

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Connect America Fund)	WC Docket No. 10-90
)	
Universal Service Reform – Mobility Fund)	WT Docket No. 10-208

ORDER ON RECONSIDERATION AND SECOND REPORT AND ORDER

Adopted: August 3, 2017

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By the Commission: Chairman Pai and Commissioners Clyburn and O’Rielly issuing separate statements.

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I. INTRODUCTION

1. In this Order we take the next step to extend mobile opportunities to rural America by fulfilling our commitment to design a robust challenge process that will direct Mobility Fund Phase II (MF-II) support to primarily rural areas that lack unsubsidized 4G Long Term Evolution (LTE) service. MF-II is critically important to supporting mobile voice and broadband coverage, incentivizing the deployment of mobile wireless service through a reverse auction, and ensuring that 4G LTE service is

preserved and advanced in those areas of the country that lack unsubsidized service. The MF-II challenge process we establish will be administratively efficient, fiscally responsible, and will enable us to resolve eligible area disputes quickly and expeditiously. This challenge process will begin with a new, one-time collection of standardized, up-to-date 4G LTE coverage data from mobile wireless providers. Interested parties will then have an opportunity to contest an initial determination that an area is ineligible for MF-II support, and providers will then have an opportunity to respond to challenges.

II. BACKGROUND

2. In February 2017, the Commission adopted rules to move forward expeditiously to an MF-II auction.¹ We established a budget of \$4.53 billion over a term of ten years to provide ongoing support for the provision of service in areas that lack adequate mobile voice and broadband coverage absent subsidies.² We further decided that geographic areas lacking unsubsidized, qualified 4G LTE service³ would be deemed “eligible areas” for MF-II support,⁴ and that we would use a competitive bidding process (specifically, a reverse auction) to distribute funding to providers to serve those areas.⁵ For purposes of competitive bidding in the auction, we explained that these eligible areas would be aggregated into census block groups or census tracts.⁶ We also decided that, prior to an MF-II auction, we would compile a list of areas that were presumptively eligible for MF-II support based on information derived from the Form 477 data submissions⁷ and high-cost support disbursement data available from the Universal Service Administrative Company (USAC),⁸ and we would provide a limited timeframe for challenges to those initial determinations during the pre-auction process.⁹

3. In order to make more informed decisions on the challenge process, we deferred deciding the specific parameters of the challenge process and instead sought additional comment.¹⁰ Among other things, we sought comment in the *Mobility Fund II FNPRM* on two potential options—called “Option A” and “Option B”—for a process to challenge the eligibility of areas for MF-II support. “Option A” and “Option B” varied in terms of the initial burdens for filing a challenge and the parameters for evidence submitted during the challenge.¹¹ We also solicited comment on any additional options and parameters

¹ *Connect America Fund; Universal Service Reform – Mobility Fund II*, Report and Order and Further Notice of Proposed Rulemaking, 32 FCC Rcd 2152 (2017) (cited below as either *Mobility Fund II Report & Order* or *Mobility Fund II FNPRM*).

² See *Mobility Fund II Report & Order*, 32 FCC Rcd at 2157, para. 16.

³ For the purposes of MF-II, the Commission defined “qualified 4G LTE service” as mobile wireless service provided using 4G LTE technology with download speeds of at least 5 Mbps. See *id.* at 2173, para. 51.

⁴ See *id.* at 2168-69, para. 41.

⁵ *Id.* at 2158, para. 18.

⁶ *Id.* at 2168, para. 39. Census block groups are aggregations of census blocks, and census tracts are aggregations of census block groups. Each group or tract covers a geographic area that can be described in square miles.

⁷ Mobile deployment Form 477 data are available at <https://www.fcc.gov/mobile-deployment-form-477-data>.

⁸ *Mobility Fund II Report & Order*, 32 FCC Rcd at 2175, para. 56. USAC reports the amounts of ongoing legacy support on a CETC-specific basis on its website. See USAC, *Tools*, <http://www.usac.org/hc/tools/default.aspx> (last visited Feb. 23, 2017).

⁹ *Mobility Fund II Report & Order*, 32 FCC Rcd at 2181, para. 66.

¹⁰ *Id.*; see also *Mobility Fund II FNPRM*, 32 FCC Rcd at 2234-39, paras. 224-47.

¹¹ Generally, “Option A” consisted of three steps: (1) an initial challenge setting forth the specific area being challenged; (2) a response from a challenged carrier in the form of a detailed propagation map; and

for the MF-II challenge process and made clear that we were not proposing to adopt either “Option A” or “Option B” wholesale, intending instead to adopt the most effective approach and parameters to assemble a “best in class” structure for the challenge process.¹² Seven petitions for reconsideration of the *Mobility Fund II Report & Order* were filed, five of which directly bear upon the framework and design of the MF-II challenge process.¹³

(3) submission of actual speed measurements providing evidence for (or against) a challenge. *Mobility Fund II FNPRM*, 32 FCC Rcd at 2236-38, paras. 232-40; *see also* Letter from David A. LaFuria, Counsel to U.S. Cellular, Lukas, LaFuria, Gutierrez & Sachs, LLP, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 10-90, WT Docket No. 10-208, at Prelim. Proposal (filed Feb. 17, 2017). Upon these submissions, the Commission would adjudicate challenges and ultimately release a final set of areas eligible for MF-II support in advance of the auction. *See Mobility Fund II FNPRM*, 32 FCC Rcd at 2238, para. 240; *Mobility Fund II Report & Order*, 32 FCC Rcd at 2182, para. 67. While similar to “Option A,” “Option B” consisted of only two steps: (1) an initial challenge identifying the area to be challenged, including a map, and submission of actual download speed test data; and (2) a response from a challenged carrier including submission of coverage shapefiles and speed test data. *Mobility Fund II FNPRM*, 32 FCC Rcd at 2238, paras. 242-45; *see also* Letter from Douglas J. Minster, Vice President, Government and Regulatory Affairs, ATN et al., to Marlene H. Dortch, Secretary, FCC, WC Docket No. 10-90, WT Docket No. 10-208, Attach. at 6-9 (filed Feb. 9, 2017). The Commission would reach decisions based on the weight of the evidence and determine whether any changes to its initial determination of eligible areas were warranted. *Mobility Fund II FNPRM*, 32 FCC Rcd at 2239, para. 246.

¹² *Mobility Fund II FNPRM*, 32 FCC Rcd at 2236, para. 231. In addition, we received eight comments and eight reply comments in response to the *Mobility Fund II FNPRM*. *See* ATN International and Buffalo-Lake Erie Wireless Systems LLC dba Blue Wireless Comments, WC Docket No. 10-90, WT Docket No. 10-208 (Apr. 26, 2017) (ATN/Blue Wireless Comments); Competitive Carriers Association Comments, WC Docket No. 10-90, WT Docket No. 10-208 (Apr. 26, 2017) (CCA Comments); Comments and Petition for Reconsideration of CTIA, WC Docket No. 10-90, WT Docket No. 10-208 (Apr. 26, 2017) (CTIA Comments or CTIA Petition for Reconsideration); T-Mobile Comments, WC Docket No. 10-90, WT Docket No. 10-208 (Apr. 26, 2017) (T-Mobile Comments); Deere & Company Comments, WC Docket No. 10-90, WT Docket No. 10-208 (Apr. 26, 2017) (Deere Comments); Mosaik Solutions Comments, WC Docket No. 10-90, WT Docket No. 10-208 (Apr. 26, 2017) (Mosaik Comments); NTCA Comments, WC Docket No. 10-90, WT Docket No. 10-208 (Apr. 26, 2017) (NTCA Comments); Rural Wireless Association, Inc. Comments, WC Docket No. 10-90, WT Docket No. 10-208 (Apr. 26, 2017) (RWA Comments); *see also* ATN International and Buffalo-Lake Erie Wireless Systems LLC d/b/a Blue Wireless Reply Comments, WC Docket No. 10-90, WT Docket No. 10-208 (May 11, 2017) (ATN/Blue Wireless Reply Comments); AT&T Reply Comments, WC Docket No. 10-90, WT Docket No. 10-208 (May 11, 2017) (AT&T Reply Comments); CCA Reply Comments, WC Docket No. 10-90, WT Docket No. 10-208 (May 11, 2017) (CCA Reply Comments); Deere & Company Reply Comments, WC Docket No. 10-90, WT Docket No. 10-208 (May 11, 2017) (Deere Reply Comments); NTCA Reply Comments, WC Docket No. 10-90, WT Docket No. 10-208 (May 11, 2017) (NTCA Reply Comments); RWA Reply Comments, WC Docket No. 10-90, WT Docket No. 10-208 (May 11, 2017) (RWA Reply Comments); Verizon Reply Comments, WC Docket No. 10-90, WT Docket No. 10-208 (May 11, 2017) (Verizon Reply Comments); Wireless Partners, LLC Reply Comments, WC Docket No. 10-90, WT Docket No. 10-208 (May 11, 2017) (Wireless Partners Reply Comments).

¹³ We address herein the portions of the five petitions asking for reconsideration of the framework and design of the challenge process. *See* CTIA Petition for Reconsideration; Petition of Rural Wireless

III. ORDER ON RECONSIDERATION

4. As necessary starting points for the challenge process, we first resolve certain issues raised in petitions for reconsideration of the *Mobility Fund II Report & Order*. Specifically, we reconsider our decision to use Form 477 data as the basis for determining deployment of qualifying 4G LTE for the map of areas presumptively eligible for MF-II support, and instead grant, in part, CTIA's petition for reconsideration seeking a new, one-time collection of data to determine the deployment of qualified 4G LTE for the purposes of the MF-II challenge process. We deny petitions to reconsider our adoption of a 5 Mbps download speed benchmark to identify areas eligible for MF-II support. We also deny petitions for reconsideration that propose including technology choice or collocation as elements in such a determination. We will address later other petitions for reconsideration of decisions in the *Mobility Fund II Report & Order* that do not implicate elements of the challenge process.

A. Source of Coverage Data

5. We reconsider our decision to use Form 477 data as the basis for determining deployment of qualified 4G LTE for the map of areas presumptively eligible for MF-II. For some time, commenters have expressed concerns in the record regarding using the Form 477 data for MF-II purposes.¹ At the

Association, Inc. for Reconsideration and/or Clarification, WC Docket No. 10-90, WT Docket No. 10-208 (filed Apr. 12, 2017) (RWA Petition for Reconsideration); Petition of Panhandle Telephone Cooperative, Inc. and Pine Belt Cellular, Inc. for Reconsideration, WC Docket No. 10-90, WT Docket No. 10-208 (filed Apr. 27, 2017) (Panhandle/Pine Belt Petition for Reconsideration); Petition of Rural Wireless Carriers for Reconsideration and Clarification, WC Docket No. 10-90, WT Docket No. 10-208 (filed Apr. 27, 2017) (RWC Petition for Reconsideration); Petition of Blooston Rural Carriers for Reconsideration, WC Docket No. 10-90, WT Docket No. 10-208 (filed Apr. 27, 2017) (Blooston Petition for Reconsideration). Two petitions request reconsideration solely of aspects of the *Mobility Fund II Report & Order* outside of the challenge process. See Petition of T-Mobile USA, Inc. for Reconsideration, WC Docket No. 10-90, WT Docket No. 10-208 (filed Apr. 27, 2017) (T-Mobile Petition for Reconsideration); Petition of Buffalo-Lake Erie Wireless Systems, L.L.C. dba Blue Wireless for Reconsideration, WC Docket No. 10-90, WT Docket No. 10-208 (filed Apr. 27, 2017) (Blue Wireless Petition for Reconsideration). At this time, we defer addressing the petitions, or portions thereof, requesting reconsideration of aspects of the *Mobility Fund II Report & Order* outside of the challenge process.

¹ *Mobility Fund II Report & Order*, 32 FCC Rcd at 2175, para. 58. See, e.g., Blooston Rural Carriers Comments, WC Docket Nos. 10-90, 14-58 and 07-135, WT Docket No. 10-208, CC Docket No. 01-92, at 4-5 (Aug. 11, 2014) (Blooston 2014 Comments) (suggesting steps to help ensure the accuracy of Form 477 data); Letter from Caressa D. Bennet, General Counsel, RWA, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 10-208, WC Docket No. 10-90, at 2 (filed Oct. 20, 2016) (RWA Oct. 20, 2016 *Ex Parte* Letter) (highlighting that carriers do not use a common coverage standard when filing Form 477 data); Letter from David A. LaFuria, Counsel to C Spire, Lukas, Nace, Gutierrez & Sachs, LLP, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 10-208, WC Docket No. 10-90, at 1-2 (filed Oct. 21, 2016) (noting that "carriers have used significantly different methodologies to generate Form 477 coverage data"); Letter from Trey Hanbury, Counsel to CCA, Hogan Lovells, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 12-264, WT Docket Nos. 16-137, 10-208, WC Docket No. 11-10, at 1-2 (filed Oct. 25, 2016) (CCA Oct. 25, 2016 *Ex Parte* Letter) (describing the variation in provider Form 477 data with respect to propagation model used and resolution); Letter from Caressa D. Bennet, General Counsel, RWA, to Tom Wheeler, Chairman, FCC, WT Docket No. 10-208, WC Docket No. 10-90, at 2-3 (filed Oct. 27, 2016) (RWA Oct. 27, 2016 *Ex Parte* Letter) (expressing concern with the absence of a common coverage standard for reporting Form 477 data); Letter from David A. LaFuria, Counsel to U.S. Cellular, Lukas, LaFuria, Gutierrez & Sachs, LLP, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 10-208, at 1 (filed Jan. 30, 2017) (U.S. Cellular Jan. 30, 2017 *Ex Parte* Letter) (pointing out that "infirmities in FCC Form 477 data released in September of 2016 make difficult the task of accurately identifying areas to be declared eligible for a reverse auction, and the increasing importance of accurate data if the FCC decides to award support for a longer term"); Letter from Caressa D. Bennet, General Counsel, RWA, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 10-208, WC Docket No. 10-90, at 2 (filed Feb. 14, 2017) (RWA Feb. 14, 2017 *Ex Parte* Letter) (continuing to express concern about the lack of a common coverage standard governing Form 477 data); Letter from Kirby J. Underberg, General Manager, Chariton Valley Wireless

time of the *Mobility Fund II Report & Order*, however, we noted that, despite their criticism, none of the commenters had identified a better available coverage data source to move forward expeditiously to implement MF-II.²

6. CTIA now seeks reconsideration of our decision to use Form 477 data to determine what areas are covered by qualified 4G LTE for purposes of identifying areas presumptively eligible for MF-II support. CTIA instead offers an industry consensus proposal asking that we undertake a new, one-time data collection with specified data parameters tailored to MF-II, thus addressing the lack of a better-tailored data source than Form 477.³

7. After consideration of CTIA's industry consensus proposal, as well as the record gathered in response to this issue, we reconsider our decision to use Form 477 data as the basis for determining deployment of qualified 4G LTE for the map of areas presumptively eligible for MF-II support. We instead grant, in part, CTIA's petition for reconsideration proposing a new, one-time collection of data to determine the deployment of qualified 4G LTE for the purposes of MF-II.⁴

8. Commenters raise concerns regarding the lack of standardization and the reliability of the Form 477 data that would be used to determine areas covered by qualified 4G LTE for the purpose of identifying areas eligible for MF-II support.⁵ Commenters argue that it would require an extensive and lengthy challenge process to correct a map of areas presumptively eligible for MF-II support compiled from the current Form 477 data that were not initially intended for that purpose.⁶

Services, to Ajit Pai, Chairman, FCC, WT Docket No. 10-208, WC Docket No. 10-90, at 2 (filed Feb. 16, 2017) (“[T]he Form 477 data cannot be confidently applied to achieve the Commission’s goals.”); Letter from Caressa D. Bennet, General Counsel, RWA, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 10-208, WC Docket No. 10-90, at 2 (filed Feb. 16, 2017) (“RWA continues to have serious concerns about the lack of a common coverage standard governing Form 477 data, and the negative impact this could have on area eligibility determinations and the challenge process.”).

² *Mobility Fund II Report & Order*, 32 FCC Rcd at 2175, para. 58.

³ CTIA Petition for Reconsideration at 2-6.

⁴ *Id.* at 1-2 (noting that CTIA “believes that [its recommended] approach will facilitate the Commission’s MF-II goals and is fully consistent with the *Mobility Fund II Report & Order* and *FNPRM*. To the extent necessary, however, CTIA also seeks reconsideration of the *Mobility Fund II Report & Order* in order to facilitate adoption of this proposal.”).

⁵ *See, e.g., id.* at 1-2 (noting that Form 477 data was neither created for nor is well suited to “identifying geographic areas unserved by 4G LTE services that achieve 5 Mbps download speeds (i.e., the specific requirements for MF-II eligibility)”); Mosaik Comments at 2-4 (expressing concern over the Commission’s sole reliance on Form 477 data, which has “no common set of radio frequency specifications,” without input from the private sector); RWA Comments at 2 (suggesting the Commission allow providers to correct their previously submitted Form 477 data before making initial eligibility determinations); NTCA Comments at 2 (proposing providers re-validate all current Form 477 prior to making initial eligibility determinations).

⁶ *See* CTIA Petition for Reconsideration at 1-2 (proposing the reconsideration of Form 477 coverage data as the starting point for MF-II eligibility and encouraging collecting new data). Mosaik claims that the Commission’s sole reliance on Form 477 data is flawed and argues that at a minimum the Commission should also be using data collected by the private sector. Mosaik Comments at 2-5. RWA proposes that the Commission release already-compiled Form 477 data and allow current provider corrections/conceding of areas before establishing an initial eligibility map, consistent with what was done in the CAF II proceeding. RWA Comments at 2. NTCA proposes re-validating all current Form 477 data by requiring currently unsubsidized providers in all ineligible areas to file data supporting ineligibility prior to establishing an initial eligibility map, because it argues that “the Form 477 data is unreliable, overstates coverage and is based on inconsistent metrics.” NTCA Comments at 2. In NTCA’s proposal, all areas for which a current provider did not provide data to substantiate a Form 477 assertion

9. We observe at the outset that the mobile deployment data collected on Form 477 represent a dramatic improvement over the deployment data previously available on a national scale. The collection of these data through Form 477 continued, modified, and improved a similar, previous collection of broadband deployment data by the National Telecommunications and Information Administration (NTIA), which also directed providers to report deployment based upon advertised speeds.⁷ These data were used to populate the National Broadband Map from 2010 to 2014. The NTIA collection required providers to report speeds in predetermined tiers based upon maximum advertised speeds, while Form 477 requires providers to report speeds (as numbers, not in preset tiers) based upon minimum advertised speeds.⁸ The various uses of the Form 477 broadband deployment data identified by the Commission in 2013 did not include determining areas eligible for MF-II. On reconsideration, we acknowledge the concerns of commenters, and find that the use of Form 477 data as the baseline, as currently filed, is likely to result in a significantly longer MF-II challenge process than if the Commission collected data consistent with the CTIA consensus proposal as the baseline for establishing which areas are presumptively eligible for support.

10. Given the negative impact that using Form 477 data could have in prolonging the MF-II challenge process, and after considering the possibility of quickly acquiring a better-tailored data source than Form 477, we are persuaded by the weight of the record to adopt CTIA's consensus proposal to undertake a new, one-time data collection of 4G LTE coverage maps based on the specific parameters we adopt below in the *Second Report and Order*. For purposes of implementing MF-II expeditiously, this collection will provide the Commission and interested parties with the best available starting point for the challenge process. When combined with the high-cost subsidy disbursement data available from USAC,⁹ the new data will form the basis of the map of areas presumptively eligible for MF-II support. Commenters favoring this approach agree that this collection should lead to a more efficient MF-II challenge process than using Form 477 data because a map of presumptively eligible areas based on new coverage data should result in fewer and more narrowly focused challenges regarding representations of coverage.¹⁰ Further, we agree with commenters who argue that using a new data collection subject to the standardized parameters we adopt below will be both more efficient and more appropriate for MF-II of coverage would be presumptively eligible for MF-II funding of a subsidized competitor. NTCA Comments at 8.

⁷ *Modernizing the FCC Form 477 Data Program*, Report and Order, 28 FCC Rcd 9887, 9887-88, paras. 2-3 (2013) (*477 Report and Order*); FCC, Changes to the Form 477 Data Collection in 2014 (Oct. 29, 2013), <https://www.fcc.gov/general/changes-form-477-data-collection-2014>.

⁸ *477 Report and Order*, 28 FCC at 9908-09, para. 42; FCC, Changes to the Form 477 Data Collection in 2014 (Oct. 29, 2013), <https://www.fcc.gov/general/changes-form-477-data-collection-2014>.

⁹ *Mobility Fund II Report & Order*, 32 FCC Rcd at 2175, para. 56. USAC reports the amount of legacy support for each CETC by study area or, in some cases, by wire center. RWA has advocated for additional information regarding the disaggregation of CETC support. See Letter from Caressa D. Bennett, General Counsel, RWA, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 10-90, WT Docket No. 10-208, at 3 (filed July 26, 2017) (RWA July 26, 2017 *Ex Parte* Letter). The Bureau issued a staff report describing preliminary methodologies that could be used to disaggregate CETC support. See FCC, Wireless Telecommunications Bureau, *Working Toward Mobility Fund II: Mobile Broadband Coverage Data and Analysis* (2016) (*Working Toward Mobility Fund II: Mobile Broadband Coverage Data and Analysis*), https://apps.fcc.gov/edocs_public/attachmatch/DOC-341539A1.pdf. The disaggregation of subsidy data will be addressed further in a subsequent public notice that will be released prior to the MF-II auction.

