
Submitted via Portal

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Re: Request for Comments on the Rural Utilities Service (RUS) Notice of Inquiry and request for comments on RUS e-Connectivity Pilot Program; 83 *Fed. Reg.* 35,609 (RUS-18 TELECOM-0004) (July 27, 2018)

To Ms. Brooks:

The National Rural Electric Cooperative Association ("NRECA") submits these comments in response to the RUS Notice of Inquiry and request for comments on RUS e-Connectivity Pilot Program.

SUMMARY

Section 779 of the Consolidated Appropriations Act, 2018 Pub. L. 115-141, 132 Stat. 348 (2018) (the "Act") authorizes up to \$600 million in Rural Utilities Service ("RUS") loans and grants to eligible applicants for broadband investments. This program is separate and distinct from previous RUS broadband programs authorized by Congress.

On July 27, 2018, RUS issued a Notice of Inquiry and request for comments ("Notice") on the implementation of certain provisions of this RUS pilot broadband program ("Pilot Program"). 83 *Fed. Reg.* 35,609 (July 27, 2018). The Notice set a deadline for comment of September 10, 2018.

The members of NRECA are dedicated to improving the communities in which they serve and are active in rural economic development efforts. Many of these cooperatives are actively pursuing the deployment of fiber within the communities and areas they serve. NRECA, on behalf of its members, strongly supports Congress' efforts to address the widely-recognized digital divide between rural and urban areas of the United States. There are many rural areas of this country that still lack adequate access to the engine that drives local, regional, national and international communications.

COMMENTS**I. Introduction**

NRECA and its members are eyewitnesses to the challenges facing rural areas of this country and are acutely aware of the digital divide that continues to hold those communities back in so many dimensions - among them, economic opportunity, healthcare, and education. Few businesses will remain or relocate to

an area without access to high speed broadband. Rural residents cannot telework from home without it. Quality and timely healthcare has also come to rely upon robust broadband capabilities, and telemedicine is actually impossible without it. National educational testing requires it. Homework increasingly requires it. Online college courses require it. In short, lack of access to broadband is holding back rural areas of this country and stripping away the ability of those communities to retain emergency rooms, doctors, and other critical service providers - each effect reinforcing the other in a downward cycle.¹

In that context, it is impossible to overstate NRECA's support of the Pilot Program and, because time is not on the side of rural communities facing these challenges, NRECA strongly encourages RUS to embrace the statutory mandate to expedite the availability of these funds and to recognize the valuable commitment of electric cooperatives to the communities they have served for many years.

Funding mechanisms should be designed to qualify those recipients that have demonstrated ability and incentive to maintain a reliable system for years to come. One way to ensure this is to provide funding to rural cooperatives (either as a standalone recipient or as a partner in a partnership), who are invested and have a long-standing local presence in the rural communities they serve. Electric cooperatives are playing a major role in trying to improve access to the internet in and around their service territories. There have been many success stories, such as an 800-mile fiber backbone network constructed by Mid-Atlantic Broadband Communities Corporation ("Mid-Atlantic") in southern Virginia, under the leadership of Old Dominion Electric Cooperative, that provides state-of-the-art service to more than 100 businesses and industries in 20 counties. This broadband capacity has attracted numerous companies, including a \$650 million Microsoft data center in Mecklenburg County, Virginia. It has also helped bring more than \$1.7 billion in private sector investment and hundreds of high-paying jobs to the region.

In Texas, Taylor Electric Cooperative, a member of Golden Spread, formed Access Fiber to provide broadband service in its service territory. Businesses in the cooperative's service territory have seen the benefits of that fiber network. As an owner of a local coffee shop explained, the broadband access "is faster than anything we have ever had. . . . [Patrons] that work here, that download quite a bit of information or pictures say it is way faster [and] they come here instead of staying home because it is faster here." The coffee shop also uses Access Fiber for all of their point of sale locations, lottery machine and their daily business needs, such as emails.

Despite these and other cooperative sponsored broadband successes, NRECA's member electric cooperatives face a number of barriers in their efforts to deploy broadband in their communities. Two of the most significant barriers are:

- High cost of serving low density areas without public financial support and sufficient financial support to make the resulting broadband service affordable; and
- Opposition from providers currently serving their service territories with sub-standard service or claiming to serve areas (based on inaccurate federal data) that they do not actually serve.

¹ See Kelly Virella, *Doctors & Health Workers Reflect on Rural America's Limited Access to Care*, N.Y. Times July 19, 2018; Adie Tomer, Elizabeth Kneebone & Ranjitha Shivaram *Brooking Institute Report, Signs of Digital Distress: Mapping broadband availability and subscription in American neighborhoods*, Sept. 2017; John Cromartie, *Rural Areas Show Overall Population Decline and Shifting Regional Patterns of Populations Change*, Amber Waves, Sept. 05, 2017, <https://www.ers.usda.gov/amber-waves/2017/september/rural-areas-show-overall-population-decline-and-shifting-regional-patterns-of-population-change/> ; Justin Fox, *Rural America is Aging and Shrinking*, June 20, 2017, <https://www.bloomberg.com/view/articles/2017-06-20/rural-america-is-aging-and-shrinking>.

Broadly speaking, RUS is soliciting comments on the following topics – (1) defining “sufficient access” when deciding what proposed service areas are eligible for grants and loans under this Pilot Program, (2) the data that is available for use in determining “sufficient access” and for other aspects of this program, and (3) leading indicators of potential benefits of broadband for rural industry sectors. NRECA addresses these topics and makes certain recommendations to further the goals of this Pilot Program. The following are some of the specific recommendations that NRECA asks RUS to consider:

- Adopt a 25/3 sufficiency standard for the Pilot Program at the outset and use 25/3 as a minimum “build-to” standard for projects funded with these funds with prioritization given to applications with speed exceeding the minimum 25/3 and offering symmetrical broadband;
- Recognize the long-standing commitment of cooperatives to their service territories when reviewing competing applications;
- Allow applicants to supplement their applications with information regarding the sufficiency of existing speeds in the areas they propose to serve and to modify the proposed service areas (within a defined cure period) if testing shows portions to be ineligible;
- Place the burden on incumbent providers seeking to challenging an application with verifiable evidence that they are actually providing the claimed speeds and require incumbents to provide service area maps with the actual structures (e.g., homes, school, etc.) they serve or could serve immediately;
- Recognize the shortcomings of FCC mapping data and give little, if any, weight to that data;
- Recognize that mobile/cellular and satellite broadband are not substitutes for fixed wireline;
- Affordability and customer density should be key factors:
 - In deciding whether existing service is sufficient;
 - In prioritizing applications for funding; and
 - In deciding the ratio of grants to loans for any given application.
- Adopt testing standards that:
 - Are transparent, non-gameable, and verifiable;
 - Test at the lesser of 5% or 50 actively subscribed locations;
 - Requires service to meet 90% of the speed and less than or equal to 100 ms latency at least 95% of the time; and
 - Require speed testing once hourly during 5:00 and 11:00 PM local time on weeknights for four consecutive weeks.

II. Sufficiency of Access to Broadband

A. RUS Should Adopt at least a 25/3 Sufficiency Standard at the Outset

RUS is requesting comments on the speed and latency that should be required to ensure that access in rural areas is comparable to what is offered in urban areas. The Act provides that, in order to be eligible for a loan/grant, an applicant must be able to show that at least 90% of the households in the area to be served are without service at a speed of at least 10/1Mbps. However, Congress recognized that this eligibility requirement could quickly become outdated and obsolete and mandated that this “sufficiency” standard be re-evaluated and re-determined by RUS, as necessary, on an annual basis.

