

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

In the Matter of
Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion
GN Docket No. 20-269

SIXTEENTH BROADBAND DEPLOYMENT REPORT NOTICE OF INQUIRY

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I. INTRODUCTION

1. Closing the digital divide—and bringing to every American the economic, education, health, civic, and social benefits that a broadband connection provides—continues to be the Commission’s top priority. As the ongoing the COVID-19 pandemic has pushed more Americans to work, study, see their doctors, and stay connected to friends and loved ones through broadband connections, it serves to underscore the importance of closing this divide and ensuring that people throughout the country have access to digital opportunity. In order to ensure that the Commission’s efforts to close the digital divide are working and to guide future policymaking, each year the Commission assesses whether service providers are extending their networks to reach unserved consumers throughout the country.

2. Through this Notice of Inquiry, the Commission begins its latest annual statutorily-mandated assessment of its progress in closing the digital divide. Section 706 of the Telecommunications Act of 1996, as amended, requires us to “determine whether advanced telecommunications capability is

being deployed to all Americans in a reasonable and timely fashion” and report annually.¹ In the *2020 Broadband Deployment Report*, we concluded that for the third consecutive year such advanced telecommunications capabilities are being timely deployed.² While the *2020 Report* acknowledged there is still work to be done to fully close the digital divide, more Americans than ever before now have access to the benefits of broadband as the Commission’s policies have created a regulatory environment to stimulate broadband investment and deployment.³ With this Notice of Inquiry, we invite all interested parties to submit comment and information to guide our analysis in the *2021 Broadband Deployment Report*.

II. BACKGROUND

3. The *2020 Report* showed that based on the best data then available, the number of Americans lacking access to fixed terrestrial broadband service of at least 25/3 Mbps continues to decline, falling more than 14% in 2018 and more than 30% between 2016 and 2018.⁴ In addition, the number of Americans without access to 4G Long Term Evolution (LTE) mobile broadband service with a median speed of at least 10/3 Mbps fell approximately 54% between 2017 and 2018.⁵ The vast majority of Americans, surpassing 85% of the population in 2018, now have access to fixed terrestrial broadband service at 250/25 Mbps, representing a 47% increase in the number of Americans with access to this speed since 2017.⁶ Over the same period, the number of Americans living in rural areas with access to such service increased by 85%.⁷ The *2020 Report* also showed that broadband investment was up more than \$3.1 billion, while fiber networks were deployed to roughly 6.5 million new homes in 2019, the second consecutive year of record-breaking single-year increases.⁸ Further, we noted the significant impacts of our continuing efforts to accelerate deployment of advanced telecommunications capability and close the digital divide by removing barriers to wireline and wireless investment, modernizing universal service programs, and making more spectrum available for the communications marketplace.⁹

4. Thus, the *2020 Report* concluded that, due to the Commission’s policy efforts, “the digital divide continues to narrow as more Americans than ever before have access to high-speed

¹ 47 U.S.C. § 1302(b). For simplicity in past inquiries, the Commission has sometimes used the term “broadband” to refer to “advanced telecommunications capability.” However, “advanced telecommunications capability” is a statutory term with a definition that is narrower than the term “broadband.” See 47 U.S.C. § 1302(d)(1) (“The term ‘advanced telecommunications capability’ is defined, without regard to any transmission media or technology, as high-speed, switched, broadband telecommunications capability that enables users to originate and receive high-quality voice, data, graphics, and video telecommunications using any technology.”). As this definition makes clear, while all services providing advanced telecommunications capability are “broadband,” not all broadband services provide advanced telecommunications capability.

² *Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, GN Docket No. 19-285, 2020 Broadband Deployment Report, FCC 20-50, paras. 3 (2020) (*2020 Report*).

³ *Id.* at paras. 90-94.

⁴ *Id.*, para. 2. When we provide broadband speed figures, we present both the download and upload speeds. In the case of 25/3 Mbps, for example, we refer to broadband service that has a download speed of 25 Mbps and an upload speed of 3 Mbps.

⁵ *Id.*

⁶ *Id.*

⁷ *Id.*

⁸ *Id.*; *Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, GN Docket No. 19-285, 2019 Broadband Deployment Report, 34 FCC Rcd 3857, 3858, para. 2 (2019) (*2019 Report*).

⁹ *2020 Report*, paras. 54-89.

broadband.”¹⁰ Consistent with the statutory text of section 706 of the Telecommunications Act of 1996,¹¹ the *2020 Report* once again used a progress-based approach to analyze year-over-year deployment of both fixed and mobile broadband services.¹² We noted that our approach enables the Commission to determine whether advanced telecommunications capability “is being deployed” in the manner that section 706 requires.¹³

5. While concluding that advanced telecommunications capability was being deployed in a reasonable and timely fashion, we also recognized in the *2020 Report* that our work to close the digital divide is not complete.¹⁴ We noted, for instance, that the 2018 data demonstrate that close to 6% of Americans, nearly 18.3 million people, lack access to fixed terrestrial advanced telecommunications capability of 25/3 Mbps.¹⁵ And although deployment is improving in all geographic areas, we also recognized that we must continue to encourage deployment particularly to rural areas, where approximately 22% of Americans lack access to fixed terrestrial services at these speeds, and in Tribal areas, where approximately 28% of Americans lack access to such services.¹⁶ Thus, further deployment of advanced telecommunications capability to close the digital divide must remain a top priority of the Commission as we continue our efforts to deliver the benefits of advanced broadband services to all Americans.¹⁷

III. STATUTORY FRAMEWORK FOR BROADBAND DEPLOYMENT INQUIRY

6. Consistent with past *Broadband Deployment Reports*, we propose to take a holistic view of progress in the deployment of advanced telecommunications capability, and determine whether that progress is occurring in a reasonable and timely fashion.¹⁸ Taking such a holistic view of deployment requires that we consider a range of speeds provided over both fixed and mobile technologies, as opposed to only a single benchmark speed, to best capture the ways Americans are using advanced telecommunications capabilities. This approach to evaluating deployment is the most faithful reading of the statute’s plain text. Below, we propose an evaluative framework for the next Report and seek comment on our proposed methodology.