¹⁰ The CTIA proposal was filed with the support of a broad coalition of CTIA members. CTIA Petition for Reconsideration at ii. CTIA's *ex parte* presentation on their proposal was attended and supported by not only AT&T, Verizon, T-Mobile, and Sprint, but also by U.S. Cellular, one of the regional providers most active in seeking a framework for MF-II sensitive to smaller entities. CCA also filed reply comments supporting CTIA's Step 1 proposal to do a new data collection. CCA Reply Comments at 3.

purposes than the extended, iterative challenge processes proposed by RWA and NTCA to revise the Form 477 data in light of their concerns.¹¹

11. We are, however, mindful of commenters that express concern that a new collection will burden wireless providers, particularly smaller carriers. CTIA's proposal suggests that all Form 477 filers that previously provided data demonstrating 4G LTE coverage would be required to submit this new data.¹² New data from providers that do not offer 4G LTE service at or above the speed benchmark will not affect the number of eligible areas. Therefore, to reduce the burden on these providers, we require only those providers that have previously reported 4G LTE coverage in Form 477 and have qualified 4G LTE coverage based on the data specification described below to submit MF-II coverage data.¹³ The limited scope for the collection should address the concerns of some of the smaller providers who objected to the potential burden of a universal new filing.¹⁴ We will use these new coverage data, in conjunction with subsidy data from USAC, to create the map of areas presumptively eligible for MF-II support.

12. We recognize the opposition of some providers, such as ATN and Blue Wireless,¹⁵ to this approach, but conclude, consistent with views of a substantial number of stakeholders in the MF-II challenge process, that using new coverage data filed in accordance with specifications determined by the Commission should significantly shorten the process for determining the areas eligible for MF-II support. In reaching our decision to undertake this effort, we find that on balance the new coverage data we are collecting should reduce the need for challengers to perform more in-depth testing in certain areas or to

¹¹ RWA Comments at 2; NTCA Comments at 2. Although Mosaik advocates for the use of privately collected LTE deployment data, Mosaik Comments at 4-5, we have concluded that Mosaik data are unsuitable for MF-II purposes because they (1) are not collected using a consistent methodology across geographic areas and service providers; (2) are commercially provided subject to intellectual property protections, which limit their use in the public policy sphere; and (3) are subject to reliability concerns of their own. *Mobility Fund II Report & Order*, 32 FCC Rcd at 2177-78, para. 59. We also deny as moot NTCA's proposal to find (after an initial eligibility list is derived from Form 477 data) that areas for which no providers submit "a declaration of service," notwithstanding the Form 477 data, are presumptively eligible for MF-II funding. See NTCA Comments at 8.

¹² See CTIA Petition for Reconsideration at 4 (stating "mobile providers would submit shapefiles that depict the coverage boundaries where providers expect users to be able to make, maintain, and receive voice calls over LTE ("VoLTE") and obtain broadband download speeds of 5 Mbps"); see also *id.* at 10-12 (explaining the new data collection proposal in more detail, and continuing to seek submission of data that would support the assertion of coverage as described).

¹³ Form 477 filers that do not provide qualified 4G LTE service at the speed benchmark and parameters for MF-II eligibility are not required to submit coverage data as part of the MF-II challenge process collection. Filers that provide service at the benchmark and parameters for MF-II eligibility must submit coverage data. 47 U.S.C. § 416(c) ("It shall be the duty of every person, its agents and employees, and any receiver or trustee thereof, to observe and comply with such orders so long as the same shall remain in effect."); *id.* § 503(b)(1)(B) (providing that "[a]ny person who is determined by the Commission . . . to have . . . willfully or repeatedly failed to comply with any of the provisions of this Act or of any rule, regulation, or order issued by the Commission under this Act" is potentially subject to a forfeiture penalty).

¹⁴ Wireless Partners Reply Comments at 2. It appears that Wireless Partners read CTIA's proposal as requiring new data filings from all providers, but that is not the process that we adopt. *Id.* Wireless Partners also raises potential Paperwork Reduction Act delays as a reason not to collect new data, but we are convinced that this collection will allow the Commission to move forward efficiently with the distribution of MF-II funds despite any administrative processes required to accomplish it. *Id.* at 2-3.

¹⁵ See ATN/Blue Wireless Reply Comments at 12-14 (stating that even with standardization of data filings a new data collection would not obviate the need for a Challenge Process, and asserting that a new data collection would therefore be inappropriate, and further arguing that collecting more standardized data may increase the pool of eligible areas for MF-II).

file extensive challenges to large geographic areas. Thus, it should reduce the burden on challengers and providers that respond to challenges and allow us to commence the MF-II auction more quickly. In addition, current 4G LTE providers have the best information concerning their coverage footprints based on their propagation models, spectrum, and network infrastructure, and thus are in the best position to provide the Wireless Telecommunications Bureau and the Wireline Competition Bureau (the Bureaus) with data already in their possession, tailored to the purposes of MF-II. This approach also allows us to simplify the challenge process by allowing only challenges that qualified LTE coverage is overstated and not also challenges that such coverage is understated. This approach also permits us to establish various bright line rules for evaluation of the new coverage submissions and of certain challenges that should expedite the final resolution of areas eligible for MF-II support.

13. We also wish to make clear that only the extent of qualified 4G LTE coverage can be challenged in the challenge process; our decision in the *Mobility Fund II Report & Order* to rely on USAC high-cost support data for determinations of which areas with 4G LTE coverage are unsubsidized remains unchanged, and subsidy data or determinations are not subject to challenge.¹⁶ In sum, the required data should allow us to achieve our policy goal of proceeding expeditiously to an MF-II auction.¹⁷

B. 5 Mbps Download Speed Benchmark for Identifying Areas Eligible for MF-II Support

14. We affirm that we will use a 5 Mbps download speed benchmark to determine what coverage counts as qualified 4G LTE for the purpose of identifying areas eligible for MF-II support. Using a download speed benchmark of 5 Mbps supports our primary policy goal of directing our limited MF-II funds to address 4G LTE coverage gaps and expanding 4G LTE coverage to areas that the private sector will not serve without government subsidies.¹⁸

15. Four petitioners seek reconsideration of some aspect of our decision to use a 5 Mbps download speed as the benchmark to determine what coverage counts as qualified 4G LTE for the purpose of identifying areas eligible for MF-II support.¹⁹ In particular, three of those four parties advocate that 5 Mbps should be replaced with a download speed of 10 Mbps to mirror the speed benchmark we adopted as the end-of-term performance requirement for MF-II support recipients.²⁰ Two

¹⁶ *Mobility Fund II Report & Order*, 32 FCC Rcd at 2181, para. 66 & n.178.

¹⁷ Compliance with the required data collection adopted in this Order on Reconsideration and Second Report and Order is mandatory, and failure to comply may lead to enforcement action, including forfeiture penalties, pursuant to the Communications Act and other applicable law. See 47 U.S.C. §§ 401(b), 409(m), 501, 502, 503; 47 CFR § 1.80.

¹⁸ *Mobility Fund II Report & Order*, 32 FCC Rcd at 2156-57, paras. 11-15 (the Commission reaffirmed that: (1) “universal service funding for the preservation and advancement of high-speed advanced services such as 4G LTE is an appropriate and necessary use of universal service funds;” (2) it “should target universal service funding to support the deployment of the highest level of mobile service available today-4G LTE;” (3) it “should target universal service funding to coverage gaps, not areas already build out by private capital;” (4) it is “committed to minimizing the overall burden of universal service contributions on consumers and businesses by expending the finite funds we have available in the most efficient and cost effective manner”).

¹⁹ See Blooston Petition for Reconsideration; Panhandle/Pine Belt Petition for Reconsideration; RWA Petition for Reconsideration; RWC Petition for Reconsideration; see also Replies to Oppositions to Petitions for Reconsideration of NTCA-The Rural Broadband Association, WC Docket No. 10-90, WT Docket No. 10-208, at 2-4 (May 26, 2017) (NTCA-The Rural Broadband Association Reply to Oppositions to Petitions for Reconsideration).

²⁰ Panhandle/Pine Belt Petition for Reconsideration at 7-10; RWC Petition for Reconsideration at 4-8; Blooston Petition for Reconsideration at 2-4. RWA also originally commented that it believed that a 10/1

of those petitioners also seek reconsideration of our decision not to include a 1 Mbps upload speed benchmark to identify areas eligible for MF-II support.²¹ Petitioners supporting the adoption of a higher speed threshold argue that a 5 Mbps benchmark does not represent service that is “reasonably comparable” to 4G LTE service available in urban areas as required by the Communications Act.²² These petitions argue that because 5 Mbps is the *minimum* advertised speed typically reported by carriers, it is not reasonably comparable to higher speeds that they argue are frequently provided to consumers in urban areas.²³ Petitioners further contend that the 5 Mbps download speed benchmark is arbitrary and capricious both because the Commission did not adequately explain its reasoning for adopting a 5 Mbps download benchmark for eligibility versus a 10/1 Mbps performance requirement,²⁴ and because the Commission did not provide evidence or analysis in support of its conclusion that existing 5 Mbps download coverage is likely to improve to coverage reasonably comparable to 10 Mbps download.²⁵ Likewise, RWA and Panhandle/Pine Belt argue that a 5 Mbps download speed benchmark without a corresponding 1 Mbps upload speed benchmark will leave rural areas inequitably served, resulting in different levels of consumer experience in rural and urban areas in contradiction of the Commission’s statutory mandate to provide reasonably comparable service in such areas.²⁶

16. We are unpersuaded by petitioners’ arguments that using a 5 Mbps speed benchmark will deprive rural areas of services that are reasonably comparable to those offered in urban areas. Although RWC claims that the median download speed provided by nationwide carriers is approximately 12 Mbps,²⁷ Verizon counters that, depending on demand, consumers in an urban market may see service

Mbps threshold is appropriate, *see* RWA Comments in Support of Petitions for Reconsideration, WC Docket No. 10-90, WT Docket No. 10-208, at 2-3 (May 16, 2017) (RWA Comments in Support of Petitions for Reconsideration); it subsequently filed an *ex parte* letter revising its position and indicating that it “recognizes that a 5/1 Mbps threshold balances the Commission’s competing priorities of ensuring reasonably comparable service and expanding wireless coverage to truly unserved areas.” Letter from Caressa D. Bennett, General Counsel, RWA, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 10-90, WT Docket No. 10-208, at 2 (filed June 7, 2017) (RWA June 7, 2017 *Ex Parte* Letter); *see also* NTCA-The Rural Broadband Association Reply to Oppositions to Petitions for Reconsideration at 2-4 & n.10.

²¹ RWA Petition for Reconsideration at 9-10; Panhandle/Pine Belt Petition for Reconsideration at 7-10.

²² *See* 47 U.S.C. § 254(b)(3).

²³ Blooston Petition for Reconsideration at 1-2; Panhandle/Pine Belt Petition for Reconsideration at 8-9; RWC Petition for Reconsideration at 5-6; RWA Petition for Reconsideration at 2, 7-8. *See also* NTCA-The Rural Broadband Association Reply to Oppositions to Petitions for Reconsideration at 2-3.

²⁴ Panhandle/Pine Belt Petition for Reconsideration at 9; RWA Petition for Reconsideration at 7-9; RWC Petition for Reconsideration at 4-7; *see also* NTCA-The Rural Broadband Association Reply to Oppositions to Petitions for Reconsideration at 2-4.

²⁵ Blooston Petition for Reconsideration at 3; RWA Petition for Reconsideration at 4; RWC Petition for Reconsideration at 6-7. The Commission rejected proposals that the speed threshold for ineligible areas be equivalent to the performance requirement for MF-II recipients, i.e., 10/1 Mbps, because “we expect that any given area with one or more providers of unsubsidized qualified 4G LTE will already meet the 10/1 Mbps threshold or will do well before the end of the MF-II support term.” *Mobility Fund II Report & Order*, 32 FCC Rcd at 2189, para. 87 n.220.

²⁶ RWA Petition for Reconsideration at 9-10; Panhandle/Pine Belt Petition for Reconsideration at 7-10.

²⁷ *See* RWC Petition for Reconsideration at 5 (citing statement of LeRoy T. Carlson, Jr. that the download speed for mobile broadband networks is 12.34 Mbps); *see also* Letter from David A. LaFuria, Counsel to U.S. Cellular, Lukas, LaFuria, Gutierrez & Sachs, LLP, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 10-90, WT Docket No. 10-208, at 1-2 (filed July 27, 2017) (U.S. Cellular July 27, 2017 *Ex Parte* Letter) (citing a T-Mobile blog post that the download speed of its mobile broadband network is

slower than 5 Mbps.²⁸ Furthermore, despite the fact that providers have used different standards and methodologies to report coverage in their Form 477 data, the nationwide carriers are all generally reporting minimum advertised download speeds of 5 Mbps for their 4G LTE network coverage.²⁹ We therefore disagree with Blooston that by using this speed we have set the bar for what is “reasonably comparable service” in rural areas at the lowest speed offered by wireless providers.³⁰ Instead, carriers’ advertised speeds demonstrate that a consumer can reasonably expect to receive 4G LTE service at a download speed of 5 Mbps in both rural and urban areas.³¹ Similarly, the *2016 Broadband Progress Report* found that, even in urban areas, 119.3 million Americans (45 percent) still lack access to 4G LTE with a minimum advertised speed of 10/1 Mbps.³² Thus, establishing a download speed of 10 Mbps for identifying areas eligible for MF-II support, as Blooston suggests, would not reflect the typical consumer experience in urban and rural areas and would direct our limited funds to areas that are already being served at speeds that are reasonably comparable to what is available in urban areas. Our analysis of available data and the record reflects that consumers in urban areas generally have access to 4G LTE service at a download speed of 5 Mbps. Therefore, this benchmark, coupled with the parameters we adopt below, serves as a reasonable basis for our analysis of what areas are currently lacking unsubsidized

26.9 Mbps).

²⁸ See Verizon Opposition to Petitions for Reconsideration, WC Docket No. 10-90, WT Docket No. 10-208, at 4 & n.13 (May 16, 2017) (Verizon Opposition to Petitions for Reconsideration) (explaining that the 5 Mbps download threshold may be too high as “[l]oading in rural areas is often below the 50 percent cell loading parameter specified in the CTIA proposal”).

²⁹ *Mobility Fund II Report & Order*, 32 FCC Rcd at 2173, para. 51; T-Mobile Petition for Reconsideration at 4-5 (providing analysis that 98 percent of consumers nationwide should experience a 5 Mbps download speed); see also RWA Comments in Support of Petitions for Reconsideration at 4; T-Mobile Reply to Opposition to Petition for Reconsideration, WC Docket No. 10-90, WT Docket No. 10-208, at 2-3 & n.10 (May 26, 2017) (T-Mobile Reply to Opposition to Petition for Reconsideration) (download speed data for two RWA member-carriers show average download speeds between 5.2 Mbps and 6.5 Mbps); RWA June 7, 2017 *Ex Parte* Letter at 3.

³⁰ Blooston Petition for Reconsideration at 2-3.

³¹ We previously noted that “commenters generally did not discuss the technical requirements of 4G LTE service” but did cite multiple comments on the performance requirement for MF-II recipients. Commenters consistently cited 5 Mbps download as consistent with 4G LTE service but differed on whether a 10/1 Mbps requirement was too aggressive. See *Mobility Fund II Report & Order*, 32 FCC Rcd at 2189, para. 87 n.220; see also T-Mobile Petition for Reconsideration at 4-5 (providing analysis that 98 percent of consumers nationwide should experience a 5 Mbps download speed); T-Mobile Reply to Opposition to Petition for Reconsideration at 2-3 n.10 (download speed data for two RWA member-carriers show average download speeds between 5.2 Mbps and 6.5 Mbps); RWA June 7, 2017 *Ex Parte* Letter at 2 (while RWA believes that a 10/1 Mbps threshold is appropriate, it “recognizes that a 5/1 Mbps threshold balances the Commission’s competing priorities of ensuring reasonably comparable service and expanding wireless coverage to truly unserved areas.”); Verizon Opposition to Petitions for Reconsideration at 4 (“Given that carriers ‘are generally reporting . . . minimum advertised download speeds’ of 5 Mbps, it is reasonable to conclude that 5 Mbps is within the range of urban LTE speeds.”) (internal citations removed).

³² *Inquiry Concerning the Deployment of Advanced 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, 735, para. 83, Table 4 (2016). The Report also noted the difficulty in determining actual speeds seen by mobile subscribers as “the relationship between advertised and actual speed is more complex for mobile services because the mobile providers report their minimum advertised speed and each mobile provider advertises the minimum speed at various points of their actual speed distribution.” *Id.* at 734, para. 82 n.246.

service at an equivalent level.

17. Contrary to the arguments of petitioners seeking a higher download speed benchmark to determine what coverage counts as qualified 4G LTE for the purpose of identifying areas eligible for MF-II support, we also do not agree that our use of the 5 Mbps download speed benchmark will “reinforce the rural digital divide.”³³ Panhandle/Pine Belt argue that rural populations served by one unsubsidized carrier will receive a lower quality of service than those served by a provider receiving MF-II support, given the difference between the eligibility benchmark of 5 Mbps download and the performance requirement of 10/1 Mbps.³⁴ Panhandle/Pine Belt’s argument fails to recognize that these speed benchmarks serve very different purposes. The purpose of the eligibility benchmark is to determine at the outset of MF-II which areas lack service reasonably comparable to current service because they are uneconomic to serve and require subsidies to achieve 4G LTE service. In contrast, the performance benchmark for an MF-II recipient ensures that our limited universal service funds are used in a fiscally responsible manner to assure that service in eligible areas is reasonably comparable to urban offerings in the future. As Verizon notes, setting the eligibility benchmark the same as the performance benchmark would have the counterproductive effect of directing subsidies to areas that are already receiving high levels of service,³⁵ and consequently providers in those areas could potentially achieve the performance objective in the first year of a ten-year support program. Different eligibility and buildout requirements are consistent with past Commission decisions in the universal service context,³⁶ and they serve “our objective of ensuring that we target our finite budget to where it is most needed.”³⁷ To accomplish this objective, we must exercise our discretion to balance competing universal service principles of promoting nationwide deployment of high-speed mobile broadband and spending limited universal service funds in a cost-effective manner.³⁸

³³ Panhandle/Pine Belt Petition for Reconsideration at 8.

³⁴ *See id.* at 8-9.

³⁵ *See* Verizon Opposition to Petitions for Reconsideration at 4.

³⁶ *See id.* at 3. The CAF Phase II challenge process was for areas with 3/768 service by an unsubsidized carrier, and ETCs are required to build to 10/1. The Commission will include those carriers providing 3/768 to 10/1 areas in the CAF-II auction. *See Connect America Fund et al.*, Report and Order, 29 FCC Rcd 15644, 15671-74, paras. 76-81 (2014).

³⁷ *Mobility Fund II Report & Order*, 32 FCC Rcd at 2173, para. 51 n.129.

³⁸ *See* Letter from L. Charles Keller, Partner, Wilkinson, Barker, Knauer LLP, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 10-90, WT Docket No. 10-208, at 1-2 (filed July 26, 2017) (ATN/Blue Wireless July 26, 2017 *Ex Parte* Letter) (arguing that the Commission should not increase the 5 Mbps download threshold for identifying eligible areas so it can “ensure that it identifies only areas as eligible that truly lack 4G LTE coverage today.”).

18. We also reject petitioners' assertions that we did not provide sufficient analysis to justify using the 5 Mbps download speeds as the eligibility benchmark in light of our expectation that areas found to be ineligible for MF-II support are likely to see improvements in the coming years.³⁹ Blooston argues we have not provided evidence to suggest that these areas will have sufficient competition to spur improvements in a timely manner.⁴⁰ Our objective in MF-II, in accordance with the *USF/ICC Transformation Order*, is to subsidize reasonably comparable service in unserved areas, not to subsidize competition.⁴¹ We anticipate that to the extent an area is served by an unsubsidized provider offering qualified 4G LTE service such that the area is not eligible for MF-II support, that unsubsidized service provider will have incentives to continue to invest in its network to maintain and expand its current market position. In addition, we anticipate that as the infrastructure to support high levels of service develops over the ten-year term of MF-II support, the incremental costs of upgrades to service in ineligible areas will become lower, further facilitating improvements in those areas. Even if incentives to invest in unsubsidized areas were lower, with all things being equal, these lower upgrade costs would help offset that effect, and would incentivize service providers to increase their speed offerings in those areas.⁴² Furthermore, we note that the cost of upgrading service is significantly lower than the cost of building a new network in unserved areas or filling in coverage gaps in areas with significant coverage, and thus we anticipate that incentives will continue to encourage upgrades to existing network deployments in unsubsidized areas. Accordingly, we expect reasonable service improvements in ineligible areas because private actors have already demonstrated in the marketplace that they have an incentive to invest in those areas without federal support.⁴³

19. Lastly, we decline to adopt an upload speed benchmark to identify areas eligible for MF-II support.⁴⁴ We disagree with petitioners and commenters that express concerns that, in areas with unsubsidized, qualified 4G LTE service, consumers may be ultimately left with lesser service because providers receiving MF-II support will have to meet a final buildout performance standard which is

³⁹ We stated that we “expect that any given area with one or more providers of unsubsidized qualified 4G LTE will already meet the 10/1 Mbps threshold or will do [so] well before the end of the [ten-year] MF-II support term.” *Mobility Fund II Report & Order*, 32 FCC Rcd at 2189, para. 87 n.220.

