April 30, 2019

Ex Parte **Notice**

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

> RE: ***Connect America Fund*, WC Docket No. 10-90;** ***Modernizing the FCC Form 477*** ***Data Program*, WC Docket No. 11-10**

Dear Ms. Dortch:

This letter is sent to provide the recommendations of NTCA–The Rural Broadband Association ("NTCA") with respect to improving the identification of voice and broadband services availability, as well as the continuing need for robust and meaningful data validation procedures by the Federal Communications Commission (the "Commission") prior to the use of any reported data in the context of distributing federal universal service fund ("USF") support.

Granularity and Accuracy – Each is an Important Goal in its Own Right, But They are Hardly the Same Thing

As a threshold matter, it is critical to articulate properly the goals of reforming and revising reporting with respect to the availability of voice and broadband. Not surprisingly, granularity is an important goal. Stories abound of would-be customers looking at broadband maps showing service providers purporting to offer high-speed broadband even though the actual location where a given customer sits lacks any high-speed connectivity at all. "False positives" today show entire census blocks served simply because one location in that block, which could be miles away in a rural area, is served by a given provider. At best, such concerns inspire a troubling lack of confidence in the maps as currently depicted – and at worst, they lead to the denial or withdrawal of federal USF support in areas where support is in fact needed to reach unserved locations, dooming those locations to a lack of service for years to come.

Achieving greater granularity in service mapping will help to minimize the number of "false positives" attributable to overstated coverage areas. If availability is reported at a sub-census block level (even down to individual addresses or locations), this would reduce greatly the number of unserved locations "swept in" as served merely by virtue of sharing an arbitrary census block with a location that is in fact served. Obtaining a more granular perspective on where voice and broadband services are or are not available is essential therefore both to instill greater confidence in the maps and to minimize debates about where the maps may still be wrong.

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But "getting more granular" is not a solution unto itself. Put simply, granularity does not equal accuracy. Any assertion that a more granular map alone will necessarily translate to an accurate map misses the mark at best and obfuscates the facts at worst. Indeed, accuracy must be viewed as a related – but fundamentally separate – goal from granularity when it comes to reforming and revising how service availability is reported. Why is this the case? Why would showing availability at a sub-census block or even location/address level not "solve" the problem of bad maps? The barriers are several.

Identifying Key Barriers to More Accurate Maps

One barrier to more accurate broadband maps, regardless of how granular, is the simple fact that the data underpinning such maps ultimately come from service providers themselves. Whatever a provider reports today on Form 477 is treated as "gospel," with little readily apparent vetting perhaps beyond the most obvious of errors – and, as the recent BarrierFree situation indicates,[1] even the most substantial and consequential of reporting errors may go undetected in whatever vetting process occurs. Indeed, even if one were to assume that no provider would knowingly certify inaccurate availability data, mistakes can be made in reporting. "Getting more granular" might help mitigate the scope of such errors, but it will not eliminate them.

Another barrier to more accurate broadband maps arises out of the lack of standardization in measuring broadband availability. A lack of clear norms or direction in how availability is to be measured and reported effectively leaves it to each provider to determine for itself how "accurate" its mapping claims need to be. For example, if a provider merely *advertises* fixed wireless or DSL technologies to offer 25 Mbps across a wide swath of rural areas – even if it has neither tested nor vetted the actual reach and limits of using those technologies to reach specific locations – that alone is sufficient to justify a report of availability on Form 477. It matters little if the provider could do so in reality given challenges of distance or topography, nor does it matter if speeds would deteriorate as more users join the network. Rather, all that matters for purposes of current Form 477 reporting is that the provider's marketers believe service could be provisioned to a given area and the provider's systems reflect that.

A third barrier to accuracy in broadband maps is timing. Once availability information is reported, it currently takes months to prepare for posting publicly on the Commission's website. Moreover, time does not stop once a map is posted for public review. Thus, even if the maps were made much more granular, and even if other concerns related to accuracy such as those noted above were fully addressed, no map can possibly keep "real-time" track of deployments in progress, construction completed, or abandonment of service in certain areas. This means effectively that every map, no matter how granular or accurate at the time published, will inevitably be outdated for some areas and in some respects soon after publication.

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[1]   *FCC Claims on Broadband Access Under Scrutiny*, The Hill (March 26, 2019) (available at: https://thehill.com/policy/technology/435741-fcc-claims-on-broadband-access-under-scrutiny).

