<div align="center">

Before the
DEPARTMENT OF COMMERCE
National Telecommunications and Information Administration
1401 Constitution Ave., NW
Washington, D.C. 20230

</div>

In the Matter of	)	
	)	
Improving the Quality and Accuracy of	)	Docket No. 180427421-8421-01
Broadband Availability Data	)	
	)	

<div align="center">

COMMENTS OF
USTELECOM – THE BROADBAND ASSOCIATION

</div>

I.   Introduction and Summary

USTelecom — The Broadband Association (USTelecom)[1] submits these comments in response to the National Telecommunications and Information Administration's (NTIA) Notice and Request for Comment on "actions that can be taken to improve the quality and accuracy of broadband availability data, particularly in rural areas."[2] USTelecom members represent a large portion of the broadband ecosystem, particularly of those internet service providers deploying rural broadband. In stepping up to this challenge we have seen first-hand the difficulties that accompany rural broadband deployment, including information gaps, and we know rural residents anxiously await the ability to connect to the digital world. Our collective experience validates NTIA's statement that "[k]nowing where the persistent gaps in broadband exist is crucial to enabling more efficient and effective investments in broadband infrastructure from both the public and private sectors."[3]

---

[1] USTelecom is the premier trade association representing service providers and suppliers for the telecom industry. Its diverse member base ranges from large publicly traded communications corporations to small companies and cooperatives – all providing advanced communications service to both urban and rural markets.

[2] Improving the Quality of Accuracy of Broadband Availability Data, Notice and Request for Comments, 83 Fed. Reg. 24747 (Dep't of Commerce, National Telecommc'ns and Info. Admin. May 30, 2018) ("RFC").

[3] *Id.* at 24748.

While we agree that more granular broadband mapping could accelerate closing the digital divide, our experience suggests that there is no "silver bullet" for this problem, and unfortunately the issues with mapping run even deeper than simply plotting broadband availability—the locations that lack broadband are often themselves unmapped. In other words, the biggest problem is not an inaccurate view of where broadband exists, it is that unserved locations are not mapped at all and therefore cannot be factored into policies and plans for deploying broadband to the unserved. It is therefore our recommendation that NTIA concentrate its limited resources on augmenting the National Broadband Map with a more fulsome set of rural geocoded locations that may exist in the hands of other government entities.

II. The Fundamental Impediment to Advancing Rural Broadband Mapping Is a Lack of Knowledge as to Where Locations Actually Exist

In the course of deploying broadband across millions of rural locations, USTelecom members have faced a consistent problem that stymies planning and deployment: the lack of geocoded information as to where the deployment targets actually exist in rural America. This information does not exist in a consistent and useful manner on any known publicly or commercially available map—our members would have long ago made use of any such tool should it have existed because it would make such a dramatic impact on their ability to continue rural broadband deployments. Therefore, NTIA should use this process to advance rural geocoding generally, which would spur both faster broadband deployments and allow for greater accuracy on the state of broadband availability at any snapshot in time.

Currently the federal government has imperfect, but generally good, information about where broadband has already been deployed; that information should be getting better in the coming years thanks to FCC requirements and programs. As the RFC recognizes, the FCC's Form 477 process ensures that fixed broadband providers are reporting semi-annually and at a

census block level, which is a very granular geographic unit of measurement.[4] While the Form

477 may encompass the broadest number of respondents, this is not the only method of

broadband reporting that the FCC requires. Participants in the Connect America Fund (CAF), the

FCC's rural broadband deployment program,[5] are required to report annually where they have

made broadband available at certain speeds at the geocoded individual location level. Though

CAF encompasses several different broadband deployment initiatives that have their own

deployment objectives and timelines, all participants are required to report their progress in this

hyper-targeted manner, which is creating an increasingly granular dataset on a rolling basis.[6]

Participants in the first program out of the gate, CAF Phase II for price cap ILECs, submitted

their geolocation information on over 1.4 million high-cost locations with broadband service on

April 1, 2018. By this program's end in 2020, it will have enabled broadband to over 3.6 million

locations[7] – all of which will be geocoded – and this is just one of the FCC's CAF programs.

NTIA should be actively pursuing how it can incorporate this data into the National Broadband

Map as it becomes available.[8]

---

[4] RFC at 24748.

[5] *See* FCC, Connect America Fund, https://www.fcc.gov/general/connect-america-fund-caf (last visited July 5, 2018).

[6] *See* 47 C.F.R. 54.313(e)(1), (f)(1); 54.316(a) (outlining different geolocation requirements for different CAF programs).

[7] *See* FCC, Connect America Fund Phase II Funding by Carrier, State and County, https://www.fcc.gov/document/connect-america-fund-phase-ii-funding-carrier-state-and-county (last visited July 5, 2018).