⁴⁰ Blooston Petition for Reconsideration at 3.

⁴¹ *Connect America Fund et al.*, Report and Order and Further Notice of Proposed Rulemaking, 26 FCC Rcd at 17663, 17780, para. 319 (2012) (*USF/ICC Transformation Order*) (“Based on the experience of a decade . . . we conclude that this prior policy of supporting multiple networks may not be the most effective way of achieving our universal service goals. In this case, we choose not to subsidize competition through universal service in areas that are challenging for even one provider to serve.”); see also *Adak Eagle Enterprises, LLC and Windy City Cellular, LLC Petitions for Waiver of Certain High-Cost Universal Service Rules*, Order on Reconsideration and Memorandum Opinion and Order, 30 FCC Rcd 5080, 5089, para. 22 (2015) (“[T]he universal service program . . . is not a guarantee of support to all carriers or a guarantee of support to every cell site.”).

⁴² See *Mobility Fund II Report & Order*, 32 FCC Rcd at 2156, para. 14 n.24 (“Since 2011, private investment, supplemented by MF-I support, has led to the extensive provision of mobile voice and broadband services through the country.”).

⁴³ See, e.g., Letter from Michael A. Lewis, Senior Engineering Advisor, DLA Piper LLP, to Marlene H. Dortch, Secretary, FCC, MB Docket No. 16-306, GN Docket No. 12-268 (filed on June 1, 2017) (T-Mobile June 1, 2017 *Ex Parte* Letter) (detailing 4G LTE expansion planned in 2017 using 600 MHz spectrum).

⁴⁴ RWA Petition for Reconsideration at 9-10; Panhandle/Pine Belt Petition for Reconsideration at 7-10; NTCA Reply Comments at 2 n.8; RWA Comments in Support of Petitions for Reconsideration at 2-6; Panhandle/Pine Belt Reply to Opposition, WC Docket No. 10-90, WT Docket No. 10-208, at 2-3 (filed May 26, 2017); RWA Reply to Opposition at 4-5.

higher than the eligibility benchmark and includes an upload speed benchmark.⁴⁵ Given the nature of mobile wireless deployment and the interplay between download and upload speeds when designing and optimizing an LTE network, there is no single upload edge speed that corresponds to a 5 Mbps download speed. T-Mobile, however, has submitted recent LTE speed measurement results showing that with 1 Mbps as the 10th percentile of the upload speed distribution, the standard national compliance, at the non-MSA (metropolitan statistical area) and MSA level, only ranges from approximately 5 percent to 12 percent.⁴⁶ This suggests that a cell edge 1 Mbps upload speed standard requirement would exceed the upload speeds of most current LTE service areas. Thus, including a 1 Mbps upload speed benchmark could make eligible for support most areas with current LTE service at download speeds of 5 Mbps. Finally, we also find that the additional upload speed standard would add unnecessary complexity to the already complex challenge process.⁴⁷ We conclude that including a 1 Mbps upload speed benchmark for determining areas eligible for MF-II support would be contrary to our policy goal of directing our limited MF-II resources to areas of the country that lack sufficient services because such a benchmark would expand the areas eligible for support to include areas that already have 4G LTE service, without any countervailing benefit to consumers.

C. Considering Incompatible Technologies in Determining Eligible Areas

20. We affirm the conclusion we reached in the *Mobility Fund II Report & Order* that areas with unsubsidized, qualified 4G LTE service are not at risk of losing service and therefore should be ineligible to receive support, regardless of whether the areas have networks that are compatible with both GSM and CDMA.⁴⁸ We further affirm our earlier finding that we should not condition limited MF-II support on a requirement that newly deployed 4G LTE networks be backwards compatible with GSM and CDMA network technologies that are being phased out by the marketplace.⁴⁹

21. In the *Mobility Fund II Report & Order*, we considered and rejected requests that the Commission make eligible for MF-II support any area currently not covered by networks that support 4G LTE, CDMA, and GSM devices. Some commenters suggested that areas be deemed eligible unless both AT&T and Verizon offered LTE coverage.⁵⁰ We determined that we were unable to support three

⁴⁵ See, e.g., RWA Petition for Reconsideration at 9-10; RWA July 26, 2017 *Ex Parte* Letter at 1.

⁴⁶ See T-Mobile Petition for Reconsideration at 6 (providing analysis that there is a 98 percent compliance for 0.15 Mbps upload speed at the 10th percentile). According to T-Mobile, the compliance is only 5 percent to 12 percent, at the non-MSA and MSA level, if the 80 percent of the upload speeds are better than 1 Mbps (i.e., a 10th percentile upload speed of 1 Mbps (reading from chart at 1 Mbps)). *Id.*

⁴⁷ See Verizon Opposition to Petitions for Reconsideration at 5.

⁴⁸ *Mobility Fund II Report & Order*, 32 FCC Rcd at 2174-75, para. 54.

⁴⁹ *Id.*

⁵⁰ *Id.*; see, e.g., Letter from Caressa D. Bennet, General Counsel, RWA, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 10-90 et al. (filed Apr. 13, 2016) (RWA Apr. 13, 2016 *Ex Parte* Letter); U.S. Cellular Jan. 30, 2017 *Ex Parte* Letter; RWA Oct. 20, 2016 *Ex Parte* Letter at 3; see also Letter from Robert A. Silverman, Counsel to Panhandle Telephone Cooperative, Inc. (PTCI), Bennet & Bennet, PLLC, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 10-90 et al., at 3 (filed Dec. 5, 2014) (suggesting that a more appropriate criterion for ineligibility would be the presence of both Verizon's and AT&T's 4G LTE networks in an area); Letter from Robert A. Silverman, Counsel to PTCI and Pine Belt Cellular, Inc., Bennet & Bennet, PLLC, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 10-90, WT Docket No. 10-208 (filed Feb. 15, 2017) (discussing the incompatibility of GSM and CDMA networks and how allowing areas impacted by this incompatibility to remain eligible for MF-II funding is a crucial public safety matter); RWA Oct. 27, 2016 *Ex Parte* Letter at 4 (expressing concern that the terms "4G LTE" and "LTE" are undefined for the purposes of MF-II); Letter from Christopher J. Wright, Counsel to CCA, Harris, Wiltshire & Grannis LLP, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 10-90, WT Docket No. 10-208, at 16 (filed Feb. 16, 2017) (CCA Feb. 16, 2017 *Ex Parte* Letter) ("In

different network technologies in every area of the country while directing the limited MF-II budget toward filling as many of the remaining 4G LTE coverage gaps as possible.⁵¹

22. RWA and Panhandle/Pine Belt now seek reconsideration of this issue; they argue that areas that do not have both GSM and CDMA coverage by unsubsidized providers should be eligible for MF-II support.⁵² In particular, RWA reiterates its previously-stated concerns regarding 911 access,⁵³ while Panhandle/Pine Belt express concerns regarding preservation of service, including preservation of voice service, and 911 access.⁵⁴

23. We deny RWA's and Panhandle/Pine Belt's petitions for reconsideration of this issue. RWA and Panhandle/Pine Belt argue that we should reconsider our decision on this issue because, they contend, MF-II support is not necessary for all three technologies (i.e., it is necessary only when there is one unsubsidized LTE network and the fallback circuit-switched network is either CDMA or GSM), and because this issue exists only in a limited number of areas.⁵⁵ We decline to reconsider our conclusion on this issue. Efficiently distributing MF-II funds and expanding coverage are our priorities, and we must balance these policy goals against an issue that even RWA notes "is one that time and ubiquitous VoLTE deployment will eventually solve."⁵⁶ In the face of a diminishing technological issue, we direct MF-II support in a fiscally-responsible manner by focusing on areas that lack unsubsidized, qualified 4G LTE coverage without considering whether older technologies are compatible. The Commission's gradual phase down of legacy support will provide consumers and carriers with time to complete the transition to newer technologies.⁵⁷

developing final eligibility criteria for MFII, the Commission should adopt funding rules to ensure that at least one CDMA carrier and one GSM carrier operate in all areas.").

⁵¹ *Mobility Fund II Report & Order*, 32 FCC Rcd at 2174-75, para. 54.

⁵² RWA Petition for Reconsideration at 11-15; Panhandle/Pine Belt Petition for Reconsideration at 2-7; *see also* Panhandle/Pine Belt Reply to Opposition at 3-6.

⁵³ RWA Petition for Reconsideration at 11-14. RWA contended prior to the *Mobility Fund II Report & Order* that the absence of both GSM and CDMA network technologies in an area could preclude rural customers from making emergency calls. *See* RWA Feb. 14, 2017 *Ex Parte* Letter at 2-3 (reiterating that the Commission should "determine areas eligible for support where an unsubsidized GSM or CDMA carrier provides service and VoLTE (and VoLTE devices) is not available"); RWA Oct. 27, 2016 *Ex Parte* Letter at 4-5 (stressing that the Commission's coverage data and definition must consider the GSM/CDMA incompatibility issue); RWA Apr. 13, 2016 *Ex Parte* Letter at 4-5; *see also* Letter from Jill Canfield, Vice President, Legal & Industry, Assistant General Counsel, NTCA, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 10-208, WC Docket No. 10-90, at 3 (filed Feb. 15, 2017) (emphasizing the importance of recognizing that the GSM and CDMA networks are incompatible); Letter from Jill Canfield, Vice President, Legal & Industry, Assistant General Counsel, NTCA, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 10-208, WC Docket No. 10-90, at 3 (filed Feb. 14, 2017).

⁵⁴ Panhandle/Pine Belt Petition for Reconsideration at 3-6.

⁵⁵ RWA July 26, 2017 *Ex Parte* Letter at 2-3.

⁵⁶ RWA Petition for Reconsideration at 14. Although RWA still believes that ubiquitous VoLTE deployment will solve this issue, it notes that this deployment may not occur before the end of the phase down period. RWA July 26, 2017 *Ex Parte* Letter at 2-3; *see* Panhandle/Pine Belt Petition for Reconsideration at 6 (arguing that the deployment of VoLTE will take longer or be more difficult in remote areas.) We observe, however, that this discrete issue may be addressed via Commission mechanisms other than MF-II, which seeks efficient distribution of funds to expand optimal coverage broadly. For example, roaming requirements also address these issues.

⁵⁷ *See Mobility Fund II Report & Order*, 32 FCC Rcd at 2182-86, paras. 68-79.

D. Considering Collocation in Determining Eligible Areas

24. We also deny RWC's request that we reconsider the basis on which we determine whether qualified 4G LTE deployed in an area is subsidized or unsubsidized. In the *Mobility Fund II Report & Order*, we concluded that any census block that is not fully covered by 4G LTE service from a carrier that does not receive high-cost universal service support will contain areas that are eligible for MF-II support.⁵⁸ RWC requests that we reconsider and clarify the effect of an unsubsidized 4G LTE service provider collocating its equipment on a tower of a carrier that has received a universal service subsidy in areas determined to be ineligible for MF-II support.⁵⁹ RWC argues that competition from such a carrier is not presumptively unsubsidized because in some instances the service provider places an antenna on a tower constructed and operated by a subsidized carrier, and therefore the presumptively unsubsidized carrier benefits from universal service support received by the subsidized carrier.⁶⁰ RWC requests that the Commission declare only areas where an unsubsidized competitor has built all of its infrastructure, including towers, without subsidy ineligible for Mobility Fund II support.⁶¹ In a related issue, RWA contends that competing 4G LTE service should not be considered unsubsidized if any facilities supporting the service are supported by high-cost support or any other government subsidy.⁶²

25. As we explained in the *Mobility Fund II Report & Order*, in order to determine whether deployment of 4G LTE in any given area was subsidized we would overlay high-cost disbursement data from USAC with coverage data to determine whether qualifying 4G LTE was being provided by a carrier receiving high-cost universal service support.⁶³ This decision furthers the goal of expanding and preserving service in areas that would not be covered absent government subsidy.⁶⁴ Consistent with the Commission's earlier conclusion, we affirm that we will determine whether a provider that deploys qualified 4G LTE in an area is subsidized or unsubsidized based only on whether it receives high-cost support for that area using USAC high-cost disbursement data, as described above, and not based on whether that provider collocates equipment on a tower of another provider receiving universal service support. In addition, we will not consider government subsidies other than legacy mobile wireless CETC high-cost support and MF-I support in determining whether a provider's qualified 4G LTE is subsidized.⁶⁵

26. We also note that the Commission has not collected and does not intend to collect the tower-by-tower data that would be necessary to conduct the analysis proposed by RWC because the possible benefits of collecting that data appear small compared to the significant costs of collection and analysis. As part of their Form 477 data filings, mobile wireless carriers submit maps that depict coverage without distinguishing between carrier-owned and collocated facilities. As discussed above, based on a new, one-time filing of coverage maps provided under standardized parameters, we will determine 4G LTE coverage and establish the areas presumptively eligible for MF-II support. Determining whether coverage depicted in the standardized coverage maps is provided through collocation on an area-by-area basis would be inconsistent with our decision to base MF-II eligibility

⁵⁸ *Id.* at 2174, para. 52.

⁵⁹ RWC Petition for Reconsideration at 21; *see also* Letter from Jill Canfield, Vice President, Legal & Industry, Assistant General Counsel, NTCA, to Marlene Dortch, Secretary, FCC, WC Docket No. 10-90, WT Docket No. 10-208, at 2-3 (filed June 15, 2017) (NTCA *Ex Parte* Letter).

⁶⁰ RWC Petition for Reconsideration at 20.

⁶¹ *Id.* at 21.

⁶² RWA June 7, 2017 *Ex Parte* Letter at 3.

⁶³ *See Mobility Fund II Report & Order*, 32 FCC Rcd at 2179, para. 63; *see also* FCC, Wireless Telecommunications Bureau, Working Toward Mobility Fund II: Mobile Broadband Coverage Data and Analysis at 2, 9 (2016), https://apps.fcc.gov/edocs_public/attachmatch/DOC-341539A1.pdf.

⁶⁴ *Mobility Fund II Report & Order*, 32 FCC Rcd at 2206-07, para. 134.

⁶⁵ *Id.* at 2206-07, paras. 133-34.

strictly on the absence of unsubsidized, qualified 4G LTE, and doing so would impose a significant burden on both carriers and the Commission.

IV. SECOND REPORT AND ORDER

27. Consistent with our overarching objective to transition quickly away from the legacy CETC support system, we adopt a streamlined challenge process that will efficiently resolve disputes about areas deemed presumptively ineligible for MF-II support. As suggested in the *Mobility Fund II FNPRM*,¹ we are not adopting wholesale “Option A,” “Option B,” or any alternative option suggested by commenters.² Based on our review of the record and our comprehensive evaluation of the advantages and disadvantages of the various proposals, we conclude that the approach we adopt will both promote fairness and minimize burdens on interested parties.

28. Under our adopted approach, we will begin with a new, one-time collection of 4G LTE coverage data, which will be used to establish the map of areas presumptively eligible for MF-II support. Specifically, we will require providers to file propagation maps and model details with the Commission indicating their current 4G LTE coverage, as defined by download speeds of 5 Mbps at the cell edge with 80 percent probability and a 30 percent cell loading factor.

29. An interested party (the challenger) will have 150 days to initiate a challenge of one or more of the areas initially deemed ineligible in the Commission’s map of areas presumptively eligible for MF-II support (the challenge window).³ Specifically, prior to the close of the challenge window, a challenger

¹ *Mobility Fund II FNPRM*, 32 FCC Rcd at 2236, para. 231 (“While we are presenting them in this Further Notice as separate options, we want to be clear that we are not proposing to adopt either option wholesale.”).

² We received comments from several interested parties on how to structure the challenge process. While some commenters supported “Option A” or “Option B,” others proposed alternative approaches. See, e.g., ATN/Blue Wireless Comments at 1-5 (supporting “Option B” as the “best option” for the MF-II challenge process); ATN/Blue Wireless Reply Comments at 3-7; AT&T Reply Comments at 10 (“If the Commission declines to adopt a new data collection for MFII purposes, we urge the Commission to adopt the Joint Proposal (i.e., Option B).”); CCA Comments at i-ii, 3-7 (supporting “Option A”); Wireless Partners Reply Comments at 1-4 (urging the Commission to adopt a challenge process based on “Option B”). For example, RWA proposed an approach similar to “Option A” and CTIA proposed a consensus approach similar to “Option B,” whereas NTCA proposed a new four-step approach. See RWA Comments at i-ii, 2-7; RWA Reply Comments at i, 1-3; CTIA Comments at 5-6, 16-22; AT&T Reply Comments at 9-10 (“[W]e recommend that the Commission adopt CTIA’s proposed new data collection and challenge process.”); CCA Reply Comments at 3 (“CCA supports CTIA’s proposed ‘Option C,’ to the extent it will ensure challenges are targeted to identify initial eligible areas and help to create reliable data.”); Verizon Reply Comments at 5 (arguing that the Commission should adopt the CTIA proposal); NTCA Comments at 7-10; NTCA Reply Comments at 2-7.

³ Some parties suggested limiting the challenge window to 60 days. CTIA Comments at 17 (proposing that challengers submit their challenges to the Commission within “60 total days from the date of the MF-II map’s publication”); ATN/Blue Wireless June 2, 2017 *Ex Parte* Letter Attach. at 1 (challengers should have 60 days to review the provisional eligibility maps, identify areas where they believe the data needs to be improved, and conduct actual testing of coverage to correct the provisional maps in such areas). Out of an abundance of caution, we find that a 150-day challenge window is appropriate to allow challengers to complete all the tasks necessary to submit challenges, such as reviewing the map of presumptively eligible areas, identifying areas to challenge, conducting speed tests, analyzing test data, and preparing the submission. This should fully satisfy the concerns expressed in the record that a 60-day challenge window would be particularly difficult for smaller carriers. See, e.g., U.S. Cellular July 27, 2017 *Ex Parte* Letter at 2 (requesting 120 days “to analyze maps, deploy technicians, drive test relevant areas, analyze drive test data, and prepare challenge submissions”); RWA July 26, 2017 *Ex Parte* Letter at 2 (urging the adoption of a 120-day challenge window because of the size of the areas to be tested and

may (1) access confidential provider-specific information for areas it wishes to challenge;⁴ (2) identify the area(s) it wants to challenge; (3) submit evidence supporting the challenge; and (4) certify its challenge for the specified area(s). To certify a challenge, a challenger will be required to identify the area(s) within each state that it wishes to challenge and submit actual outdoor speed test data collected using standardized parameters.⁵ Challengers will submit their challenges via USAC's online challenge portal (the USAC portal).⁶

30. Once a challenger submits its evidence in the USAC portal, the system will conduct an automatic validation to determine whether the challenger provided sufficient evidence to justify proceeding with each submitted challenge. In the event the data fail automatic validation for an area, the system will flag the problem for the challenger. If the failure occurs while the challenge window is still open, the challenger may submit additional or modified data, or modify its challenged area contours, as required, to resolve the problem. Once the challenge window closes, however, the challenger will have no further opportunity to correct existing, or provide additional, data in support of its challenge. Only those challenges to areas that are certified by a challenger at the close of the window will proceed.

31. A challenged party will have an opportunity to submit additional data via the USAC portal in response to a certified challenge (the response window). If a challenged party does not oppose the challenge, it does not need to submit any information. After the response window closes, Commission staff will adjudicate certified challenges and responses.⁷

the possibility of inclement weather during the testing); Letter from Rebecca Murphy Thompson, General Counsel, CCA, to Marlene H. Dortch, Secretary, FCC, at 5 (filed on July 27, 2017) (CCA July 27, 2017 *Ex Parte* Letter) (encouraging the adoption of a 120-day challenge window because of the time required to obtain and configure a device for testing and the number of observations required as part of the testing); CCA Comments at 16 ("If the Commission places the burden on a challenging carrier to submit actual coverage analysis, it must provide at least a 120-day period to obtain, sort, and analyze this data . . .").

⁴ After agreeing to treat the data as confidential, challengers will be able to access via the USAC portal (a) the underlying provider-specific coverage maps submitted as part of the new data collection; (b) the list of pre-approved provider-specified handsets with which to conduct speed measurements; and (c) any other propagation model details collected as part of the new data collection. See CTIA Comments at 17; ATN/Blue Wireless Reply Comments at 6 ("Concerns about protecting provider-specific information can be addressed by requiring challengers initially to certify that any information will be used only for purposes of the MF-II challenge process."); see also RWA Comments at 5 (suggesting that challenged carriers could request that challengers sign non-disclosure agreements prior to the carriers disclosing provider-specific data or, in the alternative, file sensitive provider-specific information confidentially with the Commission, subject to a protective order limiting disclosure to counsel and outside experts (like RF engineers) who are not involved in competitive decision-making).

⁵ See, e.g., CTIA Comments at 5 (proposing that evidence of lack of coverage would include standardized throughput test data and maps showing the precise location of each test).

⁶ We direct the Bureaus to work with USAC to establish the USAC portal through which a challenger will be able to access the confidential provider-specific information that is pertinent to the challenge, as well as submit its challenge, including all supporting evidence and required certifications. Because service providers are familiar with submitting data to USAC, this approach will be less burdensome on interested parties. This approach will also help safeguard the confidentiality of provider-specific information and reduce the risk of unauthorized access to that information.