Clearly, Congress wanted RUS to have the discretion to modify the sufficiency requirement to ensure that the funds are being used to further the agency’s rural economic development mission. The speed

threshold also must be determined in the context of rapid technological advances – meaning, if a speed is considered obsolete or nearly-obsolete now, it should not be used as the standard for eligibility for these funds going forward. As discussed below, NRECA believes that the appropriate sufficiency requirement is 25/3 Mbps. We urge RUS to consider adopting 25/3 as the minimum speed for initial applications under this program.

The first loans and grants under this new program are likely to be made nearly a year after the Act was passed by Congress in March 2018. The Federal Communications Commission (“FCC”) and many states have already adopted a 25/3 minimum speed. In the event RUS soon follows the lead of the FCC and the states, it would be administratively inefficient to replace a 10/1 standard with 25/3 in a matter of months. Further, many cooperatives around the country, when considering broadband is in their service territories need certainty as they evaluate whether an investment in broadband is in the best interest of the cooperative and its members. One of the most critical questions these cooperatives have is whether RUS loans and grants will be available. Often this is the determining factor.

Further, the Act authorizes RUS to re-evaluate and re-determine the sufficiency standard “as necessary, on an annual basis.” The Act does not prohibit the re-evaluation and re-determination before the program goes into effect or during the first year of this new program. Instead, Congress appeared to be giving RUS the latitude to consider all relevant factors at any given point in time and establish a sufficiency standard based on those factors.

The 10/1 Mbps standard is antiquated and does not constitute “sufficient access” to spur economic development (which is the heart of the problem in rural communities). In order to accomplish the goals of this program and to ensure that rural areas have access comparable to urban areas, the sufficiency standard for this Pilot Program should be raised to 25/3 Mbps.²

It has been recognized by the FCC that 25/3 is the minimum speed to provide advanced telecommunications capability.³ According to the FCC’s 2018 Broadband Deployment Report, as of year-end 2016, 92.3 percent of the overall population in this country had access to 25/3 service.⁴ That alone, demonstrates that consumers have come to expect and are relying on speeds above 10/1. The same report also found that there is a striking gap in the number of Americans in rural areas that lack access to 25/3 speed. As a year-end 2016, 30% of Americans in evaluated rural areas lack access to fixed terrestrial 25/3 broadband, as compared to only 2.1 percent of Americans in urban areas.⁵ Funds awarded under this Pilot Program should be made available to rural areas that lack access to service at speeds comparable to speeds available in evaluated urban areas and that will enable rural Americans to maximize the benefits of internet access.

NRECA members have seen first-hand that inadequate broadband service, either because speeds are too slow or access is unreliable, will drive businesses away from rural America. For example, Mid-Atlantic connected an industrial park that was being served by the incumbent provider. The customer was

² NRECA supports a requirement that all recipients of funds under this program be required to build to the 25/3 speed or higher.

³ See FCC 2018 Broadband Deployment Report (February 2, 2018), (25/3 maintained as the benchmark speed to measure whether fixed service provides advanced telecommunications capability, the statutory definition of which is services that “enable[] users to originate and receive high-quality voice, data, graphics and video telecommunications” 47 USC § 1302(d)(1)).

⁴ 33 FCC Rcd. 1660 (2), 1681 (2018)

⁵ *Id.*

dissatisfied with the service and threatened to leave the community. The cooperative was able to provide adequate broadband service and, thus, saved jobs.

It should be noted that the trend in many markets today is to offer broadband service at speeds up to 1 Gbps and above, and we are likely to see that trend continue. Thus, using a sufficiency standard of less than 25/3 will be a step backward and will effectively perpetuate a two-tiered system – one standard for urban centers and a lower one for rural America.

Thus, clear guidance on the eligibility of their plan for a loan/grant under this program is crucial and NRECA urges RUS to adopt the higher 25/3 standard for purposes of the initial applications.

B. Capacity Required for Economic Development Suggests that 25/3 May Be Too Low

The Notice requests comments on the transmission capacity that is required for economic development. A December 2017 report by the Congressional Research Service cited three sources for this type of information – two were FCC guides and the third was from National Telecommunications and Information Administration (“NTIA”).⁶ The FCC’s Broadband Speed Guide provides information on the minimum download speeds for typical online activities, based on running one activity at a time.⁷ For example, the typical online activity for a student and telecommuter are each said to require 5 to 25 minimum download speed.

The FCC also has a guide for “light, moderate, and high household use”.⁸ Light use consists of basic functions (email, browsing, basic video, VoIP, internet radio) and requires 3 to 8 Mbps for up to two users at a time. Moderate use is defined as basic functions plus one high-demand application (e.g., streaming HD video, multiparty video conferencing, telecommuting) and requires 3 to 8 Mbps for 1 user on 1 device, 12 to 25 Mbps for 2 to 3 users at a time, and more than 25 Mbps for 4 users at a time. So, this information leads to the conclusion that, if a household had two students and two adult telecommuters online at the same time, the household would need more than 25 Mbps, which was then described by the FCC Guide as “advanced service.” Similarly, one would conclude that a small business with 4 users online at a time may also require more than 25 Mbps.

The NTIA source confirms these conclusions as of a year ago – “25 Mbps+” for home (completing homework, streaming video, web browsing), “50 Mbps+” for small business.⁹ NTIA also reports 100 Mbps to 1 Gbps+ for a school, 100 Mbps to 1 Gbps+ for a library, and 1 Gbps+ for a hospital.¹⁰ This NTIA source notes that “download speed requirements vary based on the activity, location and number of users, and these needs will continue to change as technology advances.” At least one other source estimates that a

⁶ Lennard G. Kruger, Cong. Research Serv, R45039 Defining Broadband: Minimum Threshold Speeds and Broadband Policy, (Dec. 4, 2017). <https://fas.org/sgp/crs/misc/R45039.pdf>.

⁷ FCC, *Broadband Speed Guide*, last updated/reviewed February 6, 2018, available at <https://www.fcc.gov/reports-research/guides/broadband-speed-guide>.

⁸ FCC, *Household Broadband Guide*, last updated/reviewed February 6, 2018, <https://www.fcc.gov/research-reports/guides/household-broadband-guide>.

⁹ BroadbandUSA, National Telecommunications and Information Administration, *What Speed Do You Need?* https://www2.ntia.doc.gov/files/what_speed_061917.pdf.

¹⁰ *Id.*

hospitality business with 50 employees would require 55.2 Mbps download / 59.9 Mbps upload¹¹ and that an art studio with 12 employees would need 42.4 download / 46 Mbps upload.¹²

This information therefore suggests that 25/3 may be insufficient for economic development.

C. FCC Map Data is Unreliable

NRECA urges RUS not to rely on FCC maps when determining an applicant's eligibility for funds under this Pilot Program. Those maps have proven to be unreliable and inaccurate in many cases.¹³ Instead, RUS should rely on input from communities, consumers, businesses and local leaders regarding the level of service or broadband speed they deem sufficient for their communities and their satisfaction with existing service. That data will be far more reliable than the data provided by the FCC maps.

Another benefit of relying on local community input is that they can advise on other features of broadband service important to them. For example, rural communities often point to the importance of the upload speeds to their activities involving precision agriculture, telemedicine, and education, which suggests that priority should be given to applications that would offer symmetrical broadband (i.e., same speed for download and upload). Similarly, RUS should view favorably applications that reflect coordination with the community and partnerships with providers to bolster the revenue case as well as broadband adoption.

