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Before the
National Telecommunications and Information Administration
and the
National Science Foundation
Washington, D.C. 20230

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National Broadband Research Agenda	)	Docket No. 160831803-6803-01
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COMMENTS
OF
NTCA–THE RURAL BROADBAND ASSOCIATION

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I.   BACKGROUND AND SUMMARY OF NTCA RECOMMENDATIONS.

NTCA–The Rural Broadband Association (NTCA) hereby submits comments in the above-captioned proceeding,[1] in which the National Telecommunications and Information Administration (NTIA) and the National Science Foundation (NSF) seek "input to improve data collection, analysis, research and their applications for the benefit of broadband policy development, program implementation, and program evaluation."[2] In these comments, NTCA offers the following:

1.   Broadband providers currently file reports with the Federal Communications Commission (FCC). Data with greater accuracy and granularity would be useful, and the NTIA and NSF may consider working with the FCC to refine existing reports. NTIA and NSF, however, should refrain from measures that could result in duplicative and more burdensome reporting requirements.

2.   The quantification of economic and other beneficial impacts of broadband deployment and adoption is a valuable metric in the policy-making process, and should be used to inform actions that result in measures intended to speed deployment and usage across the Nation. NTCA has undertaken work in this regard, and stands ready to engage with NTIA and NSF to explore more fully these critical issues.

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[1]   Department of Commerce, National Telecommunications and Information Administration, National Science Foundation, National Broadband Research Agenda, Docket No.160831803-6803-01, (rel. Sep. 9, 2016) ("Notice").

[2]   Notice, p. 62479.

3.   Scientific research that leads to increased broadband capabilities and more reliable service is necessary to enable U.S. leadership in broadband-enabled services, including those that support economic development, education, energy and water utilities, health care, National security, and public safety. These endeavors, however, should not be rooted in applied research that could attempt to overbuild existing networks with duplicative infrastructure.

NTCA and the Rural Provider Industry

NTCA represents approximately 850 rural rate-of-return regulated telecommunications providers (commonly referred to as RLECs) providing service in 46 states. All of NTCA's RLEC members are full service local exchange carriers and broadband providers, and many of its members provide wireless, cable, satellite, and other competitive services to their communities. Each member is a "rural telephone company" as defined in the Communications Act of 1934, as amended by the Telecommunications Act of 1996 (the Act).

RLECs serve less than five percent of the population of the United States but cover approximately 37 percent of its landmass. These companies operate in rural and tribal areas long ago left behind by larger service providers because the markets were too high-cost – too sparsely populated, too far from larger towns and cities, and/or just too challenging to serve in terms of topography, terrain, and lack of subscriber density. RLECs operate in areas in which little, if any, "business case" can made to deploy and operate advanced communications networks absent of the availability of sufficient and predictable High Cost Universal Service Fund (USF) support to enable the provision of affordable and high-quality communications services and, in many cases, other Federal agency or private financing of those networks in the first instance.[3]

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[3] In 2010, the Federal Communications Commission launched a comprehensive proceeding to transition the USF to support broadband deployment. Through a series of rulemaking dockets, the Connect America Fund was created.

As anchors (and residents) in the communities they serve, these small businesses create jobs, drive economic activity, and connect rural Americans to the world. Moreover, RLECs have been at the forefront of the broadband and Internet Protocol evolution for years, making every effort to innovate and deploy advanced networks that respond to consumer and business demands for the cutting-edge services that urban consumers take for granted.

For sixteen years, NTCA has conducted an annual survey of its membership's activities in the area of broadband deployment.[4] During this period, survey respondents have demonstrated that, despite a substantial number of challenges facing them (including, but not limited to, deployment cost, regulatory uncertainty, and loop length), they have done (and continue to do) a commendable job of bring high-quality broadband to their service areas.[5]

Although NTCA's survey data is useful in terms of understanding our member's activities and the challenges they face on an ongoing basis, the availability of additional data would most certainly prove helpful as carriers seek to deploy broadband to those currently lacking service. Additional data about where broadband has been deployed and what speeds have been deployed would be extremely valuable. In addition, data and analyses that quantify the

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[4] http://www.ntca.org/survey-reports/survey-reports.html.