A. Evaluating Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion

7. *Progress in Deployment.* In the *2020 Report*, consistent with previous reports, we considered whether advanced telecommunications capability was being deployed to all Americans in a reasonable and timely fashion by evaluating progress—specifically comparing deployment of fixed and mobile services as of December 31, 2018, to deployment of those services as of December 31 of each year since 2014.¹⁹ In doing so, we reiterated our conclusion that by using the language “is being

¹⁰ *Id.*, para. 2.

¹¹ 47 U.S.C. § 1302.

¹² *2020 Report*, para. 7-8.

¹³ *Id.*, para. 7-8.

¹⁴ *Id.*, paras. 91, 94.

¹⁵ *Id.*, para. 94.

¹⁶ *Id.*

¹⁷ *Id.*

¹⁸ *Id.*, para. 7; *2019 Report*, 34 FCC Rcd at 3859, para. 8.

¹⁹ *2020 Report*, paras. 7, 35-41, Figs. 1-4; *2019 Report*, 34 FCC Rcd at 3859, para. 8; *Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, GN Docket No. 17-199, 2018 Broadband Deployment Report, 33 FCC Rcd 1660, 1678, paras. 45-46 (2018) (*2018 Report*).

deployed” in section 706, Congress intended that the Commission evaluate the progress of deployment to all Americans; Congress did not ask us to determine whether each and every American is served at this moment.²⁰ We propose to use this progress-based approach for the next Report, and seek comment on doing so.

8. In the *2020 Report*, we also reiterated our conclusion that both fixed and mobile-LTE services provide capabilities that satisfy the statutory definition of advanced telecommunications capability. However, consistent with our two previous reports, we found that the record did not demonstrate that fixed broadband and mobile-wireless broadband services are functional substitutes in all cases, despite the increasing ubiquity and capabilities of mobile services.²¹ Thus, we evaluated the availability of fixed and mobile services holistically over a five-year time period (2014-2018), using the same four categories for determining the proportion of Americans with advanced telecommunications capability available as presented in the *2019 Report*: (1) those with access to fixed services; (2) those with access to mobile LTE services; (3) those with access to both fixed terrestrial *and* mobile LTE services; and (4) those with access to at least one of either fixed terrestrial *or* mobile LTE services.²²

9. We propose maintaining the evaluative framework we used in the *2020 Report*. Specifically, we propose conducting an evaluation of fixed and mobile services using the same four categories as are used in the *2020 Report*. We also propose to continue to rely on a five-year time period (2015-2019) in our analysis. To enable the Commission and the public to monitor consumer usage trends and marketplace developments, the *2020 Report* presented deployment figures for five fixed broadband speed metrics (specifically, the 25/3 Mbps fixed advanced telecommunications capability speed benchmark, plus 10/1 Mbps, 50/5 Mbps, 100/10 Mbps, and 250/25 Mbps),²³ and for two mobile 4G LTE speed metrics (5/1 Mbps minimum advertised speed and 10/3 Mbps median speed).²⁴ We propose to use these same metrics for our upcoming Report, and we seek comment on that proposal.

10. In the *2020 Report*, we found that while subscribers of both mobile and fixed broadband service may substitute between the two when accessing certain uses, programs, and applications, the two services are not yet functional substitutes for all uses and customer groups.²⁵ Do commenters agree? Have there been changes in marketplace and technological conditions since the *2020 Report* that justify a different evaluative approach? If so, then how would we adjust our evaluative approach to account for such a conclusion? Should the increasing deployment of 5G wireless services affect our analysis and, if so, how?

11. *Defining Advanced Telecommunications Capability.* In the *2020 Report*, we found that the speed benchmark of 25/3 Mbps continued to be the appropriate measure to assess whether fixed services provide advanced telecommunications capability.²⁶ We noted that the record reflected significant support for maintaining this benchmark, and that a consistent benchmark better enables the Commission

²⁰ *2020 Report*, para. 8; *2019 Report*, 34 FCC Rcd at 3859, para. 8.

²¹ *2020 Report*, paras. 10, 12; *2019 Report*, 34 FCC Rcd at 3861, para. 11; *2018 Report*, 33 FCC Rcd at 1666-67, para. 18.

²² *2020 Report*, para. 7.

²³ The FCC Form 477 Instructions require each provider to indicate their maximum download and upload speeds. FCC Form 477 Instructions at 18, available at <https://us-fcc.app.box.com/v/Form477Instructions>.

²⁴ *2020 Report*, paras. 13, 15, 16. The FCC Form 477 Instructions require each provider to indicate their minimum advertised speeds and where users should expect to receive those advertised speeds. For convenience, when discussing mobile broadband services, we refer to minimum advertised speeds throughout this Inquiry. FCC Form 477 Instructions at 25, available at <https://us-fcc.app.box.com/v/Form477Instructions>.

²⁵ *2020 Report*, para. 12.

²⁶ *Id.*, para. 13.

and the public to track deployment progress over time.²⁷ We propose to maintain the 25/3 Mbps benchmark for fixed services, and we seek comment on this proposal.

12. In the *2020 Report*,²⁸ we found that a single benchmark was inappropriate in the mobile wireless context due to the inherent variability in the performance characteristics of mobile service both geographically and temporally, as we had also noted in previous *Reports*.²⁹ We therefore concluded that retaining the approach of using multiple metrics continued to be appropriate.³⁰ Although we did not assert that 5/1 Mbps is a mobile advanced telecommunications capability benchmark, we concluded that the 5/1 Mbps minimum advertised speed serves as a check to ensure that the 4G LTE deployed to a given geographical area has sufficient backhaul and other capabilities to offer LTE in a manner consistent with being an advanced telecommunications capability.³¹ We analyzed provider-reported 4G LTE coverage based on the Commission's FCC Form 477 data,³² where service providers claim a minimum advertised speed of 5/1 Mbps. Further, in areas where providers claim to provide 4G LTE with a minimum 5/1 Mbps advertised speed, we supplemented provider-reported data with Ookla speed-test data, which identify areas showing median measured 4G LTE speeds of at least 10/3 Mbps.³³ We concluded that this supplemental approach could help to address certain limitations of the current FCC Form 477 mobile data, while helping the Commission understand the extent to which American consumers today are receiving speeds higher than 5/1 Mbps.³⁴ By continuing our prior approach, we concluded the Commission also could more readily assess progress over time.³⁵ We seek comment on whether to take a similar approach when evaluating mobile speeds in the next Report. Further, the Commission will also begin collecting 5G New Radio (NR) deployment data this year, to ensure that both the Commission and consumers have an accurate account of 5G deployment.³⁶ We seek comment on whether and how these data should be used.