⁷ We decline to adopt RWA's proposal to let the challenger and challenged carrier work to resolve disputes concerning coverage as this extra step would delay the implementation of MF-II support and it is more administratively efficient to let the Commission adjudicate coverage challenges. See RWA Comments at 5-7.

32. We find that, in conjunction with the new data collection, this framework for the MF-II challenge process appropriately balances the need for accuracy against the burdens imposed on interested parties. We anticipate that using standardized new coverage data as the basis for our initial eligibility map will improve the accuracy and reliability of the information available to potential challengers, which should result in fewer, more targeted challenges and should reduce the administrative burdens on Commission staff, challengers, providers, and other stakeholders.⁸ Requiring challengers to submit proof of lack of unsubsidized, qualified 4G LTE coverage should deter frivolous challenges based on anecdotal evidence and, thereby, expedite the challenge process. Moreover, allowing, but not requiring, challenged parties to submit data in response to a challenge will both promote fairness and minimize burdens on interested parties.

33. We direct the Bureaus to issue a public notice or order (following their issuance of a notice and opportunity for comment) detailing instructions, deadlines, and requirements for filing a valid challenge, including file formats, parameters, and other specifications for conducting speed tests.⁹

A. Parameters for Generating Initial Eligible Areas Map

34. In the new, one-time MF-II data collection, we will require providers to file propagation maps and model details with the Commission indicating their current 4G LTE coverage, as defined by download speeds of 5 Mbps at the cell edge with 80 percent probability and a 30 percent cell loading factor. We find that a download speed of 5 Mbps with 80 percent cell edge probability, which is equivalent to approximately 92 percent cell area probability,¹⁰ and a 30 percent cell loading factor, strikes a reasonable balance between expanding LTE into unserved areas and enhancing existing suboptimal LTE service areas, which promotes the optimal use of limited public funds.¹¹

⁸ See, e.g., AT&T Reply Comments at 2-3.

⁹ Addressing these issues and specifications in subsequent public notices, the Bureaus will follow past auctions practice, move expeditiously to resolve outstanding issues and commence the MF-II auction without undue delay, and implement the Commission's directives. *But see* ATN/Blue Wireless July 26, 2017 *Ex Parte* Letter at 3-4 (noting concern about the extent of further proceedings); Letter from Mary L. Henze, Assistant Vice President, Federal Regulatory, AT&T, to Marlene Dortch, Secretary, FCC, WT Docket No. 10-208, WC Docket No. 10-90, at 2 (filed July 27, 2017) (AT&T July 27, 2017 *Ex Parte* Letter); Letter from David A. LaFuria, Counsel to U.S. Cellular, Lukas, LaFuria, Gutierrez & Sachs, LLP, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 10-90, WT Docket No. 10-208, at 2 (filed July 26, 2017) (U.S. Cellular July 26, 2017 *Ex Parte* Letter) (suggesting that "significant decisions relating to the challenge process and auction procedures should be decided at the Commission level and not delegated to the Bureaus"); U.S. Cellular July 27, 2017 *Ex Parte* Letter at 3.

¹⁰ See Christophe Chevallier et al., WCDMA (UMTS) Deployment Handbook: Planning and Optimization Aspects 33 Figure 2.6 (1st ed. 2006); see also D. O. Reudink, Microwave Mobile Communications 126-28 Figure 2.5-1 (William C. Jakes ed. 2d ed. 1974).

¹¹ Certain commenters support the adoption of a lower 70 percent cell edge probability coupled with a 30 percent loading factor. ATN/Blue Wireless July 26, 2017 *Ex Parte* Letter at 1-3 (finding these parameters to be "representative of the types of networks that will be constructed with Mobility Fund Phase II support"); Letter from Mary L. Henze, Assistant Vice President, Federal Regulatory, AT&T, to Marlene Dortch, Secretary, FCC, WT Docket No. 10-208, WC Docket No. 10-90, at 1 (filed July 26, 2017) (AT&T July 26, 2017 *Ex Parte* Letter) (noting that internal analysis "supports the . . . conclusion that a 70/30 cell edge probability and loading factor will help drive funding towards truly unserved consumers rather than those that already have high quality LTE service"); AT&T July 27, 2017 *Ex Parte* Letter at 1. Other commenters support higher cell edge probability and cell loading parameters in line with a proposal by CTIA. See, e.g., CCA July 27, 2017 *Ex Parte* Letter at 2; U.S. Cellular July 27, 2017 *Ex Parte* Letter. As discussed below, we find that establishing a cell edge probability in the middle of the range supported by commenters best balances the concerns of both sets of commenters in line with our MF-II goals.

35. In the *Mobility Fund II FNPRM*, the Commission sought comment on what technical parameters it should require for the challenge process propagation maps.¹² CTIA's proposal for a one-time collection of coverage maps based upon propagation models to determine the areas presumptively eligible for MF-II support suggests that coverage should be (1) based on a 90 percent cell edge probability and 95 percent cell area probability of a 5 Mbps download speed with VoLTE support, outdoor coverage, and 50 percent cell loading; (2) represented in a single geographic layer map with provider identifiers and the date modeled, with spatial resolution of 100 meters BINS or less; and (3) generated using an agreed-upon software product disclosed by the filer.¹³ Commenters also provided technical input regarding what the propagation maps should show to indicate current coverage at minimum download speeds of 5 Mbps.¹⁴ Other commenters offered suggestions for propagation maps to be used during the challenge process, and those suggestions would apply equally to propagation maps to be used for an initial data collection. Deere and CCA suggest various requirements for propagation maps, including a required signal strength of -85 dBm and a map resolution of 100 meters or better.¹⁵ We have carefully considered the input offered in the record when establishing the required parameters for the propagation maps for this one-time MF-II data collection.

¹² See *Mobility Fund II FNPRM*, 32 FCC Rcd at 2237, paras. 236-37 (seeking comment on specific technical parameters for engineering (propagation) maps that demonstrate expected coverage, substantiated by the certification of a qualified engineer). We sought comment on the utility of propagation maps, given that the maps do not actually portray an exact measure of a consumer experience throughout a measured area, due to variables other than signal strength. We noted at the time of the *Mobility Fund II FNPRM*, though, that propagation maps could be "a reasonable step . . . for the purpose of narrowing the areas requiring further evidence to resolve [a] . . . challenge." We sought comment on specifications necessary for propagation maps, including possible signal strength standards and whether any signal strength standard should be set based on RSSI or RSRP measurements. We also sought comment on a particular resolution for the geospatial data or other parameters.

¹³ CTIA Comments at 11-12.

¹⁴ CTIA's proposal provides numerous suggestions for propagation map technical specifications, including seeking propagation maps that depict 4G LTE coverage where providers expect users to receive VoLTE and broadband download speeds of 5 Mbps at the cell edge in 90 percent of tests and area probability of 95 percent, at an outdoor level of coverage (excluding link budget losses for service inside), with spectrum as deployed and frequencies modeled representative of deployed spectrum. CTIA Comments at 11-12. It proposed that the antenna configuration should be the MIMO antenna configuration deployed in the geography for the spectrum modeled, or 2x2 MIMO/conservative assumption; modulation should be QPSK (for maximum path-loss, indicating cell edge conditions). *Id.* The cell-loading, i.e., the interference margin calculation, should equal 50 percent on the download, and testing should use an agreed-upon software application, such as Asset or Planet, among other suggested specifications. *Id.* at 11-12. Only after this new coverage data collection process would the Commission establish a new coverage map, release it for beta review by all who had submitted data, absorb any review issues, and then release an initially eligible map and accept challenges. *Id.* at 5-6. CCA supported these technical specifications suggested by CTIA. CCA Reply Comments at 3-5. In addition to these technical specifications, CCA also suggested that: (1) "[l]ink [b]udget assumptions should include 'Thermal Noise Density,' or noise power density per one-hertz, and be standardized at -174dBm"; (2) "maps should be held to a 1Mbps uplink standard"; and (3) handset user equipment total radiated power "should be standardized for low-band and mid-band frequency assumptions, with values of 20dBm for mid-band, and 18dBm for low-band." *Id.* at 5; see also CCA July 27, 2017 *Ex Parte* Letter at 5 ("CCA continues to believe that requiring inclusion or, at the very least, disclosure of a carrier's link budget when collecting its coverage data is the best, most efficient and accurate way to measure coverage.") CCA also suggested that "[c]arriers should refrain from applying the 3GPP standard of 23dBm because it is not representative of actual device performance." CCA Reply Comments at 5.

¹⁵ CCA Comments at 15; Deere Reply Comments at 5-6.

36. We acknowledge that the 80 percent cell edge probability and 30 percent cell loading factor parameters required for the data collection are lower than those proposed in CTIA's proposal.¹⁶ Adopting the higher cell edge probability and cell loading factor parameters in CTIA's proposal, however, would increase the likelihood that MF-II funds would be directed to areas that already meet the MF-II performance requirement of a 10 Mbps median download speed.¹⁷ As one commenter noted, "[a] coverage map based on 90 percent probability of 5 Mbps service will represent an artificially small service contour."¹⁸ T-Mobile submitted recent LTE speed measurement data analysis based upon nationwide wireless provider performance in specific states. The analysis showed that in some cases less than 2 percent of the data points achieved a 5 Mbps download speed 90 percent of the time.¹⁹ Indeed, we estimate that the cell area median download speed in the cell areas associated with CTIA's proposed parameters would be significantly in excess of 10 Mbps and therefore higher than the MF-II performance requirement.²⁰ In fact, we estimate that areas larger than CTIA's proposed cell areas would have median download speeds in excess of 10 Mbps. Our analysis shows that the 80 percent cell edge probability we adopt corresponds with a 92 percent cell area probability, which means users would have a greater than 90 percent chance of achieving a download speed of at least 5 Mbps across the entire coverage area of a cell. In addition, these parameters exceed the parameters that wireless operators typically use when

¹⁶ Some commenters have expressed concern over the adoption of a cell edge probability and a cell loading probability different from those proposed by CTIA. CCA July 27, 2017 *Ex Parte* Letter at 2; Letter from David A. LaFuria, Counsel for Nex-Tech Wireless and Smith Bagley, Lukas, LaFuria, Gutierrez & Sachs, LLP, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 10-90, WT Docket No. 10-208, at 1-3 (filed July 27, 2017) (Nex-Tech/Smith Bagley July 27, 2017 *Ex Parte* Letter); U.S. Cellular July 26, 2017 *Ex Parte* Letter at 1; U.S. Cellular July 27, 2017 *Ex Parte* Letter at 1-2. Commenters suggest the changed parameters will overstate network coverage and in so doing incorrectly exclude underserved rural areas from the map of areas presumptively eligible for MF-II support and increase the burden on both challengers and responding carriers who will be required to cover a larger area. CCA July 27, 2017 *Ex Parte* Letter at 2 (noting the new parameters "appear to overstate actual coverage by as much as 45%"); Nex-Tech/Smith Bagley July 27, 2017 *Ex Parte* Letter at 1-2 (noting that, by their calculations, a move from 90 percent cell edge probability to one of 70 percent will increase reported coverage area by approximately 35 percent); U.S. Cellular July 26, 2017 *Ex Parte* Letter at 1 ("The proposed adjustments will increase the relative cell size, in some cases significantly, reducing the amount of area eligible for Mobility Fund Phase II support."); U.S. Cellular July 27, 2017 *Ex Parte* Letter at 2. Commenters also raise concerns about the quality of service at the cell edge for areas with a lower 70 percent cell edge probability. CCA July 27, 2017 *Ex Parte* Letter at 2; Nex-Tech/Smith Bagley July 27, 2017 *Ex Parte* Letter at 2 ("If a network was designed at the 70% level, the system's ability to hand-off calls among cell sites would be compromised and consumers would receive relatively poor-quality service, or no service, at the cell edge."); U.S. Cellular July 26, 2017 *Ex Parte* Letter at 1.

¹⁷ See AT&T July 27, 2017 *Ex Parte* Letter at 1 (stating that a lower cell edge probability and loading factor "will help drive funding towards truly unserved consumers rather than those that already have high quality LTE service").

¹⁸ ATN/Blue Wireless June 2, 2017 *Ex Parte* Letter at 3.

¹⁹ See T-Mobile Petition for Reconsideration at 5 (showing that compliance is less than 2 percent if 90 percent of the download speeds are better than 5 Mbps (i.e., a 10th percentile download speed of 5 Mbps)).

²⁰ In a simulation that suggests a similar outcome, 4G Americas' simulated results of LTE cell median speed to cell edge speed ratios range from 2.0 to 2.9, with lower cell edge speeds associated with higher cell median-to-edge ratios. See 4G Americas, LTE Aggregation & Unlicensed Spectrum at 18 Table 1 (2015), http://www.5gamericas.org/files/1214/4648/2397/4G_Americas_LTE_Aggregation__Unlicensed_Spectrum_White_Paper_-_November_2015.pdf. Thus, according to this simulation, a download speed of 5 Mbps at the cell edge can be expected to result in a median speed between 10 and 14.5 Mbps within the cell's coverage area.

deploying networks into previously-unserved areas (“greenfield builds”) of 75 percent cell edge probability and 90 percent cell area probability.²¹ In light of the difficulties of precisely determining the coverage areas where service with a minimum download speed of 5 Mbps is available, we find that a cell edge probability of 80 percent and a cell area probability of 92 percent appropriately balance the concern of misrepresenting coverage with our priority of directing our limited universal service funds on areas most in need of support. Further, adoption of CTIA’s proposed parameters would likely result in MF-II support being used to upgrade or over-build current 4G LTE networks rather than to expand 4G LTE coverage to unserved areas.

37. In addition, we believe that a 30 percent cell loading factor in rural areas is more appropriate for MF-II purposes than CTIA’s proposed 50 percent cell loading factor, which is more typical in non-rural areas where there is more uniform traffic.²² Typical cell site density in rural areas is much lower than in urban areas, resulting in an overall lower interference environment. Additionally, when compared to urban and suburban areas, rural areas typically have lower amounts of uniform traffic among cells because of the varied population distribution across cells, lower numbers of simultaneous users, and lower overall demands on the network over time. As such, cell loading is typically lower in rural areas than in urban and suburban areas. As Verizon notes, “Loading in rural areas is often below the 50 percent cell loading parameter specified in the CTIA proposal.”²³ The lower cell edge probability and cell loading factor parameters for the data collection will likely decrease the eligible areas and target the limited MF-II funds to more areas that are currently unserved or served by 4G LTE networks with a median download speed below 10 Mbps. If we were to adopt a lower cell edge probability, we would unnecessarily risk focusing funds on the costliest to serve areas, thus decreasing the square miles receiving support in the auction and consequently reducing the cost effectiveness of the MF-II program.²⁴ Thus, using our predictive judgment, we find that these parameters meet our standards for the availability of coverage and are best suited to advancing our goals for MF-II.

38. We recognize that some may have concerns about the effect of the parameters we adopt on the availability of certain mobile applications, for instance telemedicine and precision agriculture, in rural areas.²⁵ We believe those concerns are misplaced. Remote monitoring and diagnosing of medical conditions and precision agriculture, which uses satellite GPS positioning and remote sensors in farming

²¹ See Public Safety Interoperable Communications and the 700 MHz D Block Proceeding, Testimony for FCC En Banc Hearing, July 30, 2008 at 15 and 19, <https://transition.fcc.gov/realaudio/presentations/2008/073008/newman.pdf>; see also Christophe Chevallier et al., WCDMA (UMTS) Deployment Handbook: Planning and Optimization Aspects 33 Figure 2.6 (1st ed. 2006). Nex-Tech and Smith-Bagley indicate that their LTE networks are generally designed with 90 percent or 95 percent coverage probability at the cell edge. Nex-Tech/Smith Bagley *Ex Parte* Letter at 2 We find that the adoption of this higher cell edge probability would conflict with the purpose of this proceeding, which is to allocate a finite amount of universal service funds to the areas most in need of support, defined as those lacking a minimum download speed of 5 Mbps, not to establish the map of presumptively eligible areas based upon the network design of a particular provider.

²² See Christophe Chevallier, et al., WCDMA (UMTS) Deployment Handbook: Planning and Optimization Aspects 29 (1st ed. 2006) (“Loading of 50% is typical for symmetric traffic with links of similar capacity. However, this assumption does not apply if data services are in traffic mix. With data services, Uplink loading is expected to be about 35 to 40%.”). With data services in an asymmetric traffic mix more commonly found in non-urban areas, we anticipate that a loading factor of 30 percent would be more typical.

²³ Verizon Opposition to Petitions for Reconsideration at 4 n.13; see ATN/Blue Wireless July 26, 2017 *Ex Parte* Letter at 3 (stating that “a 30 percent loading factor is more in line with actual experience in rural areas than 50 percent”).

²⁴ A lower cell edge probability requirement would likely decrease the eligible areas with marginal LTE coverage.

operations,²⁶ are typically lower-bandwidth, machine-to-machine applications and should not significantly increase the overall cell loading or require speeds greater than 5 Mbps.²⁷ Further, we believe that focusing our limited funds on expanding service to the areas that currently lack 4G LTE service is the best way to increase the availability of these services in rural areas. Applying a higher cell loading factor more typical of an urban or suburban area or increasing the cell edge probability even further is more likely to direct funds to more areas that already have coverage that can support telemedicine and precision agriculture applications.

39. As CTIA proposed, filers shall report an outdoor level of coverage. The coverage boundaries shall have a resolution of 100 meters (approximately three arc-seconds) or better,²⁸ and shall likewise use an appropriate clutter factor and terrain model with a resolution of 100 meters or better.²⁹ In addition, filers shall use the optimized RF propagation models and parameters used in their normal course of business.³⁰ We direct the Bureaus to specify what other propagation model details and parameters must be filed alongside such propagation maps in a subsequent public notice. In addition to submitting propagation maps and model details of 4G LTE coverage, providers shall report the signal strength (RSRP) and clutter factor categories used to generate their coverage maps. If the signal strength in the coverage maps varies regionally, then such variations must be reported. The providers must report the loss value associated with each clutter factor category used in their coverage maps. Additionally, providers shall submit a list of at least three readily-available handsets that challengers can use to conduct speed tests,³¹ as well as a certification, under penalty of perjury, by a qualified engineer that the propagation maps and model details reflect the filer's coverage as of the generation date of the map in accordance with all other parameters.

²⁵ See, e.g., RWA July 26, 2017 *Ex Parte* Letter at 1 (arguing that two way applications like telemedicine require an upload speed parameter); RWA June 7, 2017 *Ex Parte* Letter at 2 (same).

²⁶ See Frank Giles, *Precision Agriculture and Big Data Gaining Traction Fast* (Jan. 16, 2017), <http://www.growingproduce.com/vegetables/precision-agriculture-and-big-data-gaining-traction-fast/> (noting agricultural uses of telemetry, including using computers, tablets and smartphones to monitor and manage moisture levels, salinity, conductivity, daylight, temperature, and wind speed and direction); see also Eric Sfiligoj and Lisa Heacox, *Top 10 Technologies In Precision Agriculture Right Now*, (Aug. 12, 2016), <http://www.precisionag.com/systems-management/top-10-technologies-in-precision-agriculture-right-now/6/> (reporting that a number of agriculture startups are using Low Power Wide Area Networks (LPWANS), which are “designed to carry small amounts of data transmitted intermittently over long ranges).

²⁷ *Id.*

²⁸ “An arc-second represents the distance of latitude or longitude traversed on the earth's surface while traveling one second (1/3600th of a degree).” See Esri, *Measuring in Arc-Seconds*, <http://www.esri.com/news/arcuser/0400/wdside.html> (last visited [[June 25, 2017]]). Three arc-seconds is a common resolution of terrain databases. See U.S. Department of the Interior U.S. Geological Survey National Mapping Division, National Mapping Program Technical Instructions at Part 1 General 1.2, 1.4 (1997), <http://nationalmap.gov/standards/pdf/1DEM0897.PDF>.

²⁹ See CCA July 27, 2017 *Ex Parte* Letter at 3 (arguing that maps must be produced using determined clutter factors). Specification of the clutter factor resolution addresses CCA's concern in part and a subsequent public notice will specify the information regarding clutter factors categories to be submitted with coverage maps and disclosed to challengers.

³⁰ AT&T July 27, 2017 *Ex Parte* Letter at 2.

³¹ Responsive to concerns raised by some commenters, see CCA July 27, 2017 *Ex Parte* Letter at 4, we clarify that the handsets identified by providers must include at least one compatible with industry-standard drive test software. As discussed below, the Bureaus will issue further guidance or requirements on the handsets that may be used for speed tests in a subsequent public notice.

