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October 19, 2018

**Via ECFS**

Marlene Dortch, Secretary  
Federal Communications Commission  
445 12th Street, SW  
Washington, DC 20554

**Re: *Ex Parte* Filing – Modernizing the Form 477 Data Program, WC Docket No. 11-10**

Dear Ms. Dortch:

On October 17, 2018, Chris Kyle and Harris Duncan (Shentel), Ross Lieberman (American Cable Association (ACA)), and Thomas Cohen (Kelley Drye & Warren LLP, Counsel to ACA) met with Preston Wise, Legal Advisor to Chairman Pai, and the following staff of the Wireline Competition Bureau: Steve Rosenberg, Rodger Woock, John Emmett, Suzanne Mendez, Ying Ke, and Ken Lynch. The purpose of the meetings was to discuss benefits and costs of various methods by which smaller cable operators that provide broadband service could collect and report on Form 477 broadband deployment data on a more granular basis.<sup>1</sup>

In brief, ACA representatives explained that, should the Commission move forward with modernizing the Form 477 data collection program, reporting broadband deployment information on a street segment basis adequately balances competing interests. It will significantly improve the information that the Commission collects today on a census block basis by providing more granular data. Moreover, while collecting and reporting broadband deployment information on a street segment basis will impose additional burdens on all providers reporting broadband deployment information, it can be implemented relatively quickly and would be far less burdensome than other options to obtain more granular data, such as requiring reporting on an individual address basis.

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<sup>1</sup> *Modernizing the FCC Form 477 Data Program, WC Docket No. 11-10, Further Notice of Proposed Rulemaking, 32 FCC Rcd 6329 (2017).*

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### **Small Operators' Compliance with Today's Form 477 Collection and Reporting Process**

Smaller cable operators produce broadband deployment data on a census block basis for filing Form 477 today, either by working from a “homes passed” database or from a digital or paper network map. A “homes passed” database is a list of addresses used by customer service representatives of an operator to determine whether consumers can receive service at their residences. The list typically includes addresses of current and former customers. It may be supplemented over time with addresses from other sources, such as marketing mailing lists and addresses obtained when the operator extends its network to a new development. While operators aim to have up-to-date, comprehensive lists, most operators report that their databases are far from perfect. Most often, these lists are underinclusive.<sup>2</sup>

To create a census block list for filing Form 477 with the Commission, the “homes passed” database is matched, usually by a third-party vendor for smaller operators, either directly with census block information or first to geocoded information that then can be associated with census blocks. Before this process can take place, the “homes passed” database must be scrubbed to improve the likelihood that the addresses contained therein will match the street names and house number range in the census block database or be able to be geocoded. The address information that is good enough for a customer service representative to determine whether a consumer can be served is often not precise enough for a census block match or geocoding.

After an initial list of census blocks is produced from the “homes passed” database, the list must be reviewed and amended with supplemental data to ensure its accuracy. For instance, addresses that could not be associated with any census block or geocoded must be reviewed to determine whether the census block list includes the blocks in which these rejected addresses are found.<sup>3</sup> Moreover, because the “homes passed” database rarely includes addresses where a home is not yet passed but service is “available” – addresses that are usually evaluated for service by network engineers on a case-by-case basis – the initial list of census blocks is reviewed to determine whether these addresses are covered. This process of reviewing and amending the initial census block list can be done by the operator or a third-party vendor. While

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<sup>2</sup> Although “homes passed” databases are imperfect, providers view them as good enough to handle the vast majority of consumer inquiries about their service availability. ACA members report that the cost of determining whether service can be provided to addresses not in the database is substantially less than the cost of having to develop and maintain a perfect database.

<sup>3</sup> An address can be rejected because a road has a different name from the one used by the Census Bureau or other sources. This problem tends to be greatest in rural areas, where government agencies and individuals often use different names for the same address – if there is any address at all.

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no operator “walks its plant” to certify the accuracy of the census block list, it is still a burdensome process.

Smaller cable operators incur a substantial upfront cost to undertake this process from beginning to end for the first time. Once this occurs, they need to maintain and update this list, for instance to add new residences and remove ones that have been demolished. In general, a third-party vendor charges an operator for each collection approximately \$2,000-\$5,000 to convert address data to census block information, depending upon the quality and amount of data available.

Digital network maps also can be used to produce census block information by electronically overlaying the network map with the census block map. Few smaller cable operators, however, have a digital network map because of the substantial time and costs required to generate it.<sup>4</sup> Mr. Duncan explained that Shentel is an exception. Shentel has spent years and approximately \$5 million working with outside mapping vendors as well as internal engineers and coders to produce its digital network map, which it uses virtually every day for its operations and engineering.<sup>5</sup> Mr. Duncan stated that Shentel, which geocodes all information related to its subscribers, has never geocoded its “homes passed” service address information because it would serve no business purpose.