D. Mobile Service is Not an Adequate Substitute for Fiber

While wireless providers often equate the availability of access on smartphones with fixed broadband, they are not reasonable substitutes.¹⁴ The productivity provided by a fiber connection to a computer are "unparalleled."¹⁵ Central Alabama Electric Cooperative reports that its proposed service area was deemed ineligible under another RUS broadband program because an RUS GFR found speeds of 10/1 via mobile wireless access in portions of its proposed service area. As that member aptly points out:

Students cannot do homework simply on their cell phones; companies cannot conduct business on cell phones alone; and people in rural areas don't have access to telemedicine options on cell phones. . . . [I]t's just frustrating that "real world"

¹¹ Mediacom Business: Does your business have enough Bandwidth? Pt. 1 (May 2016), available at <http://www.mediacombusiness.com/how-idea?idea=51>

¹² Mediacom Business: Does your business have enough Bandwidth? Pt. 1 (May 2016), available at <http://www.mediacombusiness.com/how-idea?idea=52>

¹³ See Letter from Chariton Valley Electric Cooperative, Inc. to U.S. Representative David W. Loebsack, (July 17, 2018), explaining how the faulty data in the FCC map blocked funding for broadband deployment in its community (see Attachment A); Sam Bloch, *The FCC says all of Iowa has access to broadband internet. Speed tests tell a different story.*, The New Food Economy, June 20, 2018, <https://newfoodeconomy.org/rural-iowa-broadband-data-fcc/> (see Attachment B).

¹⁴ FCC Fact Sheet on Draft 2018 Broadband Deployment Report: "Mobile services are not full substitutes for fixed services – there are salient differences between the two technologies" https://transition.fcc.gov/Daily_Releases/Daily_Business/2018/db0118/DOC-348770A2.pdf; Teresa Mathew, *Broadband Is Largely Inaccessible to Those Who Need it Most*, Citylab, Sept. 18, 2017 <https://www.citylab.com/equity/2017/09/broadband-is-the-most-inaccessible-to-those-who-need-it-most/539880/>.

¹⁵ Teresa Mathew, *Broadband Is Largely Inaccessible to Those Who Need it Most*, Citylab, Sept. 18, 2017 (quoting Adie Tomer, a fellow at the Brookings Institution and co-author of the recent Brookings Institution report available at <https://www.brookings.edu/research/signs-of-digital-distress-mapping-broadband-availability/>).

application is not considered in the current and possibly future grant stipulations. Cell phone coverage alone does not bridge the e-connectivity divide.

Further, many websites simply do not operate on mobile devices or operating systems optimized for mobile. The only option in those cases is for the rural customer to attempt to use their cellphone as a hotspot for their computer, which can also be problematic – due to data caps, throttling (caps on data speed), and/or high data transfer charges by their cellular provider.

Finally, mobile service in rural areas is a “best efforts” service; there are no service level agreements or commitments to ensure broad and reliable availability. The day-in and day-out availability and reliability of mobile service in rural areas varies significantly and does not approximate the reliability of fixed broadband service.

E. Prohibitions on Overbuilding Should be Minimal and Specific

The Act provides that an entity that is given a loan or grant under the Pilot Program “shall not use the loan or grant to overbuild or duplicate broadband expansion efforts” made by any entity that has received a “broadband loan” from RUS. NRECA’s members have expressed concerns regarding whether an electric cooperative that had used loan funds from a prior RUS broadband program to build a 4/1 broadband network would be barred from funding under the Pilot Program to upgrade the network to 25/3.

NRECA believes the legislative intent was to preclude RUS from inadvertently funding a new competitor to a preexisting RUS broadband borrower and thereby undermining the ability of the RUS borrower to repay the loan. Viewed in that light, NRECA believes that the concern raised by its members should not be an issue. However, RUS should address this scenario for the benefit of potential applicants. The Pilot Program should not bar an applicant from improving its own speed or quality of service. Likewise, NRECA does not believe the Pilot Program bars participation of entities that have received other types of broadband funding (RUS grants or FCC funding) and that are currently providing speeds below 25/3.

F. RUS Should Permit Applicants to Modify Proposed Service Areas After Submission

The comment above from Central Alabama Electric Cooperative also reveals why RUS should permit applicants to modify their proposed service areas after their applications have been submitted, rather than invalidate all of their efforts to serve the community. In other words, RUS should not penalize an entire community because an applicant did not initially draw its proposed service area boundary exactly right. NRECA urges RUS to continue its past practice of offering technical assistance to applicants and to also use the type of process for modifications that are discussed in RUS regulations at 7 CFR § 1738.204(d) (RUS advises applicants if it determines that a portion of the proposed service area is ineligible for funding so that applicants can then remove that portion and resubmit the application).

G. Affordability is Relevant to Sufficiency of Service

RUS specifically solicited comments on whether affordability should be a consideration when evaluating “sufficient access,” how to measure affordability, and at what point does lack of affordability equate to no access. NRECA believes that affordability is a key factor that should be considered when deciding whether households in an area have sufficient access to broadband. If service is not affordable to a significant portion of the households and, as a result, subscription rates are low, it stands to reason that service is not truly available to those who cannot afford the service.

Few would dispute that providing broadband service to a particular area at a price that few can afford is a waste of time and money -- *because that service is inaccessible to those it is intended to serve*. Affordability is a documented factor in broadband adoption.¹⁶ A report from the academic research journal *Information Economics and Policy* found that it would generally take a price reduction of about 15 percent to increase subscriptions by 10 percent.¹⁷ In other words, broadband subscription is clearly tied to pricing.

Additionally, many providers offer low teaser rates for a set duration, which often leads to price shock once the introductory rate expires. These introductory rates should not be considered when evaluating affordability. Further, RUS should explore whether winning e-Connectivity applicants should be allowed to implement such practices.

1. RUS Consideration of Additional Information on Affordability

Applicants should be permitted to present, and RUS should consider, data regarding affordability in the particular area they serve or propose to serve. For example, they may be able to present insights on the likelihood of adoption based on certain criteria, such as, pricing as a percentage of average income in the area when compared to similar communities already having physical access to broadband.

Similarly, applicants may be able to demonstrate that different service strategies or technologies would be more affordable to the proposed service area overall. For example, a proposal to serve the households most obviously able to subscribe might still provide affordable benefits to the service area overall if the plan also provides service to community facilities with robust community access such as libraries or community business spaces.¹⁸ Another example might be a plan that uses fiber corridors with wi-fi at the terminal points until additional incremental investment might later extend the fiber.

In addition, affordability is not simply a percentage of one's income. Affordability also depends upon whether the expense would actually improve the purchaser's economic well-being. For example, being able to afford dial-up or some other inferior access is not meaningful when the purchaser is competing with, and attempting to interact with, people using high speed broadband. As the National Digital Inclusion Alliance recently reported, the flattening of tiered pricing structures by service providers has resulted in rural consumers paying basically the same price for service over "the oldest, slowest legacy infrastructure" that their urban counterparts pay for high speed broadband.¹⁹ The rural customer's only option is to

¹⁶Kathryn Zickuhr, *Who's Not Online and Why*, PEW Research Center, Sept. 25, 2013, <http://www.pewinternet.org/2013/09/25/whos-not-online-and-why/>; Adie Tomer, Elizabeth Kneebone & Ranjitha Shivaram *Brookings Institute Report, Signs of Digital Distress: Mapping broadband availability and subscription in American neighborhoods*, Sept. 2017, <https://www.brookings.edu/research/signs-of-digital-distress-mapping-broadband-availability/> (tying low subscription rates to lower income, lower educational attainment, and aging population, with the largest subscription gaps in less densely populated regions).