²⁷ *Id.*, paras. 13, 15.

²⁸ *Id.*, para. 16.

²⁹ *2020 Report*, para. 16; *2019 Report*, 34 FCC Rcd at 3863-64, paras. 16-17; *2018 Report*, 33 FCC Rcd at 1672-74, paras. 30-34.

³⁰ *2020 Report*, para. 16.

³¹ *Id.*

³² FCC Form 477 collects information about broadband connections to end-user locations, wired and wireless local telephone services, and interconnected Voice over Internet Protocol (VoIP) services in the 50 states, the District of Columbia, and the Territories and possessions. See 47 U.S.C. § 153(58). Data obtained from this form is used to describe the deployment of broadband infrastructure and competition to provide local telecommunications services. Fixed providers file lists of census blocks in which they can or do offer service to at least one location, with additional information about the service. Mobile providers file maps of their coverage areas for each broadband technology (e.g., EV-DO, HSPA, LTE). See <https://www.fcc.gov/general/broadband-deployment-data-fcc-form-477>.

³³ The data collected by the Ookla Speedtest mobile app include test results for download speed, upload speed, and latency, as well as other information, such as the location of the test and operating system of the handset. *2020 Report*, para. 33, n.107.

³⁴ *2020 Report*, para. 16.

³⁵ *Id.*

³⁶ *Establishing the Digital Opportunity Data Collection; Modernizing the FCC Form 477 Data Program*, WC Docket Nos. 19-195, 11-10, Second Report and Order and Third Further Notice of Proposed Rulemaking, FCC 20-94, para. 33 (*Digital Opportunity Data Collection Second Order*); *Establishing the Digital Opportunity Data Collection; Modernizing the FCC Form 477 Data Program*, WC Docket Nos. 19-195, 11-10, Report and Order and Second Further Notice of Proposed Rulemaking, 34 FCC Rcd 7505, 7524, para. 44 (2019) (*Digital Opportunity Data Collection Order*).

B. Schools and Classrooms

13. Section 706 also requires an evaluation of the availability of advanced telecommunications capability in elementary and secondary schools and classrooms.³⁷ In the *2020 Report*, we continued to measure the availability of advanced telecommunications capability in schools and classrooms by using our short-term goal of 100 Mbps per 1,000 students and staff, and our long-term goal of 1 Gbps per 1,000 students and staff.³⁸ We propose to continue using these goals for the upcoming Report and seek comment on doing so.

C. Tribal Lands

14. The Commission has long recognized the need to promote and encourage the availability of broadband on Tribal lands.³⁹ We found in the *2020 Report* that Tribal lands continue to face significant obstacles to broadband deployment and observed that deployment of advanced telecommunications capability on certain Tribal lands lags behind deployment in other, non-Tribal areas.⁴⁰ Among other things, we recognized the need to promote and encourage the availability of broadband on Tribal lands as many of these lands are located disproportionately in rural areas, which tend to be less densely populated than rural non-Tribal areas.⁴¹ Further, we observed the remote, isolated nature of these areas combined with challenging terrain and lower incomes increase the cost of network deployment and entry, thereby reducing the profitability of providing service.⁴²

15. While deployment to Tribal lands has increased in recent years, additional work is required. For example, in 2018, 72.1% of the population living on Tribal lands were covered by fixed terrestrial 25/3 Mbps services and mobile LTE with a speed of 5/1 Mbps, based on FCC Form 477 data.⁴³ While this represents an increase from 67.8% in 2017 and 62.4% in 2016, 27.9% of those living on Tribal lands are still without these services—and these services are not deployed to nearly half (47.1%) of those living on rural Tribal lands.⁴⁴ We seek comment on whether deployment in Tribal areas still lags compared to deployment in non-Tribal areas, as well as other considerations, such as barriers to deployment on Tribal lands.

³⁷ 47 U.S.C. § 1302(b).

³⁸ *2020 Report*, para. 21. The Commission adopted these goals in 2014. See *Modernizing the E-rate Program for Schools and Libraries*, WC Docket No. 13-184, Report and Order and Further Notice of Proposed Rulemaking, 29 FCC Rcd 8870, 8885, para. 34 (2014).

³⁹ See, e.g., *Rural Digital Opportunity Fund; Connect America Fund*, WC Docket Nos. 10-90, 19-126, Report and Order, 35 FCC Rcd 686 (2020) (*Rural Digital Opportunity Fund Order*) (creating a Rural Digital Opportunity Fund to target support to areas that lack access to 25/3 Mbps broadband service, including prioritizing bids to serve Tribal lands); *Transforming the 2.5 GHz Band*, WT Docket No. 18-120, Report and Order, 34 FCC Rcd 5446, 5465-66, paras. 51-55 (July 11, 2019); FCC, *Report on Broadband Deployment in Indian Country, Pursuant to the Repack Airwaves Yielding Better Access for Users of Modern Services Act of 2018*, at 1-8, submitted to the Senate Committee on Commerce, Science, and Transportation House of Representatives Committee on Energy and Commerce (May 1, 2019): <https://docs.fcc.gov/public/attachments/DOC-357269A1.pdf>; *Promoting Telehealth in Rural America*, WC Docket No. 17-310, Report and Order, 33 FCC Rcd 6574 (2018); *Bridging the Digital Divide for Low-Income Consumers et al.*, WC Docket No. 17-287 et al., Fourth Report and Order, Order on Reconsideration, Memorandum Opinion and Order, Notice of Proposed Rulemaking, and Notice of Inquiry, 32 FCC Rcd 10475 (2017); *Modernizing the E-rate Program for Schools and Libraries*, WC Docket No. 13-184, Report and Order and Further Notice of Proposed Rulemaking, 29 FCC Rcd 8870, 8967-8970, paras. 243-49 (2014).