Most smaller operators (and even some larger ones that acquire smaller operators) rely on paper copies of network maps to create census block lists. They produce Form 477 data by manually overlaying their paper maps with census block maps. However, ACA representatives explained that paper maps have limitations. For instance, they can be outdated, which then requires the cable operator to rely on the knowledge of the system’s network engineer.

### **Small Operators’ Compliance with a Form 477 Street Segment Collection and Reporting Process**

The FCC staff has inquired about the process smaller cable operators would undertake to collect street segment information within their available service territories. Today, no smaller

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<sup>4</sup> From discussions with mapping vendors, ACA believes fewer than 20 of its smaller cable operator members have digital network maps.

<sup>5</sup> Mr. Duncan added that Shentel’s experience highlights the very large cost that smaller cable operators would need to incur to produce a relatively good address database. He explained that it is very difficult and costly to merge information that was generated differently from multiple sources. This is especially the case with address data in rural areas. As such, the initial error rate tends to be high, and it gets corrected slowly over time. But, because there are always new data, even about addresses that are already in the database, a “perfect” result is never achieved.

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cable operators have any business purpose for collecting street segment information nor are they mandated by any government agency to do so.<sup>6</sup> As a result, they would have to incur additional costs to comply with any such mandate and, for many, the cost would be material. However, as explained below, street segment collection and reporting is doable.

Operators reporting broadband deployment information – either on their own or by using a third-party vendor – who today match their “homes passed” database for identifying census blocks, could use the same process for identifying a Tiger/Line Identification (TLID), which is the standard format (number) used by the Census Bureau for identifying street segment information.<sup>7</sup> However, because of the imperfections in operators’ “homes passed” databases and imperfections in the Census Bureau data for TLIDs,<sup>8</sup> this process is likely to result in more

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<sup>6</sup> ACA acknowledges that some of its members who are incumbent local telecommunications providers receive universal service support with broadband deployment requirements and are required to produce detailed geolocated deployment data in their High Cost Universal Broadband (HUBB) Reports. *See Connect Am. Fund, et al.*, WC Docket No. 10-90, *et al.*, Report and Order, Order and Order on Reconsideration, and Further Notice of Proposed Rulemaking, 31 FCC Rcd 3087, para. 214 (2016). The Commission requires these providers to report their government subsidized deployments on a granular basis to prevent waste, fraud, and abuse in the program. HUBB data can in turn be used to produce information for Form 477 reports. Many ACA members, however, do not receive any government support and therefore have no obligation to report their deployments, other than what the Commission requires through Form 477. Accordingly, these providers are differently situated from government-supported telecommunications providers and are highly sensitive to any increased burden from having to comply with Form 477 collection and reporting requirements.

<sup>7</sup> The Census Bureau makes available a tool for manually looking up TLIDs based on an entered address: <https://geocoding.geo.census.gov/geocoder/locations/address?form>. This tool, however, does not permit batch processing for large volumes of addresses. As such, each address must be entered manually one at a time. ACA does not yet know of any third party that provides a free online batch tool that returns TLIDs. Accordingly, some ACA members that do their own census block matching using a free online batch tool today could not do the same for TLIDs unless the Commission makes such a tool available.

<sup>8</sup> For instance, for operators that match their “homes passed” database with the information available from the Census Bureau to directly find a TLID, there are two issues: 1) address data in the Census Bureau’s database can be associated with the wrong TLID; and 2) TLIDs in the Census Bureau’s database may not report any home addresses when home addresses are actually there. In the first case, the address match is correct but the wrong TLID is returned. In the second case, some TLIDs will never be identified. (A

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missed TLIDs than it results in missed Census blocks.<sup>9</sup> Accordingly, operators and their vendors will have an increased burden in reviewing and amending the initial output to ensure that all of their served TLIDs are reported. Operators and vendors will employ the same processes they use today to supplement their initial census block lists. Assuming the Commission maintains its current certification requirement,<sup>10</sup> Mr. Liberman explained and Shentel affirmed, that operators could certify the accuracy of "TLID-based" deployment reports without "walking their plants," just as they do today when reporting by census blocks.