40. We find that requiring a specific signal strength benchmark, as sought by several commenters, is not necessary for these propagation maps because the cell edge speed threshold requirement subsumes a specific signal strength value depending on specific operating signal bandwidth and the network deployment configurations.³² Our analysis comparing results of theoretical propagation models and actual speed test data from Ookla indicates that the signal strength parameter in propagation models may not be closely correlated with actual on-the-ground data in a particular geographic area. As a result, and in light of the differing technical characteristics of service providers' LTE deployments, we decide to benchmark download speed, which is what the customer receives, rather than signal strength, to determine whether a particular geographic area is eligible or not for MF-II support. With this in mind, as discussed above, we set the download speed at 5 Mbps at 80 percent probability, and will evaluate challenges on the basis of measured download speeds. In other words, the topography of an area as well as summer foliage may lead to differences between expected signal strength and the actual experienced speed of consumers. Thus, our cell edge speed threshold requirement should result in more accurate data in America's deserts, prairies, rolling hills, mountains, and forests than an across-the-board signal strength parameter. We are mindful, however, of the concerns of some providers regarding signal strengths, and we will, as noted above, require providers to report signal strength with their coverage maps. The signal strength information will be available to challengers.³³

41. In a public notice to be released later in the MF-II process, we direct the Bureaus to provide instructions for how to file the data submission, including a data specification, formatting information, and any other technical parameters that may be necessary for such filings.³⁴

³² A 10 MHz bandwidth has double the noise power of the 5 MHz bandwidth; thus, it requires higher signal strengths for the same signal quality (SNR) requirement. The thermal noise power equation indicates that noise power is directly proportional to the bandwidth. See Jyrkit J. Penttinen, *The Telecommunications Handbook: Engineering Guidelines for Fixed, Mobile and Satellite Systems* 599 eq. 16.15 (2015) ("Noise Power = KTB , where K is constant with a value of -228.6 dBJ/K, T is the temperature (K), and B is the received noise bandwidth (Hz)."). In addition, different antenna configurations and LTE releases deployment offer different performance for the same signal strength. The multi-antenna enhancements such as MIMO and beam forming in successive LTE releases are ways to improve user data rates and network capacity of the radio network. Ericsson, *LTE Release 13* at 5 (Apr. 2015), <https://www.ericsson.com/res/docs/whitepapers/150417-wp-lte-release-13.pdf>.

³³ We disagree with commenters that have proposed that we specify additional components of the link budgets and other parameters, see, e.g., CCA July 27, 2017 *Ex Parte* Letter at 5 (require inclusion of link budget), CCA Reply Comments at 4-5 (require specification of additional assumptions of link budget), CTIA Comments at 12 (specify antenna configuration and modulation), because, for the specific purpose of the MF-II challenge process, the parameters we have specified adequately account for the link budgets and such additional parameters. (The RF link budget estimates the acceptable signal strength to deliver the targeted performance by calculating the maximum allowable path loss, which is subsequently used by the propagation model, together with other site parameters, to generate the coverage maps. See Christophe Chevallier, et al., *WCDMA (UMTS) Deployment Handbook: Planning and Optimization Aspects* 25 (1st ed. 2006)). Moreover, we believe transparency about certain additional parameters used to generate propagation maps is the best means of facilitating efficient challenges of the accuracy of such maps during the challenge process. When issuing filing instructions, we direct the Bureaus to explain what additional parameters (such as signal strength and clutter categories) and information must be included with coverage map filings, and subsequently disclosed to challengers in the challenge process.

³⁴ In order to provide ample time for carriers to generate data in accordance with these parameters, we direct the Bureaus to set the deadline for carriers to submit data for the one-time data collection at least 90 days after the release of the filing instructions public notice. See U.S. Cellular July 27, 2017 *Ex Parte* Letter at 2.

B. Interested Parties Eligible to Participate

42. Based on the Commission's experience in the challenge processes for MF-I and CAF-II, and after carefully weighing the record on this issue,³⁵ we conclude that government entities (state, local, and Tribal) and all service providers required to file Form 477 data with the Commission are best suited to participate as challengers in the MF-II challenge process. Allowing these interested parties to participate in the challenge process satisfies our policy goal of administrative efficiency because they are most likely to be able to acquire the requisite data sufficient to support a valid challenge and,³⁶ in many cases, are already familiar with filing data with USAC.³⁷ In the interest of broad participation, however, and contrary to RWA's comments and the options presented in the *Mobility Fund II FNPRM*, we will not require a challenger to demonstrate a geographic relationship with the challenged area because we are persuaded that doing so may unnecessarily prohibit a new entrant from participating in the process.³⁸ Likewise, we decline to adopt RWA's suggestion to limit carrier participation in the challenge process to ETCs or providers with licensed spectrum in a challenged area for the same reason.³⁹

43. Although we recognize the arguments of commenters who contend that consumers have an interest in, and will directly benefit from, 4G LTE service reaching unserved areas,⁴⁰ we disagree that such interest necessitates their inclusion as challengers in the MF-II process. As a practical matter, we do not expect that an individual consumer would have the time, ability, or resources to file a valid challenge. Instead, we anticipate that an individual consumer will be best served by participating in the MF-II challenge process through his or her state, local, or Tribal government entity.⁴¹ And we encourage state

³⁵ As set forth in the *Mobility Fund II FNPRM*, both "Option A" and "Option B" permitted challengers to be either a carrier that submitted a challenge within its licensed area or a state or local government that submitted a challenge within its jurisdiction, potentially through a state PUC. *Mobility Fund II FNPRM*, 32 FCC Rcd at 2237-38, paras. 233, 242. The *Mobility Fund II FNPRM* also sought comment on whether additional parties (carriers that are potential entrants, consumers, etc.) should be allowed to submit challenges. *Id.* at 2237, para. 233.

³⁶ RWA argues that, *inter alia*, the restrictions on challenger eligibility would limit the ability of other additional parties to submit valid challenges for the sake of expediency. RWA July 26, 2017 *Ex Parte* Letter at 1. As explained in detail *infra*, however, a consumer, organization, or business may file a waiver to participate in the challenge process.

³⁷ Many Form 477 filers have a pre-existing relationship (i.e., an account) with USAC because they are required to make filings on a regular basis with USAC. Thus, it will be administratively efficient for Form 477 filers to use the USAC portal since it will interface with USAC's existing single sign-on authentication system. To the extent that any Form 477 filer or government entity eligible to participate does not have an account with which to authenticate against the USAC single sign-on system by the time the USAC portal opens, such interested parties will be required to request an account. We direct the Bureaus to detail this process along with other instructions to file a valid challenge in a subsequent public notice.

³⁸ See RWA Comments at 3-4. Under RWA's proposal, a prospective challenger must have what it considers to be "standing." *Id.* at 3. *But see* Deere Reply Comments at 2-3.

³⁹ RWA Comments at 3.

⁴⁰ See, e.g., CCA Comments at ii, 2, 9; CCA Reply Comments at 2-3; Deere Comments at 4-5.

⁴¹ This expectation is supported by past practice before the agency, as individual consumers did not file challenges in either the MF-I or CAF proceedings. See, e.g., *Mobility Fund Phase I Auction Scheduled for September 27, 2012; Notice and Filing Requirements and Other Procedures for Auction 901*, Public Notice, 27 FCC Rcd 4725, 4731-32, para. 14 (WCB/WTB 2012). If, however, a consumer, organization, or business believes that its interests cannot be met through its state, local, or Tribal government entity, and it wishes to participate in the process as a challenger, it is free to file a waiver with the Commission for good cause shown, either on its own or with the assistance of an organization. 47 CFR § 1.3. Waivers

commissions, state-level broadband deployment offices, county and municipal executives and councils, Tribal governments, and other governmental entities to participate robustly in the challenge process to ensure that our information about where service is or is not available is as accurate as possible.

44. Moreover, given the improvements we expect to see in the standardized information that will be collected for MF-II purposes, we anticipate that there should be less concern associated with eligible area determinations, which, in turn, should reduce the likelihood that individual consumers should have to bear the burden of seeking to participate in the process. As we explained in the *Mobility Fund II FNPRM*, “the challenge process must not impede the implementation of MF-II support.”⁴² Our decision therefore fosters our commitment to designing a challenge process that is as efficient and open as possible.

C. Types of Challenges

45. Because we are undertaking a new collection of standardized, more reliable, and more recent 4G LTE coverage data, we will only permit challenges for areas that the Bureaus identify as ineligible for MF-II support.⁴³ As explained in the *Mobility Fund II FNPRM*, we anticipate that a party that submits a challenge for an eligible area will likely be the unsubsidized service provider that submitted and certified the data used to make the initial eligibility determination for the challenged area.⁴⁴ As such, the challenge would consist of nothing more than an update to or correction of the coverage data submitted by the unsubsidized service provider during the new data collection in compliance with our new requirements.⁴⁵ Since, under the framework we adopt, service providers will be required to update their coverage data shortly before the start of the challenge process, permitting such “corrections” within the challenge process would be administratively inefficient and unnecessarily delay the deployment of MF-II support.⁴⁶ Although we acknowledge Deere’s concern that the use of Form 477 data for eligibility determinations could result in the identification of areas where coverage is “both overstated and understated,”⁴⁷ we are confident that the new data collection will give providers ample opportunity to correct and/or update the coverage data previously provided via Form 477. Therefore, we will not permit challenges for areas that the Bureaus identify as eligible for MF-II support.

D. Restricting *De Minimis* Challenges

46. As part of the framework we adopt for the MF-II challenge process, we will limit challenges to *de minimis* geographic areas to increase the efficiency of the challenge process and reduce the administrative complications of resolving challenges for very small coverage gaps.⁴⁸ Unlike the proposal

may be submitted by e-mail to auction904@fcc.gov or delivered in hard copy to Margaret W. Wiener, Chief, Auctions and Spectrum Access Division, Wireless Telecommunications Bureau, FCC, 445 12th Street, S.W., Room 6-C217, Washington, D.C. 20554. We anticipate granting waivers in cases in which an individual, organization, or business demonstrates a bona fide interest in the challenge process and a plausible ability to submit a valid challenge.

⁴² *Mobility Fund II FNPRM*, 32 FCC Rcd at 2236, para. 228.

⁴³ *See id.* at 2237, para. 235 (seeking comment on whether the Commission should permit challenges for areas that the Bureaus identify as eligible (i.e., areas where Form 477 data show no qualified 4G LTE coverage from an unsubsidized carrier) in addition to areas that are identified as ineligible).

⁴⁴ *Id.*

⁴⁵ *Id.*

⁴⁶ *See* RWA Comments at 2 (expressing concern that “allowing [coverage data] corrections to take place concurrently with the challenge process would cause unnecessary confusion, and may lead to delays”).

⁴⁷ *See* Deere Comments at 5-6.

⁴⁸ *See* *Mobility Fund II FNPRM*, 32 FCC Rcd at 2237, para. 234 (seeking comment on whether to require that a challenged area be at least some minimum size).

in the *Mobility Fund II FNPRM*,⁴⁹ challengers will not be required to match up challenged areas to census blocks or census block groups (CBGs). We believe this change will ease the filing burden on challengers because the data required will align more closely with data already collected and maintained in the normal course of business.⁵⁰ In addition, the record generally supports restricting *de minimis* challenges.⁵¹ Accordingly, we will require only that any challenged area be of a minimum size of at least one square kilometer. This minimum size requirement will prevent challenges solely regarding minor, patchy areas often at the edge of a covered area, which aligns with the overall goal of using MF-II funds to expand service to unserved areas.⁵²

E. Data Required for Submission of Challenge

47. We find that a challenger must submit detailed proof of lack of unsubsidized, qualified 4G LTE coverage in support of its challenge.⁵³ For each state, a challenger must identify the specific area(s) it wants to challenge⁵⁴ and submit actual outdoor speed test data that satisfy the parameters we adopt below, as well as any other parameters that the Commission or Bureaus may implement.⁵⁵ The speed test data must be collected using the latest devices specifically authorized by the providers that submitted 4G LTE coverage data in response to the new, one-time data collection discussed above (i.e., provider-specified handsets). We find that such “on the ground” data collected using standardized parameters are a reliable form of evidence because they simulate consumers’ actual experience.⁵⁶

⁴⁹ *Id.* at 2236-37, para. 232.

⁵⁰ Consistent with this approach, we will not link *de minimis* challenges to CBGs, because a significant portion of CBGs are small enough (less than 1 square kilometer) that establishing a minimum area for challenges as a portion of a CBG would make the *de minimis* challenge area so small as to be inconsequential for improving efficiency in the challenge process.

⁵¹ Deere seeks a low minimum challenge area, if any limit is imposed. Deere Comments at 7. RWA suggests that the specific challenge area may be for a partial census block or full census block(s). RWA Comments at 4. RWA offers an initial proposal of a challenge area of five square miles for discussion. *Id.* CTIA comments that the size of an area to be challenged should be at least 2 contiguous square miles, but census blocks boundaries should not be considered. See CTIA Comments at 18. If a challenger submits data for an area less than 2 square miles, that challenge should be rejected. *Id.* But see CCA Comments at ii, 2, 8-9 (suggesting that the challenge process should not be subject to a minimum challengeable area requirement).

⁵² Ineligible areas of less than one square kilometer can be subject to challenge insofar as they are part of a challenge where the total size of areas being challenged exceeds the *de minimis* size requirement.

⁵³ See *Mobility Fund II FNPRM*, 32 FCC Rcd at 2236-38, paras. 232, 243 (seeking comment on what, if any, evidence should be required to support a challenge).

⁵⁴ See, e.g., CTIA Comments at 18; Deere Comments at 6. To reduce burdens on challengers, we will not require challengers to match up their challenged areas to census blocks or CBGs as proposed in the *Mobility Fund II FNPRM*. 32 FCC Rcd at 2236-37, para. 232. However, if the challenged area(s) extend across state borders, a challenger will need to initiate separate challenges for each state into which the challenged area(s) extend.

⁵⁵ See *Mobility Fund II FNPRM*, 32 FCC Rcd at 2237-38, paras. 238, 243 (seeking comment on the requirements we should adopt for speed tests to ensure that the results would be representative of coverage in a disputed area, including requirements pertaining to time and distance between tests, the number of test locations and how many tests should be done per location).

⁵⁶ See, e.g., ATN/Blue Wireless Comments at 2 (requiring challengers to submit actual speed test data using commercial application-based speed tests or commercial drive-test equipment will present a “highly accurate picture of coverage”); CCA Comments at 16; CCA Reply Comments at 5 (“CCA agrees that all submissions must reflect on-the-ground coverage data, subject to certain parameters . . .”); Deere Comments at 6-7 (proposing that challenging parties be required to report actual download speeds with

48. These requirements strengthen our ability to design an administratively efficient challenge process that does not impede implementation of MF-II.⁵⁷ We agree with AT&T that “requiring staff to review thousands of challenges based on anecdotal claims is the antithesis of administrative efficiency.”⁵⁸ We find that requiring challengers to submit detailed proof of lack of unsubsidized, qualified 4G LTE coverage instead of “anecdotal evidence” is fair, minimizes the burden on providers and Commission staff, and should help deter excessive and unfounded challenges that could delay the deployment of MF-II support.⁵⁹ Contrary to CCA’s claims, we are not persuaded that such requirements will limit or drastically impede the ability of interested parties to submit a valid challenge.⁶⁰ Moreover, we agree with ATN/Blue Wireless, AT&T, and Wireless Partners that requiring actual speed test data will not impose an excessive burden on challengers, including small carriers.⁶¹ We expect that challenged areas will be sufficiently circumscribed that challengers will not need to collect speed test data over unnecessarily large areas. Further, we expect that small carriers are likely to already own drive test equipment.⁶² To the extent they do not, our decision to allow application-based tests provides a less expensive and more mobile means of collecting data. Thus, we decline to allow a challenger to initiate the challenge process with an unsubstantiated good-faith assertion of lack of unsubsidized, qualified 4G LTE coverage.⁶³

data collected using actual speed tests or transmitter monitoring data); NTCA Comments at 8; NTCA Reply Comments at 6; *see also* CTIA Comments at 18 (arguing that all submissions should reflect the speed on the ground); AT&T July 26, 2017 *Ex Parte* Letter at 1 (“Validating propagation model results by collecting on-the-ground data is essential to ensure MFII reflects consumer experience.”). While no commenter that supports requiring a challenger to submit proof with its challenge opposes the use of “on the ground” speed data, some commenters would prefer flexibility with respect to how to collect and report ground-speed data. *See, e.g.*, CCA Reply Comments at 6 (“CCA echoes recommendations in the record encouraging the FCC to provide sufficient flexibility with respect to the type of supporting documentation that a challenger may provide.”); Deere Reply Comments at 3-4 (“[T]he Commission’s Rules should not mandate that challengers develop a specific type of supporting information (*e.g.*, particular drive test results, engineering analyses, propagation maps, etc.) as long as the information supports the challenging party’s good faith belief.”).

⁵⁷ *See Mobility Fund II FNPRM*, 32 FCC Rcd at 2236, para. 228.

⁵⁸ AT&T Reply Comments at 8.

⁵⁹ *See, e.g.*, CTIA Comments at 5-6; ATN/Blue Wireless Comments at 2, 4 (arguing that actual speed test data (using commercial app-based speed tests or commercial drive-test equipment) will present a highly accurate picture of coverage); ATN/Blue Wireless Reply Comments at 4 (arguing that requiring challengers to conduct speed tests sets “an appropriately high bar to prevent spurious challenges, yet is readily achievable, even for small carriers”); AT&T Reply Comments at 7-9 (“Option A’s ‘good faith belief’ standard welcomes challengers with anecdotal and unsystematic claims, leading to an extraordinarily inefficient process.” (emphasis omitted)); Wireless Partners Reply Comments at 3.

⁶⁰ *See* CCA Comments at 5-6; RWA Comments at 8-9.

⁶¹ ATN/Blue Wireless Comments at 3-4; ATN/Blue Wireless Reply Comments at 4-5 (arguing that even small wireless carriers typically own drive-testing equipment, commercial drive-testing services offer a cost-effective alternative, and the provision for testing with commercial speed test apps makes the process accessible for small entities or non-carrier entities that may not own drive-testing equipment); AT&T Reply Comments at 4-5; Wireless Partners Reply Comments at 3 (“Wireless Partners does not believe that a requirement to substantiate challenges with drive-test or speed data would create an unreasonable burden on small entities.”). *Contra* RWA Comments at 8-9.

⁶² AT&T Reply Comments at 4; ATN/Blue Wireless Comments at 3.

⁶³ *See, e.g.*, CCA Comments at 2, 10, 12 (“For initial challenges, the Commission should not require evidence other than a certification of a good faith belief that an area is unserved.”); RWA Reply Comments at 7-8. In its reply comments, CCA contradicts the position it took in its initial comments and, instead, supports a challenge process that requires a challenger to submit detailed evidence to support its

1. Standard Parameters

49. Although we agree with commenters that some flexibility with testing standards is warranted,⁶⁴ we find it necessary to adopt clear guidance and parameters on speed test data to ensure that the evidence submitted by challengers is reliable, accurately reflects consumer experience in the challenged area, and can be analyzed quickly and efficiently.⁶⁵ As a preliminary matter, we will allow challengers to submit speed data from hardware- or software-based drive tests or application-based tests that cover the challenged area.⁶⁶ To minimize the burdens on challengers, we will not require that an independent third party conduct the speed tests.⁶⁷ We will require that all speed tests be conducted pursuant to standard parameters using Commission-approved testing methods on pre-approved handset models. Accordingly, we expect that it would be difficult to manipulate the data collected regardless of whether a challenger uses drive-based or application-based tests as both types of tests can automatically generate data reports that can conform to the specifications for the data submission. We will, however, require that the speed test data be substantiated by the certification of a qualified engineer or official under penalty of perjury.⁶⁸

50. A challenger must provide proof of lack of unsubsidized, qualified 4G LTE coverage in the form of measured download throughput test data for each of the unsubsidized providers claiming qualified 4G LTE coverage in the challenged area.⁶⁹ As part of the new MF-II data collection, we will require service providers with qualified 4G LTE coverage to identify at least three readily available handset models appropriate for testing those providers' coverage.⁷⁰ Challengers electing to use application-based tests and software-based drive tests must use the applicable handsets specified by each

challenge. See CCA Reply Comments at 4 (“CCA echoes assertions that any challenge process adopted should begin with the requirement that challengers submit detailed proof of lack of coverage in a challenged area, including standardized test data and maps.”).

⁶⁴ See, e.g., CCA Reply Comments at 6; Deere Reply Comments at 3-4 (“Deere urges the Commission to err on the side of accepting the submission of [a] broad set of data in this examination.”).

⁶⁵ See, e.g., CCA Comments at 10-11, 16.

⁶⁶ See CCA Comments at 16 (“CCA strongly supports the use of ‘on the ground’ data as the most persuasive form of evidence to prove or disprove 4G LTE coverage.”); CCA Reply Comments at 7 (“CCA likewise agrees with comments encouraging the Commission to allow for collection of speed data gathered by a variety of methods including drive testing and applications on consumer devices.”); CTIA Comments at 18 (“The required information may be compiled using any industry-accepted, speed measurement practice including device-based speed-test applications, drive tests, or transmitter monitoring reports that meet the specified requirements.”); CCA July 27, 2017 *Ex Parte* Letter at 4 (“CCA therefore agrees with the FCC that challengers should have the ability to submit speed data from hardware- or software-based drive tests or application-based tests that cover the challenged area.”); see also Letter from Ookla to Marlene H. Dortch, Secretary, FCC, WC Docket No. 10-90, WT Docket No. 10-208, at 1 (filed July 26, 2017) (advocating that “consumer initiated tests conducted within the Speedtest application be permitted as data submissions by the Commission as part of the challenge process or as responses to challenges”).

⁶⁷ See, e.g., CCA Comments at 18 (arguing that data should be collected and analyzed by an independent third-party or in-house, certified engineer); CCA Reply Comments at 3.

⁶⁸ See, e.g., NTCA Comments at 8; see also *Mobility Fund II NPRM*, 32 FCC Rcd at 2237-38, para. 238 (requiring that actual speed data submitted by a challenger “be substantiated by the certification of a qualified engineer, under penalty of perjury”). For challengers that are governmental entities and do not have a qualified engineer available to certify, we will allow certification by a government official authorized to act on behalf of the organization and with actual knowledge of the accuracy of the underlying data.