⁴⁰ *2020 Report*, paras. 22, 77.

⁴¹ *Id.*, para. 22.

⁴² *Id.*

⁴³ *Id.*, para. 38.

⁴⁴ *Id.*, para. 47.

IV. DATA SOURCES AND ANALYSIS

16. *Deployment Data for Fixed Services.* We found in the *2020 Report* that despite its well-known limitations, the FCC Form 477 deployment data for fixed technologies are currently the most reliable and comprehensive dataset with which to assess availability of fixed services.⁴⁵ The Digital Opportunity Data Collection, along with the Broadband DATA Act—which largely ratifies the Commission’s approach to broadband mapping in the Digital Opportunity Data Collection—will make significant improvements to our collection of broadband deployment data, and will ultimately result in the collection of more precise fixed data.⁴⁶ However, the improved data will not be available for use in the upcoming Report.⁴⁷ We recognize that using publicly-available data increases the transparency of our analysis, permitting the public to independently assess our broadband deployment data, and also has the benefit of using a consistent unit of measurement for evaluating progress in deploying advanced telecommunications capabilities.⁴⁸ We therefore propose to continue to use the FCC Form 477 data to evaluate deployment of fixed broadband services. We seek comment on this proposal.

17. Consistent with the *2020 Report*,⁴⁹ we recognize the limitations of the FCC Form 477 data, and we consider the shortcomings and challenges of the dataset when those data are used to inform our funding and policy decisions.⁵⁰ For example, we acknowledged in the *2020 Report* that because the FCC Form 477 fixed data are at the census block level, for purposes of the *2020 Report*, a census block is classified as served if that service is available anywhere in the census block, although it is not necessarily the case that every household, housing unit, or person will have access to a given service.⁵¹ Thus, we noted, our analysis likely overstates to some degree the coverage experienced by some consumers, especially in large or irregularly-shaped census blocks, causing the report to possibly overstate the deployment of fixed and mobile services.⁵² We seek comment on the extent to which such an overstatement may occur, the potential data sources to quantify such an estimate, and how that estimate should affect the conclusions we draw regarding the state of deployment.

18. As adopted in the *Digital Opportunity Data Collection Second Order*, the Digital Opportunity Data Collection represents an improvement to the Commission’s broadband deployment data collection by, among other things, requiring fixed broadband providers to submit broadband coverage polygons or lists of addresses or locations identifying where they make fixed broadband service available

⁴⁵ *Id.*, para. 24; see also *2019 Report* at 3868-69, para. 25.

⁴⁶ *Digital Opportunity Data Collection Order*, 34 FCC Rcd at 7524, para. 44, 7530, para. 58, 7549-59, paras. 112-34; Broadband Deployment Accuracy and Technology Availability Act, Pub. L. No. 116-130, 134 Stat. 228 (2020) (codified at 47 U.S.C. §§ 641-646) (Broadband DATA Act); *Digital Opportunity Data Collection Second Order*, para. 54.

⁴⁷ The Commission had created a role for USAC to develop and maintain technology infrastructure for collecting and processing coverage data from service providers, crowdsourced data, and challenges from consumers, state, local, and Tribal governments, and certain other third parties. However, the Broadband DATA Act prohibits this, and the Commission currently lacks an appropriation necessary to implement the new broadband coverage mapping program. .

⁴⁸ *2020 Report*, para. 24.

⁴⁹ *2020 Report*, paras. 25-26.

⁵⁰ Though staff examine FCC Form 477 data for quality and consistency, the data may understate or overstate deployment of services to the extent that broadband providers fail to report data or misreport data. See Federal Communications Commission, *Explanation of Broadband Deployment Data* (March 12, 2020), <https://www.fcc.gov/general/explanation-broadband-deployment-data> (describing quality and consistency checks performed on providers’ submitted data and explaining any adjustments made to the FCC Form 477 data as filed).

⁵¹ *2020 Report*, para. 26.

⁵² *Id.*, para. 26.

to end users.⁵³ For each location within the polygons, or address or location listed, the provider must either have a current broadband connection or be capable of providing such a connection within 10 business days of a customer request.⁵⁴ Further, the Digital Opportunity Data Collection includes a crowdsourcing component to allow the submission of public input on the accuracy of the data on the public fixed broadband availability map.⁵⁵

19. The Broadband DATA Act, enacted in March 2020, requires the Commission to establish rules by September 21, 2020: (1) requiring the collection of granular data from providers on the availability and quality of service of broadband internet access service,⁵⁶ which the Commission would use to create publicly available coverage maps; (2) adopting processes for challenging and verifying the coverage maps and submitted data; and (3) creating a common dataset of all locations where fixed broadband internet access service can be installed.⁵⁷ The Broadband DATA Act largely affirms the Commission's approach to mapping the availability of broadband in last year's *Digital Opportunity Data Collection Order*, but differs in some respects. The Commission has taken steps in the *Digital Opportunity Data Collection Second Order* to build on its earlier approach and implement the Broadband DATA Act by requiring fixed and mobile broadband providers to submit standardized broadband availability maps and taking steps to develop fabric of broadband-serviceable locations upon which broadband availability data can be overlaid. The Commission is also seeking comment on requirements to create a process for receiving verified data from State, local, and Tribal governmental mapping entities and to establish a challenge process for coverage data.⁵⁸

20. As promising as our efforts to improve broadband deployment information are, we believe that basing our analysis of fixed broadband deployment in the upcoming Report on FCC Form 477 data is most appropriate. We reiterate that because our next Report is due 180 days from release of this Inquiry, we will not have information from the Digital Opportunity Data Collection in time for use in the next Report. Therefore, the FCC Form 477 fixed data are likely to remain the most thorough and accurate data available for this analysis.⁵⁹ Further, continuing to rely on FCC Form 477 deployment data for now will best enable us to assess the level of deployment by providing a consistent unit of measurement. We also note that the Commission will continue to collect data through the FCC Form 477 while the Digital Opportunity Data Collection is being implemented and thereafter in order to provide a means of validating new broadband coverage data.⁶⁰ Commenters that prefer we use alternate data should also provide recommendations for alternative datasets or supplements to the FCC Form 477 data that could be used to guide our analysis. We remind commenters, however, that this Inquiry is not a rulemaking, and therefore cannot be used to undertake changes to the FCC Form 477 or any other

⁵³ *Digital Opportunity Data Collection Second Order*, paras. 4-5, 12-13.

