industry. Ookla welcomes every opportunity to engage with respective government agencies in the ideation, development and execution of pilot programs to help address the complex considerations outlined above.

And fifth, federal agencies can improve the scale of data collection by working with other federal agencies, state and local governments. Agencies like the Department of Agriculture, Department of the Interior, and the Postal Service can leverage their geographically dispersed workforces to drive additional consumption of consumer-initiated testing applications, and promote the development of new, innovative approaches to data collection. Broadband data collection tools should also take advantage of on-the-ground state and local support in verifying broadband availability. For example, West Virginia has established a Broadband Enhancement Council to provide for and oversee the development of plans, processes, and procedures for extending broadband access into underserved and unserved areas of West Virginia.<sup>25</sup> The

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<sup>25</sup> See *West Virginia Broadband Enhancement Council*, <https://bit.ly/2urIL0G> (last visited July 14, 2018).

homepage of the Council’s website links directly to a speed test and offers consumers resources and maps on broadband availability in West Virginia.<sup>26</sup> Likewise, California has established the California Broadband Council and Taskforce.<sup>27</sup> The Taskforce was responsible for delivering a report on actions that the state government could immediately take to increase broadband availability and adoption in California, as well as another report that contains a comprehensive assessment of the state of broadband in California.<sup>28</sup> These are just a few of the innovative approaches that NTIA and other government agencies should learn from to improve nationwide broadband data collection.

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<sup>26</sup> *Id.*

<sup>27</sup> *California Broadband Council*, <https://goo.gl/1wPqZj> (last visited July 14, 2018).

<sup>28</sup> *Id.*

#### IV. CONCLUSION

Existing and proposed data collection efforts do not paint a sufficiently accurate picture of broadband availability; additional data sets and collection mechanisms must be considered to improve the quality and depth of these data collections. Government agencies' embrace of the capabilities of private companies as well as alternative approaches such as those proposed herein, will help maximize taxpayers' return on investment and promote sound broadband policymaking. Stakeholders involved in broadband coverage data initiatives generally agree that genuine engagement with experts and small investments in high-quality data (relative to the amount of direct investment in broadband expansion) will yield the best results. Ookla welcomes every opportunity to help NTIA and other agencies improve the quality and accuracy of the nation's fixed and mobile broadband availability data.

Respectfully submitted,

*/s/ Chip Strange*

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