[8] FCC CAF participants report in to the Universal Service Administrative Co. (USAC), which is the body overseeing CAF reporting compliance. USAC has created a High Cost Universal Broadband (HUBB) portal to administer this reporting and the datasets will be made public. *See* USAC, Filing Geolocated Broadband Deployment Data, https://www.usac.org/hc/tools/hubb.aspx (last visited July 6, 2018) ("Carriers participating in modernized Connect America Fund programs must file deployment data with USAC's HUBB portal showing where they are building out mass-market, high-speed internet service by precise location. This information includes latitude and longitude coordinates for every location where service is available, and USAC will eventually display this information on a public-facing map to show the impact of Connect America funding on broadband expansion throughout rural America.").

Though the FCC's geocoding requirements yield the right result from a broadband mapping perspective, the process to get there counterproductively slows down deployment in the short term. When USTelecom members deploy broadband in rural areas, they have good information on topography and the road networks along which fiber and wireless sites will be deployed. Importantly, however, they do not have good information on where many locations physically exist today in the high-cost rural areas where broadband is most needed. This lack of information makes it difficult to determine where to build and how much it will cost, which is the foundation for cost modelling and network planning. These problems arise particularly where people live away from publicly-maintained roads, use post office boxes, and live in trailer parks, among other issues. Many of the commercial databases of geolocation start with the universe of postal addresses, which does not account for a this range of locations, particularly in rural areas. There are commercial programs/algorithms that attempt to estimate geolocation, but a significant percentage of high-cost, unserved locations end up being assigned somewhat randomly. Even the FCC's broadband model, which is a very good model in the aggregate, uses these "surrogates" to place millions of locations throughout rural areas—a much higher percentage than is found in other areas.[9] CenturyLink, a USTelecom member and substantial participant in the CAF program, has found within its service area that 75 percent of its serviceable locations have rooftop level geocoding accuracy. In CAF areas, that number drops to 55 percent, and in areas deemed too costly under the current CAF program (and even more likely to be unserved), correct

---

[9] CostQuest Associates, Inc.., Connect America Cost Model at 44 (2015), https://transition.fcc.gov/wcb/Model%20MethodologyACAM1_1v5_Post.docx ("CQLL then augments actual geocoded point data with surrogate locations for demand that cannot be located accurately. These surrogate locations are based upon generally accepted data sources (e.g., Census data), client-specific engineering and optimization rules, and standard industry practices.").

geolocation information only exists for 43 percent of the territory. These unknowns and inaccuracies make planning a network deployment slower and more costly.

The lack of geolocation information on rural locations creates post-deployment problems as well that detracts from greater deployment. Currently, CAF network providers have to assume the role of cartographers, a distraction from the area where they should be laser-focused: deploying broadband networks. USAC has explicit guidance on how carriers can go about geocoding new locations for CAF compliance, implicitly recognizing that many deployment targets are unmapped.[10] USAC acknowledges that its "recommended collection method" of manually conducting GPS data in the field for every deployed location is "time consuming and expensive,"[11] and certainly not an ISP's core business or strength. Alternatively, carriers can use a satellite map/image program to try to individually identify what appears to be a potential customer location—though the accuracy of this method is undermined because it is hard to tell a home from a barn, shed, etc., when using only aerial imagery. Existing ISP customer records are insufficient given current levels of customer penetration, even with voice service. From the perspective of broadband deployment, this manual, after-the-fact reporting does not help efficiently deploy broadband. Indeed, the discrepancy between model estimates and actual results increases risk and deters broadband deployment. NTIA should focus its efforts on filling-in the rural location gaps. Once those locations are identified, ISPs are able to quickly determine if, and at what level, those locations can be served on its network.

NTIA should avoid using its limited resources available to it in this effort to improve the accuracy of FCC Form 477 results. USTelecom acknowledges NTIA's belief that "the Form 477

---

[10] *See* USAC, Geolocation Methods: A guide to successfully collecting broadband deployment data, https://www.usac.org/_res/documents/hc/pdf/tools/HUBBGeolocationMethods.pdf (last visited July 5, 2018).

[11] *Id.* at 4.

data collection program suffers from issues with data accuracy" due to the fact that "there is no independent validation or verification process" for the Form 477 submission.[12] While this could be a useful project at some point, given the small budget available and the multiplicity of benefits that accrue from helping to map the currently unmapped, a data correction effort—particularly one of the scale associated with the Form 477 that includes millions of census blocks—would be an inefficient use of limited resources. The end result of such an effort would at best be a better identification of where broadband exists today, not the areas where deployment efforts should be targeted.