[5] As far as a decade ago, the achievements of the rural industry were noted by the Federal State Joint Board on Universal Service ("A significant portion of the High Cost Loop fund supports the capital costs of providing broadband-capable loop facilities for rural carriers. Under this system, rural LECs (RLECs) have done a commendable job of providing broadband to all their customers. While this program may need adjustment, we recognize its effectiveness in maintaining an essential network for POLRs [providers of last resort] and in deploying broadband."). *High Cost Universal Service Support; Federal-State Joint Board on Universal Service: Recommended Decision,* Docket Nos. 05-337, 96-45, FCC 07J-4, at para. 30 (2007). NTCA notes, however, that the task of deploying and maintaining broadband, much like the evolution and advancement of the technology itself, is an on-going task to keep pace with market developments and consumer demands.

socioeconomic benefits of broadband deployment would help support the argument that the investments made in broadband are dollars well spent. These endeavors, however, should build upon existing processes.

II. HIGHER QUALITY BROADBAND ACCESS AND ADOPTION DATA IS NEEDED, BUT IT IS CRITICALLY IMPORTANT NOT TO DUPLICATE CURRENT DATA COLLECTION EFFORTS.

One of the key components of bringing broadband service to unserved or underserved areas is identifying more accurately where broadband has already been deployed. Any efforts that add to the current knowledge base will make the job of policymakers and rural broadband providers alike easier and more effective.

The FCC currently collects broadband data on its Form 477 – Local Telephone Competition and Broadband Reporting.[6] All facilities-based broadband providers are required to file Form 477 with the FCC twice a year, providing information on where they offer Internet access service at speeds exceeding 200 kbps in at least one direction. On the form, providers (specifically, those that provide "fixed," non-mobile services) file lists of census blocks in which they can or do offer service to at least one location, with additional information about the service. Although the Form 477 is a source of valuable information about broadband deployment and usage, the relatively broad posts within which data is reported (specifically, that a single location in a census block deems a census block "served") do not establish a particularly granular data set.

Any perceived confidence in Form 477 data, however, is counterbalanced by the imperative to not affix new and burdensome reporting requirements upon broadband providers

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[6] https://www.fcc.gov/general/form-477-reporting

generally and small businesses in particular. To have a better understanding of the burdens

placed upon its member companies by the numerous mandatory data requests these companies

are subject to, NTCA conducted a survey[7] in March 2016 asking member companies about the

resources they must devote on a regular basis to completing these requests. NTCA received

responses from 149 member companies, representing a 24% response rate. Responding

companies ranged from a low of one employee to a high of 678 employees. The average number

of employees of responding companies was 40, and the median 20.

Survey respondents reporting spending, on average, a total of 76 hours completing the

FCC Form 477, submitted in March and September annually. For small providers with limited

resources, this represents a significant commitment. Respondents also reported devoting, on

average, 587 hours annually responding to all mandatory forms and data requests—the

equivalent of more than 73 workdays per year.

Although additional data on broadband access and adoption would undoubtedly prove

useful, small, rural carriers can ill afford devoting additional resources resubmitting information

that is already being collected elsewhere. Any additional burdens placed on carriers must be

examined carefully in order to determine what is potentially useful new information, and what is

duplicative.

Reporting burdens are of greater concern to small, rural providers as they have fewer

resources to devote to such tasks, and time and energy dedicated to filling out forms is time and

energy that could otherwise be devoted to the important job of serving customers. More data is

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[7] NTCA Member Reporting Burden Survey, March 2016. Summary of survey results attached as an appendix to these comments.

helpful—but it is critically important that any new data collection efforts build upon, rather than duplicate, current data collection instruments.

III.   DATA ILLUSTRATING THE SOCIOECONOMIC BENEFITS OF BROADBAND DEPLOYMENT WOULD HELP DETERMINE WHETHER THE DOLLARS INVESTED INTO BROADBAND DEPLOYMENT ARE PAYING DIVIDENDS.

Though perhaps more difficult to compile that information on where and how much broadband has been deployed, data and analysis that quantifies the benefits of broadband from a socioeconomic standpoint would also prove beneficial. Data indicate that interdependencies among rural and urban areas support economic and other benefits that while sourced in one type region make their ultimate impact in the other. Federal loan and other funding programs that support broadband deployment in remote and high-cost areas of the country enable benefits that accrue to the entire Nation.

In April of 2016 the Hudson Institute, in conjunction with the Foundation for Rural Service (FRS), released a report examining the economic benefits of rural broadband deployment.[8] In the study, the Hudson Institute determined that rural broadband contributes $24.1 billion to the nation's gross domestic product (GDP) on an annual basis. Further, Hudson determined that $8.2 billion (34%) of that total accrued to rural areas, while $15.9 billion (66%) accrued to urban areas.[9] These results indicate that investment in rural broadband brings returns that reach far beyond the confines of rural America.