¹⁷ Octavian Carare, Chris McGovern, Raquel Noriega, Jay Schwarz, *The willingness to pay for broadband of non-adopters in the U.S.: Estimates from a multi-state survey*, 30, Info. Econ. & Pol'y, 19 March 2015.

¹⁸ The term "households" is only used in the statute when discussing whether an area has sufficient access. That term is not used as a limitation on who an applicant may serve. In other words, an applicant can propose to serve schools, hospitals, farms, and other facilities in an area in addition to the households in that area. Based on remarks by Jannine Miller, Senior Advisor for Rural Infrastructure at USDA, USDA shares this interpretation, saying that the only requirement on this topic is that the applicant serves "premises." Farm Foundation Third E-Connectivity Listening Session (Aug. 16, 2018), <http://tvworldwide.com/events/farmfoundation/180816/> (last visited Sept. 7, 2018).

¹⁹ Angela Siefer, *White Paper – Tier Flattening*, July 31, 2018. (<https://www.digitalinclusion.org/blog/2018/07/31/tier-flattening>)

continue paying for something that is worth less than it used to be – essentially, for a broadband vehicle that can no longer keep up with traffic on the internet superhighway.

For these reasons, NRECA urges RUS to consider whether the overall circumstances in a proposed service area indicate that broadband is not in fact accessible. For example, if broadband is offered in a particular service area but subscription rates are unusually low, logic and experience suggest that there is a problem. The problem may be that the service is unaffordable. On the other hand, the problem may be that the service itself is substandard and not worth the price of subscription. If there is such a problem, the question is whether an applicant has a credible proposal that would fix the problem.²⁰ If an applicant can offer service at the same speed but at a lower price, that application deserves consideration. Likewise, if an applicant can offer a significantly higher speed for the same, or similar, price, that application also deserves consideration.

2. Ratio of Grants and Loans

Affordability should be considered when deciding the appropriate ratio of grants and loans for proposed service areas. Many rural areas are too expensive to serve without significant assistance in the form of grants. This challenge is similar to the obstacles that faced electric providers 100 years ago. Low population density per mile of line is also relevant to broadband. Accordingly, a household density factor should be a key determinant for the amount of grant money made available to applications – such that lower density areas are eligible for more grant money. We would recommend use of a density range of 0-15 homes per mile of line in weighting or evaluating applications. Adopting this recommendation would address criticisms of past RUS broadband programs where funds were used to serve areas better characterized as suburban, rather than rural.²¹

Adopting this recommendation may mean that most or all of the Pilot Program funding is disbursed in the form of grants. There is nothing in the Act that prohibits this outcome. Furthermore, RUS has shifted broadband funding increasingly towards grants²² in recognition of the inherent problem in serving remote areas – there is no “business case” to be made for serving those areas and thus loan funds will not get those remote networks built. While using more of the designated funds in the form of loans, rather than grants, may enable RUS to increase the dollar amount of aid and the number of recipients, it would not advance the intent of the Act because the areas that can support loans are typically those with higher density.²³ If making loans to rural broadband projects were enough, many more rural networks would have

²⁰ For example, the applicant may be able and willing to leverage funding from other broadband programs to improve the offering. If the existing carrier is ineligible for ETC status (or unwilling assume the obligations of ETC status) and thus is unable to receive USF payments to support its operations, a new carrier that is eligible and willing to take on ETC status might present such a solution.

²¹ Lennard G. Kruger, Cong. Research Serv., RL33816, Broadband Loan and Grant Programs in the USDA’s Rural Utilities Service, (Apr. 20, 2018) <https://fas.org/sgp/crs/misc/RL33816.pdf>. Some prior programs had this effect because of specific legislative language. The ARRA, for example, focused on serving the greatest proportion of unserved households, which naturally tended to exclude the most remote areas with the least population density.

²² Lennard G. Kruger, Cong. Research Serv., RL33816, Broadband Loan and Grant Programs in the USDA’s Rural Utilities Service, (Apr. 20, 2018) <https://fas.org/sgp/crs/misc/RL33816.pdf>.

²³ This legislation is also unlike the ARRA programs in another respect. The ARRA gave priority to applications that offer to provide broadband service to the greatest proportion of households then without broadband. This tended to skew funding towards areas that were on the edges of urban areas and not to the most remote areas which are scarcely populated. See Christopher Ali & Mark Duemmel, *The Reluctant Regulator: The Rural Utilities Service and American broadband policy*, Telecommunications Policy (available online August 23, 2018)

been built. In short, Congress has given RUS the discretion to determine the mix of grants and loans under this Pilot Program and RUS should use that discretion to full advantage for those in rural America that will not otherwise obtain high speed broadband.

3. Affordability Considerations Are Unique in Remote Areas

The \$600 million authorized by the Pilot Program is a small amount when compared to what is needed for rural broadband funding, which some estimate to be between \$80 billion and \$150 billion.²⁴ Assuming that applications for remote, low-density areas are submitted, RUS should target this funding to those areas. The higher density areas are more likely to have other funding options. Successful targeting to areas that most need the funds will often result in successful economic outcomes (such as the Mid-Atlantic experience described earlier).

III. Application and Evaluation Deadlines

Critics of past RUS broadband funding have noted the relevance of application and evaluation deadlines.²⁵ For example, broadband funding under the ARRA stimulus program was also intended to serve as economic stimulus. In that context, rolling deadlines made sense because getting the money out the door and into the overall economy was considered critically important in its own right. However, it also meant that applications were only compared to others then under consideration, which was a smaller group than the overall pool of applications. This Pilot Program is not intended to serve additional objectives. While Congress intended that the Pilot Program be expedited for economic development purposes, it will achieve that boost only if the funds are appropriately targeted. For that reason, RUS should use fixed application deadlines that would allow RUS to evaluate all of the applications together and thereby identify the best applications for the intended targets – remote areas and areas lacking high speed broadband service.²⁶

IV. Obligations of Applicants

The Act imposes certain obligations on successful applicants – specifically, the reporting requirements contained in 7 U.S.C. § 950bb(d)(8). NRECA assumes that RUS will impose other obligations as part of its program administration to ensure that the funds are spent wisely.

A. Minimum Build-To Speed Should be 25/3

While neither the statute nor the RUS Notice mentions a minimum “build-to” speed for this program, NRECA urges RUS to set such a minimum at 25/3 regardless of the speed used to determine “sufficiency.” Further, the aim of this program should be to fund networks capable of providing speed even higher than 25/3, including symmetrical broadband (the same upload and download speeds), or scalable networks that can increase speeds as demand rises. Focusing on investment in technologies that offer long-term sustainable, high-speed, low latency, quality services and affordable pricing will ensure that federal resources will be used wisely to fund forward looking networks. At present, this would exclude satellite

²⁴ Jannine Miller, Senior Advisor for Rural Infrastructure at USDA, stating this range as figures that are sometimes mentioned when discussing rural broadband. Farm Foundation Third E-Connectivity Listening Session (Aug. 16, 2018), <http://tvworldwide.com/events/farmfoundation/180816/> (last visited Sept. 7, 2018).

²⁵ Lennard G. Kruger, Cong. Research Serv., RL33816, Broadband Loan and Grant Programs in the USDA’s Rural Utilities Service, (Apr. 20, 2018) <https://fas.org/sgp/crs/misc/RL33816.pdf>.

²⁶ *Id.*

technology. Accordingly, RUS should prioritize applications with speeds exceeding the minimum requirement.

