![USTelecom - The Broadband Association]

March 21, 2019

<u>**Ex Parte**</u>
Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 Twelfth Street, S.W.
Washington, D.C. 20554

Re: **Modernizing the FCC Form 477 Data Program WC Docket No. 11-10;**
 Connect America Fund et al. CC Docket No. 10-90

Dear Ms. Dortch:

 USTelecom has proposed a long-term solution to improve our nation's current
broadband mapping capabilities in a manner that will meet the needs of policymakers, American
citizens, businesses and broadband service providers.[1] As the Commission has itself said in this
proceeding, the current use of reporting by census blocks (CBs) to identify where broadband can
be provided has created a one-served-all-served basis for deployment data that has become less
reliable as a tool to understand the rural broadband gap or to close it.[2] Not only is a census block
based reporting mechanism not granular enough to target areas that lack broadband, but simply
asking providers to identify areas where existing service can be provided does not do enough to
help understand and solve the digital gap.

 Policymakers need better and more granular information about the areas without
broadband before they can design efficient programs to address the problem, ensure there is no
overbuilding, and track progress towards national goals. The growing use of competitive reverse
auctions to distribute broadband funding puts an even higher premium on having the best
possible data about the areas up for bid in order to ensure a fair result. USTelecom members'
recent experience with CAF programs, however, have revealed that the type of granular GIS data
needed to support policy makers and broadband providers in rural areas is not readily available
and is highly inconsistent.

 Therefore, USTelecom with the help of its vendor CostQuest has developed a proposal to
create a "Broadband Serviceable Location Fabric" (BSLF) that can serve as the uniform
foundation for dramatically more accurate FCC Form 477 reporting and enhancing the ability to
understand the unserved areas of the country. Our proposal goes beyond using an address to
generate, typically through a commercial geocoder, an individual latitude and longitude for the

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[1] *See* Letter of B. Lynn Follansbee, VP–Law & Policy, USTelecom to Marlene H. Dortch, Secretary, FCC, WC
Docket No. 11-10, (Oct. 17, 2018).

[2] *See In the Matter of the Modernizing the FCC Form 477 Data Program,* Further Notice of Proposed Rulemaking
32 FCC Rcd 6329, 6342 (Aug. 3, 2017).

building to where broadband is/would be deployed. Addresses are important, but an address does not provide the actual geographic location of where service is deployed or is needed. It is the difference between locating the broadband serviceable point at a service address in the middle of a field or actually where the home or business structure is on the property; a very important difference if one is laying fiber cable or relying on a wireless signal. Our proposal will create a consistent location fabric where all serviceable locations (e.g., the house, the small business)[3] are located using a single methodology and thus provide a harmonized reference point for broadband reporting. In support of that objective, today, USTelecom is announcing the launch of a broadband mapping pilot in Virginia and Missouri to demonstrate the viability of USTelecom's proposal, and to validate our assumptions.[4]

No single data source can solve this problem. To create the BSLF, multiple data sources, scoring routines, and managed visual review are required. These data sources include: parcel boundaries, parcel attributes (*e.g.*, land use, assessed value, number of units, etc..), building polygons, and addresses. To plan the pilot USTelecom and CostQuest have conducted a review of both public, open source, and private/commercial data sources to determine which are the most complete, high quality, and useful for this purpose. While there are many impressive open source data sets available (for example, OpenAddress, Microsoft rooftop database) we have found that they may not be as complete, reliable, and maintained as commercial data sources. However, to demonstrate the potential benefit of using commercial data, we determined that using both data source types (open and commercial) will provide a verifiable test. Similarly, while some states and counties make digitized parcel data available for free, the effort to collect and normalize would be a significant effort that can be avoided since commercial sources have laboriously collected, validated, and organized such parcel data. Other data elements to be used, as noted, include land attribute records, road data and georeferenced addresses where available. Combined for the states we will study for the proof of concept, all of these data sources will be analyzed and layered in a way that ultimately identifies and validates which structure on a parcel of land is the serviceable location and determines the latitude and longitude of the rooftop.[5] The database of these latitude/longitude geocoded locations will also be assigned a location type (*e.g.*, residential, business, community anchor) and be scored to provide a level of certainty or confidence that the data is correct.

While combining multiple data sources will give a high level of certainty in most cases, there will be areas of the country where data is scarce or conflicting so that a person will need to review the available data to provide additional confidence. For the pilot, CostQuest will use a managed crowdsourcing visual review process to, for example, inspect satellite imagery to align building data with visible structures or to validate an incomplete attribute record. We anticipate

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[3] It will be up to the FCC to clearly define "serviceable location." For purposes of the pilot we are identifying homes and small business locations.

[4] *See* https://www.ustelecom.org/broadband_mapping_initiative/

[5] For example, a land parcel may contain multiple structure (house, storage shed, garage, etc.), our process will identify only the house as the serviceable structure and eliminate other structures from the BSLF.

that there will be up to 75,000 such reviews in each state to demonstrate the effort and the potential benefit.