⁶⁹ See CTIA Comments at 19.

unsubsidized service provider with coverage in the challenged area.⁷¹ In addition, to accurately reflect consumer experience in the challenged area, the challenger must purchase an appropriate service plan from each unsubsidized service provider in the challenged area.⁷² If there are multiple unsubsidized service providers in the challenged area, the challenger must purchase service plans that are comparable (i.e., similar with respect to services provided).

51. All speed tests must be conducted between the hours of 06:00 AM and 12:00 AM local time, when consumers are most likely to use mobile broadband data.⁷³ To ensure that the speed test data reflect consumer experience throughout the entire challenged area, a challenger must take speed measurements that are no more than a fixed distance apart from one another within the challenged area, and which substantially cover the entire area. We direct the Bureaus to adopt the specific value for the maximum distance between speed tests after seeking comment in a subsequent public notice. Consistent with comments in the record, this value will be no greater than one mile.⁷⁴ While we decline to adopt the specific parameter here, we are convinced that a value within this range will strike the correct balance between the benefits of increased accuracy, and the harms of burdens on small carriers and to the efficient administration of challenges.⁷⁵ We also agree with CCA that the data should reflect recent performance.⁷⁶ However, given upcoming, expected deployment of new 4G LTE service in conjunction with our decision

⁷⁰ *Id.* at 13; *cf.* ATN/Blue Wireless Reply Comments at 6. CCA suggests that we require that a provider identify amongst its pre-approved handsets at least two engineering-capable devices, or devices able to be put into diagnostic mode sufficient to interface with industry standard drive test software. *See* CCA July 27, 2017 *Ex Parte* Letter at 4. We note that we do not intend to disfavor drive tests or unduly burden small providers, and as discussed above, we will require providers to specify at least one handset that is compatible with industry-standard drive test software. Further, we direct the Bureaus to propose and adopt further guidance on the types of devices that may be used for speed tests in the subsequent public notices.

⁷¹ *See* CTIA Comments at 19; *see also* RWA Comments at 13 (“If a specific group of handsets is proscribed for testing purposes, this group should include some low cost devices.”).

⁷² For example, if Company A and Company B are unsubsidized service providers in the challenged area, a challenger would need to use the Company A-specified handset under a Company A data plan to test Company A’s coverage. Likewise, the challenger would need to use a Company B-specified handset under a Company B service plan to test Company B’s coverage. An appropriate service plan would allow for speed tests of full network performance, *e.g.*, an unlimited high-speed data plan. *See* RWA July 26, 2017 *Ex Parte* Letter at 2 (“Unlimited data is necessary because carriers begin to throttle download speeds when certain levels of data usage are exceeded.”). We disagree with RWA that this requirement is a “costly barrier for small rural carriers seeking to mount a successful challenge” and reject its proposal to require unsubsidized carriers to provide challengers with test phones and unlimited data access or, in the alternative, allow challengers to purchase the challenged carrier’s unlimited data plans at the carriers’ actual cost. RWA July 26, 2017 *Ex Parte* Letter at 2. RWA’s proposals would be unduly burdensome on unsubsidized carriers who have no control over whether one or more challengers choose to challenge the carriers’ 4G LTE service areas. Therefore, we find that the burden of requiring a challenger to use a carrier-specified handset and purchase an appropriate data plan is outweighed by the corresponding burden on the unsubsidized carrier.

⁷³ *See, e.g.*, ATN/Blue Wireless Reply Comments at 5; AT&T Reply Comments at 8; CTIA Comments at 18 (proposing testing hours of 6:00 AM through midnight).

⁷⁴ *See, e.g.*, CTIA Comments at 19 (tests should be carried out at least one quarter mile, but not more than one mile, apart); RWA Comments at 6 (drive test data should be collected once per tenth of a mile); ATN/Blue Wireless Reply Comments at 5; AT&T Reply Comments at 9.

⁷⁵ Moreover, the requirement that challengers submit speed test measurements no more than a fixed distance apart from one another serves as an upper bound, and a challenger will be free to submit measurements taken more frequently.

to perform a new data collection,⁷⁷ we are concerned that speed measurements taken before the submission of updated coverage maps may not reflect the current consumer experience. Thus, we will only accept data that were collected after the publication of the initial eligibility map and within six months of the scheduled close of the challenge window.

52. Several commenters proposed additional parameters and specifications for speed tests, such as the minimum number of test locations in a challenged area,⁷⁸ minimum number of measurements,⁷⁹ specific requirements depending on the type of speed test (i.e., application-based vs. drive-based tests),⁸⁰ and reporting standards (i.e., all results or only those depicting speeds under 5 Mbps).⁸¹ As noted above, we direct the Bureaus to seek comment on and to implement any additional parameters and/or to require the submission of additional types of relevant data, such as signal strength tests,⁸² and then to implement any such parameters or requirements as appropriate to ensure that speed tests accurately reflect consumer experience in the challenged area, by issuing an order or public notice providing detailed instructions, guidance, and specifications for conducting speed tests.⁸³

2. Validation of Challenger's Data

53. We adopt a general framework for automatic system validation of a challenger's evidence, and we direct the Bureaus to work with USAC to implement specific parameters for the validation process. Using an automated process is the most efficient way to evaluate the data submitted by a challenger because it ensures that the objective validation criteria are applied consistently across every challenge.

54. Under this approach, at the outset the USAC system will superimpose each identified challenged area on the initial eligibility map and will remove any portions that overlap eligible areas. If a challenged area meets the *de minimis* area threshold, that challenge will proceed. If it does not meet the threshold, the system will flag the failure and will not accept that challenge for submission unless and until the challenger submits during the challenge window new data that meet the threshold.

⁷⁶ See CCA Comments at 17 (suggesting that data should be collected no more than six months prior to the date of submission to the Commission); see also Deere Comments at 6-7 (“Challenging parties should be required to report actual download speeds with data collected within the prior 12 months . . .”).

⁷⁷ See, e.g., T-Mobile June 1, 2017 *Ex Parte* Letter at 1, Attach. at 3-4 (discussing “plan[s] to rapidly deploy the 600 MHz band spectrum for mobile broadband and commence providing service with that spectrum this year”).

⁷⁸ See, e.g., CCA Comments at 17 (arguing that drive test data are only valuable if the data are collected at a sufficient number of points within a challenged area); CCA Reply Comments at 7.

⁷⁹ See, e.g., Deere Comments at 8-9 (recommending sample size of 33 readings across a five-mile drive).

⁸⁰ See, e.g., ATN/Blue Wireless Reply Comments at 5-6; CCA Comments at 18-19 (arguing that the Commission should commit to weighing evidence collected via applications on consumer devices “based on its reliability, lending credence to the predictive data”); CTIA Comments at 19-20; ATN/Blue Wireless June 2, 2017 *Ex Parte* Letter, Attach. at 1.

⁸¹ See, e.g., CTIA Comments at 19-20; ATN/Blue Wireless June 2, 2017 *Ex Parte* Letter, Attach. at 1.

⁸² See, e.g., CCA Comments at 16-17 (“Signal strength data provides a separate but parallel measure of the quality of service at a particular test point.”); CCA Reply Comments at 4.

⁸³ In the *Mobility Fund II Report & Order* we indicated that we would require parties awarded MF-II support to demonstrate compliance with our coverage requirements by submitting data consistent with the evidence we determined to be necessary in the challenge process. *Mobility Fund II Report & Order*, 32 FCC Rcd at 2195, para. 100. Further, we directed the Bureaus to precisely define these requirements in the pre-auction process, and to determine more precisely the content and format of the information, including substantiation that MF-II recipients are required to include in their Milestone Reports. *Id.* at 2226-27, para. 198.

55. Next, the USAC system will analyze the geographic coordinates of the points at which the challenger conducted the speed tests and will validate that the data associated with each speed test point meet the specifications for speed tests. To be counted towards a valid challenge, the speed test must record a download speed less than 5 Mbps (counted speed tests) and meet all other standard parameters. In order to implement the requirement that the tests substantially cover the entire challenged area and that each point is no more than a fixed distance apart, the system will create a buffer (i.e., draw a circle of fixed size) around each counted speed test point and calculate the area of these buffered points (speed test buffer area).⁸⁴ For each challenged area, if the speed test buffer area covers at least 75 percent of the challenged area, the challenge will pass validation, and once certified, these challenged area(s) will be presented to the incumbent provider(s) for a response.⁸⁵ If the speed test buffer area does not cover at least 75 percent of the challenged area, the challenge for that area will fail validation unless the challenger submits new evidence or modifies its challenge during the challenge window such that it meets the 75 percent threshold.⁸⁶

56. The USAC system will require speed tests to substantially cover the entire challenged area (i.e., 75 percent) regardless of any characteristics of the area, including whether any part of the area is inaccessible due to terrain, private property, or other reason. We decline to provide any special accommodations for a challenger to indicate that it was unable to access any part of the challenged area.⁸⁷ As discussed below, challengers have the burden of proving that an area deemed ineligible is, in fact, not covered by at least one carrier providing qualified, unsubsidized 4G LTE service. Providing special accommodations that would relieve challengers of the need to furnish actual evidence would be inconsistent with this decision, would be difficult to administer, and would increase the likelihood of gamesmanship, none of which further our goal of conducting a fair and efficient challenge process in a timely manner. We note that while the system will not provide any special accommodations, challengers may still include areas with inaccessible land in their challenges so long as the submitted speed measurements otherwise meet the validation threshold showing that 75 percent of the area has insufficient coverage. Moreover, this decision is confined only to the challenge process; a bidder in the MF-II auction may still bid for support to serve eligible areas that include land that may be inaccessible.⁸⁸

57. Each challenged area that meets the *de minimis* threshold will be considered individually. Challenged areas that meet the validations described above, including the 75 percent speed test buffer area overlap, will proceed once certified by the challenger. The USAC system will determine which portions of a challenged area overlap which 4G LTE providers, and respondents will see only those challenged areas and speed test buffer areas that overlap their 4G LTE coverage.

⁸⁴ The system will apply a buffer with a radius equal to half of the maximum distance parameter, and will trim any portion of the buffer that is outside of the challenged area. In addition, where a challenged area overlaps the submitted coverage map of more than one incumbent provider, the system will require counted speed tests for each provider in order to calculate the speed test buffer area.

⁸⁵ The area of a circle with diameter x superimposed on a square with width x is approximately 78.5 percent, therefore setting the validation threshold at 75 percent area coverage ensures that speed measurements conducted no more than a fixed distance apart from one another in a challenged area are sufficient to establish coverage of the entire area, when each measurement point is buffered by a radius of half of the fixed distance parameter.

⁸⁶ See RWA Comments at 6 (arguing that if “90 percent of an area has service at the requisite speeds after averaging the miles covered, then service is considered ‘generally available’”).

⁸⁷ Cf. CTIA Comments at 19 (proposing that a challenger provide an explanation of the circumstances preventing access).

⁸⁸ A bidder that ultimately wins support to serve an area with inaccessible lands will remain responsible for demonstrating its performance in serving that area.

F. Opportunity to Respond to Challenges

58. Consistent with the record,⁸⁹ we will provide challenged parties a limited opportunity to submit additional data in response to a challenge.⁹⁰ We find that this approach promotes our goals of a fair and fiscally responsible MF-II program while minimizing the burdens on challenged parties. Giving challenged parties an opportunity to contest a challenge and submit more detailed coverage data to supplement the information provided during the initial data collection will help to ensure that only areas truly lacking unsubsidized, qualified 4G LTE coverage will receive MF-II support.

59. After the challenge window closes, the response window will open. Using the USAC portal, challenged parties will have 30 days after the opening of the response window to: (1) access and review the data submitted by the challenger with respect to the challenged area; and (2) submit additional data/information to oppose the challenge (i.e., demonstrate that the challenger's speed test data are invalid or do not accurately reflect network performance). If a respondent chooses to respond, it need only conduct speed tests of its own network (or gather its own geolocated, device-specific data from network monitoring software) in the disputed areas, which should require less time to complete than a challenger testing multiple networks in multiple areas for data to substantiate a valid challenge. Hence, we agree with commenters that propose that the response window does not need to be open for the same amount of time as the challenge window.⁹¹ If a challenged party does not oppose the challenge, it does not need to submit any additional data. A challenged party will not, however, have a further opportunity to submit any additional data for the Commission's consideration after the response window closes.

60. To reduce the burden on challenged parties, we decline to require a specific level of response from challenged parties.⁹² Instead, we will accept certain technical information that is probative regarding

⁸⁹ Commenters support giving a challenged provider an opportunity to respond to a challenge. *See, e.g.*, AT&T Reply Comments at 9 (arguing that "it is appropriate to require a challenged party to respond in-kind to the challenger's data"); CCA Reply Comments at 2, 4 (proposing that "responding parties" provide signal strength data in addition to download speed information); CTIA Comments at 17-18, 20-21 (proposing that challenged providers be permitted to either submit responsive evidence or notify the Commission that it will not respond); Deere Comments at 9; Deere Reply Comments at 4; RWA Comments at i, 4-5 (recommending that challenged carriers should supply data similar to that required for the Commission's 700 MHz band coverage build-out notifications); *see also* NTCA Comments at 8 (suggesting that after the initial eligibility map is released, incumbent providers should file additional data to bridge the gap between what is shown on Form 477 and what is necessary to make a final determination of competitive presence).

⁹⁰ As set forth in the *Mobility Fund II FNPRM*, both "Option A" and "Option B" provided an unsubsidized carrier whose coverage is being challenged an opportunity to submit additional information in response to a challenge. *See Mobility Fund II FNPRM*, 32 FCC Rcd at 2237-38, paras. 236-37, 239, 244-45 (seeking comment on what type of information should be accepted from an unsubsidized carrier whose coverage is being challenged, as well as how much time should be allowed for the submission of response data).

⁹¹ *See, e.g.*, CTIA Comments at 17, 20 (proposing that challengers should submit their challenges within 60 days from the date of the MF-II eligibility map's publication and challenged parties should respond within 30 days of receiving notification that the challenge window has closed); Deere Comments at 9 (agreeing "that challenging parties should have at least 60 days following the release of the list of eligible areas to submit challenges and that challenged parties should have 30 days to file their certified responses"); ATN/Blue Wireless June 2, 2017 *Ex Parte* Letter, Attach. at 1-2 (proposing that challengers should submit their challenges within 60 days from the release of the provisional eligibility maps and challenged carriers should have 30 days to review and respond to challenges).

⁹² *See Mobility Fund II FNPRM*, 32 FCC Rcd at 2238, para. 245 (seeking comment on the burden of requiring a specific level of response from challenged parties, such as requiring that responses meet the same requirements as those for challengers); *see also* Deere Reply Comments at 4 (urging the

the validity of a challenger's speed tests including speed test data and other device-specific data collected from transmitter monitoring software.⁹³ If a challenged party chooses to submit its own speed test data, the data must conform to the same standards and requirements we adopt above for challengers, except that we will only accept data from challenged parties that were collected after the publication of the initial eligibility map and within six months of the scheduled close of the response window.⁹⁴ Any evidence submitted by a challenged party in response to a challenge must be certified by a qualified engineer or official under penalty of perjury. Since we are not requiring a specific level of response from challenged parties, the response data will not be subject to USAC's automatic system validation process.

61. Although we are willing to accept certain technical data that are probative regarding the validity of a challenger's speed tests, the data must be reliable and credible to be useful during the adjudication process.⁹⁵ We agree with commenters that "on the ground" data collected using standardized parameters are a reliable form of evidence because they simulate what consumers actually experience.⁹⁶ Thus, we expect that speed test data would be particularly persuasive evidence for challenged parties to submit to refute a challenge, especially since it will be easier for the Bureaus to compare equivalent data.⁹⁷

62. As noted above, we direct the Bureaus to issue an order or public notice implementing any additional requirements that may be necessary or appropriate for data submitted by a challenged party in response to a challenge. Such order or notice will contain any further detailed instructions, guidance, and specifications for responding to a challenge.

G. Adjudication of Challenges

63. Consistent with the standard of review adopted in the *Connect America Fund Report & Order*⁹⁸ and the *CAF II Challenge Process Order*,⁹⁹ we adopt a preponderance of the evidence standard to

Commission "to err on the side of accepting the submission of [a] broad set of data in this examination").

⁹³ See, e.g., CTIA Comments at 20-21; ATN/Blue Wireless June 2, 2017 *Ex Parte* Letter, Attach. at 2. *But see* CCA July 27, 2017 *Ex Parte* Letter at 4-5 (arguing that transmitter monitoring data "can be easily manipulated based on time of day and period of collection and can produce unreliable geo-location results").

⁹⁴ See also ATN/Blue Wireless June 2, 2017 *Ex Parte* Letter, Attach. at 2 (proposing that a challenged party's actual testing data conform to the same standards as the challenger's testing data).

⁹⁵ See CCA Comments at 17 ("[P]arties submitting actual speed test data should be required to collect such data in a manner that ensures reliability, credibility, and usefulness."); CCA July 27, 2017 *Ex Parte* Letter at 5. Specifically, technical data other than speed tests submitted by a challenged party, including data from transmitter monitoring software, should include geolocated, device-specific throughput measurements or other device-specific information (rather than generalized key performance indicator statistics for a cell-site) in order to be useful to help refute a challenge.

⁹⁶ See, e.g., CCA Comments at 16 ("CCA strongly supports the use of 'on the ground' data as the most persuasive form of evidence to prove or disprove 4G LTE coverage.").

⁹⁷ While the system will not validate a challenged party's response data, to be probative in order to refute a challenge, speed tests must record a download speed of at least 5 Mbps and meet all other standard parameters.

⁹⁸ *Connect America Fund Report & Order*, 28 FCC Rcd at 7779, para. 33 (explaining that the Bureau would consider evidence using a "more likely than not" evidentiary standard to make its determinations whether a census block's designation should be changed).

⁹⁹ *Connect America Fund, Report and Order*, 28 FCC Rcd 7211, 7220, para. 21 & n.48 (WCB 2013) (*CAF II Challenge Process Order*) (concluding that a preponderance of the evidence test is suitable to this type of fact-finding inquiry).

evaluate the merits of any challenges.¹⁰⁰ Additionally, we adopt our proposal that the challenger shall bear the burden of persuasion.¹⁰¹ If, upon review of all the evidence submitted in the challenge, it appears that the challenger has not submitted sufficient evidence to demonstrate that it is more likely than not that the challenged area does not have qualified LTE coverage, the challenge will fail under this standard. Following the close of the response window, the Bureaus will adjudicate certified challenges based upon this standard and the evidence submitted by the challenger and challenged party(ies) to determine whether adjustments to the initial eligibility map are appropriate. The Bureaus will weigh the evidence submitted by challengers and challenged parties based on its reliability, giving more credence to data that were collected pursuant to the parameters established in this *Second Report and Order* and any additional standards that the Commission or Bureaus may adopt.¹⁰² We are not persuaded by the arguments of certain commenters that the burden of proof should be placed on the unsubsidized carrier;¹⁰³ rather, particularly in light of the steps we have taken to address questions about the reliability of Form 477 data in response to the comments, we conclude that it is appropriate that the burden rest on the challenger. We find that placing the burden of proof on the challenger both incentivizes challengers to present a full evidentiary record as well as discourages frivolous filings, thus supporting our goal of administrative efficiency and allowing for disbursement of support to unserved areas without unreasonable delay.¹⁰⁴

64. With respect to the evidentiary standard, comments submitted in the record support a preponderance of the evidence standard,¹⁰⁵ and no commenters supported the higher standard of clear and convincing evidence.¹⁰⁶ The preponderance of the evidence standard of review is consistent with the CAF challenge processes,¹⁰⁷ as well as with a wide body of Commission precedent.¹⁰⁸ A more demanding

¹⁰⁰ See *Mobility Fund II FNPRM*, 32 FCC Rcd at 2238, para. 240 (seeking comment on whether parties seeking to challenge the Bureaus' initial determination that an area is ineligible for MF-II support should have the burden of proving its claims by a preponderance of the evidence); see also *id.* at 2238, para. 240 n.542 (explaining that a preponderance of evidence is described as enough evidence to make it more likely than not that the status the claimant seeks to prove is true).

¹⁰¹ *Mobility Fund II FNPRM*, 32 FCC Rcd at 2238, para. 240 (proposing that the party seeking to challenge the Bureaus' initial determination of eligibility for MF-II support would have the burden of proving its claims).

¹⁰² See, e.g., CCA Comments at 18 (arguing that the Commission should commit to weighing evidence based on its reliability). We retain discretion to discount the weight of a challenger's evidence if a challenge appears designed to undermine the goals of MF-II.

¹⁰³ See NTCA Comments at 6-7, 9 (arguing that "the party declaring an area to be served and thus ineligible for MF II funding [s]hould have the burden of proving an area is served"); CCA Comments at 2, 7-8; CCA Reply Comments at 7; NTCA Reply Comments at 7; RWA Reply Comments at 12-13.

¹⁰⁴ See *Mobility Fund II FNPRM*, 32 FCC Rcd at 2236, para. 227 (explaining that the Bureaus would need to adjudicate challenges utilizing an evidentiary standard that did not deter legitimate challengers, yet did not unnecessarily burden parties whose coverage is challenged merely on anecdotal claims).

¹⁰⁵ See CCA Reply Comments at 7; NTCA Comments at 9; NTCA Reply Comments at 7. See also CCA July 2017 *Ex Parte* Letter at 5 n.22 (supporting the "use of a 'preponderance of the evidence' standard to the challenge process, which strikes a reasonable balance between a strong burden of proof and protecting against superfluous challenges").