B. Testing Speeds and Related Performance Metrics

With regard to speed and other performance standards, NRECA proposes the following obligations for RUS consideration (which are consistent with the standards NRECA proposes for “Standards for Evaluating Incumbent Claims of Service” as detailed on page 13: (i) the winning applicant should be required to test the lesser of 5% or 50 actively subscribed locations in the proposed area to be served; (ii) winning applicants meeting 90% of the speed and latency requirement of less than or equal to 100ms at least 95% of the time should be considered in full compliance; and (iii) speed testing conducted once hourly during peak times—between 5:00 pm and 11:00 pm local time on weeknights—for four consecutive weeks to ensure that RUS receives an accurate snapshot of how well networks perform when customers are actually using them. The new FCC testing protocol, which was released in July, can be helpful, although NRECA strongly opposes one of the three methods included in that testing protocol – self-testing. All testing for this Pilot Program must be transparent, non-gameable and verifiable.

C. Construction Time Periods Must be Reasonable

NRECA’s members have pointed out that some broadband programs impose unrealistic deadlines for completion of construction. For example, some require completion of construction within one year of funding award. The deadline should reflect the necessary tasks for the particular application. For example, if new easements must be obtained for the work, that will require more time. NRECA members also note that qualified contractors may not be immediately available to begin work because they may be already engaged on projects receiving CAF II funding from the FCC. If one deadline is desirable for all applications, our members recommend three years from the date of funding award.

NRECA’s members request an opportunity to provide additional comments on the Pilot Program rules before they become final to make sure details like the construction deadline are not problematic. Given the need to move relatively quickly with this program, the comment period should be relatively short.

V. Availability of Broadband Service

Many areas served by electric cooperatives have existing internet service but that service is slow and unreliable. Because cooperatives are member-owned organizations and have deep roots in their communities, many of them are interested in expanding their traditional electric service to install broadband and, thereby, help those communities. These cooperatives have served their communities for many years and will be the electric providers for many years to come. They have an incentive to offer and improve broadband service in their service territories.

A. How Data Speeds Should Be Verified Accurately

The statute requires RUS to use the service area assessment procedures set forth in 7 USC § 950bb(d)(10), which in turn contemplate incumbent service providers submitting claims and supporting data and the use of other data to assess the service area.

As noted in the RUS Notice, it is widely understood that the existing federal databases on broadband availability are inaccurate and unwieldy.²⁷ It must also be understood that incumbent providers in the areas proposed to be served and adjacent areas are not disinterested or neutral parties when they submit data to RUS in support of their claim to be providing service to particular areas at particular speeds. Accordingly, RUS should not rely upon that mapping data and instead employ common-sense measures (described below) to verify incumbent claims of service.

- RUS resources for verification

RUS GFRs can aid in verification and RUS may contract with independent third parties to verify data reported by incumbents and applicants. However, it is unlikely that RUS will have sufficient resources to verify service at every location for the time periods required. In light of that, other means of verification are needed.

- Standards for Evaluating Incumbent Claims of Service

Incumbents challenging an applicant's proposed area must provide verifiable proof they are offering the claimed speeds using neutral, non-gameable testing methodologies. For example, incumbent challengers cannot simply provide evidence of one speed measured at a time of their choosing. Rather, incumbents must provide proof that they meet 90% of the reported speed and latency at least 95% of the time for the area to be deemed served. (NRECA proposes this standard also to measure the obligation of winning applicant.) Similarly, tests must be conducted during peak times, that is, 5-11 PM local time.²⁸ Further, incumbent challengers should be required to include area maps with actual structures (e.g., homes, businesses, schools) they serve and areas that provider could provide service to immediately.

- Data Provided by the Applicant

Rather than having applicants submit proposed service areas and awaiting incumbent objections, applicants should be able to submit supplemental information and data along with their applications

²⁷ The FCC data relies on reporting by service providers themselves, uses the "one-home-served rule" (which deems an entire Census Block served when only one residence in that Block is served), and tracks maximum advertised speeds (as opposed to actual speeds). The NTIA map uses data that was collected and verified by States, is dependent on continued funding to remain up to date, and does not require reporting by the service providers and thus attracted only 74 percent participation by service providers. Neither data set tracks pricing data. Eric Null, *Why Can't the U.S. Government Make a Decent Broadband Map?*, New America Weekly, April 5, 2018. <https://www.newamerica.org/weekly/edition-201/why-cant-us-government-make-decent-broadband-map/>. Sam Bloch, *The FCC says all of Iowa has access to broadband internet. Speed tests tell a different story.*, The New Food Economy, June 20, 2018. <https://newfoodeconomy.org/rural-iowa-broadband-data-fcc/> (Iowa internet users experience the 25/3 speed only 22 percent of the time, according to nearly half a million speed tests run on a diagnostic tool operated by the Open Technology Institute, a research arm of the New America Foundation, a non-partisan think tank) See Attachment B.

²⁸ Some cooperatives have reported that peak hours in their service territories begin at 5:00 pm.

regarding the sufficiency of existing service within the application area as well as whether the needs of the community are being met.

- **Actual speed data**

Applicants should be able to submit available data from testing of the speeds actually delivered by the incumbent in the proposed service area. This has been a chronic problem facing electric cooperatives and others in obtaining Federal funding and in many cases the speeds reported by incumbents are simply overstated. See, for example, the experience of Chariton Valley Electric Cooperative as expressed in the letter filed with the House Energy and Commerce Committee and attached as Attachment A and the article also about Iowa broadband attached as Attachment B.

- **Community needs**

As an example of whether the needs of the community are being met by the incumbent provider's existing service, NRECA member[s] report that when their schools are conducting standardized testing (which is conducted online) the school must shut down all other broadband usage during the testing period. This is an example of current insufficiency.

Applicants should also be able to provide any information they have regarding future insufficiency that is already known or foreseeable. For example, if the schools are aware of national educational initiatives in the pipeline that would similarly overwhelm their broadband capacity, they should be able to provide that information.

Another community need for education involves homework – how much homework in the applicant's community requires internet access and how many homes have that access. (According to the state of North Carolina, nationally, 70 percent of teachers assign homework that requires broadband access, but only 33 percent of students have access at home.²⁹ North Carolina also reports county data on the percentage of needy and the broadband adoption rate.)

B. Other Sources of Data Availability Should Be Used For Evaluation

RUS could consider using speed tests from computers in a proposed applicant's service area run on a diagnostic tool operated by the Open Technology Institute, a research arm of the New America Foundation, a non-partisan think tank. The test provides the speed but also diagnostic information. That M-Lab Data is also publicly-available on their website.³⁰

NRECA encourages RUS to work closely with state governments that collect broadband data. NTIA works closely with state broadband officials and could be a resource for information. North Carolina posts the FCC data for the states but also provides a means for residents to test their system and report that data to the state. Some counties also independently collect and report on broadband data.

VI. Leading indicators of benefits

²⁹ *Homework Gap Recommendations, Connecting North Carolina: State Broadband Plan*, NC DIT Broadband Infrastructure Office. <https://www.ncbroadband.gov/connectingnc/homework-gap/>.

³⁰ See <https://www.measurementlab.net/data/docs/bq/quickstart/>

Comments were specifically requested on effective means to measure potential benefits of broadband for local industry sectors. It is widely accepted that broadband service provides significant benefits to users and that those benefits take the form of higher paying jobs, better educated students, and improved healthcare.

A recent report by the Center for Regional Development at Purdue University (“Indiana Report”) studied the benefits of broadband to rural areas of Indiana served by electric cooperatives.³¹ That report concludes that the net present value of benefits of broadband to the seven distribution cooperatives in the state of Indiana is over \$2.2 billion or \$24,293/member served by those cooperatives. Extrapolating to the state, the total benefits of broadband to Indiana would be approximately \$12 billion.