⁵⁴ *Id.*, paras 13.

⁵⁵ *Id.*, paras. 62-76.

⁵⁶ Broadband internet access service is defined as “a mass-market retail service by wire or radio that provides the capability to transmit data to and receive data from all or substantially all internet endpoints, including any capabilities that are incidental to and enable the operation of the communications service, but excluding dial-up internet access service. This term also encompasses any service that the Commission finds to be providing a functional equivalent of the service described in the previous sentence or that is used to evade the protections set forth in this part.” 47 U.S.C. § 641(1); 47 CFR § 8.1(b).

⁵⁷ 47 U.S.C. §§ 642(a)(1)(A), (B)(i), (b)(1)(A).

⁵⁸ *Digital Opportunity Data Collection Second Order*, paras. 130-40, 145-48; 47 U.S.C. §§ 642(a)(2)(A)-(C), 644(b), 642(b)(5).

⁵⁹ *2020 Report*, para. 24; *2019 Report* at 3868-69, para. 25.

⁶⁰ *See, e.g.*, 47 U.S.C. 642(b)(6)(A)(I) (requiring the Commission to collect Form 477 data in a manner that “(aa) enables the comparison of data and maps produced before the implementation of [the Broadband DATA Act] with data and coverage maps produced after [its] implementation”).

Commission data collection.⁶¹

21. We propose to present deployment estimates for satellite broadband services as we did in the *2020 Report*, providing deployment estimates for fixed terrestrial services in the report's tables and providing deployment estimates for all fixed services, including satellite, separately in an appendix.⁶² As we noted in the *2020 Report*, while satellite signal coverage may enable operators to offer services to wide swaths of the country, overall satellite capacity may limit the number of consumers that can actually subscribe to satellite service at any one time.⁶³ As we did in the *Fifteenth Notice of Inquiry*, we seek comment on the treatment of satellite service generally, including how we should take into account any possible limitations, such as satellite capacity, in assessing the geographic scope of reported satellite coverage.⁶⁴

22. *Deployment Data for Mobile Services.* In the *2020 Report*, we reported deployment estimates based on FCC Form 477 deployment data for 2014 through 2018.⁶⁵ For this date range, we analyzed FCC Form 477 mobile LTE deployment shapefiles with a minimum advertised speed of 5/1 Mbps, as has previously been done by the Commission.⁶⁶ Similar to previous *Reports*, we employed the centroid methodology in evaluating the FCC Form 477 deployment data for LTE.⁶⁷ We considered a census block to be covered by LTE services if there was at least one service provider serving that census block that reported 5/1 Mbps as its minimum advertised speed, based on its FCC Form 477 submission.⁶⁸

23. Further, in the *2020 Report*, recognizing that actual speeds tend to be much faster than the minimum advertised speed,⁶⁹ in those areas where providers claim to provide 4G LTE with a minimum 5/1 Mbps advertised speed, we supplemented provider-reported data with Ookla data, identifying areas showing median measured 4G LTE speeds of at least 10/3 Mbps.⁷⁰ The analysis of

⁶¹ Comments regarding additional changes to the FCC Form 477, the Digital Opportunity Data Collection, and our implementation of the Broadband DATA Act should be filed in both WC Docket No. 11-10 (Modernizing the FCC Form 477 Data Program) and WC Docket No. 19-195 (Establishing the Digital Opportunity Data Collection).

⁶² See *2020 Report*, paras. 35-41, Figs. 1-4. As of year-end 2018, 94.4% of the overall population had coverage of fixed terrestrial broadband at speeds of 25/3 Mbps—the Commission's current benchmark for fixed advanced telecommunications capability—up from 93.5% in 2017, including 98.5% of Americans in urban areas and 77.7% of Americans in rural areas. *Id.*, para. 36 and Fig. 1. If satellite service is included in this estimate, the December 2018 data show that fixed 25/3 Mbps service is deployed to nearly every American as of December 2018. *Id.*, para. 36.

⁶³ See *2020 Report*, para. 30, n.99.

⁶⁴ *Inquiry Concerning Deployment of Advanced Telecommunications Capability to all Americans in a Reasonable and Timely Fashion*, GN Docket No. 19-285, Fifteenth Broadband Deployment Report Notice of Inquiry, 34 FCC Rcd 10092, 10099 at para. 19 (2019). We note that we are seeking comment on how we could improve upon the existing satellite broadband data collection in the *Digital Opportunity Data Collection Second Order*. *Digital Opportunity Data Collection Second Order* at para. 94. Comments regarding such improvements should be submitted in both WC Docket Nos. 11-10 and 19-195.

⁶⁵ *2020 Report*, paras. 26-27.

⁶⁶ *Id.*, para. 32.

⁶⁷ *Id.*; *2019 Report* 34 FCC Rcd at 3870, para. 29 (among other past *Reports*).

⁶⁸ *2020 Report*, para. 32.

⁶⁹ *Id.*, para. 33.

⁷⁰ As noted above, the data collected by the Ookla Speedtest mobile app include test results for download speed, upload speed, and latency, as well as other information, such as the location of the test and operating system of the handset. *2020 Report*, para. 33, n.107. The results presented in the *2020 Report* were based on tests that were executed in the second half of the year for 2014, 2015, 2016, 2017, and 2018 on the smartphone's cellular connection, and using LTE technology. Test data was excluded if it had missing GPS location data or if the reported

(continued....)