III.   **Incorporating Existing Government Data from Other Sources Will Be the Most Effective and Efficient Means of Improving Broadband Mapping under this Program**

While no single dataset will solve the problem, incorporating existing government sources and third-party data sources into the National Broadband Map will do the most to show areas that lack broadband service, which in turn allows policy-makers and private companies to develop the most effective manner of serving the unserved. Additionally, NTIA should consider the usefulness of a pilot program.

A. **Census Data Could Prove to be the Most Useful Dataset to Determine Where Broadband is Available**

Incorporating data from the Department of Census, which we believe to be the most robust data set available, would present the best opportunity for depicting an accurate representation of existing locations and would not require any new data collection; this aligns with Congress' direction to NTIA.[13] From USTelecom members' previously inquiries about

---

[12] RFC at 24748.

[13] RFC at 24748 ("Congress directed NTIA to acquire and display available third-party data sets to the extent it is able to negotiate inclusion to augment data from the FCC, other federal government agencies, state government, and the private sector.").

making use of Census data, we believe that some form of Census address database exists that may

contain location information for up to 98 percent of all addresses—a sizeable improvement over

what is available today—but that dataset was not publicly available. With both the Department

of Census and NTIA falling under the Department of Commerce, NTIA has a unique opportunity

to determine how existing Census data can be used to facilitate broadband mapping. We

encourage NTIA to make all such information public but to the extent Census data cannot be

publicly revealed, NTIA should explore whether it can create non-public maps available to

governments and carriers, allowing for better informed broadband deployment projects and

planning. If the current Census data proves not to feature these geolocated areas, NTIA should

continue working with the Census Bureau in order to jumpstart this effort for the Census

Bureau's future data collections.

B. Other Datasets and Methods May Also Be Helpful to Depict Unmapped Areas

There are other datasets—both governmental and private sector—that NTIA should also

consider incorporating into the National Broadband Map in order to depict possible broadband

targets in a more fulsome way:

- **U.S. Postal Service:** As noted above, most commercial datasets make use of this data as their base location dataset so it is a wealth of information, though is not clear how much additional information it has that is currently unavailable. A potential drawback to this data source is that the Postal Service's knowledge of actual location information may be the most limited in rural areas, where postal stops or P.O. boxes are common; these are of course the areas most in need of mapping and in turn broadband service.

- **Department of Transportation (DOT):** DOT has a conducted a National Address Database (NAD) project in an attempt to ensure the use of addresses across the country. As part of this project, NAD had created partnerships with numerous states that may have more granular geolocation data available.[14]

---

[14] *See* DOT, National Address Database (April 2018), https://www.transportation.gov/nad (The U.S. Department of Transportation (USDOT) and its partners from all levels of government recognize the need for a National Address Database (NAD). Accurate and up-to-date addresses are critical to transportation safety and are a vital part of Next

- **911 Authorities:** As DOT recognized in its NAD project, accurate location information is essential to 911 authorities so that they can dispatch first responders appropriately. While 911 authorities vary substantially by state and locality, attempting to centralize such available location information may prove useful.

- **Electric Utilities:** Any location hoping to receive a broadband connection would require an electric connection. NTIA could explore working with electric utilities to determine the extent to which they have existing geolocation information of their service territories that could be incorporated into NTIA's map.

- **Large Edge Providers:** Some large internet/software companies like Google, Facebook, and Microsoft may collect spatial data as part of their business functions. NTIA should talk to these companies to determine what data sets they may have available to share for incorporating into this effort.

- **Autonomous Driving Companies:** We observe that companies in the autonomous driving space are developing large datasets of road information that may also include address information for routing purposes. Ironically, the companies in the business of providing spatial information experience the same challenges in developing data in this area: the long distances and low density makes these mapping (driving) datasets less profitable.

Also, while we understand Congress's general direction of seeking to use existing data sets, USTelecom recommends that NTIA consider, now or in the future, the efficacy of doing a pilot project to focus on geolocation issues. In assessing such a project, NTIA could take an individual state that has both a significant rural population and advanced its own geolocation initiatives in order to create a more comprehensive map. NTIA could then work with ISPs to map broadband availability and determine how the new information could make new deployments more efficient. NTIA then could balance the results of this effort against the costs and time and other external benefits associated with the geolocation process.

IV.   CONCLUSION

USTelecom members are committed to closing the digital divide and believe accurate

---

Generation 9-1-1. They are also essential for a broad range of government services, including mail delivery, permitting, and school siting.").

broadband mapping of all locations—served and unserved—is the proper prerequisite to fully developing solutions for doing so.

Respectfully submitted,

By:

Michael Saperstein
USTelecom Association
601 New Jersey Avenue, N.W.
Suite 600
Washington, D.C. 20001
(202) 326-7300

July 16, 2018