¹⁰⁶ See *Mobility Fund II FNPRM*, 32 FCC Rcd at 2238, para. 240 (seeking comment on whether the Commission should require challengers to meet a higher standard, such as clear and convincing evidence).

¹⁰⁷ *Connect America Fund Report & Order*, 28 FCC Rcd at 7779, para. 33; *Phase II Challenge Process Order*, 28 FCC Rcd at 7220, para. 21 & n.48.

¹⁰⁸ See, e.g., *Applications of AT&T Mobility Spectrum LLC, Tampnet Inc., Tampnet Licensee LLC, Broadpoint License Co., LLC, and Broadpoint Wireless License Co., LLC, for Consent to Assign Licenses*

standard would impose an evidentiary burden that is in tension with our overall goal of making the most accurate determinations based on the evidence of record. In response to concerns that a preponderance of the evidence standard imposes a hardship on rural carriers with limited resources,¹⁰⁹ we sought comment on ways in which we can reduce the burden of the challenge process on smaller providers.¹¹⁰ We find that applying a preponderance of the evidence standard strikes the appropriate balance, potentially reducing the number of disputed areas and ensuring that the Commission has the data necessary to evaluate the merits of any challenges, while not unduly burdening smaller providers.

V. PROCEDURAL MATTERS

A. Paperwork Reduction Act Analysis

65. This *Second Report and Order* contains new information collection requirements subject to the Paperwork Reduction Act of 1995 (PRA), Public Law No. 104-13. It will be submitted to the Office of Management and Budget (OMB) for review under section 3507(d) of the PRA. OMB, the general public, and other Federal agencies are invited to comment on the new information collection requirements contained in this proceeding. In addition, we note that pursuant to the Small Business Paperwork Relief Act of 2002,¹ we previously sought specific comment on how the Commission might further reduce the information collection burden for small business concerns with fewer than 25 employees. We describe impacts that might affect small businesses, which include most businesses with fewer than 25 employees, in the Final Regulatory Flexibility Analysis (FRFA) in Appendix A.

B. Congressional Review Act

66. The Commission will send a copy of this Order on Reconsideration and Second Report and Order to Congress and the Government Accountability Office pursuant to the Congressional Review Act.²

and Approval of Long-Term De Factor Transfer Spectrum Leasing Arrangements et al., Memorandum Opinion and Order and Declaratory Ruling, 31 FCC Rcd 7890, 7894-95, para. 10 (WTB/IB 2016) (“The Applicants bear the burden of proving, by a preponderance of the evidence, that the proposed transaction, on balance, would serve the public interest.”); *AMTS Consortium, LLC et al.*, Memorandum Opinion and Order, 25 FCC Rcd 526, 529, para. 11 (2010) (“The filing party must demonstrate by a preponderance of the evidence that confidential treatment is appropriate ‘consistent with the requirements of the Freedom of Information Act.’”); *Implementation of Sections 255 and 251(a)(2) of the Communications Act of 1934, as Enacted by the Telecommunications Act of 1996 et al.*, Report and Order and Further Notice of Inquiry, 16 FCC Rcd 6417, 6453, para. 88 (1999) (“In those instances, where a piece of equipment undergoes substantial modifications after its sale, however, we agree with those commenters who argue that it would be unfair to hold the manufacturer liable under section 255. In those instances, . . . manufacturers shall bear the burden of proving, by a preponderance of the evidence, that a piece of equipment has undergone substantial modifications after its sale.”) (footnote omitted); *Contel of the South, Inc. v. Operator Communications, Inc.*, Memorandum Opinion and Order, 23 FCC Rcd 548, 552-53, para. 10 (2008) (“It is well established that the complainant in a section 208 formal complaint proceeding has the burden of establishing, by a preponderance of the evidence, that the defendant has violated the Act or Commission rules or orders”); *Syntax-Brilliant Corporation*, Forfeiture Order and Notice of Apparent Liability for Forfeiture, 23 FCC Rcd 6323, 6343, para. 45 (2008) (“The Commission will then issue a forfeiture if it finds by a preponderance of the evidence that the person has violated the Act or a Commission rule.”).

¹⁰⁹ See RWA Feb. 14, 2017 *Ex Parte* Letter at 2. *But see* ATN/Blue Wireless Reply Comments at 4 (supporting evidence-based challenges, stating that it is not overly burdensome, even for small entities).

¹¹⁰ *Mobility Fund II FNPRM*, 32 FCC Rcd at 2236, para. 227. No comments in the record specifically suggest that a different evidentiary standard would be less burdensome for smaller providers.

¹ See 44 U.S.C. § 3506(c)(4).

² See 5 U.S.C. § 801(a)(1)(A).

C. Final Regulatory Flexibility Analysis

67. The Regulatory Flexibility Act of 1980 (RFA) requires that an agency prepare a regulatory flexibility analysis for notice and comment rulemakings, unless the agency certifies that “the rule will not, if promulgated, have a significant economic impact on a substantial number of small entities.” Accordingly, we have prepared a Final Regulatory Flexibility Analysis (FRFA) concerning the possible impact of the rule changes contained in the *Order on Reconsideration and Second Report and Order* on small entities. The FRFA is set forth in Appendix A.

VI. ORDERING CLAUSES

68. Accordingly, IT IS ORDERED, pursuant to the authority contained in sections 1, 2, 4(i), 5, 10, 201-206, 214, 219-220, 251, 254, 256, 303(r), 332, 403, 405, and 503 of the Communications Act of 1934, as amended, and section 706 of the Telecommunications Act of 1996, 47 U.S.C. §§ 151, 152, 154(i), 155, 160, 201-206, 214, 219-220, 251, 254, 256, 303(r), 332, 403, 405, 503, 1302, and sections 1.1 and 1.429 of the Commission’s rules, 47 CFR §§ 1.1 and 1.429, that this Order on Reconsideration and Second Report and Order IS ADOPTED. It is our intention in adopting these procedures that if any of the procedures that we retain, modify, or adopt herein, or the application thereof to any person or circumstance, are held to be unlawful, the remaining portions of the procedures not deemed unlawful, and the application of such procedures to other persons or circumstances, shall remain in effect to the fullest extent permitted by law.

69. IT IS FURTHER ORDERED that, pursuant to section 1.103 of the Commission’s rules, 47 CFR § 1.103, this Order on Reconsideration and Second Report and Order SHALL BECOME EFFECTIVE thirty (30) days after the date of publication in the Federal Register, except for those rules and requirements containing new or modified information collection requirements that require review by the Office of Management and Budget (OMB) under the Paperwork Reduction Act, which SHALL BECOME EFFECTIVE after OMB review and approval, on the effective date specified in a notice that the Commission will have published in the Federal Register announcing such approval and the relevant effective date.

70. IT IS FURTHER ORDERED that the Petition for Reconsideration and Comments filed by CTIA on April 26, 2017, IS GRANTED IN PART to the extent described herein.

71. IT IS FURTHER ORDERED that the Petition for Reconsideration and/or Clarification filed by the Rural Wireless Association, Inc. on April 12, 2017, is DENIED as described herein.

72. IT IS FURTHER ORDERED that the Petition for Reconsideration filed by Panhandle Telephone Cooperative, Inc. and Pine Belt Cellular, Inc. on April 27, 2017, is DENIED as described herein.

73. IT IS FURTHER ORDERED that the Petition for Reconsideration and Clarification filed by Rural Wireless Carriers (i.e., United States Cellular Corporation, East Kentucky Network, LLC d/b/a Appalachian Wireless, Cellular Network Partnership d/b/a Pioneer Cellular, NE Colorado Cellular, Inc. d/b/a Viaero Wireless, Nex-Tech Wireless, LLC, and Smith Bagley, Inc.) on April 27, 2017, is DENIED as described herein.

74. IT IS FURTHER ORDERED that the Petition for Reconsideration and/or Clarification filed by the Blooston Rural Carriers on April 27, 2017, is DENIED as described herein.

75. IT IS FURTHER ORDERED that the Commission’s Consumer and Governmental Affairs Bureau, Reference Information Center, SHALL SEND a copy of this Order on Reconsideration and Second Report and Order, including the Final Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

Marlene H. Dortch
Secretary

APPENDIX A

Final Regulatory Flexibility Analysis

1. As required by the Regulatory Flexibility Act of 1980, as amended (RFA),⁰ an Initial Regulatory Flexibility Analysis (IRFA) was incorporated in the Further Notice section of the *Report and Order and Further Notice of Proposed Rulemaking* adopted in February 2017 (*Mobility Fund II FNPRM*).⁰ The Commission sought written public comment on the proposals in the *Mobility Fund II FNPRM* including comment on the IRFA. The Commission received three comments in response to the IRFA. The Commission also included a Final Regulatory Flexibility Analysis (FRFA) in the Report and Order section of the February 2017 *Mobility Fund II FNPRM (Mobility Fund II Report and Order)*.⁰ Seven petitions for reconsideration, one comment in support of a petition for reconsideration, two oppositions to the petitions, and six replies to the oppositions were received by the Commission in response to the *Mobility Fund II Report and Order*. This FRFA addresses the comments on the IRFA and analyzes the modifications adopted in response to the petitions, comments, and responsive filings to the *Mobility Fund II Report and Order*. This FRFA conforms to the RFA.⁰

A. Need for, and Objectives of, This Order on Reconsideration and Second Report and Order

2. Rural and high-cost areas of the United States trail significantly behind urban areas in the growth of 4G LTE service. The Mobility Fund Phase II (MF-II) will use a market-based, multi-round reverse auction and allow the Commission to redirect its limited resources to those areas of the country lacking unsubsidized, qualified 4G LTE service.

3. In this *Order on Reconsideration and Second Report and Order*, we adopt procedures for a challenge process to supplement our coverage maps by providing an opportunity for interested parties to provide up-to-date LTE coverage data to determine a map of areas presumptively eligible for MF-II support. Interested parties will have the ability to contest this initial determination that an area is ineligible for MF-II support because an unsubsidized service provider submitted data that demonstrates it is providing qualified 4G LTE service there. The challenge process adopted in this *Second Report and Order* enables the Commission to resolve eligible-area disputes in an administratively efficient and fiscally responsible manner.

B. Summary of Significant Issues Raised by Public Comments in Response to the IRFA

4. The Commission received one comment, one reply comment, and one written *ex parte* submission bearing on the IRFA.⁰ CCA and RWA believe that a challenge process without a required data collection would better fulfill the directive of the RFA.⁰ NTCA similarly expressed concern that requiring all providers, including small entities, to file new Form 477 data to determine eligibility for MF-II support by area would be unnecessary and contrary to the directive of the RFA.⁰

⁰ 5 U.S.C. § 603. The RFA, 5 U.S.C. §§ 601-12, has been amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), Public Law No. 104-121, 110 Stat. 857 (1996).

⁰ *Mobility Fund II FNPRM*, 32 FCC Rcd at 2269, Appx. C.

⁰ *Mobility Fund II Report and Order*, 32 FCC Rcd at 2258, Appx. B.

⁰ See 5 U.S.C. § 604.

⁰ CCA Comments at 5; RWA Reply Comments at ii; NTCA *Ex Parte* Letter at 2.

⁰ CCA Comments at 5; RWA Reply at 2. See *FCC Directive*, Regulatory Flexibility Act of 1980, as amended (P.L. 96-354) and the Small Business Regulatory Enforcement Fairness Act of 1996 (P.L. 104-121), Directive Number FCCINST 1158.2 (effective date Sep. 15, 2011).

⁰ NTCA *Ex Parte* Letter at 2.

5. The Commission is sensitive to the burden on small entities and other providers associated with the new data collection. However, the benefits of standardized, reliable data on which to base eligibility determinations outweigh the costs associated with their collection. Moreover, the use of newly collected data enables the Commission to adopt a streamlined challenge process that will reduce the burden on challengers and providers that respond to challenges. Fewer small providers will be forced to bring a challenge, and challenges will be more directed, more accurate, and less onerous because the Commission will have the best-available starting point of standardized data. We also ease the burden of the new data collection on small entities by limiting the one-time data collection to providers who have previously reported 4G LTE coverage in Form 477 and have qualified 4G LTE coverage. The limited scope of the collection addresses the concerns of some of the smaller providers who objected to the potential burden of a universal new filing. The Commission has eased the burden of the collection by only requiring a filing from those who have easy access to the necessary data. Additional steps taken to minimize the burden of the challenge process on small entities are discussed below.

C. Response to Comments by the Chief Counsel for Advocacy of the Small Business Administration

6. Pursuant to the Small Business Jobs Act of 2010,⁰ which amended the RFA, the Commission is required to respond to any comments filed by the Chief Counsel for Advocacy of the Small Business Administration (SBA) in response to the proposed rule(s) and to provide a detailed statement of any change made to the proposed rule(s) as a result of those comments.

7. The Chief Counsel did not file any comments in response to the proposed procedures in this proceeding.

D. Description and Estimate of the Number of Small Entities to which the Proposed Rules Will Apply

8. The RFA directs agencies to provide a description of, and where feasible, an estimate of the number of small entities that may be affected by the rules adopted herein.⁰ The RFA generally defines the term “small entity” as having the same meaning as the terms “small business,” “small organization,” and “small governmental jurisdiction.”⁰ In addition, the term “small business” has the same meaning as the term “small-business concern” under the Small Business Act.⁰ A “small-business concern” is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the SBA.⁰

9. *Small Entities, Small Organizations, Small Governmental Jurisdictions.* Our actions, over time, may affect small entities that are not easily categorized at present. We therefore describe here, at the outset, three broad groups of small entities that could be directly affected herein.⁰ First, while there are industry-specific size standards for small businesses that are used in the regulatory flexibility analysis, according to data from the SBA’s Office of Advocacy, in general a small business is an independent business having fewer than 500 employees.⁰ These types of small businesses represent 99.9 percent of all

⁰ 5 U.S.C. § 604(a)(3).

⁰ See *id.* § 603(a)(4).

⁰ See *id.* § 601(6).

⁰ See *id.* § 601(3) (incorporating by reference the definition of “small-business concern” in the Small Business Act, 15 U.S.C. § 632). Pursuant to 5 U.S.C. § 601(3), the statutory definition of a small business applies “unless an agency, after consultation with the Office of Advocacy of the Small Business Administration and after opportunity for public comment, establishes one or more definitions of such term which are appropriate to the activities of the agency and publishes such definition(s) in the Federal Register.”

⁰ See 15 U.S.C. § 632.

⁰ See 5 U.S.C. § 601(3)-(6).

businesses in the United States which translates to 28.8 million businesses.⁰ Next, the type of small entity described as a “small organization” is generally “any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.”⁰ Nationwide, as of 2007, there were approximately 1,621,215 small organizations.⁰ Finally, the term “small governmental jurisdiction” is defined generally as “governments of cities, towns, townships, villages, school districts, or special districts, with a population of less than fifty thousand.”⁰ U.S. Census Bureau data for 2012 indicate that there were 89,476 local governmental jurisdictions in the United States.⁰ We estimate that, of this total, as many as 88,715 entities may qualify as “small governmental jurisdictions.”⁰ Thus, we estimate that most governmental jurisdictions are small.

10. *Wireless Telecommunications Carriers (except Satellite)*. This industry comprises establishments engaged in operating and maintaining switching and transmission facilities to provide communications via the airwaves. Establishments in this industry have spectrum licenses and provide services using that spectrum, such as cellular services, paging services, wireless internet access, and wireless video services.⁰ The appropriate size standard under SBA rules is that such a business is small if it has 1,500 or fewer employees.⁰ For this industry, U.S. Census data for 2012 show that there were 967 firms that operated for the entire year.⁰ Of this total, 955 firms had employment of 999 or fewer

⁰ See U.S. SBA Office of Advocacy, “Frequently Asked Questions, (June 2016), https://www.sba.gov/sites/default/files/advocacy/SB-FAQ-2016_WEB.pdf.

⁰ See SBA, Office of Advocacy, “Frequently Asked Questions, Question 2- How many small businesses are there in the U.S.?” https://www.sba.gov/sites/default/files/advocacy/SB-FAQ-2016_WEB.pdf (June 2016).

⁰ 5 U.S.C. § 601(4).

⁰ Independent Sector & Urban Institute, *The New Nonprofit Almanac and Desk Reference: The Essential Facts and Figures for Managers, Researchers and Volunteers* (2010).

⁰ 5 U.S.C. § 601(5).

⁰ U.S. Census Bureau, *Statistical Abstract of the United States: 2012* at 267, Table 429 (2011), <http://www2.census.gov/library/publications/2011/compendia/statab/131ed/2012-statab.pdf> (citing data from 2007).

⁰ The 2012 U.S. Census data for small governmental organizations are not presented based on the size of the population in each organization. There were 89,476 local governmental organizations in the Census Bureau data for 2012, which is based on 2007 data. As a basis of estimating how many of these 89,476 local government organizations were small, we note that there were a total of 761 cities and towns (incorporated places and minor civil divisions) with populations over 50,000 in 2016. See U.S. Census Bureau, *Data: Places of 50,000 or More: Annual Estimates of the Resident Population for Incorporated Places of 50,000 or More, Ranked by July 1, 2016 Population: April 1, 2010 to July 1, 2016*, <https://www.census.gov/data/tables/2016/demo/popest/total-cities-and-towns.html> (last visited July 25, 2017). If we subtract the 761 cities and towns that meet or exceed the 50,000-population threshold, we conclude that approximately 88,715 are small.

⁰ NAICS Code 517210. See U.S. Census Bureau, *North American Industry Classification System: 2012 NAICS Definition*, <https://www.census.gov/cgi-bin/sssd/naics/naicsrch?input=517210&search=2012+NAICS+Search&search=2012> (last visited June 25, 2017).

⁰ 13 CFR § 121.201, NAICS code 517210. The now-superseded, pre-2007 CFR citations were 13 CFR § 121.201, NAICS codes 517211 and 517212 (referring to the 2002 NAICS).

⁰ U.S. Census Bureau, *American Fact Finder: Information: Subject Series - Estab. & Firm Size: Employment Size of Firms for the U.S.: 2012 Economic Census of the United States*,

employees and 12 had employment of 1000 employees or more.⁰ Thus under this category and the associated size standard, the Commission estimates that the majority of wireless telecommunications carriers (except satellite) are small entities.

11. The Commission's own data—available in its Universal Licensing System—indicate that, as of October 25, 2016, there are 280 Cellular licensees that will be affected by our actions today.⁰ The Commission does not know how many of these licensees are small, as the Commission does not collect that information for these types of entities. Similarly, according to internally developed Commission data, 413 carriers reported that they were engaged in the provision of wireless telephony, including cellular service, Personal Communications Service, and Specialized Mobile Radio Telephony services.⁰ Of this total, an estimated 261 have 1,500 or fewer employees, and 152 have more than 1,500 employees.⁰ Thus, using available data, we estimate that the majority of wireless firms can be considered small.

12. *Wired Telecommunications Carriers.* The U.S. Census Bureau defines this industry as “establishments primarily engaged in operating and/or providing access to transmission facilities and infrastructure that they own and/or lease for the transmission of voice, data, text, sound, and video using wired communications networks. Transmission facilities may be based on a single technology or a combination of technologies. Establishments in this industry use the wired telecommunications network facilities that they operate to provide a variety of services, such as wired telephony services, including VoIP services, wired (cable) audio and video programming distribution, and wired broadband internet services. By exception, establishments providing satellite television distribution services using facilities and infrastructure that they operate are included in this industry.”⁰ The SBA has developed a small business size standard for Wired Telecommunications Carriers, which consists of all such companies having 1,500 or fewer employees.⁰ U.S. Census data for 2012 show that there were 3,117 firms that operated that year. Of this total, 3,083 operated with fewer than 1,000 employees.⁰ Thus, under this size

https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2012_US_51SSSZ5&prodType=table (Jan. 8, 2016) (2012 NAICS Code 517210, Firms Operated for the Entire year).

⁰ *Id.* (2012 NAICS Code 517210, Firms Operated for the Entire Year, Firms Operated Entire Year With 1,000 Employees or More). Available census data do not provide a more precise estimate of the number of firms that have employment of 1,500 or fewer employees; the largest category provided is for firms with “1000 employees or more.”

⁰ See FCC, *Universal Licensing System*, <http://wireless.fcc.gov/uls/index.htm?job=home> (last visited June 25, 2017). For the purposes of this FRFA, consistent with Commission practice for wireless services, the Commission estimates the number of licensees based on the number of unique FCC Registration Numbers.

⁰ See FCC, Industry Analysis and Technology Division & Wireline Competition Bureau, Trends in Telephone Service at 5 – 5 Table 5.3 (2010), https://apps.fcc.gov/edocs_public/attachmatch/DOC-301823A1.pdf.

⁰ See *id.*

⁰ See 13 CFR § 120.201. The Wired Telecommunications Carrier category formerly used the NAICS code of 517110. As of 2017 the U.S. Census Bureau definition shows the NAICS code as 517311 for Wired Telecommunications Carriers. See, U.S. Census Bureau, *North American Industry Classification System*, <https://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=517311&search=2017> (last visited June 25, 2017).

⁰ See 13 CFR § 120.201, NAICS code 517110.