There are Viable Paths to Improve Both Granularity and Accuracy – But It is Important to Acknowledge that There is No "Silver Bullet"

All of these issues are provided as context not to argue that nothing can or should be done. To the contrary, these issues are highlighted merely to ensure full recognition of what needs to be tackled and why. For example, it is not enough to "get more granular" and declare victory. Even if location-based reporting could be implemented tomorrow, maps would still suffer from accuracy concerns in the absence of other efforts. Similarly, even if greater standardization could be achieved in structuring how providers measure and report on availability, concerns would persist as to whether advertising claims match reality in the field and the timeliness of data once published. Thus, a comprehensive set of steps should be taken to improve or replace Form 477 reporting, striking a balance between the need for better data and reporting burdens and recognizing that no one measure will deliver a perfectly accurate map down to the user/location level.

With this as backdrop, NTCA recommends the Commission take the following three steps. These measures would improve *both* the granularity *and* the accuracy of its Form 477 data collection processes, while also instilling greater confidence in that data both as rendered in a baseline broadband availability map *and* as such data are then used to make decisions from time to time with respect to policies and/or USF funding.

1. **Improved Granularity Through Shapefile Reporting in the Near-Term and Longer-Term Migration Toward Addresses or Locations**

NTCA joins NCTA in recommending that the Commission cease collection of information at the census block level, and that it adopt instead a reporting framework based upon the use of polygon shapefiles. As NCTA explains, "The use of shapefiles would dramatically increase the accuracy of the reported data because shapefiles are more closely tied to a provider's service area." [2] NTCA also concurs with NCTA's assessment that, other than some transitional efforts, the relative ongoing burden of reporting availability via shapefiles as compared to the current census block-based approach should be reasonable: "One significant benefit of a reporting regime based on shapefiles is that it is familiar to many providers because it has been used in other contexts by the Commission and by other federal and state agencies."[3]

More specifically, the use of shapefiles would allow providers to "slice" census blocks in part based upon actual service contours, thereby substantially reducing the systematic potential for overstated coverage. This in turn would help to minimize the number of "false positives" where areas that might be subject to challenge in the context of funding decisions or customer confusion when consulting an availability map.

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[2]   *Ex Parte* Letter from Steve Morris, Vice President & Associate General Counsel, NCTA, to Marlene H. Dortch, Secretary, Commission, WC Docket No. 11-10 (filed Feb. 28, 2019) ("NCTA Letter"), at 1.

[3]   *Id.* at 2 (citing Letter from Thomas Cohen, Counsel for the American Cable Association, to Marlene H. Dortch, Secretary, Commission, WC Docket No. 11-10 (filed October 19, 018) at 7 ("[F]or Shentel, using shapefiles offers the easiest approach, addressing most concerns about collection burdens.").).

At the same time, the use of shapefiles should by no means whatsoever be considered an "end game" in terms of granularity. Shapefiles would certainly improve granularity in the near-term as described above, but another significant benefit is the prospect of integrating this approach seamlessly with broader, longer-term efforts to identify availability or lack thereof on a location basis. In this regard, NTCA welcomes and is hopeful for the efforts initiated by USTelecom to explore creation of a "serviceable location fabric" that could ultimately enable identification of individual locations that either have or lack access to broadband.[4] But work to improve granularity (and important policy and funding decisions) should not and cannot await the potential outcomes of that longer-term effort. Indeed, there is no reason to view the use of shapefiles now and exploration of a location database as mutually exclusive. Instead, they should be viewed as complementary efforts that will enable improved granularity in the interim while work continues on a database that could yield even greater results. At such time as that location fabric is created, shapefiles can then be grafted on top of that database to enable capturing and reporting – essentially "batch uploading" – of the individual locations within that database that a given provider can serve. In other words, movement toward shapefiles would hardly represent a wasted effort, as they would render benefits in the interim while also providing utility in an even more granular mapping process later should that materialize.

As a corollary to addressing broadband coverage granularity, the Commission must not ignore the importance of measuring more precisely where voice services may or may not be available. Today, providers report only at a state level with respect to the offering of voice telephony services.[5] Obtaining such information only on a statewide basis, however, yields little meaningful information regarding whether consumers in a given area can obtain voice service from a provider. Particularly, as determinations of unsubsidized competition for USF purposes turn on the availability of *both* broadband *and* voice to consumers in an area, there is no good reason for the Commission to continue to collect voice availability information on a statewide basis – the rules and Form 477 instructions should be amended to gather availability of voice service on the same basis as broadband availability.

2. **Improved Accuracy Through Standardized Reporting**

As noted above, granularity and accuracy are not the same thing. Thus, even with the use of shapefiles or at such point as a location fabric is in place, erroneous data could result in overstatement of availability. Indeed, the Mobility Fund experience provides perhaps the most vivid demonstration of how an increased degree of granularity may help in narrowing disputed coverage but will not translate to perfectly accurate maps. In 2017, the Commission adopted an order setting forth the challenge procedures for the Mobility Fund II USF program.[6] This order reversed course from a prior plan for sheer reliance on Form 477 data without any meaningful vetting, and instead contemplated a special,

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[4]   *Ex Parte* Letter from B. Lynn Follansbee, Vice President – Law & Policy, USTelecom, to Marlene H. Dortch, Secretary, Commission, WC Dockets No. 11-10 and 10-90 (filed March 21, 2019).

