

From: [John Windhausen](#)
To: [BOCrfc2015](#)
Subject: BOC Comments from The Quilt
Date: Wednesday, June 10, 2015 5:32:11 PM
Attachments: [Quilt BOC Comments 06102015.pdf](#)
[ATT00001.htm](#)

Karen and Denise,

Please accept these comments to the Broadband Opportunity Council from The Quilt. We apologize for the delay in submitting them. We encountered a variety of travel and technical glitches today. We appreciate your willingness to accept them just one-half hour after the deadline. Please let us know if you have any questions or if there is any problem with accepting these comments as timely filed.

June 10, 2015

Attention: Broadband Opportunity Council

Karen Hanson
National Telecommunications and
Information Administration (NTIA)
U.S. Department of Commerce
1401 Constitution Avenue NW
Room 4626
Washington, DC 20230

Denise Scott
Rural Development
Rural Utilities Service
US. Department of Agriculture
1400 Independence Avenue SW
Washington, DC 20250

Comments of The Quilt

The Quilt¹ is a non-profit 501(c)(3) organization that represents over thirty-five of our nation's most advanced Research & Education (R&E) Networks that operate in a number of states in regions across the United States. R&E Networks are non-profit organizations that provide broadband services, advanced networking, Internet access and related services to a diversity of community anchor institutions, often over fiber optic networks.

Most of the R&E Network members of The Quilt began service by providing high-capacity data services among institutions of higher education. Over time, and with the help of the Broadband Technology Opportunities Program (BTOP),² many of our networks have expanded to provide broadband services to K-12 schools, libraries, state and local government agencies, non-profit organizations, health care providers, and private industry engaged in research and educational partnerships. About ½ of Quilt members participate in the E-rate program, either as consortium applicants, filing on behalf of a number of their member school and library institutions, or as Internet access service providers.

While all members of The Quilt are non-profit organizations, they are funded, governed and structured very differently. These differences reflect the diverse and complex environments of the communities and states in which they operate:

- 35% of Quilt members are 501(c)(3) non-profit corporations;
- 40% of Quilt members are university-based organizations;
- 25% of Quilt members are either a division of the State Board of Regents, State Dept. of Higher Education or another state government agency.

The Quilt appreciates the opportunity to submit these comments to the Broadband Opportunity Council (BOC). Before addressing some of the particular questions in the Notice and Request for Comments, we would like to set the stage with some opening

¹ More information about The Quilt, including a list of our members, is available at www.thequilt.net.

² <http://www2.ntia.doc.gov/>.

observations about the broadband marketplace that may help to shape the BOC's approach to these broadband issues.

I. Opening Principles

Per their missions, R&E Networks are instrumental in providing advanced networking services to extended communities that would otherwise not have access to such services, including higher education institutions, K-12 schools, libraries, state and local government agencies, health care, and other non-profit organizations.

R&E Networks have been designed to meet the needs of some of the most demanding Internet users in the country: scientists, academics and researchers in our nation's leading academic institutions. These networks are engineered to support high-quality services that are consistent regardless of the number of users on the network. The networks must readily adapt to new experiments or projects that place new demands on the network. The network speed, quality, flexibility and support offered by R&E Networks also provide schools and libraries with exceptional service that adapts easily to specific demands of these users.

As consortium purchasers, R&E Networks have a successful history of forming lasting public/private partnerships with commercial telecommunications carriers and other industry partners. These partnerships have resulted in the ability for higher-education institutions and other CAIs to cost-effectively access R&E Networks' shared infrastructure while increasing revenue and lowering administrative costs for these commercial partners. (This benefit was specifically recognized in the National Broadband Plan, p. 154).

It is also important to recognize that R&E Networks provide more than simply broadband connectivity. Our members also provide training, planning, and technical consultative services to communities that help them address their broadband needs in a cost-effective manner. In short, R&E Networks are an integral part of the nation's broadband ecosystem serving community anchor institutions.

While the BOC considers national policy changes to help facilitate broadband affordability, availability and adoption for our country, we believe national policies and programs should support the following principles:

1. The broadband technology must provide a high-quality connection – symmetrical, low latency, low jitter, and capable of handling bursting capabilities for flash events/usage;
2. The broadband technology must be scalable – capable of being upgraded easily – to support longer-term capacity needs;
3. The broadband technology must be cost-effective – the capital investment required should lead to lower recurring annual bandwidth charges over 3-5 years that can be

used to quantify the return on the investment; (Several Quilt members use a 3-5 year return on investment (ROI) on fiber builds to justify the capital investment.)

As the BOC considers policy changes to promote broadband, we encourage the BOC integrate the important role played by the R&E Network community in spurring broadband investment and fostering an environment that promotes broadband adoption.