⁰ U.S. Census Bureau, *American Fact Finder: Information: Subject Series - Estab & Firm Size: Employment Size of Firms for the U.S.: 2012 Economic Census of the United States*, https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2012_US_51SSSZ5&prodType=table (Jan. 8, 2016) (2012 NAICS Code 51711, Firms

standard, the majority of firms in this industry can be considered small.

E. Description of Projected Reporting, Recordkeeping, and other Compliance Requirements

13. In today's *Order on Reconsideration and Second Report and Order*, we adopt parameters both for establishing an eligible area baseline prior to the MF-II challenge process and for a streamlined challenge process. The process will efficiently resolve disputes about areas shown as eligible for MF-II support on the initial eligibility map that will be generated based on the new collection of 4G LTE coverage data. We summarize below the reporting and other obligations of the MF-II challenge process in the accompanying *Order on Reconsideration and Second Report and Order*. Additional information on these requirements can be found in the *Order on Reconsideration and Second Report and Order* at paragraphs 27-63.

14. To establish the map of areas presumptively eligible for MF-II support, all current Form 477 filers that have previously reported qualified 4G LTE coverage and have qualified 4G LTE coverage based on the data specification set forth in the Order will be required to submit to the Commission a one-time new data filing detailing 4G LTE coverage. Providers will be required to file propagation maps and model details indicating current 4G LTE coverage, as defined by download speeds of 5 Mbps at the cell edge with 80 percent probability and a 30 percent cell loading factor. Filers should report an outdoor level of coverage. The coverage boundaries shall have a resolution of 100 meters (approximately three arc-seconds) or better and shall likewise use an appropriate clutter factor and terrain model with a resolution of 100 meters or better. Providers shall report the signal strength (RSRP) and clutter factor categories used to generate their coverage maps. If the signal strength in the coverage maps varies regionally, then such variations must be reported. The providers must report the loss value associated with each clutter factor category used in their coverage maps. In addition, filers should use the optimized RF propagation models and parameters that they have used in their normal course of business, subject to further requirements set forth in subsequent public notices. Carriers will be required to submit data for the one-time collection at least 90 days after the release of the filing instructions public notice.

15. In conjunction with submitting propagation maps, model details, and signal strength of 4G LTE coverage, providers will submit a list of at least three readily-available handset models appropriate for challengers wishing to conduct a speed test of the providers' coverage in a particular area, and a certification, under penalty of perjury, by a qualified engineer or government official⁹ that the propagation map and model details reflect the filer's coverage as of the generation date of the map in accordance with all other parameters.

16. To initiate a challenge, a challenger must, within the 150-day challenge window: (1) access confidential, provider-specific information for areas it wishes to challenge; (2) identify the area(s) it wishes to challenge; (3) submit evidence supporting the challenge; and (4) certify its challenge for the specified area(s). Only service providers required to file Form 477 data and government entities (state, local, and Tribal) have standing to initiate a challenge. Challengers other than government entities and service providers required to file Form 477 data with the Commission, who are not already represented by another interested party, may file a waiver request with the Commission to participate in the MF-II challenge process for good cause shown. Only challenges for areas that the Bureau identify as presumptively ineligible for MF-II support will be permitted.

17. Challengers must submit their challenges to areas identified as ineligible for support via an online challenge portal to be operated by the Universal Service Administrative Company (USAC). A challenger will be required to identify the area(s) that it wishes to challenge for each state. We will

Operated for the Entire Year).

⁹ For challengers that are governmental entities and do not have a qualified engineer available to certify, we will allow certification by a government official authorized to act on behalf of the organization and with actual knowledge of the accuracy of the underlying data.

require that any challenge be of a minimum size of at least one square kilometer.

18. Challengers will also be required to submit actual outdoor speed test data that satisfy the parameters outlined below and any others the Commission or Bureaus may implement. Speed test data must be collected using provider-specified handsets, discussed above, and substantiated by the certification of a qualified engineer or, in the case of a government entity, a government official under penalty of perjury.

19. A challenger must provide detailed proof of lack of unsubsidized, qualified 4G LTE coverage in support of its challenge with speed test data for each of the providers claiming qualified 4G LTE coverage in the challenged area. We will allow challengers to submit speed data from hardware or software-based drive tests or application-based tests that spatially cover the challenged area. All speed tests must be conducted between the hours of 06:00 AM and 12:00 AM local time, when consumers are likely to use mobile broadband data. A challenger must take speed measurements that are no more than a fixed distance apart from one another within the challenged area, and which substantially cover the entire challenged area. This fixed distance parameter will be a value no greater than one mile, and will be set by the Bureaus in a subsequent public notice. The Commission will only accept data that were collected after the publication of the initial eligibility map and within six months of the scheduled close of the challenge window.

20. Challengers electing to use application-based tests must use the applicable handsets specified by each service provider servicing any portion of the challenged area. The challenger must purchase a service plan from each unsubsidized service provider in the challenged area. If there are multiple unsubsidized service providers in the challenge area, the challenger must purchase service plans that are comparable (i.e., similar with respect to cost and services provided).

21. Once a challenger has submitted its evidence in the USAC MF-II portal, the system will automatically conduct a validation to determine whether the evidence is sufficient to justify proceeding with the challenge. The USAC system will superimpose each challenger's identified challenged area on the initial eligibility map and will remove any portions that overlap eligible areas. A challenged ineligible area must meet the *de minimis* area threshold to move forward in the challenge process. If the challenged area does not meet the threshold, the system will flag the failure and will not accept the challenge for submission unless and until the challenger submits during the challenge window new data that meet the threshold. Then, the USAC system will analyze the geographic coordinates of the points at which the challenger conducted the speed tests to validate whether the speed test data show measurements of download speed less than 5 Mbps (counted speed tests) and meet all other standard parameters. In order to implement the requirements that each point is no more than a fixed distance apart and that the measurements substantially cover the entire challenged area, the system will create a buffer around each counted speed test point and calculate the area of these buffered points (speed test buffer area). The system will apply a buffer with a radius equal to half of the maximum distance parameter and will trim any portions of the buffers that are outside the challenged area. Where a challenged area overlaps the submitted coverage map of more than one incumbent provider, the system will require counted speed tests for each provider in order to calculate the speed test buffer area. If the speed test buffer area within each challenged area covers at least 75 percent of the challenged area, the challenge will pass validation, and once certified, the challenged area(s) will be presented to the incumbent provider(s) for a response. If the speed test buffer area does not cover at least 75 percent of the challenged area, the challenge for that area will fail validation unless the challenger submits new evidence or modifies its challenge during the challenge window such that the challenge for that area meets the 75 percent threshold. Each challenged area that meets the *de minimis* threshold will be considered individually. The USAC system will determine which portions of a challenged area overlap which 4G LTE providers, and respondents will see only those challenged areas and speed test buffer areas that overlap their 4G LTE coverage.

22. Once the challenge window closes, challenged parties will have a limited opportunity to submit additional data in response to a challenge. Using the USAC portal, a challenged party will have 30 days after the opening of the response window to: (1) access and review the data submitted by the

challenger with respect to the challenged area; and (2) submit additional data/information to oppose the challenge. We will accept certain technical information that is probative to the validity of a challenger's speed tests, including, but not limited to speed test data and device-specific data collected from transmitter monitoring software. If a respondent chooses to respond, it need only conduct speed tests of its own network (or gather its own geolocated, device-specific data from network monitoring software) in the disputed areas. If a challenged party chooses to submit its own speed test data, the data must conform to the same standards and requirements we adopt above for challengers. Any evidence submitted by a challenged party in response to a challenge must be certified under penalty of perjury. Response data will not be subject to the USAC's automatic system validation process. A challenged party may choose not to oppose the challenge in which case no additional information will be required. A challenger bears the burden of persuasion and the merits of any challenge will be evaluated under a preponderance of the evidence standard.

F. Steps Taken to Minimize Significant Economic Impact on Small Entities, Significant Alternatives Considered

23. The RFA requires an agency to describe any significant alternatives that it has considered in reaching its approach, which may include the following four alternatives, among others: "(1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance and reporting requirements under the rule for such small entities; (3) the use of performance, rather than design, standards; and (4) an exemption from coverage of the rule, or any part thereof, for small entities."⁰

24. The Commission has considered the economic impact on small entities in reaching its final conclusions and taking action through this proceeding. In the *Mobility Fund II FNPRM*, we sought comment on the parameters for the challenge process for MF-II. We acknowledged that any challenge process would necessarily involve tradeoffs between the burden on interested parties and the Commission and the timeliness and accuracy of final determinations. We sought specific comment on the ways we could reduce the burden on smaller providers.

25. In today's *Order on Reconsideration*, we amend our decision to use a parties' most recent Form 477 data and will instead supplement our coverage maps by providing an opportunity for interested parties to provide up-to-date LTE coverage data to determine an initial map of potentially eligible areas for MF-II support. This amended data baseline, in response to concerns regarding the lack of standardization and reliability of Form 477 data for the purpose of determining coverage meeting the MF-II eligibility benchmark, is intended to provide the Commission and interested parties with the best available starting point of standardized coverage data. In building on this baseline, the procedures we adopt in the Second Report and Order will provide greater certainty and transparency for entities participating in the MF-II challenge process, including small entities. In the *Mobility Fund II FNPRM*, we sought comment on two options, "Option A" and "Option B" for the challenge process, and invited alternative options for the challenge process.

26. "Option A" allowed a challenge to be made on a good-faith belief, based on actual knowledge or past data collection, that 4G LTE coverage was not available in an area as depicted by Form 477 filings. Carriers and state and local governments would be eligible to participate. We sought comment on what evidence, if any, should be required in support of a challenge, whether or not we should require a challenged area to reach a minimum size threshold, whether challenges should be allowed for areas marked as eligible, and how and when challenged providers could respond and with what evidence of coverage.

27. "Option B" gave challenging parties 60 days following the Commission's release of a list of eligible areas to submit evidence, which would include speed test data and shapefile maps and be filed in the public record, contesting the eligibility status of an area. Service providers and governmental entities located in or near the relevant areas would be eligible to participate. Challenged providers would

⁰ 5 U.S.C. § 601(c)(1)-(4).

then have 30 days to respond with their own speed tests and shapefile maps. We sought comment on what requirements should be imposed for speed tests and on the burden of requiring such a level of response from challenged providers.

28. We explained that we intended to assemble a “best in class structure” from the proposed options and made it clear the Commission did not intend to adopt either option wholesale. We believe the challenge process procedures adopted today are the “best in class” and will both promote fairness and minimize burdens on small entities and other interested parties.

29. Given the concerns voiced in the comments regarding the lack of standardization and the reliability of using Form 477 data for MF-II purposes, a collection of new data will ultimately lead to a less onerous and more efficient challenge process for small entities and other MF-II participants. The challenge process will be streamlined using universal, standardized coverage data. These data are already in the possession of current providers who are therefore in the best position to provide data to the Bureaus. Current providers of unsubsidized, qualified 4G LTE coverage, including small businesses, will benefit by filing their coverage data under the standardized parameters adopted in the Order because they can establish their coverage areas as initially ineligible to competitors seeking subsidies in the MF-II auction.

30. Use of newly collected data enables the Commission to adopt a streamlined challenge process that will ease the burden of submission and resolution of challenges to the map of presumptively eligible areas. Because the map of presumptively eligible areas will be established using current, standardized data, challengers will be able to target fewer areas to challenge and reduce the need for more in-depth testing in certain areas. This in turn should reduce the burden on challengers and providers that respond to challenges. We also limited the new, one-time data collection to providers who have previously reported 4G LTE coverage in Form 477 and have qualified 4G LTE coverage. The limited scope for the collection eases the burden by only requiring a filing from those who have easy access to the necessary data.

31. We have taken a number of steps to reduce the burden on small entities and other parties participating in the challenge process while also collecting the information required to target areas without qualified 4G LTE coverage. For example, we limit the types of challenges and will only accept challenges for areas identified by the Bureaus as ineligible for MF-II support. Because the data for the map of presumptively eligible areas are supplied by service providers, we believe a challenge to an eligible area would likely be a correction by the service provider who supplied the initial data. We will not require challengers to match up their challenged areas to census blocks or census block groups as proposed in the *Mobility Fund II FNPRM*. We will allow challenges from government entities (state, local, and Tribal) and all service providers required to file Form 477 data with the Commission, limiting the process to those parties with an adequate interest who are likely to have the knowledge and expertise to make the requisite submission. We do not include consumers as challengers in the MF-II process and believe consumers are best suited to participate in the MF-II challenge process through a state, local, or Tribal government entity. If a consumer, organization, or business believes that its interests cannot be met through its state, local, or Tribal government entity, and it wishes to participate in the process as a challenger, it is free to file a waiver with the Commission for good cause shown, either on its own or with the assistance of an organization. These limits promote an efficient challenge process and prevent unnecessary delay of the deployment of MF-II support.

32. We also require that challenges be a minimum size of at least one square kilometer. By including a minimum size requirement for challenges, we believe small businesses and all interested parties will benefit from a streamlined challenge process. We rejected smaller alternatives to the size of the minimum challenge area. Making the minimum zone smaller than one square kilometer would make the area so small as to be inconsequential for improving efficiency for the challenge process. Ineligible areas of less than one square kilometer can be subject to challenge insofar as they are part of a challenge where the total size of the areas being challenged exceeds the *de minimis* size requirement. The minimum size requirement for a partial area challenge will prevent challenges solely regarding minor, patchy areas

often at the edge of a covered area.

33. The Order adopts specific types of data needed to support a challenge, including actual outdoor download speed test data. The Order also adopts parameters around the type and number of handsets tested, service plan types, hours during which the tests must be completed, frequency of tests, and timing of tests in relation to the submission of the challenge. Standardizing the data-collection parameters will lead to a more efficient and accurate process, deter excessive and unfounded challenges, and minimize the burden on small business challengers as well as other parties utilizing the challenge process. In requiring the submission of standardized data, we allow challengers to use drive-based or application-based tests to generate the necessary data reports. In addition, we are not requiring that an independent third party conduct the speed tests. Given the parameters for speed test data, along with the required certification, we believe the flexibility afforded by allowing different testing methods limits the burden on small businesses. The Order also adopts an automatic system of validation of a challenger's evidence. This automatic validation system ensures that the evidence is reliable and accurately reflects consumer experience in the challenged area, and can be analyzed quickly and efficiently. Challenged parties are also given a limited opportunity to respond to challenges. If a challenged party does not oppose the challenge, it does not need to submit any additional data. To reduce the burden on challenged parties, we decline to require a specific level of response from challenged parties.

34. The Commission will send a copy of the *Order on Reconsideration and Second Report and Order*, including this FRFA, in a report to be sent to Congress and the Government Accountability Office pursuant to the Congressional Review Act.⁰ In addition, the Commission will send a copy of the *Order on Reconsideration and Second Report and Order*, including this FRFA, to the Chief Counsel for Advocacy of the Small Business Administration. A copy of the *Order on Reconsideration and Second Report and Order* and FRFA (or summaries thereof) will also be published in the Federal Register.⁰

⁰ 5 U.S.C. § 801(a)(1)(A).

⁰ See *id.* § 604(b).

**STATEMENT OF
CHAIRMAN AJIT PAI**

Re: *Connect America Fund, WC Docket No. 10-90; Universal Service Reform – Mobility Fund, WT Docket No. 10-208*

Janie Corley co-owns a farm and local mini-golf course in Hopkinsville, Kentucky. She's got plenty of customers.⁰ But the crowd isn't necessarily there to play a round of mini-golf. Instead, the small space surrounding the cashier is a wireless "sweet spot." It's the one place you can be sure to get a signal. So locals clamor around the cashier to send their e-mails or make their phone calls.

Folks in Hopkinsville will tell you that it's not exactly a mobile hotspot. They don't even need a wireless coverage map to know that. And they are joined by millions of rural Americans whose phones too often can't give them high-speed Internet access

In February, we allocated \$4.53 billion over ten years to address this problem by building 4G LTE mobile networks in rural communities. But to make sure these funds actually go toward expanding mobile coverage, as opposed to duplicating private capital, we sought input on a "challenge process." We hoped this process would help us create an accurate map of unserved areas eligible for Mobility Fund II subsidies.

Working together, my colleagues and I have struck the right balances in this challenge process. Having carriers submit maps based on uniform parameters, which parties can then challenge, creates a fair opportunity for both the challengers and the challenged. And on a bipartisan basis, we have made some important revisions which should lead to a more robust challenge process. For instance, we now require confidential disclosure of the parameters that carriers used in their propagation models (such as signal strength and clutter). This will let potential challengers see if an area is actually likely to meet a certain service threshold. We have also provided substantially more time for the stages of the challenge process and made it easier for state and local governments to submit a challenge. In short, we have established a process calibrated to be fair to all parties and to deliver mobile broadband to rural America.

Thank you for the leadership of the Rural Broadband Auctions Task Force who handled this order simultaneously with the CAF II Comment PN: Kirk Burgee, Chelsea Fallon, Michael Janson, and Thom Parisi. And thank you to the all other staff who worked on this important order: from the Wireless Telecommunications Bureau: Rita Cookmeyer, Chas Eberle, Ben Freeman, Jessie Friend, Nese Guendelsberger, Audra Hale-Maddox, Katie Hinton, Jonathan McCormack, Gary Michaels, Murtaza Nasafi, Kelly Quinn, Paroma Sanyal, Jim Schlichting, Christiaan Segura, Karen Sprung, Don Stockdale, Patrick Sun, Tom Tran, and Margie Weiner; from the Wireline Competition Bureau: Ying Ke, Ken Lynch, Alex Minard, and Gilbert Smith; from the Office of General Counsel: Bill Dever, Keith McCrickard, and Bill Richardson; from the Office of Native Affairs and Policy: Sayuri Rajapakse; and from the Office of Strategic Planning and Policy Analysis: Paul LaFontaine.

⁰ Terena Bell, How Cellular Dead Zones Hurt Rural Towns, The American Conservative (Mar. 17, 2017), <http://tinyurl.com/y9puep9f>.

**STATEMENT OF
COMMISSIONER MIGNON L. CLYBURN**

Re: *Connect America Fund, WC Docket No. 10-90; Universal Service Reform – Mobility Fund, WT Docket No. 10-208*

On July 18th, I rode over to Marietta, Ohio where I listened to countless teachers, students, parents, small business owners and local government leaders express in glaring and poignant detail just how wide – and deep – digital and opportunities divides are in Appalachia. Pat of Athens, Ohio said this to me: “I’m tired of my area being short changed. I want equal footing, and equal opportunities for people in my region of the state, regardless of who they are, what they look like, who they know, or how much money they have.” Far too many families and communities in rural America share Pat’s fate, where subpar service, unaffordable service or simply no service at all are the norm, not the exception. And while we have made significant progress along the way, much more remains to be done.

Finding ways to connect communities that have been left behind has been an obsession of mine since I first arrived at the FCC some eight years ago. So I am pleased to be able to affirm to Pat and the others who were in attendance at the Marietta Town Hall and Connectivity Summit that we hear you, and with this item we are taking critical next steps in phase two of the Mobility Fund.

Today, we establish a framework for the Mobility Fund Phase II challenge process. Importantly, we adopt an industry consensus proposal to undertake a new, one-time data collection on deployment of 4G LTE. This is a watershed decision, because as I have said before, lack of good data would prolong the time it takes to deliver on the Mobility Fund’s stated objective of bringing connectivity to unserved communities. And as promised earlier this year, we have restructured an admittedly complex process to minimize the burdens on challengers, including small providers who just want to bring connectivity to more communities.

Our goal, in large part, is to promote local economies in underserved and rural communities through the deployment of essential mobile services. With the exciting prospects of 5G inching closer by the day, we must ensure that all areas, no matter how remote, have access to at least 4G LTE service. To achieve this goal and ensure that connectivity is ubiquitous, we must allocate our limited universal service funds as efficiently and effectively as possible.

Thank you to the Rural Broadband Auctions Task Force and the Wireless Telecommunications Bureau for your dedicated and laudable efforts to promote broadband deployment in rural America. Whether it is connected cars, access to healthcare, or simply being able to let friends and family know that you are on the way home during that long drive, your efforts will ensure that underserved and unserved communities in rural America reap the benefits of those technological innovations that so many of us outside of Appalachia take for granted.

**STATEMENT OF
COMMISSIONER MICHAEL O'RIELLY**

Re: *Connect America Fund, WC Docket No. 10-90; Universal Service Reform – Mobility Fund, WT Docket No. 10-208*

When the Commission established rules for the Mobility Fund Phase II earlier this year, I worked with my colleagues to include a challenge process to confirm which areas should be eligible for funding. Decisions premised on inaccurate data or faulty assumptions could result in either wasteful overbuilding or a loss of service for consumers. Therefore, we sought comment on a challenge process to ensure that these vital decisions would be based on the best possible data without overburdening participants or staff or creating undue delays.

The order before us today appears to have struck an appropriate balance on all counts. While this process will involve a new data collection, which is not something to be undertaken lightly, the order attempts to standardize and streamline the requirements, which is intended to make the process more efficient and expeditious overall. In addition, the order seems to set reasonable parameters to maximize coverage while targeting areas that are truly unserved. In each of the high-cost programs, the Commission has worked hard to find the sweet spot that will ensure that our scarce ratepayer funds are used where they are needed most. Consistent with our prior decisions, we have decided to direct this funding to the higher-cost unserved areas that are less likely to be served through market forces. Finally, in order for a challenge process to be successful, participants must have time to assemble the necessary filings. Therefore, I am pleased that the order has been revised to provide a longer timeline to gather and submit data.

I will vote to approve.