[5]   FCC Form 477 Local Telephone Competition and Broadband Reporting Instructions, at 12 (available at: https://transition.fcc.gov/form477/477inst.pdf).

[6]   *See Connect America Fund; Universal Service Reform – Mobility Fund,* WC Docket No. 10-90 and WT Docket No. 10-208, Order on Reconsideration and Second Report and Order, 32 FCC Rcd 6282, 6309 (2017).

one-time data collection subject to very specific parameters to provide what was hoped would be more accurate coverage information.[7] Despite these efforts, however, accuracy concerns persist, and a variety of stakeholders and policymakers have expressed serious doubt regarding the veracity of the mobility map notwithstanding the unprecedented and highly-structured nature of the one-time data collection.[8]

More must be done therefore to improve mapping beyond a mere migration to shapefiles or even ultimately to location-based or address-based reporting. Specifically, the Commission should take steps to standardize how providers assess the scope of their coverage that will feed into reporting by whatever means, whether census block, shapefile, or location or address. In theory, the Commission could leverage the regime it is already developing for USF performance testing to ensure that *all* providers reporting coverage have some reasonable basis for the coverage claims they submit; a provider would not be permitted to claim service availability in a given area or to a given location unless it has conducted (and has retained the records of) some basic testing protocols to confirm it can serve there.[9] In essence, this would enable a movement to some degree away from "advertised" speeds, and more toward a recognition of the "actual" speeds realized by users.

At the very least, however, the Commission should adopt clear rules and standards for the reporting of service coverage if it will not require some *a priori* testing of actual capabilities. For example, the Commission should start by at the very least prescribing and building upon some of the same standards it demanded in the "re-mapping" process for Mobility Fund II for use in the context of fixed services as well. Strictly standardized and tested propagation models, with defined factors for signal strength, cell edge probability, and loading, are essential to have any confidence in the maps even as just a starting point – although as described below and as the Mobility Fund II experience indicates, even these are not enough standing alone to ensure maps are as accurate as they need to be in making policy and/or funding decisions. Nonetheless, if the Commission will not apply some basic testing requirements to all those that would assert service availability in a given area or to individual locations, it should at a minimum define with greater specificity the standards by which providers will be permitted to claim actual coverage and have that reflected on availability maps.

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[7]   *Id*. at 6286.

[8]   *See, e.g., Pai: Major Carrier(s) May Have Violated Mobility Mapping Rules*, Multichannel News (Dec. 7, 2018) (available at: https://www.multichannel.com/news/pai-major-carrier-s-may-have-violated-mobilty-mapping-rules) (noting Chairman Pai's suspension of the Mobility Fund II program pending review of the map and the concerns of Senator Moran regarding those map); *Sen. Manchin Says FCC Mobility Map is Wrong*, Multichannel News (Nov. 28, 2018) (available at: https://www.multichannel.com/news/sen-manchin-says-fcc-mobility-map-is-wrong).

[9]   *Connect America Fund*, WC Docket No. 10-90, Order (rel. July 6, 2018). These results could even be submitted into USAC's HUBB portal by *all* reporting providers to help validate and retain records of the information submitted, and greater consideration should otherwise be given generally as to how the data inserted in the HUBB could be used to inform availability and minimize duplicative reporting burdens.

3. **Improved Accuracy Through Validation and Challenge Processes Prior to Use of Mapping Data**

While the two steps discussed above would substantially improve the accuracy of service data, the plain fact is that they do not represent a "silver bullet" and they will not yield perfect maps. It is therefore essential that the Commission utilize data-driven, evidentiary-backed validation and challenge processes to minimize the risks of false negatives or positives skewing policymaking decisions or funding awards based upon a baseline map.

Policymakers and diverse stakeholders have all expressed support for this important "additional step" of validation and a challenge process. To start, as Chairman Pai recently explained in testimony before Congress:

> Q: Chairman Pai, you heard Commissioner Rosenworcel and I talking about mapping, and I wanted to give you a chance to weigh in. . . . Chairman, do you agree that a challenge/evidentiary process is a good way to improve the accuracy of maps before funding decisions are made?
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> A: I couldn't agree more, Congressman, and that's why . . . two years ago . . . I set up a challenge process . . . that included not just competitive providers but opening up to others – farm bureaus for example, legislators, and others who might want to challenge those maps. . . . On the fixed broadband side, I share your frustration coming from a rural part of the country myself where it's hard to get coverage.[10]

Sentiments in support of at least some further vetting of baseline maps generated through provider reports before they are used to make funding or policy decisions have been registered by parties ranging