Operators who primarily rely on a digitized network map to identify served census blocks could identify served TLIDs by using the same process they use to identify served census blocks. However, because digital network maps have flaws and street segments are lines (whereas census blocks are shapes), this process too will initially result in more missed TLIDs than would be missed when reporting by census blocks. Accordingly, operators will have to review the

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lookup can never find a TLID if the Census Bureau does not include the address information.) As an example, about 26 percent of secondary and local road TLIDs in Orange County, FL have no address data. For some roads, this is legitimate as they run through areas with no homes or buildings. In other cases, the Census Bureau data is just not complete. ACA does not know if this percentage is representative of other counties or states. Regardless, it means operators and their vendors will need to develop methods to include these TLIDs in their Form 477 filings.

<sup>9</sup> As discussed above, operators today identify census blocks using different processes. Some operators, either on their own or by using a third-party vendor, convert each address in their "homes passed" database into individual geocodes. These geocodes can then be either entered into the Census Bureau's geocoder that uses latitude/longitude coordinates to return a census block, or plotted on a census block map to produce an initial list of served blocks. While this process works rather effectively for identifying census blocks, it's not ideal for identifying street segments. First, the Census Bureau's geocoder that uses latitude/longitude coordinates to identify census blocks will not return TLIDs. Second, while geocodes can be straightforwardly associated with census blocks that are shapes on a map, they are not ideal for identifying street segments, which are lines. For example, a location's coordinates can be equidistant between two street segments, requiring the provider to make a judgment on which of the two street segments is served. This type of manual intervention increases the cost and time required to complete the TLID lookup process.

<sup>10</sup> "FCC Form 477, Local Telephone Competition and Broadband Reporting, Instructions," OMB Control No. 3060-0816, 7.3 Certification of Filing Accuracy, at 32 (Dec. 5, 2016) (requiring that the operator official "certifies that he/she has examined the information contained in this Form 477 and that, to the best of his/her knowledge, information and belief, all statements of fact contained in this Form 477 are true and correct.").

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output closely to add back missed TLIDs. As a result, while this process is achievable, it will prove more burdensome than the process for census blocks.

For smaller operators who primarily rely on maps to identify served census blocks, the process for identifying TLIDs is likely to be more challenging. ACA is not aware of any publicly available maps that visually show all street segments and provide associated TLIDs. For operators who rely solely on such maps to affordably report the availability of their service on a census block basis, the burden is likely to be significantly greater because they would need to rely on a third-party vendor. Before the Commission requires any street segment collection and reporting, however, ACA would expect the Commission to take steps to make street segment maps available.<sup>11</sup>

ACA recognizes that the costs it has identified in transitioning from census block to street segment reporting are primarily upfront costs, which would diminish over time, but they would still be significant, and the Commission needs to account for them in determining whether and how to adopt a street segment regime. As for ongoing costs of collecting and reporting Form 477 information, ACA expects these costs would be similar or slightly greater than those that small operators incur today.

In a follow-up discussion with Bureau staff, ACA representatives discussed other aspects of implementing a street segment regime. First, Mr. Lieberman expressed concern that, should the Commission require reporting of service availability on street segments that are not associated with homes, such as on expressways, the burden of reporting by street segment could be materially greater than discussed. Second, because the TLID data set changes annually, for example, as new streets are included, the Commission should consider easing the burden on operators by “freezing” a particular data set for a number of years. Third, if the FCC does not require operators and other Form 477 filers to report by street segments in all census blocks, then the Commission will need to clarify which street segments need to be reported because street segments can border multiple census blocks. Additionally, in response to a staff inquiry about the use of network maps, and distinguishing feeder and distribution plant for purpose of determining street segment coverage, Mr. Duncan explained that such a distinction does not often hold for modern networks, and he would urge the Commission to give operators flexibility in determining whether service is available in a street segment. Mr. Lieberman added that, overall, the Commission should maintain the flexibility it gives operators in determining where their service is available should it require reporting by street segments, as opposed to the Commission providing detailed, prescriptive rules.

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<sup>11</sup> ACA would expect smaller cable operators that only have paper maps to overlay these maps with street segment maps, although they would still then encounter all the problems discussed above.

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### **Option to Use Shapefiles**

Mr. Lieberman explained that some cable operators have the capability to produce shapefiles of their “homes passed” databases, their network maps, or a combination of both. Since the Commission accepts deployment information in this format from mobile wireless carriers, he suggested that it should consider giving wireline providers the option of submitting information in this way instead of only by street segments. He noted that shapefiles can still be burdensome to produce, but for some operators it could be less burdensome than producing street segment data. Mr. Duncan explained that for Shentel, using shapefiles offers the easiest approach, addressing most concerns about collection burdens. Moreover, it can produce more granular information than street segments. With shapefiles, the Commission could generate street segment or other coverage data. Mr. Lieberman added that, in implementing this proposal, the Commission should permit providers to submit shapefiles not only in the ESRI file format, but also in the KMZ file format, which can be created through Google Earth, as well as ease the restrictions associated with the inclusion of attributes of shapefiles.

