



**Comments of the
SCHOOLS, HEALTH & LIBRARIES BROADBAND (SHLB) COALITION
to the
NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION
Pursuant to the Request for Comment on
“Improving the Quality and Accuracy of
Broadband Availability Data”
July 16, 2018**

Docket No. 180427421–8421–01

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The Schools, Health & Libraries Broadband (SHLB) Coalition appreciates the opportunity to comment on the question of how the National Telecommunications and Information Administration (NTIA) can best implement the direction from Congress to measure broadband availability. The SHLB Coalition is a broad-based coalition of a diverse group of organizations that share the goal of promoting open, affordable, high-quality broadband for anchor institutions and their communities.¹ High-capacity broadband is the key infrastructure that libraries, K-12 schools, community colleges, colleges and universities, health clinics, public media and other anchor institutions need to serve their communities in the 21st century. Enhancing the broadband capabilities of these community anchor institutions is especially important to the most vulnerable segments of our population – those in rural areas, low-income consumers, disabled and elderly persons, students, minorities, and many other disadvantaged members of our society.

Earlier this year, Congress appropriated \$7.5 million to NTIA to improve broadband mapping. This amount was much smaller than the \$50 million requested by the President’s budget. To determine how it can use this funding most wisely, NTIA has asked for comment on “on actions that can be taken to improve the quality and accuracy of broadband availability data, particularly in rural areas.”² It also requested input “on ways to improve the nation’s ability to analyze broadband availability, with the intention of identifying gaps in broadband availability that can be used to improve policymaking and inform public investments.” According to the Congressional report language that accompanied the \$7.5M appropriation, NTIA’s effort must “update” and “augment” and not “duplicate” the FCC’s National Broadband Map and the Form 477 data collected from broadband providers.³

¹ Our members include representatives of schools, libraries, telehealth networks, state broadband mapping organizations, private sector companies, state and national research and education networks, consultants, and public interest organizations. See www.shlb.org for a complete list of SHLB Coalition members.

² Federal Register, Vol 83., No. 104, May 30, 2017, P.24747.

³ The legislative report language is contained in the Appendix.

The focus on broadband “availability” is enormously important. Several studies show the harm caused by the lack of access to broadband. To cite one recent example, the U.S. Department of Education recently released a report which identifies significant gaps in home broadband access among K-12 students.⁴ Among other findings, it discovered:

- A significant different between overall US households with Internet access (77%) compared to households with students age 3-18 with Internet access (61%);
- Students living below the poverty threshold have the lowest rates of home internet access; and
- Students without home internet access had lower assessment scores in reading, math and science.

Despite the importance of broadband for solving the Digital Divide and the Homework Gap, the U.S. currently does not have adequate information about the availability of broadband services for anchor institutions and for residential consumers. While the FCC collects information from the industry through its Form 477 process, it does not collect information about anchor institutions, and there are shortcomings with the information collected from the industry about residential access (as discussed below).

This leads the SHLB Coalition to make two key recommendations:

1. Funding could be used to collect, publish and display information about the broadband available to community anchor institutions to determine if the U.S. is meeting Goal #4 in the National Broadband Plan.
2. Funding could also be used to validate (from a consumer’s perspective) the broadband availability data provided by broadband providers to the FCC by conducting a survey of a sample of anchor institutions and residential consumers.

Before discussing these recommendations in more detail, it is important to recognize the purposes of gathering this information. Broadband availability information is extremely important for

⁴ See, “Student Access to Digital Learning Resources Outside the Classroom,” published by the National Center for Educational Statistics (NCES), a division of the Institute of Education Services (IES), available at <https://nces.ed.gov/pubs2017/2017098/index.asp>.

determining how to allocate federal, state and local resources to ensure that communities have sufficient broadband capability. It is not adequate to determine in a binary fashion whether a community is “served” or “not served.” Policy-makers should adjust their analysis to focus on the **quality** (speed, latency, jitter, etc.) of the broadband connection and to incorporate a sliding scale that evaluates whether the quality of the connection is sufficient to accomplish the user’s goal. For instance, some proposals would treat a school as “served” if it has a DSL connection of 10 Mbps, but a 10 Mbps connection is totally inadequate for a school to fulfill its mission to provide personalized learning and technology-training to its students. Anchor institutions typically need between 100 Mbps and multi-gigabit connections to carry out their public missions. The SHLB Coalition strongly supports measuring the quality of the broadband available to anchor institutions so that policy-makers can make wise decisions about how to allocate resources to improve anchor institution broadband connectivity and generate the most “bang for the buck.” Making such information publicly available will also help private sector companies make better decisions about where to expand their broadband networks.

