

**Before the  
Federal Communications Commission  
Washington, DC 20554**

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

**COMMENTS OF THE OPEN TECHNOLOGY INSTITUTE AT NEW AMERICA**

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## EXECUTIVE SUMMARY

Form 477 is a valuable tool that is long overdue for modernization. The Open Technology Institute at New America (“OTI”) recommends that the Commission (1) collect data at a more granular geographic scale; (2) collect broadband pricing data; (3) continue collection by spectrum band and semi-annually; and (4) make the data more readily available for public use and third party research.

Form 477 needs to collect more refined geographic data. The Commission should require reporting at the census block level for fixed and mobile broadband subscription data and fixed broadband speed data. Census blocks are 100 times more granular than census tracts and offer a more accurate and useful picture of broadband service.

The Commission should also take the long overdue step of collecting data about broadband pricing. The federal government has no reliable measure of the cost of broadband service, creating an information vacuum that has handicapped policymaking for too long.

Furthermore, the Commission should continue collecting data by spectrum band, which helps hold broadband providers accountable for their legal obligations to utilize spectrum resources in the public interest. Additionally, the Commission should not reduce the frequency of Form 477 reporting. The current semi-annual collection provides timely and useful data.

OTI supports the Commission’s proposals to make certain Form 477 datasets publicly available. This information should be released in a manner that is machine-readable and user-friendly. Form 477 data should also be incorporated into the National Broadband Map or a similar visualization tool to help consumers and policymakers better understand the state of the broadband market.

## **I. INTRODUCTION**

OTI respectfully submits these comments to support the Commission's ongoing efforts to modernize Form 477 data collection and reporting. We welcome the opportunity to provide feedback and recommendations on the Commission's proposals to make Form 477 a more valuable tool to advance the public interest.

Through our work on digital inclusion and broadband deployment, we have found Form 477 to be a unique and indispensable tool for studying broadband adoption and identifying outreach targets. We use the Local Telephone Competition and Broadband Deployment data to locate and analyze areas of low adoption and to advise organizations on where to place public computer centers, broadband resources, and digital literacy trainings. Form 477 also informs our work in advising municipalities across the country, including Brooklyn, Detroit, New Orleans, Philadelphia, San Francisco, and Seattle. In these comments, we seek to provide the Commission with insights and perspectives that arose from these experiences.

Although Form 477 provides valuable information for OTI and the rest of the research community, it is long overdue for modernization. Since its inception 17 years ago, the form was designed to give the Commission the information it needs to assess the availability of broadband services in the United States. Form 477 is not adequately meeting this goal. To best serve the Commission and the public interest, Form 477 must provide a more nuanced picture of broadband deployment and adoption.

## II. DISCUSSION

### A. Form 477 should collect data at a more granular geographic scale.

Form 477 needs to collect more refined data, a critical point that the Further Notice of Proposed Rulemaking (“FNPRM”),<sup>1</sup> the Department of Justice,<sup>2</sup> and the Commission’s own National Broadband Plan<sup>3</sup> have all recognized. The data generated by Form 477 often does not accurately reflect the on-the-ground reality of broadband service in the United States, largely because the form does not collect sufficiently granular information. For example, the form currently collects subscription data by census tract (for fixed broadband service) and at the state level (for mobile broadband service), neither of which provide adequate insight into competition or service levels.<sup>4</sup> Tract-level data does not reliably assess how many people or households subscribe to service in a specific neighborhood, nor does it sufficiently identify areas that lack access to services. In rural tracts, low population density can skew an analysis since a large tract will show up as “served” or with a large percentage of households subscribing even if only one person in that tract has service. Moreover, in our experience the most effective digital literacy trainings take place at the neighborhood level, where tract-level data is inadequate.

Accordingly, OTI recommends that fixed broadband providers report their subscription and speed data by census block. Blocks are 100 times more granular than tracts, offering a scale

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<sup>1</sup> *Modernizing the FCC Form 477 Data Program*, Further Notice of Proposed Rulemaking, WC Docket No. 11-10 (rel. Aug. 4, 2017) (*FNPRM*).