Data provided by reporting carriers will also place an important role in ensuring the BSLF is as complete as possible. Carriers participating in the pilot will be asked to provide CostQuest with a confidential list of known addresses that they serve or have served with any fixed service. The existence of a carrier record of actual service is a unique and valuable validation of a serviceable location. CostQuest will create a secure portal for carrier submissions and then normalize industry address data by deduplicating records and standardizing address formats so they can be linked to the BSLF and used in the scoring process. Carriers in return will get back their customer address lists with a location key that creates a linkage between the data they submitted and the final BSLF in order to assist them in matching their addresses to the records in the fabric. This step will greatly simplify and improve both FCC Form 477 reporting as well as compliance with CAF location reporting.

Once the BSLF is complete, carriers will be able to report where they can provide broadband. During the pilot we will explore a number of ways of reporting availability information in order to determine the most efficient processes.   Carrier size and technology is likely to influence the method that works best for each participant but we anticipate testing several methods including: reporting by individual address/locations, submitting shape files of service area based on the underlying fabric, and submitting results of propagation maps for fixed wireless service.

Should this process then be adopted for use at the national level, we envision a separate portal and process would be designed to allow the public to assist by submitting data to improve both the location fabric and the broadband availability information.   Creating a database at this level of granularity is a major endeavor and enlisting the help of consumers or state officials on the ground will help confirm, correct, or refine the data in the BSLF. We are attempting to map in a highly dynamic environment where service deployment, homebuilding, business development, natural disasters, and developments in GIS resources create a constantly changing landscape that must be updated and improved over time. In addition to a systematic schedule to refresh data and reporting, this proposal is designed to support a cooperative, collaborative approach to creating and maintaining an important national data source.

We believe our proposal offers a very promising method to improve broadband mapping, but it is an entirely new approach, which is why USTelecom has formed a consortium of its members and others in the fixed broadband industry to launch an industry funded pilot in Missouri and Virginia[6]. These states were chosen for their mix of types of fixed service

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[6] The consortium chose to fund the pilot in order to help develop the record we felt the FCC would need in order to adopt this methodology nationwide and to validate and test the assumptions about our proposed approach. If adopted as the new Form 477 reporting process, as a national broadband map, or as a method to update the CAM, we believe the funding to support the expansion and ongoing maintenance of the BSLF should come from public, not private, sources.

providers as well as the fact that both states have a mix of both rural and urban areas. We anticipate that the pilot project will take 4-6 months to complete and at the end of that period USTelecom and its consortium will submit into the record in this proceeding the results which we anticipate will demonstrate evidence that this methodology is achievable and should be adopted on a nationwide basis.

At the completion of the pilot a number of sample files will be made available for review.[7] Additionally, demonstration material will be provided to showcase the effort, including sample data and the resulting fabric. This demonstration will include a limited set of data and include a summary analytic report that will include, but not limited to, the following types of information:

- Information about how location results by CB vary from the CAM and/or the percent improvement in location accuracy over the CAM. While individual CBs cannot be shown, summary analytics can.
- Summary information on how the location results by CB vary from the Form 477 and or how many CBs that are shown as fully served in the 477 are actually only half, or a quarter served.
- Information about the percent of locations with a latitude/longitude with high certainty (*i.e.,* did coalesced commercial data products provide certainty unavailable before).
- Information about whether there is an address format that would be helpful for carriers to adopt or strive to adopt.

USTelecom can provide the FCC, and other interested policymakers as appropriate, an evaluation copy of the BSLF portion based on open source data and samples of the commercially sourced portion. Parties receiving the evaluation copy will be required to sign an agreement limiting the use of the BSLF and other licensed materials to only evaluation of whether the BSLF will meet policy needs and whether it should be developed as a national product. Agreement will limit distribution and will not allow for any public posting or re-distribution.

USTelecom and its consortium members estimate that if the FCC adopts the BSLF methodology it would take an additional 12 months to 2 years to complete a nationwide fabric after the pilot closes. During this time the pilot will have provided the FCC and other carriers with the information that is needed to resolve remaining policy issues such as frequency of reporting, standards for reporting, and propagation map parameters. It is estimated that the cost to implement the initial nationwide BSLF is approximately $10 million and, because this is a living database, approximately $2.5 million per year to keep it updated.

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[7] Due to some licensing restrictions of the third-party data for the BSLF pilot, portions of the completed pilot BSLF and other components of the licensed materials cannot be made public nor distributed. However, the datasets created from open source data can be made available to the FCC for review (not distribution). And, if the FCC finds value in using the commercial data sources, use and distribution can be discussed with the vendors.

Please contact the undersigned should you have any questions.

Respectfully submitted,

USTELECOM

By: _____
        B. Lynn Follansbee
        Vice President – Law & Policy