### **Reporting on an Address-by-Address Basis Would Be Too Onerous**

ACA representatives explained that collecting and reporting data by individual street address are fraught with grave problems. First, there is no national database of street addresses and for good reason. The task is overwhelmingly complex because the data set is very large (some 130 million housing units) and it needs to be pulled from multiple sources that have inconsistent collection and reporting methods and formats. These inconsistencies, as well as errors in the information, would need to be resolved. Further, the information changes virtually every day and so would need constant maintenance. As a result, the Commission’s cost to produce and maintain such a database would be tremendous, and the process would take many years, assuming adequate resources are provided.

The second problem is no provider reporting broadband deployment information, including any of ACA’s members, have a complete list of all the addresses that are available for them to serve. As discussed, at best, they have an imperfect “homes passed” database and a digital network map. To report on an individual street address basis would require every provider to expend substantial time and incur substantial costs to “walk their plant” at regular intervals to produce such information.<sup>12</sup> The costs would be significant for all, and prohibitive for some who have limited resources and few employees. The costs of such an undertaking far outweigh the benefits.

Finally, we would expect the Commission’s costs would soar as it would first need to produce the national address database and then, for each report, collect, process, analyze, and

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<sup>12</sup> In the case of fixed wireless providers, it is likely they would have a similar task in determining which locations were served by their signals and then “walk the area” to determine the addresses of the locations covered.

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store all of this information. This process also increases the risk that Commission releases would be delayed, which is an issue even today. In sum, rather than “boil the ocean” by requiring deployment data to be submitted on an address-by-address basis, ACA believes the Commission can produce a materially better result in relatively short order by adopting a street segment methodology.<sup>13</sup>

### **Policies the Commission Should Include in a Street Segment Collection**

ACA representatives closed the meeting by recommending that the Commission adopt the following policies in a street segment collection regime to ease the burden on smaller cable operators:

- Rural Only Collection – To focus the collection and reporting of more granular data on the areas of greatest concern, the Commission should collect street segment data only for census blocks that are more than two square miles in area in rural areas.<sup>14</sup>
- Phase-In of Granular Collection for Smaller Operators – So that smaller operators can gain the time and attention of a limited number of vendors and can convert their data after learning from the experiences of larger providers, the Commission should permit smaller operators to comply with a new street segment collection one year after larger providers are required to comply.

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<sup>13</sup> See Letter from Ola Oyefusi, Director, Federal Regulatory, AT&T, to Marlene H. Dortch, Secretary, Federal Communications Commission, WC Docket Nos. 11-10, 10-90, at 4-5 (Oct. 12, 2018) (“AT&T agreed that road segment reporting of service availability would be an improvement over the current CB-based program in terms of granularity. Based on our discussion, it also appears it would be easier for the FCC to implement. A road segment database would require changes to FCC systems, but the complexity and sheer size of the data set would likely be smaller than an address database. Carriers, however, would have to change their own systems to report by road segment since it is not a data element that is used for any business purpose. AT&T estimates it would take it eight months to adapt to road segment reporting, but we cannot speak to the time it would take smaller entities to comply. While submitting large address lists to the FCC would likely challenge some entities, it is data that is generally maintained in the normal course of business.”).

<sup>14</sup> For providers that serve any census blocks that are more than two square miles in area in rural areas, the Commission should permit them to file street segment data for all areas they serve. For some providers, reporting all in one format for all areas is the less burdensome approach, while for other providers, it could be less burdensome filing street segments in only those areas where it is required.



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- Timing of 477 Collections – The FCC should move to an annual data collection, which will ease the burden on smaller operators and would not appreciably limit its usefulness for the Commission.
- Stability of New Collection Mechanism – So that all providers can amortize the significant upfront costs of a new collection and reporting regime over time, the Commission should maintain any new collection regime for at least five years.
- Determining Whether Service is Available in a Street Segment – The Commission should permit a provider to declare it has service available in a street segment if it can serve any location in the street segment within a commercially reasonable time.

# # #

In closing, the ACA representatives told Commission staff that ACA members were prepared to submit additional information about any more granular broadband deployment collection and reporting regime and to meet again to discuss specific requirements.

This letter is being filed electronically pursuant to Section 1.1206 of the Commission's rules.<sup>15</sup>

Sincerely,



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<sup>15</sup> 47 C.F.R. § 1.1206.