<sup>2</sup> Notice of Ex Parte Communications, United States Department of Justice, GN Docket No. 09-51, at 7 (Jan. 4, 2010) (*DOJ Comments*).

<sup>3</sup> Federal Communications Commission, *Connecting America: The National Broadband Plan*, GN Docket No. 09-51, at 41 (2010) (*National Broadband Plan*).

<sup>4</sup> See FNPRM ¶ 33.

that better reflects the on-the-ground reality of broadband service in the United States.<sup>5</sup> Form 477 already collects block-level data on deployment, demonstrating the feasibility of this approach.<sup>6</sup> Moreover, the Commission concluded in 2009 that block-level data was “necessary” to conduct a “full analysis” of fixed broadband service.<sup>7</sup> Block-level subscription data would greatly improve the form’s accuracy; help municipalities and community-based organizations allocate scarce resources more effectively; improve the disbursement of high-cost funds; and aid consumers in locating neighborhoods with competitive broadband options. Importantly, the Commission should also require fixed providers to report whether service is offered to *all* residential premises in a given census block. This information would greatly improve the accuracy and utility of the data and help municipalities and organizations know where to target their efforts.

Mobile broadband reporting should also be more granular. We support the Commission’s proposal to require mobile providers to aggregate their subscriber data to the census tract level, based on each subscriber’s billing address.<sup>8</sup> This change would lead to a substantially improved data set when compared to the current regime, which requires mobile subscriber data only at the state level. Reporting by census block may also be feasible, given that mobile providers already report other types of Form 477 data at this level. Because mobile service is not fixed to any one location, analysis of this technology is somewhat different than analysis of fixed broadband service. Nonetheless, a household-level understanding of who subscribes to mobile broadband service would help digital literacy programs better target their efforts. Moreover, granular data is

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<sup>5</sup> See Federal Communications Commission, *National Broadband Plan Progress Report*, at 32 (Sept. 2009), available at [https://apps.fcc.gov/edocs\\_public/attachmatch/DOC-293742A1.pdf](https://apps.fcc.gov/edocs_public/attachmatch/DOC-293742A1.pdf).

<sup>6</sup> See *Modernizing the FCC Form 477 Data Program*, Report and Order, 28 FCC Rcd. 9887, para. 3 (2013).

<sup>7</sup> *Id.*

<sup>8</sup> FNPRM ¶ 28.

particularly important in the mobile context because a substantial and disproportionate share of low-income households rely on mobile broadband as their primary means of accessing the internet.<sup>9</sup>

Any data at finer geographic scales has greater research potential. For example, block- and tract-level data can be cross-referenced with other granular data sets, such as those released by the Bureau of Labor Statistics and the Census Bureau, to provide a more nuanced and complete picture of broadband deployment and adoption. With this more precise information, researchers, advocates, and policymakers could design better digital literacy programs and conduct more effective outreach to underserved communities.

#### **B. Form 477 should collect broadband pricing data.**

The Commission should expand the scope of Form 477 to include broadband pricing data. Policymakers, advocates, and consumers have long sought this information. Indeed, the first recommendation of the National Broadband Plan was for the Commission to “collect, analyze, benchmark and publish detailed, market-by-market information on broadband pricing and competition.”<sup>10</sup> This long overdue step would facilitate meaningful analysis of marketplace competition, the public’s access to broadband, and whether services are available at affordable rates.

Survey research consistently indicates that cost is a primary barrier to broadband

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<sup>9</sup> See Pew Research Center, “Digital divide persists even as lower-income Americans make gains in tech adoption” (Mar. 2017); S. Derek Turner, Free Press, “Digital Denied: The Impact of Systemic Racial Discrimination on Home-Internet Adoption” (Dec. 2016).

