

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

In the Matter of)	
)	
Modernizing the FCC Form 477 Data)	WC Docket No. 11-10
Program)	
)	
)	

COMMENTS OF VERIZON

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While it is important that the Commission have access to useful data on broadband services, it is also important to ensure that it collects information efficiently, without imposing needless burdens on providers. Since it began its Form 477 data collection in 2000, the Commission has substantially expanded the scope and scale of information collected. Originally, the Commission just collected information from some providers on the availability of different broadband services by zip code.¹ In 2008, it sought significant additional granular detail;² in 2012, it expanded the obligations yet again.³ Today, it receives reports from all providers that describe the availability of broadband and voice services and provide detailed counts of voice

¹ See *Local Competition and Broadband Reporting*, Report and Order, 15 FCC Rcd 7717 (2000) (“2000 Form 477 Order”).

² See *Development of Nationwide Broadband Data to Evaluate Reasonable and Timely Deployment of Advanced Services to All Americans, Improvement of Wireless Broadband Subscriber Data, and Development of Data on Interconnected Voice over Internet Protocol (VoIP) Subscriber Data*, Report and Order and Further Notice of Proposed Rulemaking, 23 FCC Rcd 9691 (2008) (“2008 Form 477 Order”).

³ See *Modernizing the FCC Form 477 Data Program*, Report and Order, 28 FCC Rcd 9887 (2013) (“2013 Form 477 Order”).

and broadband subscribers of all kinds.⁴ And this collection is in addition to the multiple other data collections and reports the Commission requires every year.

As the Commission explores ways to both improve and streamline the 477 reporting process,⁵ it should therefore consider the extent to which it is seeking duplicative or uninformative data as well as the burdens this data collection imposes on filers. The Commission should also be careful not to introduce risks to competition from public disclosure as it seeks ever more competitively sensitive information. Instead, the Commission should focus on collecting and protecting just the practical, meaningful data that serve its policy goals, and look for opportunities to streamline the information requested.

I. The Commission Should Adopt its Streamlining Proposals and Eliminate Unnecessary or Conflicting Data Collection

A. Any Changes to the 477 Mobile Service Availability Collection Should Be Consistent with the Data Sought in the Mobility Fund Proceeding

The Commission's current collection of service availability maps provides significant value to the Commission. For example, the Commission has for several years used this detailed coverage map data to inform its Mobile Competition and Section 706 Reports, among other matters.⁶ Nothing is wrong with the current methodology and the Commission should maintain the status quo.

Should the Commission, however, decide to change the existing mobile broadband availability data it collects, it should follow the lessons learned in the Mobility Fund Proceeding, rather than create yet another new set of requirements for the mobile broadband availability maps

⁴ See *Modernizing the FCC Form 477 Data Program*, Further Notice of Proposed Rulemaking, 32 FCC Rcd 6329, ¶¶ 2-4 (2017) (“FNPRM” or “Notice”).

⁵ See *id.*

⁶ See FNPRM, ¶ 9.

it collects under Form 477.⁷ In the Mobility Fund proceeding, the Commission sought to address concerns that a lack of uniformity among 4G LTE availability maps filed by different providers under Form 477 made administration of the Mobility Fund Phase II more challenging.⁸ The Commission thus adopted “a new, one-time data collection with specified parameters.”⁹ In that proceeding, the Commission enumerated in detail specific, uniform propagation map and model parameters, such as throughput at the cell edge, probability percentages, cell loading factors, resolution, and other pertinent information.¹⁰ The Commission has just released its data filing requirements for the Mobility Fund, addressing the filing mechanics, and providers are reviewing these requirements and will file data in that proceeding.¹¹ The Commission should ensure that, if it changes its methodology for its Form 477 collection, it collects data in a way that is consistent with the methods used in the Mobility Fund proceeding – once it has had time to review the one-time Mobility Fund maps collection. The Commission should not revise the Form 477 requirements before it gains that insight.

B. The Commission Should Eliminate Unnecessary Reporting Requirements for Mobile Broadband and Voice Deployment

As the NPRM notes, there may be opportunities for the Commission to eliminate or streamline several aspects of mobile broadband deployment reporting. The data required by the

⁷ *FNPRM* ¶¶ 12-13.