The Indiana Report provides a useful set of criteria to measure the benefits of broadband. It focuses on several indicators to measure the benefits of broadband, including:

- Telemedicine (reduced physician time for diagnosis and treatment, transportation savings for patients, missed work income savings, initial health consultation via web, health improvement, improved health knowledge and improved self-care, and reduced use of emergency room and other expensive hospital equipment)
- Education (K-12 students’ completion and turn-in of homework, communication with teachers, improved student performance, access to online courses)
- Business investment and general economic development (economic growth, negative impact on unemployment, improved medium household incomes, relocation of businesses to area, entrepreneurship and startup activity)
- Consumer savings (lower insurance, energy, and general shopping costs; availability of, and savings on, services)
- Farm income changes (increased farm profitability, easier communications with suppliers and market outlets, quicker access to weather information)

The report also cites to federal and state revenue benefits resulting from broadband and other cost savings in the form of health care costs and fewer Medicaid recipients.

VII. Viability of applications that include local partnerships

RUS is seeking comments regarding applications that include partnerships, which NRECA understands to mean all sorts of teaming arrangement, regardless of legal form or tax status. The use of partnerships by cooperatives to build infrastructure is commonplace. Many electric generation and transmission projects are developed and owned by RUS borrowers together with third parties under partnership arrangements. The precise partnership structure varies from project to project, but parties have found ways to address legal, collateral and other issues.

NRECA believes that RUS should support partnerships, but that partnerships should be given equal weight as applications filed by entities developing projects on their own. Applications that propose a partnership for development and ownership of the project should explain the structure to be used and the basic terms of the partnership agreement (e.g., credit requirements, collateral sharing, etc.).

³¹ Available at <https://www.pcrd.purdue.edu/files/media/006-RPINsights-Indiana-Broadband-Study.pdf>.

In all cases, RUS should consider whether the applicant (whether an entity on its own or in partnership with others) has a proven history of providing service in the proposed service area or an area that is similar to the proposed service area. Ties to the proposed service area should be given weight over those without such ties because they have a greater understanding of the area to be served and the customer base. Accordingly, NRECA believes electric cooperatives seeking funding to expand broadband in their service territories should be given a priority over competing applicants without ties to the area.

CONCLUSION

NRECA appreciates the opportunity to submit these comments to RUS on behalf of its membership. Many of NRECA's members have made the expansion of broadband service one of their highest priorities. The funds made available under this Pilot Program, together with other Federal, state and local funds, are crucial to that effort.

If you have any questions regarding these comments, please contact me at Brian.O'Hara@nreca.coop

Respectfully,

Brian O'Hara
Direction of Regulatory Issues --- Telecom & Broadband
National Rural Electric Cooperative Association

cc: Chris McLean
Ann Hazlett
Jannine Miller
Chad Parker



Chariton Valley Electric Cooperative, Inc.

Your Touchstone Energy® Partner



July 17 2018

The Honorable David W. Loebsack
U. S House of Representatives
1527 Longworth House Office Building
Washington, DC 20515

Dear Representative Loebsack,

Thank you for the opportunity to share the Chariton Valley Electric Cooperative vision for rural broadband with members of the Communications and Technology Subcommittee of the House Energy and Commerce Committee.

Chariton Valley Electric Cooperative (CVEC) was organized in April, 1945, and began providing electric service to farms in 1947. It serves around 6,000 homes and businesses in the city of Albia and portions of the seven Iowa counties of Appanoose, Davis, Lucas, Marion, Monroe, Wapello and Wayne. CVEC owns and maintains 1,300 miles of overhead and underground line.

The CVEC service territory sits in a broad section of South Central Iowa, just north of the Missouri border. The seven counties, which were once the hub of Iowa's coal country, feature rolling hills, farmland and dozens of small towns – none of which have a population greater than 3,600.

CVEC's members reside in a region that has a median household income below the state average. Every county served has seen its population decline and the average age of its residents increase. Economic development efforts are ongoing, but issues ranging from available workforce to housing to access to capital create constant barriers.

However, no barrier to growth is as dramatic as the digital divide that exists in our region.

Broadband access in our territory is primarily limited to slow, outdated service from a few large investor-owned telecommunications companies. Even then, their service is focused on town centers with little availability in the rural areas. And none have expressed any interest in expanding speeds or capacities in order to allow residents and businesses in South Central Iowa to adequately access information, digital content or the global economy.

For that reason, CVEC has begun developing a plan to extend fiber to the homes of member homes and businesses. This cooperative can no longer stand by and allow its members and region to operate at an economic and educational disadvantage.

And, there is no doubt residents are frustrated. Earlier this year, when plans for the CVEC Broadband Project were announced, more than 2,000 members sent in postcards to express their support and interest. Those postcards were included in the USDA Community Connect grant application, as were 40 letters of support and need from local businesses, hospitals, schools and colleges. We also received support letters from you and Senators Grassley and Ernst.

As you know, the value of fiber-to-the-home for rural electric cooperatives is great. That fiber gives us better control of our electric systems, monitoring, efficiencies and operations. But it also provides us with a tremendous opportunity to benefit our members.

CVEC plans to extend fiber to the home of each member, and will be able to offer members up to 1 Gb service at a reasonable and affordable cost as we exist to improve the quality of our members lives – not to increase the profits to shareholders.

The convergence of new technology and partnerships has made rural broadband deployment more achievable than ever. Yet despite these advances, the high cost of rural broadband deployment remains the biggest obstacle to successfully closing the digital divide.

Our plan requires three phases to reach every CVEC member. Yet, we plan to accomplish that feat in a 24-month period once we begin construction. We anticipate the overall cost of implementation to approach \$35 million.

To accomplish our goals, CVEC will need the support of partners like USDA's Rural Utilities Service, the Federal Communications Commission and others. We have already applied for a \$3 million USDA Community Connect grant to begin the \$4.9 Phase I of our project, which is focused on unserved Appanoose County (a recently-designated Opportunity Zone). We have plans to pursue other USDA financing options, including those recently made available in the FY18 Omnibus Appropriations bill.

Another barrier we have encountered is related to faulty data that overstates rural broadband service. The FCC maps, reliant on Form 477 data, reflect the wishful thinking of existing providers and entities who lack a presence in the region yet submitted inflated performance metrics. They are precluding CVEC from accessing the resources it must have to provide the 6,000 households and businesses with broadband speeds readily available in urban areas.

Recently, CVEC was disqualified from the upcoming CAFII auction due to questionable data used to populate FCC broadband maps. According to the FCC map, 100 percent of residents in Appanoose, Davis, Lucas, Marion, Monroe, Wapello, and Wayne counties have access to a download speed of 10 Mbps. But, independent tests run in these counties show that can only happen 17 percent of the time.

This committee has a great opportunity to drive the discussion of rural broadband and the policies that will expand it. Since 2001, the FCC has used the Universal Service Fund to deliver \$114 billion to build out rural communications infrastructure. But the digital divide still plagues our nation. Existing federal programs have failed to solve the rural broadband problem, and it's time for a new approach.

There exist four keys to empowering rural electric cooperatives to partner in those efforts.

1. Additional financing support with a combination of grants and loans.
2. All capable providers with experience in serving rural infrastructure needs should have equal access to federal funding, regardless of technology.
3. Grants should prioritize projects in areas with the lowest population density given that is a prime cost driver for rural broadband deployment.

4. Broadband systems funded with limited federal funds should meet the growing speed and data consumption needs of today and into the future.