<sup>10</sup> *National Broadband Plan* at XI.

adoption in the United States.<sup>11</sup> Yet the Commission, and the federal government writ large, has no reliable measure of how much Americans pay for broadband access at even a national level or how much prices have changed over time. This information vacuum handicaps policymaking at the Commission, Congress, and other agencies that oversee the telecommunications industry. This is why both the Department of Justice and the National Broadband Plan asked the Commission to collect pricing information seven years ago.<sup>12</sup> The Commission should finally adopt these recommendations in the current proceeding.

Broadband providers have long resisted price reporting because they claim such data is difficult to obtain. However, the record does not support this claim. There is no clear accounting of how, exactly, this reporting would be infeasible or otherwise unduly burdensome to a broadband provider. Moreover, the imperative need for this data should outweigh any modest burdens incurred by industry.

The Commission, the Department of Justice, and Congress all recognize that the internet is a vital platform for our economy and our democracy—and yet the federal government lacks any reliable measure of the cost of access to that platform. This reality has persisted for too long, to the detriment of informed policymaking and the public interest.

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<sup>11</sup> See, e.g., National Telecommunications and Information Administration, “Exploring the Digital Nation: Computer and Internet Use at Home” (2011); Federal Communications Commission, “93 Million Americans Disconnected from Broadband Opportunities,” News Release, (Feb. 23, 2010).

<sup>12</sup> See *National Broadband Plan* at 41; *DOJ Comments* at 20.



**C. Form 477 should continue to collect data by spectrum band.**

OTI does not support the Commission’s proposal to terminate the requirement that mobile broadband providers submit deployment data by spectrum band.<sup>13</sup> This information helps hold mobile broadband providers accountable for their use of public airwaves and whether they are complying with legal obligations to utilize spectrum resources in the public interest. For example, auctioned spectrum licenses often include buildout requirements.<sup>14</sup> Without spectrum band-level deployment data, it would be difficult for the Commission or consumer advocates to detect non-compliance with these requirements. This information could also promote the effective functioning of secondary markets for fallow spectrum by making it more evident where spectrum with particular propagation characteristics is not yet in use. Moreover, this reporting is clearly not burdensome since mobile broadband providers do not use many different bands in an area and have the information readily available. The Commission should continue collecting this information through Form 477.

**D. Reporting should continue on a semi-annual basis.**

We do not support the proposal to replace the longstanding semi-annual reporting cycle with annual reporting.<sup>15</sup> Informed policymaking requires more than a yearly snapshot of the market. On a one-year cycle, the most recent data available would be up to six months older,

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<sup>13</sup> FNPRM ¶ 19.

<sup>14</sup> See, e.g., *In the Matter of Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, Report and Order, GN Docket No. 12-268, ¶ 47 (2014) (“We will require new 600 MHz Band licensees to build out to 40 percent of the population in their service areas within six years and to 75 percent of the population by the end of their initial license terms of 12 years. If a licensee fails to meet its interim build-out benchmark, its initial license term will be shortened to 10 years”).

<sup>15</sup> FNPRM ¶ 56.

which would undermine the Commission’s ability to conduct accurate Broadband Progress assessments, merger transaction reviews, and other inquiries. Moreover, this is a particularly inopportune time to reduce the frequency of data collection. The U.S. broadband market has experienced substantial consolidation in recent years, and many industry observers expect further consolidation in the near future.<sup>16</sup> Moreover, the Commission is currently evaluating the impact of the 2015 Open Internet Order, an inquiry that requires the kind of granular analysis that Form 477 can facilitate.<sup>17</sup> Given the uncertainty generated by this consolidation and the Commission’s proposal to roll back Title II reclassification, the Commission should not choose this moment to reduce its understanding of broadband deployment. The Commission and the public need timely and accurate data.