⁸ *See Connect America Fund; Universal Service Reform – Mobility Fund*, Order on Reconsideration and Second Report and Order, 32 FCC Rcd 6282, ¶¶ 8-13 (2017) (“*Mobility Fund II Order on Reconsideration*”).

⁹ *Id.* ¶ 6.

¹⁰ *Id.* ¶¶ 34-40.

¹¹ *Instructions For Filing 4G LTE Coverage Data To Determine Areas Presumptively Eligible For Mobility Fund II Support*, Public Notice, 32 FCC Rcd 7023 (2017). *See also Responses to the Mobility Fund Phase II 4G LTE Data Collection are Due by January 4, 2018*, Public Notice, WC Docket No. 10-90, WT Docket No. 10-208; DA 17-975 (Oct. 6, 2017).

Commission's Form 477 have expanded significantly since the form was implemented. Form 477 originally required some providers to file telephone and broadband service details.¹² The Commission updated and expanded on these requirements over time, expanding the collection to require input from all facilities-based providers in 2004,¹³ requiring significant additional granular detail in 2008,¹⁴ including mobile coverage maps in 2012.¹⁵ Given the Commission's recent conclusion that mobile services are competitive, now is an appropriate time for the Commission to examine and reconsider its requirements.¹⁶

Reporting by Spectrum Band: The Commission should adopt its proposal "to eliminate the requirement that mobile broadband providers submit their broadband deployment data by spectrum band."¹⁷ The Commission correctly "anticipate[s] that eliminating the requirement to provide spectrum band information would greatly streamline and reduce the burdens on providers by reducing the number of shapefiles (and the amount of the associated underlying data processing) they are required to submit."¹⁸ The Commission admits that this data is not now used, nor is the Commission aware of "any significant purpose" for which this information will

¹² See 2000 Form 477 Order.

¹³ *Local Telephone Competition and Broadband Reporting*, Report and Order, 19 FCC Rcd 22,340, ¶¶ 8-13 (2004).

¹⁴ See 2008 Form 477 Order.

¹⁵ See 2013 Form 477 Order.

¹⁶ *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services*, Twentieth Report, WT Docket No. 17-69, FCC 17-126 (Sept. 27, 2017) ("Twentieth Wireless Competition Report").

¹⁷ FNPRM ¶ 19.

¹⁸ *Id.*

be used.¹⁹ Since the Commission already monitors developments in spectrum use through other processes,²⁰ there is no need to continue this collection.

Availability Listings: The Commission also rightly proposes to eliminate the listings of geographic areas where service is available and the provider has a “local retail presence.”²¹ This type of data is redundant of the service coverage maps that providers file, and the Commission has concluded that the listing data it collects is not reliably accurate.²² Moreover, the stated purpose of this collection – to identify areas where service is available, but the provider is not affirmatively offering service to subscribers through a local retail presence²³ – doesn’t reflect how services are sold in today’s highly competitive marketplace. Verizon and other mobile service providers are eager to win new business wherever they provide service. Providers advertise services nationally, and provide information about retail presence on the web or by telephone, as well as in the many direct and indirect retail outlets providers maintain throughout the country.²⁴ The Commission should eliminate this requirement.

“On-the-ground” data: The Commission should not require providers to submit “on the ground” data as a separate part of Form 477 data collection,²⁵ as these data would be both redundant and inconsistent across providers, since the Commission identifies no systematic way

¹⁹ *Id.* See also *id.* ¶ 18 (“to date, the Commission has not used the spectrum band information from Form 477 in its mobile broadband coverage analysis”).

²⁰ *Id.* ¶ 18 n.28 (“rather than relying on the data it collects through Form 477, the Commission often asks for coverage information by spectrum band directly from providers”).

²¹ *Id.* ¶¶ 21-22.

²² *Id.* ¶ 22.

²³ *Id.* ¶ 21.

²⁴ See *Twentieth Wireless Competition Report*, ¶¶ 66-67.