Ookla data considered only those counties with a sufficient number of Ookla speed test observations in each time frame covered by the *2020 Report*.⁷¹ Although we did not have reliable on-the-ground speed data for every county in the United States, the Ookla data covered approximately 93% of the population of the United States.⁷² We propose to use the same approach in the upcoming Report and seek comment on this proposal. We also seek comment on whether other sources for these data exist.

24. We are in the process of establishing an improved framework for verifying mobile broadband coverage through the Digital Opportunity Data Collection. This approach includes, among other things, incorporating mobile broadband coverage data into the new data collection, such as requiring submission of propagation maps and propagation model parameters⁷³ In addition, the Commission has established rules requiring mobile providers to submit corporate officer certifications,⁷⁴ and has sought comment on requiring submission of infrastructure information, implementing certain provisions of the Broadband DATA Act pertaining to data verification, and a challenge process for coverage data similar to those required by the legislation for fixed broadband.⁷⁵ As is the case with fixed broadband data, however, mobile broadband data from the Digital Opportunity Data Collection will not be available in time for us to consider in the upcoming Report.

25. As such, we again propose to continue to rely on the mobile broadband coverage data from the FCC Form 477 collection for the upcoming *Report*. Commenters who prefer the use of other data for the purposes of this Inquiry should also provide recommendations for alternative datasets or supplements to the FCC Form 477 data that could be used to guide our analysis.

26. *Calculation of Americans with Advanced Telecommunications Capabilities Available.* We propose to use the same methodology as we used in the *2019* and *2020 Reports* to calculate where advanced telecommunications capability is deployed. Our analysis began with determining whether there was at least one provider of services in each census block with the capability to provide advanced telecommunications capabilities.⁷⁶ In these *Reports*, the Commission used staff estimates of the U.S. population to calculate the number of Americans with fixed advanced telecommunications capability available by summing the population of all of the census blocks with at least one provider of services, whether the calculation is considering fixed terrestrial services, all fixed services, mobile LTE services, a

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download or upload speed was less than zero or greater than 100 Mbps. Multiple tests by a single phone in the same locality and in the same day were averaged (using the median). *Id.*, para. 33 & n.108.

⁷¹ *2020 Report*, para. 33. In the *2020 Report*, we considered a county to have a sufficient sample size if there were at least 300 total observations after cleaning the data as described above. The Commission viewed the 300-observation requirement as a conservative estimate, and it was based on a general mean and median sample size analysis. *Id.*, para. 33 & n.111. The Commission's process permitted it to evaluate actual median upload and download speeds at the county level, in each year of the five-year time periods, for counties in which approximately 93% of the U.S. population live (not including the U.S. Territories). If a census block had LTE coverage of at least 5/1 Mbps based on the FCC Form 477 minimum advertised speeds, the Commission assigned the median upload and download speeds that the Commission calculated for the census block's county. This allowed the Commission to evaluate the mobile broadband speeds for each census block within the United States. *Id.*

⁷² *2020 Report*, para. 33 & n.112.

⁷³ *Digital Opportunity Data Collection Order*, 34 FCC Rcd at 7524, para. 44, 7530, para. 58 (requiring reporting of 5G technology deployments and submission of broadband and subscriber data at the census-tract level); *Digital Opportunity Data Collection Second Order*, paras. 32-51 (requiring propagation maps and propagation model details).

⁷⁴ *Id.*, para. 61. This requirement applies both to mobile and fixed broadband providers.

⁷⁵ *Id.*, paras. 100-102 (submission of infrastructure information), 149-64 (process for receiving verified data from State, local, and Tribal governmental mapping entities), 141-44 (challenge process for coverage data); 47 U.S.C. §§ 642(a)(2)(A)-(C), 644(b), 642(b)(5).

⁷⁶ *2020 Report*, para. 26.

combination of fixed terrestrial and mobile LTE services, or a combination of fixed terrestrial or mobile LTE services.⁷⁷ We seek comment on this proposal.

27. *Deployment Data for Schools.* To evaluate developments in the deployment of advanced telecommunications capability to America's elementary and secondary public schools, we relied upon publicly available data from EducationSuperHighway's *2019 State of the States Report*.⁷⁸ We propose to rely on the next iteration of this source for the next Report, as well as any version of the Consortium for School Networking's (CoSN) Annual Infrastructure Survey Report that may be released since the 2018-2019 iteration (used in the *2019 Report*)⁷⁹ and seek comment on this proposal. We also seek comment on any alternative data sources available for us to evaluate deployment of advanced telecommunications capability in America's schools as required by section 706.

28. *Deployment Data for Tribal Lands.* In the *2020 Report*, we found that, as of December 31, 2018: (i) 25/3 Mbps fixed terrestrial service was deployed to 72.3% of Americans on Tribal lands; (ii) mobile LTE with a minimum advertised speed of 5/1 Mbps was deployed to 97.5% of Americans on Tribal lands; and (iii) 72.1% of Americans on Tribal lands were covered by both of these services.⁸⁰ The deployment figures for Tribal lands examined deployment in the census blocks that have been identified as federally-recognized Tribal lands for the 2010 Census.⁸¹ We seek comment on whether there are other sources of information that we could use to examine deployment on Tribal lands. Furthermore, for purposes of presentation of the data, our analysis of federally-recognized Tribal lands groups these areas into four Tribal lands categories (the Lower 48 States, Tribal Statistical Areas, Alaskan Villages and Hawaiian Homelands).⁸² We seek comment on whether we should summarize the deployment data on a more disaggregated basis, and whether there are other more informative categories that could be used to present this data.

V. COMMISSION EFFORTS TO CLOSE THE DIGITAL DIVIDE

29. We described in the *2020 Report* the many actions the Commission has taken to encourage deployment of advanced telecommunications capability and close the digital divide.⁸³ These actions were central to our finding in the *2020 Report* that the Commission's policy efforts are now encouraging the deployment on a reasonable and timely basis of advanced telecommunications capability.⁸⁴ We seek comment on the ongoing effects of these efforts in spurring broadband deployment, as well as any additional efforts we might undertake. Has the Commission been effective in its efforts to increase deployment by targeting universal service funding to unserved areas in order to extend the reach of networks to all Americans? What more should we do to expand access to spectrum to support or

⁷⁷ *Id.*; *2019 Report*, 34 FCC Rcd at 3869.