We're glad that expanded rural broadband access is a topic of conversation in state legislatures and in Washington. And CVEC, like electric co-ops nationwide, is committed to rural America and the people who live there. Yet, 23 million rural Americans lack broadband access.

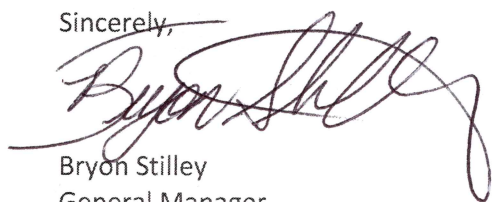
Congress should support investment in forward-looking, modern broadband systems that will stand the test of time. It should take an all-inclusive approach to solutions in unserved and underserved areas. It is critical that these solutions recognize the need to remain viable for years into the future.

And it should recognize that in today's 21st century economy, broadband systems built to 10/1 or slower speeds cannot support a modern household much less attract and retain new businesses.

Chariton Valley Electric Cooperative is ready to bring the rural Iowans it serves a 21st century technology. We just need help overcoming barriers that prevent us from accomplishing that.

Thanks in advance for your assistance and support.

Sincerely,

A handwritten signature in dark ink, appearing to read "Bryon Stilley", with a large, sweeping flourish at the end.

Bryon Stilley
General Manager
Chariton Valley Electric Cooperative
Albia, Iowa

The FCC says all of Iowa has access to broadband internet. Speed tests tell a different story.

Misleading data from internet service providers is cutting Iowa off from billions in broadband subsidies. Other states could be missing out, too. A New Food Economy investigation.

June 20th, 2018

by [Sam Bloch](#)

Like everyone else, rural Americans need broadband. They rely on their internet connections for many of the same reasons urban Americans do: to find doctors and look for jobs, pay bills and do homework, get the news and watch movies. But outside of cities, where great distances separate residents from social services, employers, and neighbors, reliable broadband not only keeps rural Americans apace with the modern world—it's a critical economic lifeline.

The United States government recognizes that the need is dire. The Federal Communications Commission (FCC), the federal agency primarily charged with expanding internet coverage, has committed over \$9 billion to getting rural America online. In February, it released a [national broadband map](#), purporting to show which parts of the country had access to fixed, or non-mobile, high-speed internet. The goal of the map is to inform policies and target subsidies as the government extends broadband to over 11.5 million American who still lack access.

A closer look, however, suggests that the map is based on misleading data. A New Food Economy analysis of internet speed tests in some rural counties shows connections well below what FCC is claiming, which means the number of Americans without broadband could actually be much higher than reported.

Few connections reach the “baseline” broadband speed of 25 Mbps, speed tests show

Source: M-Lab NDT Data Set, 2017, correlated with US census county level geographic data

According to FCC, Iowa is the only Midwestern state with virtually complete access to high-speed internet. Every county is covered by download speeds of 25 megabits per second (Mbps), which the agency defines as “baseline” broadband. But another set of data tells a different story: Internet users in Iowa experience that speed only 22 percent of the time. That’s according to nearly half a million speed tests run on a diagnostic tool operated by the Open Technology Institute, a research arm of the New America Foundation, a non-partisan think tank. Data from these tests, which were run last year, mostly as Google searches, are publicly available on the institute’s website and were updated at the request of The New Food Economy.

Connections are worse outside the cities. Take, for example, a cluster of predominantly rural counties located in southern Iowa, between Des Moines and the Missouri border. According to the FCC map, 100 percent of residents in Appanoose, Davis, Lucas, Marion, Monroe, Wapello, and Wayne counties have access to a download speed of 25 Mbps, the speed at which three people can simultaneously stream HD video. But tests run in these counties show that can only happen 17 percent of the time.

Because DSL connections are slow and satellite service is unreliable, many rely on cell phone hotspots to get online.

On the outskirts of Albia, the Monroe county seat, wedding photographer Carol Selvy can’t show clients her photos. Selvy says she needs a week to upload a suite of files, which progresses in fits and spurts. According to FCC, Selvy has access to download speeds of 12 Mbps. (The agency’s “minimum” broadband definition is 10 Mbps.) But that isn’t accurate. Selvy played The New Food Economy a voicemail left by a representative from Windstream, a phone company with a large presence in Iowa, and her internet service provider.

“The best you’re gonna get is 4 megs,” the representative told her. That was the broadband standard in 2011.

Selvy is not alone. Corn farmers in Appanoose and Monroe counties are among the state’s least productive. Some say that’s due, in part, to slow connections. “We’ve had some of our members that want to take advantage of precision planting and spraying, but they just don’t have access to high-speed internet to be able to do it,” says Bryon Stilley, CEO of Chariton Valley Electric Cooperative, a member-owned utility that serves the counties. Because DSL connections in this part of Iowa are slow and satellite service is unreliable, many of the cooperative’s members rely on cell phone hotspots to get online.



Bryon Stilley is an Iowa resident and CEO of Chariton Valley Electric Cooperative, a member-owned utility that serves parts of seven rural counties

Why do speed tests conflict so dramatically with what's on FCC's map? Because the broadband map, which the Commission calls a "key source" of information for consumers and policymakers, doesn't include on-the-ground measurements in the first place. The map is based on data taken from Form 477, a filing that internet providers submit to FCC twice annually. The data are the agency's main source of information on broadband availability, and the backbone of its funding decisions.

Form 477 data have surprising limitations. Providers are not required to include information in the filing about actual on-the-ground internet speeds, which are confidential and considered a trade secret. Instead, when providers submit data, they include lists of census blocks where they "can or do" offer service to at least one location, along with the maximum speeds they *advertise* there, whether that's what residents have or not. Nationwide, around 28 people live in a census block, on average. In Iowa, a rural state, the density is closer to 15.

"We're leaving too many households behind."

For these reasons, it's hard to know how many Americans covered in the federal broadband map actually have the internet their providers say they do. When asked why FCC accepts self-reported advertised speeds as a metric, Mark Wigfield, a spokesman, said carriers are "required by statute to provide accurate data," and the agency finds a strong correlation between advertised and actual speeds, though not for DSL or satellite. "The cost and burden of collecting actual speeds would be too great," he wrote in an email to The New Food Economy.

Policymakers have openly acknowledged that the broadband map, the first major refresh of publicly accessible internet data in several years, is incorrect. When the map was unveiled in February, Commissioner Jessica Rosenworcel, who lives in Washington, D.C., admitted it had "errors," and asked the public to email FCC directly with corrections. "I looked up my house and can tell you with good authority it lists service that is not available at my location," she wrote. "You can go ahead and plug in your address and you might find the same thing."

It's hard to know how many Americans covered in the broadband map have the internet their providers say they do.

Part of the reason for this discrepancy is that FCC doesn't collect granular data about deployment. "For a long time, the way that the FCC collected data about broadband was, as we found, if there is one subscriber in a census block, we presumed that it was available throughout the block," Rosenworcel told a House subcommittee in 2017. "I think we all know that that is not a fair assumption anymore, and we're leaving too many households behind."

And faulty data can have real-life consequences. When census blocks are reported to have access to 10 Mbps downloads, which was the broadband standard in 2014, other internet service providers are disqualified from receiving FCC funds to expand service there. In other words, the government decides the area is connected enough not to require additional funds for expansion.

But self-reported estimates don't match the speeds independently measured by the Open Technology Institute in Iowa, and the circumstances there are likely to be illustrative of a larger problem. Interviews with broadband advocates, public comments submitted to FCC, and statements by policymakers all indicate that in other states, rural residents may be in similar situations: reliant on subpar DSL and satellite connections, and ineligible for federal support.