²⁵ *FNPRM* ¶ 14.

to conduct its testing. For example, Verizon incorporates “on the ground” data directly into its service area propagation model, using actual drive test information to better calibrate elements of the model and to confirm the accuracy of the model. Different providers could use different approaches, including online or crowd-sourced tests that would render any comparison meaningless, unreliable, or misleading. Such casual, crowd-sourced speed tests are anecdotal – they are informative of a single user’s experience at a specific location on a specific device at a specific time.²⁶ These anecdotal tests lack scientific rigor, are not comparable from one location to another, let alone from one carrier to another, and should not be required.²⁷

Coverage Maps: The Commission should also further streamline mobile broadband deployment reporting by limiting its coverage map technology categories to 3G, 4G non-LTE, 4G LTE, and 5G.²⁸ As stated above, the elimination of spectrum band reporting will significantly streamline the reporting effort and eliminating this requirement, as the Commission suggests, would also reduce filing burdens. To the extent the Commission does maintain a requirement to file by technology, the Commission’s proposal to limit the number of technologies requested is not unreasonable, but the Commission should ensure that it does not become outdated, and that it does not prematurely try to define or limit 5G technologies as they are developing.

Mobile voice: Similar to its proposal to streamline mobile broadband deployment reporting, we encourage the Commission to eliminate unnecessary data collection for mobile

²⁶ For example, earlier model LTE devices that continue to work perfectly well, but lack the capability to use multiple LTE frequency bands or to aggregate multiple carrier bands could provide a different user experience and test differently in the same network conditions.

²⁷ See, e.g., Verizon, News Release, *A primer on network testing* (Aug. 29, 2017), <http://www.verizon.com/about/news/primer-network-testing>.

²⁸ See *FNPRM* ¶ 20.

voice services by adopting its proposal to eliminate the need to submit coverage maps by technology and by spectrum band.²⁹ The Commission should remove this requirement because it provides very little, if any, useful information. Maintaining the spectrum-based reporting doesn't make sense for the same reasons described above in mobile broadband reporting. And as providers have widely deployed voice over LTE (VoLTE) technology, the distinctions between GSM and CDMA voice technologies are becoming less meaningful for the Commission's analysis. Moreover, since LTE broadband coverage maps should largely duplicate VoLTE coverage maps,³⁰ this separate reporting of voice coverage is quickly becoming irrelevant.

C. The Commission Should Eliminate Unnecessary Reporting for Enterprise Services

The Commission should remove distinctions in its enterprise service data reporting that creates confusion and inconsistency. Specifically, the Commission should “eliminate the separate reporting of available contractual or guaranteed data throughput rates for business/enterprise/government services.”³¹ As the *Notice* recognizes, these data “do not appear to provide additional useful insight”³² and may suffer from misreporting errors.³³ Simply relying on the maximum upload and download speed should sufficiently describe the services that are available to business customers in an area.

²⁹ *Id.* ¶ 23-25.

³⁰ Note that VoLTE coverage will also be available where the customer has access to Wi-Fi.

³¹ *FNPRM* ¶ 31.

³² *Id.*

³³ *Id.* ¶ 32.

D. The Commission Should Limit, Rather Than Increase, Its Collection of Sensitive Mobile Subscribership Data

Rather than accept the proposal to collect even more granular mobile voice and broadband subscriber data,³⁴ the Commission should scale back its subscriber data collections. Requiring huge amounts of detail at the census block level will greatly increase burdens on providers without substantially aiding the Commission’s work. The Commission should instead continue to seek mobile subscribership data at a more aggregated state level.

The Commission has, for good reason, collected mobile broadband and voice subscribership data at the state level, but now – based on some limitations in the “NRUF” datasets it has relied on in the past³⁵ – proposes to collect it at the census tract level, consistent with fixed services.³⁶ But collecting subscriber information at the census block level won’t work, since, as the Commission observes, mobile users may not use their service at their billing address.³⁷ In dense urban areas, for example, census tracts may be quite small – perhaps even a few blocks – and so census level data would provide a false sense of precision about where devices are used. Extended families often share joint accounts, with grandparents, siblings, etc. in distant locales all listed on the same billing address. College towns could underreport the number of subscribers in a highly mobile-connected population when students remain on family

³⁴ See *id.* ¶¶ 26-29.

³⁵ *Id.* ¶ 26 & n.38.

³⁶ *Id.* ¶¶ 26, 28.