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[8] The Hudson Institute, "The Economic Impact of Rural Broadband," April 2016, ("Hudson Paper"). https://s3.amazonaws.com/media.hudson.org/files/publications/20160419KuttnerTheEconomicImpactofRuralBroadband.pdf.

[9] Hudson paper, pp. 13-14.

Hudson also found that rural broadband investment was a major driver of job growth. Hudson estimates that 69,595 jobs are directly attributable to rural broadband. Again, these benefits accrue to both rural and urban areas: 32,014 (46%) of these jobs are in rural areas, and 37,581 (54%) in urban areas.[10]

Finally, Hudson found that rural broadband supported over $100 billion in e-commerce in 2015. Nearly $10 billion of that total involved retail sales; Hudson estimates that if that broadband deployment in rural areas was equivalent to that in urban areas, sales would be at least $1 billion higher.[11]

Other studies have examined the impact of rural broadband deployment, as well. A February 2015 Research Policy Brief, entitled "Broadband's Contribution to Economic Health in Rural Areas"[12] from Cornell University's Community & Regional Development Institute (CaRDI), found that median income, number of firms, and education levels in non-metro counties were all positively correlated to the level of broadband adoption in those counties. At the same time, researchers found that both unemployment and poverty rates were inversely correlated to broadband adoption.

The issue of rural and urban relationships has also been explored. A survey of literature paper published by NTCA's Smart Rural Community (SRC) program in 2015 utilized data culled from the U.S. Department of Agriculture, state agriculture departments, telemedicine

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[10] *Id., p. 13.*

[11] *Id., pp. 19-20.*

[12] http://cardi.cals.cornell.edu/publications/research-policy-briefs/broadband%E2%80%99s-contribution-economic-health-rural-areas

resources, and numerous academic resources to demonstrate that rural broadband deployment is an issue of National, rather than solely rural, concern.[13] New and contemporaneous data and additional research would provide a better understanding of why increasing levels of broadband deployment and adoption in rural America is so critically important.

NTIA and NSF are well-placed to understand the need for new research modalities to address the problem. As noted by Norman Jacknis, Senior Fellow, Intelligent Community Forum, "old industrial measures are not measuring the impact of the digital economy, which means they are not measuring the value of that digital economy in rural areas – or anywhere, for that matter." [14] In a time when all expenditures in infrastructure must be carefully examined to ensure that they can pass the cost/benefit test, development of additional data about the socioeconomic benefits of broadband would go a long way toward allowing for determination that the level of investment made in rural areas is optimal.

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[13] Seidemann, Joshua *"Beyond Rural Walls: Identifying Impacts and Interdependencies Among Rural and Urban Spaces,"* NTCA/Smart Rural Community (2015) (*https://www.ntca.org/images/stories/Documents/Advocacy/SmartCommunity/src_beyond_the_rural_walls_white_paper.pdf*).

[14] The afore-mentioned paper was discussed in Washington at public event; a summary of the panel discussion was published following the event. Dr. Jacknis' remarks can be found there. *See, "Beyond Rural Walls: A Scholars' Conversation About Rural and Urban Spaces"* at 10 (https://moody.utexas.edu/sites/communication.utexas.edu/files/images/content/tipi/Beyond%20Rural%20Walls-exerptsNB.pdf)

IV. WHILE TECHNOLOGY RESEARCH ON BROADBAND ADVANCEMENTS IS USEFUL, IT IS CRITICALLY IMPORTANT THAT SUCH WORK NOT BE APPLIED RESEARCH THAT TIPS THE MARKETPLACE SCALES.

Perhaps more so than in any other industry, technology change in telecommunications is ongoing and transformative. Research that results in gains in technological innovation holds the potential to move the industry forward in a cost effective manner. The ultimate goal of technology development should be enabling faster broadband speeds and more reliable service, in the most efficient manner possible.

But, there are dangers to innovation that must be avoided if the ultimate goal is widespread deployment of affordable broadband service. *Applied* research, *e.g.,* research that benefits one technology over the other from the outset and distorts the mechanisms of the free market, will not result in efficient outcomes. Rather, the marketplace, and the providers that must operate within the constraints of the marketplace, are best suited to determine the most effective and efficient means of bringing broadband service to specific parts of the nation. Efforts aimed from the outset at promoting the use of one particular technology to the disadvantage of others will be, ultimately, ineffective. Resources spent in the research and development of certain technologies to the detriment of other, worthy technologies distort the machinations of the marketplace and will result in waste and inefficiency.