Power lines, operated by Chariton Valley Electric Cooperative, flank a farm in rural Iconium, Iowa

Across the country, politicians with rural constituents are moving to address the problem. Last year, Republican Senator Roger Wicker of Mississippi, Democratic Senator Joe Manchin of West Virginia, and Democratic Congressman Dave Loebsack of Iowa all introduced bills to improve the accuracy of mobile broadband data—also from Form 477—in advance of an FCC funding opportunity for phone companies. Loebsack’s bill was signed into law in March as part of the omnibus spending bill.

“I like to call it, ‘garbage in, garbage out,’” Loebsack told telecommunications executives at a House hearing in January. “If we don’t have accurate data, whether that’s in agriculture, or that being a subset of something larger, then we’re not going to be able to make good public policy decisions, or even investment decisions on the part of the private sector.”

There’s not a business case for bringing high-speed internet to rural America.

Manchin has been more direct. One month after introducing his bill, he admonished FCC Chairman Ajit Pai for the agency’s poor record-keeping. “Inaccurate data has failed rural and remote communities across this country,” he said at a Senate hearing. “Inaccurate data has caused us to be left behind.”

More recently, Loeb sack, who represents southern Iowa, introduced another bill, co-authored by Republican Congressman Bob Latta of Ohio, that directs FCC to identify broadband coverage gaps on farms, and target funding to help farmers use data-heavy precision agriculture tools. (The bill passed a House subcommittee last Thursday.) But for the residents in his district, and particularly those who had hoped to benefit from an upcoming, billion-dollar broadband subsidy auction, the bill comes too late.

Bryon Stilley from the Chariton Valley Electric Cooperative is one of those residents. In 2016, he began planning a fiber broadband network for the 6,100 members of the co-op. Then, as now, rural members were buying internet from one of four companies: Windstream, the local phone company, which offered DSL; Rise Broadband, a “fixed wireless” provider that transmitted a wireline connection from towers; and two satellite companies named HughesNet and ViaSat. Disappointed by the options, many instead relied on service from their cell phones.



A utility pole (left) and cell tower outfitted with “fixed wireless” internet antennas (right) stand beyond a farm in rural Iconium, Iowa

Generally speaking, there’s not a business case for bringing high-speed internet to rural America. It’s labor-intensive, expensive and inefficient. “We’re talking four-point-two, four-point-three members per mile of line,” Stilley says of his area. “At the end of the day, it’s hard to justify, and hard to make something like that work.”

To build a \$29.3 million, 1,400-mile fiber optic cable network, the cooperative would need help. Stilley decided to pursue subsidies from FCC and its primary vehicle for funding rural broadband, known as the Connect America Fund. In the past, all of these funds went to large telephone companies, such as AT&T and Verizon, and in Iowa,

to CenturyLink, Frontier and Windstream. Next month, the Commission will begin offering funds to small providers, including electric cooperatives.

That move comes too late for Stilley, whose plans to take advantage of Connect America Fund monies were dashed in December, when FCC updated a [map of eligible areas](#) and showed a major broadband expansion in his area. According to Form 477 data, Windstream and Rise Broadband had blanketed Chariton Valley's service area in minimum broadband, leaving only nine census blocks uncovered and thus eligible for funding. Across the state, Rise had doubled its coverage. Possible funds for the cooperative shrank from \$8 million to \$56,000, Stilley says.

But speed tests don't show an increase in high-speed internet. Last year, internet users in the seven counties in Chariton's service area were just as likely to reach the minimum broadband speed of 10 Mbps as they were three years ago: around 44 percent of the time, according to the Open Technology Institute. Windstream users reached minimum broadband in only 34 percent of tests. Surprisingly, of thousands of tests conducted in those counties in 2016 and 2017, not a single user was on Rise Broadband, calling into question the efficacy of its advertising.

In rural America, a phone company may be the only internet provider, and connections may degrade with distance.

In an email to The New Food Economy, a Windstream spokesman said the company had expanded broadband coverage through VDSL bonding, a process of releasing additional, usually pre-existing telephone lines for internet use. Meanwhile, a spokesman for Rise Broadband said the company "has not had any significant Iowa changes," and "coverage has remained about the same," also in an email. Both companies use a mix of advertising, including direct mail and digital ads, to promote their services in southern Iowa.

Dependence on DSL is common in rural America, according to Brian Whitacre, an agricultural economics professor at Oklahoma State University and a [professional bodybuilder](#). In cities, consumers often have their choice of wireline providers, which can include a local phone company offering DSL, but also cable and fiber companies. Not so in rural areas, where that phone company may be the only provider, and where internet connections degrade with distance.

Other rural technologies are unreliable. Fixed wireless, which is touted as "[bridging the digital divide](#)" in areas without wireline connections, requires a line-of-sight connection that can be interrupted by rain or trees. Satellite connections are also compromised by weather. [One FCC study finds that satellite users rarely achieve advertised speeds](#). When FCC says [24 million Americans lack access to broadband internet](#), that includes internet users on these two kinds of connections.

"If you're gonna base public funding decisions on data, you either have to account for errors, or give people a chance to challenge the data."

In the case of Chariton Valley, it's unclear whether broadband coverage actually increased, or was just reported to be more widely advertised.

Last year, FCC opened a proceeding to consider changing the Form 477 and seek granular deployment data, such as the locations of homes and businesses served, rather than census blocks reached. In seeking public comment, the agency wrote that filings do not have “meaningful information” about how data were collected or coverage areas determined. Nor had the agency investigated “whether actual consumer experience has diverged substantially from the Form 477 filings.”

But FCC may never know the answer, because publicly subsidized providers don’t divulge their data collection process or explain how services are advertised in a specific market in their filings. They often claim that disclosing better, more specific deployment information would compromise customer privacy, and their ability to compete with other providers. (The Open Technology Institute supports collecting and disclosing more deployment data.)

Jonathan Chambers, a former FCC attorney and broadband consultant for rural electric cooperatives, including Chariton, believes that without an opportunity for his clients to challenge FCC’s data, the subsidy process will remain fundamentally flawed.



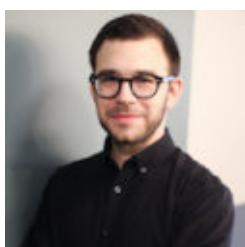
Telephone poles north of Albia, Iowa, carrying phone lines that can be used for DSL connections

“If you’re gonna base the service—these public funding decisions—on data, you either have to account for the errors in the data, or you have to give people a chance to challenge the data,” Chambers says. “Because the funding decision means that these areas of the country now won’t get funded. And if they don’t get service, then

they get the worst of both worlds. They don't have service and they won't have funding.”

Bryon Stilley says he is back to the drawing board. Now ineligible for Connect America Funds, Chariton Valley has applied for a grant from the Rural Utilities Services to build a smaller network in Appanoose, one of the seven counties in the cooperative's coverage area. Absent the competition of another provider, it could be years before members in the other counties experience broadband internet.

Bidding for \$1.98 billion in subsidies available through FCC's Connect America Fund II auction, which has 277 applicants, including 25 rural electric cooperatives, begins July 24.



Sam Bloch

Sam Bloch has written about arts, culture, and real estate for publications including *L.A. Weekly*, Artnet and *Commercial Observer*, and served as managing editor of *Art Los Angeles Reader*. His essay about Los Angeles' "shade deserts" will be published by *Places Journal* in 2018. Reach him by email at: samuel.bloch@newfoodeconomy.org

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