A. The Congressional language provides some limitations on NTIA’s use of the funding but does not bar NTIA’s collection of some primary broadband information.

Congress asked NTIA to “update” and “augment” the FCC National Broadband Map with a focus on improving data on broadband “availability,” (not adoption or use). NTIA cannot “duplicate” existing FCC data collection efforts. (See full Congressional report language in the Appendix below). In addition, the language does not allow NTIA to establish a new data collection “program” or to fund data collection “by States or third parties.” (“The funding provided does not constitute a new program to fund the primary data collection of broadband availability or subscription data, nor is it for funding specific data collection activities by States or third parties.”)

The legislative language, however, does not bar NTIA from gathering primary source data on its own, as long as it does not create a “program” for doing so, does not fund data collection by States or

third parties, and does not duplicate data already collected by the FCC. For instance, NTIA can itself gather additional data (as described below) on anchor institution broadband and from consumer surveys, if such information would help to “update” and “augment” the national broadband availability map. Since the FCC does not collect data on anchor institution broadband, NTIA can do so. NTIA could also gather information from consumers regarding their broadband capability on a selective or sampling basis to validate the FCC’s Broadband map (as long NTIA avoids creating a “program”).

B. Since the FCC does not collect data on anchor institution broadband, NTIA should use the funding to acquire and publish anchor institution broadband data.

The National Broadband Plan Goal #4 calls for all anchor institutions to have gigabit capacity by the year 2020.⁵ At present, we do not have sufficient information to determine whether or not the country is meeting that goal, or even whether it is on track to meeting that goal by 2020. We thus suggest that NTIA should use all or at least a portion of its funding to begin to map the availability of high-quality broadband for anchor institutions.

There are many reasons why collecting anchor institution broadband data is important to the nation’s future. Anchor institutions are public entities that are dedicated to serving the needs of their communities and often provide a community connection to the residents. Residents rely on their anchor institutions for obtaining state-of-the-art health care, education, information and other essential services. Anchor institutions are rooted in every community in the country; thus, collecting anchor institution data is a less expensive and less burdensome way of gauging the availability of broadband around the U.S. than trying to collect street and address level data for every home. Furthermore, 95% of U.S. households are within the same zip code (approximately 5 miles radius on average) of an anchor

⁵ See National Broadband Plan Executive Summary, page XIII, available at <https://transition.fcc.gov/national-broadband-plan/national-broadband-plan-executive-summary.pdf>. (“Goal No. 4: Every American community should have affordable access to at least 1 gigabit per second broadband service to anchor institutions such as schools, hospitals and government buildings.”)

institution.⁶ If the anchor institution has high-quality broadband that is open to interconnection, it will be easier to extend service from the anchor institution to the surrounding homes and businesses using either wireline or wireless services.⁷ For this reason, the SHLB Coalition supports the strategy of deploying broadband “to and through” anchor institutions to the community.