#### **E. The Commission should increase public access to Form 477 data.**

As a general matter, OTI supports efforts to increase public access to data and believes the Commission should publicly release Form 477 data with greater and more complete detail. All datasets should be released in a machine-readable, user-friendly, and easily-accessible manner to facilitate third-party research, in accordance with the National Broadband Plan’s

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<sup>16</sup> See, e.g., *Applications of XO Holdings and Verizon Communications Inc. for Consent to Transfer Control of Licenses and Authorizations*, Memorandum Opinion and Order, MB Dkt. No. 16-70 (2016); *Applications of Charter Communications, Inc., Time Warner Cable, Inc., and Advance/Newhouse Partnership for Consent to Assign or Transfer Control of Licenses and Authorizations*, Memorandum Opinion and Order, MB Dkt. No. 15-149 (2016); *Applications of AT&T Inc. and DIRECTV for Consent to Assign or Transfer Control of Licenses and Authorizations*, Memorandum Opinion and Order, MB Docket No. 14-90 (2015); “T-Mobile and Sprint are in active talks about a merger,” CNBC (Sept. 19, 2017), <https://www.cnbc.com/2017/09/19/t-mobile-and-sprint-are-in-active-talks-about-a-merger.html>.

<sup>17</sup> See *Restoring Internet Freedom*, Notice of Proposed Rulemaking, WC Docket No. 17-108, 32 FCC Rcd. 4434 (2017).

recommendation that Form 477 promote outside analysis.<sup>18</sup> We also support the proposals to publicly release certain data and incorporate the results of Form 477 data collection into an improved, searchable map.

The Commission has prudently proposed releasing Form 477 data on minimum advertised speeds.<sup>19</sup> These data are currently treated as confidential to protect commercially sensitive information. However, this information is not commercially sensitive, as it is already available to the public through advertisements. Additionally, providers can still request confidential treatment of this data if there are any unforeseen sensitivities. Speed data transparency would help consumers make informed choices and promote third-party analysis. Speed data would be especially useful to compare against the tests conducted by OTI's research partner, Measurement Lab, to assess whether consumers are getting the broadband speeds for which they pay. Relatedly, the Commission should require broadband providers to publicly disclose the methodologies used to determine the speeds promised in their advertisements.

We also support the Commission's proposal to publicly disclose the national-level subscriber counts for fixed broadband providers.<sup>20</sup> Making public the number of subscribers at each reported speed tier would be a meaningful metric for the Commission and the public. In addition to providing a clearer picture of adoption rates in the U.S., this information could be useful in determining which speed tiers are most popular. Anecdotal reporting indicates that some providers, when confronted with complaints about interconnection-related congestion,

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<sup>18</sup> See *National Broadband Plan* at 43.

<sup>19</sup> FNPRM ¶ 51.

<sup>20</sup> FNPRM ¶ 53.

have tried to “upsell” their customers on faster, more expensive tiers.<sup>21</sup> Upgrading their service tier would not have alleviated the congestion these consumers experienced, but it would result in consumers paying more for their existing, degraded broadband service. When this anecdotal reporting emerged, it would have been helpful to have publicly available subscriber counts to determine how many consumers moved to higher speed tiers, and therefore how widespread the upselling tactic may have been.

Lastly, we support the Commission’s proposal to use the most recently available Form 477 data to create a searchable national map for public use.<sup>22</sup> The Commission already helps maintain the National Broadband Map in coordination with NTIA, but that map relies on data that is currently more than three years old. Form 477 data could reinvigorate the map with more timely and granular data, which would vastly improve its utility to the public, researchers, and policymakers. In response to the Commission’s inquiry about the availability of nationwide housing unit datasets,<sup>23</sup> we suggest the Commission investigate Open Source Geocoding.<sup>24</sup> We also encourage the Commission to engage with other federal agencies that are doing significant work on geocoding—particularly the National Geospatial Intelligence Agency, which may have open-source tools that could improve the Commission's mapping capabilities.

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<sup>21</sup>See Open Technology Institute, “Beyond Frustrated: The Sweeping Consumer Harms as a Result of ISP Disputes” (Nov. 2014).

<sup>22</sup> FNPRM ¶ 58.

<sup>23</sup> FNPRM ¶ 39.

<sup>24</sup> See Open Source Geocoding, available at <https://github.com/pelias/pelias>.