⁷⁸ *2020 Report*, paras. 52-53.

⁷⁹ At present, the most recent COSN Annual Infrastructure Report is for 2018-19. *See id.* at n.114.

⁸⁰ *Id.*, para. 48 & Fig. 10.

⁸¹ *Id.*, para. 46, n.141.

⁸² The Lower 48 States category includes: (1) Joint Use Areas; (2) legal, federally-recognized American Indian area consisting of reservation and associated off-reservation trust land; (3) legal, federally-recognized American Indian area consisting of reservation only; and (4) legal, federally-recognized American Indian area consisting of off-reservation trust land only. Tribal statistical areas include statistical American Indian areas. These are defined for a federally-recognized Tribe that does not have reservation or off-reservation trust land, specifically a Tribal designated statistical area (TDSA) or Oklahoma Tribal statistical areas (OTSA). Alaskan Villages are Native village statistical areas and Hawaiian Homelands include areas established by the Hawaiian Home Commission Act of 1921. *Id.*, para. 35 & nn. 117-20.

⁸³ *See id.*, paras. 54-89.

⁸⁴ *Id.*, para. 54.

supplement wireless and satellite broadband services? We also seek comment on ways the recent COVID-19 pandemic may affect broadband deployment in the year 2020 and beyond. Do commenters expect the rate of deployment of broadband facilities to decrease because of the health crisis? Similarly, do commenters expect the rate of adoption to increase because of the newfound need of many Americans to work from home? How does the COVID-19 pandemic affect schools and classroom data? How has the outbreak affected deployment of services to schools and classrooms? How has it affected deployment in Tribal communities that have been severely affected by economic shutdowns? How should we account for any such effects in our future Reports?

VI. PROCEDURAL MATTERS

30. *Ex Parte Rules.* This proceeding shall be treated as a “permit-but-disclose” proceeding in accordance with the Commission’s *ex parte* rules.⁸⁵ Persons making *ex parte* presentations must file a copy of any written presentation or a memorandum summarizing any oral presentation within two business days after the presentation (unless a different deadline applicable to the Sunshine period applies). Persons making oral *ex parte* presentations are reminded that memoranda summarizing the presentation must (1) list all persons attending or otherwise participating in the meeting at which the *ex parte* presentation was made, and (2) summarize all data presented and arguments made during the presentation. If the presentation consisted in whole or in part of the presentation of data or arguments already reflected in the presenter’s written comments, memoranda, or other filings in the proceeding, the presenter may provide citations to such data or arguments in his or her prior comments, memoranda, or other filings (specifying the relevant page and/or paragraph numbers where such data or arguments can be found) in lieu of summarizing them in the memorandum. Documents shown or given to Commission staff during *ex parte* meetings are deemed to be written *ex parte* presentations and must be filed consistent with Rule 1.1206(b), 47 CFR § 1.1206(b). Participants in this proceeding should familiarize themselves with the Commission’s *ex parte* rules.

31. *Comment Filing Procedures.* Pursuant to sections 1.415 and 1.419 of the Commission’s rules, 47 CFR §§ 1.415, 1.419, interested parties may file comments and reply comments on or before the dates indicated on the first page of this document. Comments may be filed using the Commission’s Electronic Comment Filing System (ECFS) or by paper. All filings must be addressed to the Commission’s Secretary, Office of the Secretary, Federal Communications Commission.

- Electronic Filers: Comments may be filed electronically by accessing ECFS at <http://apps.fcc.gov/ecfs>.
- Paper Filers: Parties who choose to file by paper must file an original and one copy of each filing. Paper filings can be sent by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail.
 - Effective March 19, 2020, and until further notice, the Commission no longer accepts any hand or messenger delivered filings. This is a temporary measure taken to help protect

⁸⁵ 47 CFR § 1.1200(a). Although the Rules do not generally require *ex parte* presentations to be treated as “permit but disclose” in Notice of Inquiry proceedings, *see* 47 CFR § 1.1204(b)(1), we exercise our discretion in this instance, and find that the public interest is served by making *ex parte* presentations available to the public, in order to encourage a robust record. *See id.* § 1.1200(a). In past section 706 inquiries, we have treated *ex parte* presentations similarly. *See, e.g., 2018 Report* at 8397, para. 27; *Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, 2017 Broadband Deployment Report, 32 FCC Rcd 7029, 7046, para. 56 (2017); *Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, 2016 Broadband Deployment Report, 31 FCC Rcd 9140, 9174, para. 86 (2016).

the health and safety of individuals, and to mitigate the transmission of COVID-19.⁸⁶

- Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9050 Junction Drive, Annapolis Junction, MD 20701.
- U.S. Postal Service first-class, Express, and Priority mail must be addressed to 445 12th Street, SW, Washington, D.C. 20554.

32. *Availability of Documents.* Comments, reply comments, and *ex parte* submissions will be publicly available online via ECFS.⁸⁷ These documents will also be available for public inspection during regular business hours in the FCC Reference Information Center, which is located in Room CY-A257 at FCC Headquarters, 445 12th Street, SW, Washington, D.C. 20554. The Reference Information Center is open to the public Monday through Thursday from 8:00 a.m. to 4:30 p.m. and Friday from 8:00 a.m. to 11:30 a.m.

33. *People with Disabilities.* To request materials in accessible formats for people with disabilities (braille, large print, electronic files, audio format), send an e-mail to fcc504@fcc.gov or call the Consumer & Governmental Affairs Bureau at 202-418-0530 (voice), 202-418-0432 (tty).

34. *Contact Person.* For further information about this proceeding, please contact Alex Johns, FCC Wireline Competition Bureau, Competition Policy Division, 445 12th Street, S.W., Washington, D.C. 20554, 202-418-1167, Alexis.Johns@fcc.gov.

VII. ORDERING CLAUSE

35. Accordingly, IT IS ORDERED, that pursuant to section 706 of the Telecommunications Act of 1996, as amended, 47 U.S.C. § 1302, this Notice of Inquiry IS ADOPTED.