The SHLB Coalition issued a study earlier this year conducted by Columbia Telecommunications Corporation (CTC) that estimates the costs of connecting all remaining anchor institutions to fiber.⁸ Unfortunately, the authors could not find an accurate dataset of the number of anchor institutions or their level of broadband connectivity. The State Broadband Initiative (SBI) program directed states to develop such a dataset,⁹ but CTC found that dataset of anchor institutions to be flawed because of the inconsistent manner in which data was collected from state to state.¹⁰ For instance, Pennsylvania (population of 12.5 M) listed about 8,000 anchor institutions, while Arizona (population of 7 M) listed 10,350 anchor institutions. As Connected Nation stated in its FCC Comments:

. . . the SBI program as a whole faced a number of challenges. Since every state had its own mapping agency or third-party partner, this meant that multiple methodologies were employed in

⁶ See, “A Model for Understanding the Cost to Connect Anchor Institutions with Fiber Optics Prepared for the Schools, Health & Libraries Broadband (SHLB) Coalition,” by Columbia Telecommunications Corporation, February 2018, p. 1, available at http://www.shlb.org/uploads/Policy/Infrastructure/SHLB_ConnectingAnchors_CostEstimate.pdf. (CTC Fiber to Anchors Cost Estimate)

⁷ See the SHLB Coalition’s “To and Through” Rural Broadband Strategy, available at http://www.shlb.org/uploads/Policy/Infrastructure/SHLB_ToAndThrough_Overview.pdf. (“Deploying high-speed broadband “to and through anchors” is valuable because [anchor institutions] can serve as ‘anchor tenants’ that make the entire network more economically viable. Anchor institutions not only provide Internet access to populations most impacted by the digital divide (low-income families, job seekers, students, and seniors), they also provide ‘jumping off’ points to extend additional broadband deployment to surrounding residential and business customers. With forward-looking policies a broadband connection to an anchor institution can provide enough bandwidth to serve the needs of the institution AND surround residents. If the broadband networks built to serve anchor institutions are open to interconnection and shared use, the anchor can act as a ‘gateway’ to the community.”)

⁸ See CTC Fiber to Anchors Cost Estimate.

⁹ The dataset of anchor institutions is available at <https://www.broadbandmap.gov/data-download>.

¹⁰ According to CTC, “The states interpreted these categories [of anchor institutions] independently; some provided data that reflect their individual circumstances. For example, Utah reported Anchors that primarily deal with natural resources such as guard stations, ranger stations, and research centers. Hawaii’s list of Anchors seems to include locations with public Wi-Fi access, such as coffee shops, restaurants, and hotels.”) CTC Report, p. 8.

collecting provider information, processing and analyzing the data, and mapping the results. This also meant that providers, many of whom operate in more than one state, had to juggle not only multiple points of contact and data requests, but they had to report their information in varying ways to satisfy those requests. Additionally, known best practices, such as those Connected Nation developed to represent mobile and fixed wireless coverage propagation, were not required to be adopted across all states. For example, fixed wireless coverage in some states continued to be represented as full circles or drastic polygons that did not reflect the true coverage on the ground. Unfortunately, some of these inaccuracies persist even today in the Form 477 data being submitted to the FCC.

We are not aware of a verified national dataset covering anchor institutions. A few years ago, the FCC attempted to gather information about school and library fiber connections in the E-rate program, but this map is no longer being updated.¹¹ Some states have continued to collect anchor institution data even after the completion of the SBI program. For instance, California conducted a survey of library broadband connectivity.¹² The Consortium for School Networking (CoSN) has conducted an annual survey of school broadband connectivity.¹³ USAC is planning to make a more concerted effort to make its data publicly available. While these efforts could shed some light on the connectivity of schools and libraries, the data is not recent or validated, and there is very little data concerning the broadband connectivity of other types of anchor institutions, such as community colleges, public media, community centers, public housing, government buildings, etc. NTIA could review and analyze the limited amount of data that has been collected to date and seek to acquire more recent data of anchor institution connectivity.

As was the case with the SBI program, however, it will be difficult for NTIA to review the many different and partial data sources and find a way to integrate and harmonize them so that they are consistent and meaningful. For this reason, we recommend that NTIA conduct its own data collection effort covering all types of anchor institutions (not just schools and libraries), perhaps on a sample or

¹¹ See, <https://www.fcc.gov/reports-research/maps/e-rate-fiber-map/>.

¹² See, <http://www.library.ca.gov/services/to-libraries/broadband/>.

¹³ See, <https://cosn.org/Infrastructure2017>.

trial basis as its limited funding allows, so that the information is collected and defined in a consistent manner and is useable for research purposes.