³⁷ See, e.g., Comments of Verizon and Verizon Wireless, *Development of Nationwide Broadband Data to Evaluate Reasonable and Timely Deployment of Advanced Services to All Americans, Improvement of Wireless Broadband Subscribership Data, and Development of Data on Interconnected Voice over Internet Protocol (VoIP) Subscribership*, WC Docket No. 07-38, at 12-13 (June 15, 2007) (“The Commission also should collect from wireless broadband providers digital coverage maps depicting the availability of wireless broadband service within a state, rather than continuing to collect ZIP Code information or focusing on billing address information that bears little relation to the location of mobile broadband users.”).

plans. Finally, it is unclear how a carrier would precisely pinpoint its prepaid customers who do not provide a billing address.

Nor is such data sufficiently superior to the data the Commission already collects as to justify the significantly more complex reporting. Today, most providers don't maintain customer records by census tract. Thus, to produce such data would require creating new systems and processes to map billing addresses to census tracts. But there is no benefit that justifies this burden. The Commission's statutory priorities, such as Section 706 and universal service, do not focus on subscriber counts or other subscriber information, but rather on deployment and service availability. And the Commission can solicit more detailed information when and if a particular proceeding might justify the expenses.

Instead, the Commission should seek subscriber data at a more aggregate level, such as by county or state. It should also look for opportunities to reduce the geographic granularity of the subscriber data it currently collects, rather than expand it.

E. The Commission Should Collect Form 477 Data Annually

The Commission should change the frequency of its required Form 477 data from twice a year to once per year.³⁸ The type and amount of data required to be submitted by Form 477 are already voluminous and complex; a switch to annual filing would ameliorate some of the challenges of compiling these data. The Commission will still be able to meet its statutory and other needs since changes in deployment are usually incremental and gradual. But providers will improve their ability to file and respond to clarification requests (that increase as the complexity of the data increases), and the additional time will provide the Commission staff with a greater opportunity to process and publish the volumes of data it collects.

³⁸ See *FNPRM* ¶¶ 56-57.

II. The Commission Should Maintain Its Current Fixed Broadband Deployment Collections

A. Reporting Deployment Data Below the Census-Block Level Creates Large and Unjustified Burdens

The Commission should reject any proposals that would require fixed broadband providers to report deployment data below the census-block level. Such proposals would impose enormous costs on fixed broadband providers without providing any real benefit to the Commission or the public.

The Commission in 2013 “decline[d] to gather fixed broadband deployment data at a level more granular than the census block because the added complexity and burden are unlikely to provide a significant insight into how many residences and businesses lack access to service.”³⁹ The Commission recognized then that fixed broadband providers could face a “significantly higher burden” if the Commission moved from reporting on 6.2 million populated census blocks and instead required reporting on 118.1 million households, 133.3 million housing units, and millions of business locations.⁴⁰ In fact, the Commission rejected importing a requirement from the NTIA’s State Broadband Initiative program that fixed broadband providers provide address- and/or street-segment data for census blocks larger than two square miles.⁴¹ In the current *Notice*, however, the Commission again inquires about collecting data at the street, street-segment, or address level, and also inquires about requiring providers to geocode all of the addresses at which service is available.⁴² As in 2013, the Commission should reject any proposals that would require fixed broadband providers to provide deployment data below the

³⁹ 2013 Form 477 Order, ¶ 35.

⁴⁰ *Id.*, citing 2010 Census data.

⁴¹ *Id.*

⁴² FNPRM ¶¶ 39-41.

census-block level. The “complexity and burdens” that the Commission identified in 2013 are still present in 2017.

Reporting all addresses at which fixed broadband service is available would be an enormous burden on providers. While large broadband providers often have web tools reflecting potential service availability at the address level, smaller providers, including many providers serving rural areas, may not have address-level availability data. And even those providers that make tools available on their websites to allow subscribers or potential subscribers to check whether broadband is likely available at their location may not be able to compile that data into one single dataset, or coordinate approaches between providers. For example, the predictions (not promises) concerning broadband availability that are available on a provider’s website often depend on multiple different computer systems and databases (such as customer databases, fiber facilities databases, DSL facilities databases, etc.) and rely on numerous assumptions that may, in any particular case, prove imprecise. Moreover, the systems and databases underlying this tool are constantly updated to reflect customer, network, and service changes. And while this process is complex even within a single provider, each broadband provider is likely to rely on its own, similarly complex systems and approaches in making its own predictions concerning availability.