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch
Secretary

⁸⁶ See FCC Announces Closure of FCC Headquarters Open Window and Change in Hand-Delivery Policy, Public Notice, 35 FCC Rcd 2788 (2020), <https://www.fcc.gov/document/fcc-closes-headquarters-open-window-and-changes-hand-delivery-policy>.

⁸⁷ Documents will generally be available electronically in ASCII, Microsoft Word Binary File (DOC), and/or Portable Document formats.

**STATEMENT OF
COMMISSIONER JESSICA ROSENWORCEL,
DISSENTING**

Re: *Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, GN Docket No. 20-269.

The Federal Communications Commission's annual Broadband Deployment Report should provide a clear-eyed and candid assessment of the availability of broadband nationwide. It's the kind of work that is essential for us to understand where high-speed service is so we can develop policies that extend the reach of broadband to all Americans, no matter who they are or where they live.

On this front, we have serious work to do. We are in the middle of an extraordinary public health crisis that has required us to move much of our world online. Work, education, healthcare, and more now require a broadband connection. Yet it's painfully clear that too many people in too many places in the United States lack the internet access they need to fully participate in modern civic and commercial life.

The evidence is all around us. Look at the headlines decrying the absence of broadband in communities across the country. Look at the volume of legislation Congress has developed, pressing for new emergency programs to extend the reach of internet infrastructure to every home and business nationwide. Take note of the governors in states with large and small populations setting up committees to connect the disconnected and assess the economic impact of the digital divide. See also the state legislatures taking up these matters, developing their own programs to expand where service is available. Look at the mayors, clamoring to ensure that every resident can consume and create online. Then look at the everyday Americans writing the FCC concerned that high-speed service does not exist where they live and fearful that without it their communities will not have a fair shot in the digital age.

It is not a coincidence that so much of this activity is happening right now. It's taking place because the current crisis has exposed the hard truth that our nation's digital divide is very real and very big.

As a result, this proceeding is the perfect place to detail the extent of our nation's broadband challenges. By seeking comment, as we do here, on where service is and is not, we should be developing a record that supports an honest assessment of the availability of broadband across the country.

But the ugly truth is that when the agency released its last Broadband Deployment Report earlier this year it concluded that broadband deployment was "reasonable and timely" nationwide. In other words, it found all was well. It clapped its hands and said job done.

That's just not right. For starters, the FCC concluded that there were only 18 million people in the United States without access to broadband. That number wildly understates the extent of the digital divide in the country. That's because if a broadband provider simply told the FCC that it can offer service to a single customer in a census block, the agency assumed service was available throughout. The result is data that systematically overstates service across the country. By how much? Consider that other studies have shown that the true number of people without broadband access is 42 million or even as high as 162 million.

So it's no wonder that the FCC's broadband data has been the subject of nonstop criticism from consumers and Congress. In fact, earlier this year the President signed the Broadband DATA Act directing the FCC to clean up its act and develop data and maps that reflect the true state of broadband access in the United States. But the agency has yet to roll up its sleeves to collect any improved information as part of this effort—so the same data problems that existed last time are bound to show up in this inquiry, too.

Plus, in its last report the FCC continued to use a broadband standard that is too low for a nation that has moved so much online. Many households with multiple users are calling, watching, listening, gaming, and searching online all at the same time. I know—my household is one of them. But the FCC

has been sticking with a download standard of 25 megabits per second that it adopted more than five years ago. We need to set audacious goals if we want to do big things. With many of our nation's providers offering gigabit service, it's time for the FCC to adjust its baseline upward, too. We need to reset it to at least 100 megabits per second. While we're at it we need to revisit our thinking about upload speeds. At present, our standard is 3 megabits per second. But this asymmetrical approach is dated. We need to recognize that with enormous changes in data processing and cloud storage, upload speeds should be rethought. There is, unfortunately, little evidence the FCC is willing to do so in this inquiry.

Finally, in its last report the FCC neglected to meaningfully discuss big issues that contribute to the digital divide. It didn't consider affordability. It barely mentioned digital literacy. If the agency is serious about living up to its duty to report on the state of broadband in this country, these omissions are a problem. But there is little here to suggest the FCC is seriously considering these matters in this inquiry now.

So here we go again. We are setting ourselves up for making all the same mistakes we did in our last report. We have not updated our methodology. We have not modernized our thinking about what is truly broadband. We have not suggested that we will give serious thought to real impediments like cost. At a time that we desperately need a candid accounting from the FCC about the state of broadband in this country, the agency is stubbornly oblivious to how its reporting is at odds with the lived experience of so many people in this country.

This is disappointing—because it doesn't have to be this way. This approach fails to meet the current moment. It simply does not lay the foundation for the honest assessment we require to ensure broadband for all. I regretfully dissent.

**STATEMENT OF
COMMISSIONER GEOFFREY STARKS,
DISSENTING**

Re: *Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, GN Docket No. 20-269.

Six weeks into the COVID-19 pandemic, the Commission released its 2020 Broadband Deployment Report. Even in those early weeks, it was already clear that this pandemic would bring our failure to close the digital divide into the sharp relief. Releasing a report that confidently touted the timely deployment of broadband—just as more than 15 million students found themselves without the broadband connections and devices required to participate in distance learning—demonstrated how far this annual undertaking has departed from reality. In gathering information for next year’s report, the Commission should have taken a different approach.

Instead, the Commission continues to repeat its mistakes. As I noted in my dissent from last year’s Notice of Inquiry, I fundamentally disagree with the approach of comparing broadband providers’ deployment in one year against their deployments in prior years to measure “progress.” I continue to believe this approach gives us little understanding of internet inequality and the ways to combat it.

We also continue to rely on the Commission’s misleading Form 477 data. I am disappointed that, despite broad recognition that Form 477 has distorted our view of the digital divide, the Commission did not develop alternatives in time for this year’s Notice of Inquiry. As we approach the Broadband DATA Act’s September 21, 2020 deadline for new mapping and data rules, the entire Commission should commit to making this the last time we rely on this flawed data set.

Because the proposals in this Notice of Inquiry are likely to produce yet another report that misrepresents internet inequality in the United States, I respectfully dissent.