C. NTIA could also use a portion of the funding to conduct surveys of both anchor institutions and households to validate the industry data provided to the FCC through the Form 477 process.

NTIA observed in the Request for Comments that the FCC's Form 477 process tends to overstate the availability of broadband services, especially in rural markets, because providers are instructed to designate an entire census block as "served" if they have only one customer in the block.¹⁴

Furthermore, some broadband providers, especially the largest incumbent providers, may have an incentive to overstate their broadband availability in order to discourage new entrants.

The FCC itself noted in its NPRM on improving the Form 477 collection process that there are several difficulties with its existing data collection process. Even if the broadband provider makes every possible effort to provide accurate information, collecting and reporting such information may be challenging.¹⁵ For instance, the FCC acknowledged that the meaning of "available" is multi-faceted and difficult to pin down:

Specifically, if a [census] block was listed by a provider [as available], it is impossible to tell whether residents of that block seeking service could turn to that provider for service or whether the provider would be unable or unwilling to take on additional subscribers. This may limit the value of these data to inform our policymaking and as a tool for consumers and businesses to determine the universe of potential Internet service providers at their location.¹⁶

¹⁴ See NTIA's RFC ("A provider offering service to any homes or businesses in a Census block is instructed to report that block as served in its Form 477 filing, even though it may not offer broadband services in most of the block. This can lead to overstatements in the level of broadband availability, especially in rural areas where Census blocks are large.")

¹⁵ Even third-party data may be suspect if the third party gathers its data from the industry.

¹⁶ See, In the Matter of Modernizing the FCC Form 477 Data Program, WC Docket No. 11-10, Further Notice of Proposed Rulemaking, released Aug. 4, 2017, para. 33. ("Form 477 NPRM").

The broadband providers themselves may not know whether its service is available. The availability of service offerings may change so frequently that what is reported by the carriers maybe outdated or inaccurate within a few months. A growth in subscribers in a market may saturate the provider’s network and reduce its ability to take on new customers. Or, the provider may deploy new facilities that can accommodate new customers after the Form 477 was submitted to the FCC. (The difference between actual and reported availability will grow even stronger if the FCC makes the Form 477 filings annually instead of every six months, as several parties have requested.) The FCC itself raised legitimate questions about the providers’ ability to file accurate information.

Is it reasonable, for example, to assume that fixed broadband providers are aware of whether they have the capacity in place to make their service available and add new subscribers in a particular location? Do providers routinely maintain information about their service areas that would enable them to provide this information readily, or would this proposal require them to develop new information?¹⁷

Thus, SHLB recommends that NTIA “augment” the broadband availability map by developing data from the customer’s point of view rather than that of the broadband provider.¹⁸ This could entail a conducting phone calls or Internet-based surveys in different service areas to both the anchor institutions and the residential consumers in that area and asking what level of broadband service they are able to purchase. In fact, anchor Institutions could be an especially helpful group to survey because they provide excellent geographic coverage, and anchor institutions are likely to be a more responsive sample group than the general public. If NTIA does pursue this path, it will require a pro-active effort to educate consumers about the technology and design questions that are easy to answer.¹⁹ For instance,

¹⁷ Id., para. 35.

¹⁸ Again, while Congress told NTIA not to create a new data collection "program", it did not preclude it from engaging in a sample data collection

¹⁹ Simply setting up an e-mail address to which people send information may not be effective because they may use different and inconsistent terminology, and may not know what information to share. Anchors and residential consumers are more likely to submit useable information if NTIA provides specific guidance and consistent terminology.

efforts that simply permit institutions or municipalities to “prove” that a map is incorrect places an undue burden on individuals who may not know how to submit a speed test or how many data points are necessary in order for their “proof” to be accepted.

While such phone calls and Internet-based requests could not be conducted in every census block, NTIA could conduct a sample in a small number of states and census blocks to test the accuracy of the information provided by the providers through the Form 477 process. Gathering this data from the anchor institution and consumer point of view would also allow NTIA to gather some pricing information, which (since the FCC does not request this information) would not duplicate the FCC efforts.