For these reasons, the only practical method for a broadband provider to report address-level availability would be by providing a “snapshot” of these systems that offers a list of addresses for which a provider’s systems predict that broadband is available as of a point in time. The results of such a search would, of course, result in highly confidential and competitively sensitive data – potentially including tens of millions of addresses for some providers – and would take considerable time and resources to create. And even if Verizon and other providers

undertook these efforts, the addresses that we develop may not be easily comparable to other providers' addresses or to public databases because – as others have previously informed the Commission – “service providers do not necessarily record addresses in a standardized, uniform manner.”⁴³ Requiring address-level reporting would thus substantially increase providers' burdens without any apparent benefit to the Commission.

Similarly, reporting geocoded information at the address level or filing geospatial data showing coverage areas⁴⁴ would be onerous for Form 477 filers. Providers may not generally maintain databases that contain geocoded information about its users' exact locations. And the cost and time needed for individual providers to gather these data and implement a database from scratch would be significant. For example, a carrier would need to collect the latitudes and longitudes (or other geographic markers) for each of its subscribers' locations on an individualized basis. This would require the use of specialized technology and expensive consultants. Customer databases might need to be entirely restructured to associate the geocoded data with every customer's general data, requiring changes to millions (and in some cases, tens or hundreds of millions) of customer entries. The process of collecting and reporting geocoded information would be costly and logistically difficult and would not serve any significant business purpose.

Requiring fixed broadband providers to report data more granular than the census-block level would thus impose a substantial expense on providers but would create data sets of only limited value to the Commission's assessment of nationwide broadband deployment and availability. And, as discussed below, reporting address-level availability data would involve the

⁴³ See *2013 Form 477 Order* ¶ 35 & n.113.

⁴⁴ See *FNPRM* ¶¶ 38, 40.

disclosure of extremely sensitive competitive information. In light of these concerns, the Commission should confirm its prior conclusion “that requiring providers to report fixed broadband deployment data by census block appropriately balances the burdens of reporting this information to the Commission with the level of granularity required to carry out [the Commission’s] statutory duties.”⁴⁵

B. The Commission Should Maintain – Rather than Expand – its Requirements on Availability of Fixed Broadband Technologies

Rather than seek additional detail on availability of fixed broadband technologies, the Commission should keep its existing specifications for Form 477’s fixed broadband requests. The Commission’s proposal to obtain information specifying one of three categories of service availability for each census block would dramatically increase the volume of data required – and the associated collection and reporting burdens on providers – but would not meaningfully serve any identified purpose.

Noting that “the meaning of ‘availability’ in each listed census block can be multifaceted,”⁴⁶ the *Notice* seeks comment on whether fixed broadband providers should be required to further specify three categories of service areas for each technology code: (1) areas where there are existing customers and the total number of customers could be readily increased upon request; (2) areas where there are existing customers but no net-additional customers will be added; and (3) areas where there are no existing customers but new customers will be added

⁴⁵ *2013 Form 477 Order* ¶ 35.

⁴⁶ *FNPRM* ¶ 33.

upon request.⁴⁷ The *Notice* also asks about requiring fixed providers to identify census “blocks that they can fully serve.”⁴⁸

Requiring fixed broadband providers to attempt to report this level of detail would dramatically increase the volume of data that providers must produce and the burdens associated with collecting and reporting these data but would not serve any identified purpose to a meaningful degree. As explained above in connection with our website’s fixed broadband address look-up tool, the information in our systems regarding broadband availability at particular locations depends on multiple different computer systems and databases that are constantly updated to reflect customer, network, and service changes, or changes in underlying assumptions that may not prove accurate in any particular case. Verizon and – to the best of our knowledge – other fixed broadband providers do not organize or manage networks according to census blocks. Therefore, it makes no sense to require fixed broadband providers to re-configure their availability information in an attempt to state whether they accept net-additional customers in a census block.⁴⁹ Indeed, making such a statement could give the erroneous impression that the statement applies uniformly throughout the census block, even if a provider might be able to serve net-additional customers only in some areas of the census block but not others. Thus, the meaning of “availability” would remain “multifaceted” despite any increased level of detail that the Commission requires.