Another danger that will impede the deployment of broadband to areas lacking service is overbuilding—deploying networks to locations already served by existing infrastructure. Any resources devoted to replicating currently-existing and operating networks are resources that could otherwise be used to bring broadband to Americans currently lacking service altogether – or, just as importantly, to sustain service in rural areas where high costs make it difficult or

impossible to make the business case for ongoing operations and upgrades and the provision of affordable services to consumers. NTIA and NSF should therefore ensure that their efforts with respect to research and data publication do not enable or empower governmental intrusion into markets where one or more providers have already made network investments.

V.   CONCLUSION.

NTCA applauds the efforts of NTIA and NSF in considering ways to improve the public availability of data regarding the availability and affordability of advanced communications. Additional data on broadband access and adoption can be useful—provided that there is no redundancy with current data collection efforts. Additional data on the socioeconomic benefits of broadband will prove invaluable in advocacy efforts to justify ongoing investment in broadband deployment. And, while technological research can provide important information about new and innovative ways to deploy broadband to the most rugged and high-cost parts of the country, it is vitally important that this research be conducted in a fair manner, one that does not favor or incentivize the promotion of any particular technology from the outset, skew markets, or undermine the efforts of existing operators and their existing investments in advanced communications networks.

Respectfully submitted,

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NTCA Member Reporting Burden Survey – Summary of Results

Telecommunications service providers are called upon to do more than merely provide high quality service to their customers. They are also compelled to expend precious resources to comply with "one-size-fits-all" reporting requirements and to respond to numerous, ongoing requests for quantitative information about their operations.

For small providers, such demands can present a particular problem. Smaller staffing levels mean that there are fewer resources available for responding to data requests. Any time spent responding to data requests means less time available for installing networks and serving customers.

The best way to accurately grasp the scope of the reporting burdens placed upon these providers is to ask them directly.

OVERVIEW OF THE SURVEY

In March of 2016, NTCA–The Rural Broadband Association, in cooperation with the Small Company Coalition (SCC), surveyed its members on the burdens imposed upon them by various data requests. NTCA is a national association of nearly 900 small businesses that provide service in rural portions of 44 states. All NTCA members are "rural telephone companies" as defined in the Communications Act of 1934, as amended. Despite their small size, NTCA members deliver high-quality communications services in the most sparsely-populated, highest-cost rural areas of the country, in the face of substantial economic challenges. NTCA's membership includes both cooperatives and commercial operators. The SCC is an alliance of rural telecommunications companies formed to educate and empower small rural ILEC communications providers on methods to influence and eliminate harmful regulations and legislation.

SURVEY RESULTS

The survey URL was distributed via email to all of the NTCA member companies in NTCA's database. The messages contained instructions for online access to the survey. Responses were received from 149 member companies, a 24% response rate.[1]

There was a wide variation in the size of the responding companies, as measured by number of employees. Responding companies ranged from a low of 1 employee to a high of 678 employees. The average number of employees was 40, and the median 20.[2]

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[1] Based on this sample size, results of this survey can be assumed to be accurate to within ± 7% at the 95% confidence level.

[2] Across the results of this survey, there is some variation between the mean and median values. The mean is calculated as the numerical sum of all responses divided by the number of responses, while the median is the central value of all responses when arranged in numerical order. Because there are a small number of relatively larger companies responding, they exert some influence on the mean, which will thus tend to be greater than the

The results of the survey responses are presented in Table 1. Respondents were given a list of data forms and asked to provide the typical number of hours spent preparing their response to each. In addition, respondents were offered the opportunity to "write in" any other form which posed a significant burden. Only one was cited by a substantial number of respondents: the Telecommunications Reporting Worksheet, Form 499Q and 499A, by 29 respondents. It has been included in Table 1.

Table 1. Survey Respondents' Reporting Burden by Form (Listed Chronologically)

	Mean (hrs.)	Median (hrs.)	Minimum (hrs.)	Maximum (hrs.)
Form 502: Numbering Resource Utilization/ Forecast (Jan.)	5	3	1	40
Interstate Revenue Projections (Feb.)	39	22	1	40
Form 477 – Local Competition and Broadband Reporting (March)	38	15	1	661
ICC/CAF Data Collection (March)	24	17	2	150
Advance Services Data Request (April)	12	8	1	120
Rate of Return Carrier CAF ICC Support (June)	12	8	2	120
USF 16-1 High Loop Cost Data Collection (July)	19	10	1	160
Interstate Separations Cost Study (July)	239	132	1	1550
Annual ETC Reporting and Form 481 (July)	60	35	2	520
Form 502 – Numbering Resource Utilization/ Forecast (August)	5	3	1	60
Mandatory Customer Services Questionnaire (Aug.)	12	5	1	100
Form 477 – Location Competition and Broadband Reporting (Sept.)	38	14	1	661
Universal Support Use Certification (Oct.)	4	2	1	40
Lifeline Customer Recertification (Dec.)	55	8	1	1845
Other (Selected by Respondents:				
Telecommunications Reporting Worksheet, Form 499Q & 499A (n = 29)	25	15	4	200
TOTAL ANNUAL REPORTING BURDEN	**587**	**297**	----	----