As one example, the State of Georgia conducted an online survey using a company called “CrowdFiber” to evaluate the actual broadband availability from a consumer perspective.²⁰ The survey was hosted at broadband.georgia.gov. The Georgia Rural Broadband Survey opened online responses on September 23, 2016 and closed on June 30, 2017. In total, 12,437 people participated the survey and provided valuable inputs. The survey protected the anonymity of the survey participants, and the Survey Visualizations utilized CrowdFiber’s geographical attributes (e.g., City, County, GA House District, GA

²⁰ The survey was promoted by the Georgia Electric co-ops in their member magazines and member emails, by legislators, by the Carl Vinson Institute of Government, and most importantly, by the respondents themselves who used social media technologies to share the survey and the fact they took it with their contacts.

Senate District) to make geographical filtering and analysis possible.²¹ California's broadband mapping program solicits consumer feedback on both landline and mobile.²²

NTIA could focus on collecting information and verifying data from non-industry sources in a few states – perhaps reflecting a mix of rural/remote and suburban/urban areas and reflecting the diversity of geographical regions. This limited effort would demonstrate the value of collecting and providing such information and could set the stage for a more comprehensive effort to develop customer-based information covering the entire U.S. if it is given more funding in the future.

D. Conclusion

The SHLB Coalition recognizes that Congress did not authorize NTIA to embark on a comprehensive data collection effort similar to the State Broadband Initiative program that ended in 2014. Nonetheless, we do believe that NTIA's charge to "update" and "augment" the National Broadband Map gives NTIA the authority to collect or obtain additional data as long as it does not initiate a "program" and does not duplicate the data collected by the FCC. Since the FCC Form 477 does not collect anchor institution data,²³ the SHLB Coalition suggests that NTIA could use this funding to collect or acquire and publish data about anchor institution broadband. This data on anchor institution

²¹ According to CrowdFiber, it can source broadband demand data that complements the FCC's supply-side data. The CrowdFiber approach is to collect end-user broadband experience data includes the following:

1. Verification of the latitude and longitude of the respondent on a map
2. Speed test that collects the actual upload speed, download speed, latency, provider, and other key characteristics of the user's existing broadband service.
3. Questions to confirm whether and to what extent broadband services, as reported by the FCC through its broadband availability data, is actually available and sufficient at each respondent's address.
4. Additional demographic and psychographic questions as desired
5. Referral incentive systems to improve overall response rates.


More information is available at www.crowdfiber.com.

²² See, <http://www.cpuc.ca.gov/General.aspx?id=2540>.

²³ The FCC requires broadband providers to report data on the deployment of broadband to either "mass market/consumer" services or "business/enterprise/government" service." See Form 477 NPRM, para. 30. The FCC does not collect this information for community anchor institutions.

broadband is critically important for determining whether or not the country is on course to reach Goal #4 in the National Broadband Plan to provide gigabit connections to anchor institutions by the year 2020. We also suggest that NTIA could collect survey information from anchor institutions and residential consumers as a way to verify and improve upon the information provided to the FCC by the industry through the Form 477 process.

Respectfully Submitted,

A handwritten signature in black ink that reads "John Windhausen, Jr." The signature is written in a cursive style with a large initial 'J' and a distinct 'W'.

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APPENDIX

The following paragraph is an unofficial account of the report language accompanying the Congressional appropriation of \$7.5 million to NTIA for broadband mapping:

“Broadband.-The agreement provides \$7,500,000 to update the national broadband availability map in coordination with the Federal Communications Commission (FCC), which updated its map in February 2018 using Form 477 filing data. The funding provided does not constitute a new program to fund the primary data collection of broadband availability or subscription data, nor is it for funding specific data collection activities by States or third parties. Instead, NTIA should use this funding to acquire and display available third-party data sets to the extent it is able to negotiate its inclusion in existing efforts to augment data from the FCC, other Federal government agencies, State government, and the private sector. NTIA shall not duplicate FCC's efforts. The updated map will help identify regions with insufficient service, especially in rural areas.”