⁴⁷ *See id.* ¶ 34.

⁴⁸ *Id.* ¶ 43.

⁴⁹ As discussed below, the Commission should not require that availability be disclosed at any sub-census-block level.

For the reasons explained above, the Commission should not require providers to report more detail on the meaning of “availability” because doing so would impose significant new burdens on providers without any real benefit to the Commission or the public.

III. The Commission Must Respect the Confidentiality of Certain Information

Given the wealth of information collected by the Form 477 process, the Commission must continue to protect providers’ competitively sensitive and confidential data as it revamps its data collection efforts. Reporting requirements should not be so broad as to risk harming competition or threatening the security of communications networks. Indeed, Congress has confirmed the importance of protecting proprietary broadband data from public disclosure, including “any matter that is a trade secret, commercial or financial information, or privileged or confidential.”⁵⁰ And courts have also recognized that disclosure of a provider’s granular broadband data would likely cause competitive harm given the existing competition for broadband.⁵¹

Not all data, of course, needs to be subject to protection. For example, a provider’s minimum advertised speeds⁵² could, as the Commission suggests, be disclosed publicly since providers already inform customers of the typical expected wireless broadband speeds.⁵³ The Commission should be careful, however not to create new requirements on how this information is disclosed, or force providers to disclose these expectations in a new or different manner.

⁵⁰ 47 U.S.C. §§ 106(h)(2), (d)(2)(C) (codifying the Broadband Data Improvement Act).

⁵¹ See, e.g., *Center for Public Integrity v. FCC*, 505 F. Supp. 2d 106 (D.D.C. 2007).

⁵² *FNPRM* ¶ 51. Note that customers often experience much higher throughput speeds.

⁵³ See, e.g., Verizon, *Important Information About Verizon Wireless Broadband Internet Access Services*, <https://www.verizonwireless.com/support/broadband-services/> (last visited October 10, 2017) (informing customers to expect “typical” download speeds of 5 - 12 Mbps and upload speeds of 2 - 5 Mbps).

But certain competitively sensitive data should be protected. The Commission should continue to protect aggregate subscriber information,⁵⁴ as well as older full subscriber reports.⁵⁵ The Commission has long recognized the value of maintaining the confidentiality of subscriber data.⁵⁶ Even if aggregated, competitors could use information about subscriber count changes at certain speeds to gain proprietary insight and target areas of competitive overlap. And, unlike the assumptions made in the *Notice*,⁵⁷ information disaggregated by speed tier is not routinely publicly available. Further, the proposal to release older data sets in their entirety could, given the geographic granularity of these data, provide competitors with confidential insights into the effectiveness of certain sales efforts and allow them to extrapolate older data into current market statistics.

The Commission should also protect the proprietary details of carrier propagation models. For example, the Commission sought comment on its mobile broadband availability proposal to make public certain “higher-level aggregate parameters” such as terrain resolution, signal strength, and loading factor.⁵⁸ The Commission must be careful here not to require disclosure of proprietary details about the models that providers use to predict coverage. Carriers like Verizon have spent significant capital over many years to continuously improve their understanding of coverage through drive-testing and other means that funnel directly into improvements in their propagation models. Releasing this proprietary information residing in

⁵⁴ *FNPRM* ¶ 53.

⁵⁵ *Id.* ¶ 54.

⁵⁶ *See, e.g., 2000 Form 477 Order*, ¶ 91.

⁵⁷ *See FNPRM* ¶ 53 (stating that “similar information is routinely made public by these entities through the Securities and Exchange Commission and other disclosures”).

⁵⁸ *FNPRM* ¶ 52.

the details of our propagation model would give competitors an unfair insight into the results of years of our work to collect detailed on-the-ground data about signal propagation.

IV. CONCLUSION

For these reasons, the Commission should modify its Form 477 Data Program in ways that improve the Commission's analytical capabilities without overburdening service providers.

Respectfully submitted,

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