The average annual reporting burden for all forms is 587 hours, or more than 73 workdays per year.

median value. Conversely, the smaller median indicates that relatively more respondents are clustered toward the smaller end of the scale. In order to ensure that the substantial burdens on the larger companies are accounted for here, we will focus on the mean value of the responses to survey questions (though we report the median values, as well.)

ANALYSIS

While the various forms were provided to the respondents in chronological order (according to when during the course of the year they were required to be submitted), in analyzing this information it is more useful to rank the relative burden by mean total hours required. The relative burdens, listed in descending order, are as follows (FCC reports are in red and underlined; cost/industry submissions are in black):

1. Interstate Separations Cost Study (239 hours)
2. Form 477 (76 hours, consisting of 38 hours twice per year)
3. Form 481 (60 hours)
4. Lifeline Customer Recertification (55 hours)
5. Interstate Revenue Projections (39 hours)
6. Form 499 (25 hours)
7. ICC/CAF Data Collection (24 hours)
8. USF 16-1 High Cost Loop Data Collection (19 hours)
9t. Advanced Services Data Request (12 hours)
9t. Rate of Return Carrier CAF ICC Support (12 hours)
9t. Mandatory Customer Services Questionnaire (12 hours)
12. Form 502 NRUF (10 hours, consisting of 5 hours twice per year)
13. Universal Service Use Certification (4 hours)

The FCC provides the OMB with an estimate for the time required to complete many of its forms. Some pertinent examples of the relative burden estimated by the FCC compared to reporting burdens estimated by NTCA members include:

- Form 477 – The FCC estimates an average burden of 387 hours per response. The survey found 38 hours per response mean (349 hours below the FCC estimate.)

- Form 481 – The FCC estimates an average burden of 20 hours per response. The survey found 60 hours per response mean (40 hours above the FCC estimate.)

- Form 499 – The FCC estimates an average burden of 13.5 hours per response. Our survey found 25 hours per response mean (11.5 hours above the FCC estimate.)

- Form 502 – The FCC estimates an average burden of 44 hours per response. The survey found 5 hours per response mean (39 hours below the FCC estimate.)

There does not seem to be a discernable trend between the FCC estimate of reporting burden and the actual burden reported by our member companies. In some instances the FCC estimate is significantly less than the actual burden; in others, significantly more.

What can be seen is that compared to the rest of the industry, small carriers are materially less burdened by the 477 (the average industry time to reply is ten times that of survey respondents) and the 502 (industry average is nine times that of survey respondents.) Alternatively, survey respondents are much more burdened by the 481 (three times the industry average) and the 499 (almost double the industry average.)

In taking stock of the survey results, it is also worth noting that:

- The FCC reports represent just over 38% of the overall burden; while cost studies and similar submissions represent just under 62%.

- The top 5 reports--the 477, the 481, and the Lifeline recertification, along with the cost study and the interstate revenue projections--represent 80% of the burden all by themselves.

Finally, in assessing these results and considering next steps, it must be noted that the FCC has taken recent steps that could affect the relative burdens imposed by two of its forms.

First, as of 2017, what some have cited as the most burdensome portion of the 481--the 5-year plan and related information--will be eliminated and replaced with a going-forward duty to report on the geocoded locations of new builds/upgrades as deployed. (For those electing model-based support, there will be an additional requirement to geocode pre-existing service locations as well.) The FCC has also recently eliminated some of the paperwork processing (e.g., hard-copying and redundant filing) associated with the 481. While more review and clarity regarding the exact nature and impact of these changes is needed, it would seem that these changes could reduce 481 reporting burdens.

Second, the FCC has recently decided that Lifeline certifications/verification of customer eligibility will now be streamlined and centralized through a third-party database. Such a measure, depending again upon implementation details, could offer promise in reducing burdens.

It would appear important to understand better the scope and ultimate anticipated effect of these changes in considering to what degree further streamlining of FCC reporting requirements will help relieve the current reporting burdens placed on smaller carriers.