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[10]   *See Hearing on the FCC's Fiscal Year 2020 Budget Request Before the Subcommittee on Financial Services and General Government, Committee on Appropriations, U.S. House of Reps.*, 116th Cong. (2019) (video available at: https://appropriations.house.gov/legislation/hearings/federal-communications-commission-budget-hearing).

from representatives of smaller rural operators[11] to NCTA[12] and WISPA.[13] Although much of the outrage from policymakers regarding inaccuracies in the baseline maps has been directed to date at mobile coverage in the context of Mobility Fund II,[14] these concerns are no less prevalent in the fixed service context. Steps should therefore be taken in *both* the fixed and mobile contexts to "double-check" the validity of baseline maps before they are used to make decisions on important federal policies or to award or withdraw support from a given area. Furthermore, given the fact that any map is going to be at least somewhat outdated by the time it is used for such decisions, it would be prudent to conduct a validation and challenge processes to "bring the map forward" to a reasonable degree prior to such use. Finally, the migration toward more granular maps as described above should help in focusing and narrowing challenges much more than they are today when entire census blocks are reported as served even though all involved know that is not the case. In short, the Commission should treat a map that has been improved through the first two steps outlined above as *informative but not dispositive*, with the validation and challenge processes playing a critical role in refining that baseline map in certain areas prior to its use in decision-making by the Commission.

In terms of the scope of such validation procedures, any party with relevant and credible information regarding coverage should be permitted to come forward to present that data and have it considered by the Commission. This would include not only broadband service providers, but also governmental entities and consumer groups with a stake in the outcome of use of the mapping data. That being said, the Commission must also be careful to vet the challenge/validation data as well prior to using it to alter the baseline map. For example, while "crowdsourcing" may yield interesting information,[15] there are many factors – ranging from internal network configurations at the customer premise to the vintage and capabilities of the device the customer is using – that can badly skew performance data and thereby render crowdsourcing as unreliable as the current data about which so many complain. Thus, much like the baseline mapping data itself, information gathered through validation and challenge procedures should be scrutinized rather than being accepted as "gospel."

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[11]   *See, e.g.*, Comments of ITTA – The Voice of America's Broadband Providers, WC Docket No. 10-90, et al. (filed Mar. 8, 2019), at 4-5; Comments of FWA, Inc., WC Docket No. 10-90, et al. (filed Mar. 8, 2019), at 5; Comments of US Telecom – The Broadband Association, WC Docket No. 10-90, et al. (filed Mar. 8, 2019), at 5; Comments of TCA, Inc., WC Docket No. 10-90, et al. (filed Mar. 8, 2019), at 2-4; Comments of WTA – Advocates for Rural Broadband, WC Docket No. 10-90, et al. (filed Mar. 8, 2019), at 14-16; Comments of Vantage Point Solutions and its Affected Clients, WC Docket No. 10-90, et al. (filed Mar. 8, 2019), at 2-15; Comments of the Concerned Rural LECs, WC Docket No. 10-90, et al. (filed Mar. 8, 2019), at 4-9.

[12]   NCTA Letter, at 3.

[13]   Comments of the Wireless Internet Service Providers Association, WC Docket No. 10-90, et al. (filed Mar. 8, 2019), at 3.

[14]   *See, e.g.,* footnote 8, *supra*. Concerns regarding the accuracy of the Mobility Fund II map even after the one-time data collection have of course also been raised frequently in congressional hearings. *See, e.g.*, Senate Commerce Committee Broadband Infrastructure Hearing (available at: https://www.c-span.org/video/?442490-1/hearing-focuses-broadband-infrastructure-investment).

[15]   NCTA Letter, at 3.

Conclusion

The three steps outlined above – moving to shapefiles "on the way to" perhaps even more granular service availability data; standardizing how providers can determine and report on asserted coverage; and adopting validation and challenge processes – will result in the best possible maps showing where services are available or not while recognizing that there is no magic "silver bullet" that will yield perfect results. These recommendations also strike a reasonable balance in terms of the work that providers will need to do in reporting more granular data while also minimizing the scope of challenge processes due to more granular reports than are available today. NTCA therefore urges the Commission to modernize and improve its Form 477 data collection process and the generation of ensuring broadband availability maps through the three steps recommended herein.

Thank you for your attention to this correspondence. Pursuant to Section 1.1206 of the Commission's rules, a copy of this letter is being filed via ECFS.

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Sincerely,

/s/ *Michael R. Romano*
Michael R. Romano
Senior Vice President –
Industry Affairs & Business Development

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cc: Chairman Ajit Pai
   Commissioner Michael O'Rielly
   Commissioner Brendan Carr
   Commissioner Jessica Rosenworcel
   Commissioner Geoffrey Starks
   Kris Monteith
   Alexander Minard
   Katie King
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