II. Specific Questions.

Here are responses to some of the questions posed in the Request for Comments.³

2. How can the federal government best promote the coordination and use of federally-funded broadband assets?

The Quilt supports continued public investment in additional broadband infrastructure. The changes in the FCC's E-rate program to promote greater options for schools and libraries to invest in fiber and wireless services should help those institutions obtain high-quality last-mile connections. There are many other anchor institutions, however, who are not included in the E-rate program. Health care providers and health clinics, state government offices and agencies, community colleges, community centers, public safety are examples of anchor institutions that need to be connected to a high-capacity network. Some estimate that the BTOP program connected about 10% of all the anchor institutions nationwide, so there is much more work to be done to meet the National Broadband Plan goal #4 to connect all anchor institutions with gigabit capacity by the year 2020.

One benefit of the BTOP program is that the grant opportunity sparked local and statewide discussion, collaboration and partnerships that would have otherwise not occurred. The BOC should consider additional steps to facilitate such coordination and provide a pool of long-term funding (5-7 years funding) instead of the 3 years used for BTOP infrastructure projects. BTOP projects were focused on shovel-ready projects. The next round of broadband deployment will likely involve a bigger lift to get to harder-to-reach areas that may require greater lead time for planning and coordination.

Additional public investment should not restrict the type of providers or technologies that are eligible to participate. Federal government rules should encourage broad participation and provide opportunities for new program participants to invest in and lead broadband infrastructure projects. Public funding should also not dictate any particular technology. While fiber optic cables often provide the most long-term capacity, the expense of deploying fiber can be exorbitant in some of the most remote or high-cost areas. Wireless services – both licensed and unlicensed – can also provide affordable, high-bandwidth options in some regions.

³ Since R&E Networks do not serve residential consumers, these comments will focus more on the questions surrounding broadband deployment than on broadband adoption.

5. How can the federal government best collaborate with stakeholders (state, local, and tribal governments, philanthropic entities, industry, trade associations, consumer organizations, etc.) to promote broadband adoption and deployment?

The federal government should promote the coordination of federally-funded broadband projects to foster the creation of community broadband networks that offer shared, high-quality broadband connectivity to anchor institutions. The FCC has taken steps along this path by allowing recipients of E-rate funding to make their networks available to healthcare providers, and vice versa. More can be done to leverage these and other federal programs to share resources and deploy networks that use cost allocation to apportion the costs among the various federal funding programs in alignment with individual program goals. These shared networks will lead to reduced costs and more efficient use of the federal dollars.

Further, some states, are taking legislative steps to support community broadband deployment such as the easing of pole attachment requirements for aerial fiber or coordination with state departments of transportation to lay conduit during road improvement projects. Federal program should seek out and communicate on effective models of state and local policy and department coordination as well as highlighting policies that support such coordination.

The Federal Government can also work more closely with providers to capture and communicate the benefits that anchor institutions can achieve by owning, deploying and managing their own fiber networks. Quilt members have been strong supporters of the FCC's decision to allow schools and libraries and healthcare entities to choose to lease dark fiber or self-construct their own fiber networks as an option to consider in addition to leasing lit fiber from traditional providers. There is no reason that these benefits should be constrained to schools, libraries and health providers. Where no other cost-effective alternatives exist, R&E networks have opted to build fiber laterals to schools and libraries, allowing them to lower their rates and provide more affordable broadband services when aggregated on-net to their network infrastructure shared by other community anchor institutions.

Moreover, allowing anchor institutions the opportunity to lease and/or own their own fiber facilities creates marketplace pressure on traditional telecommunications service providers to offer affordable Ethernet service solutions where traditionally only TDM services such as T1s and T3s were offered. The availability of fiber with open interconnection helps to drive down the costs of last mile connections for other telecommunications providers, allowing them to expand their last mile services to surrounding residential and business consumers.

It has been suggested that not all anchor institutions have staff with the technical know-how to build and manage fiber networks. We wish to note that fiber ownership does not mean that anchor institutions must operate and manage the fiber on their own. Fiber operations and maintenance agreements with third-parties are commonplace and provide

the opportunity for individual organizations as well as consortia to evaluate and secure the most cost-effective bids for these services. Traditional service providers, which have these types of skills and competencies, would be able to bid on these types of services as well.

III. Conclusion

Serving the unique bandwidth requirements of higher education, K-12 schools, libraries and other community anchor institutions is the common mission of our country's Research and Education Networks. By charter, Research and Education Networks aim to accomplish many of the same broadband goals that are contained in the President's ConnectED Initiative and that are set forth in this Notice and Request for Comment. The need for high-capacity broadband services will become even more urgent in the next few years as states adopt initiatives that focus on more personalized digital learning, telemedicine, digital textbooks and national Common Core testing. By adopting the changes recommended above and providing our community anchor institutions with improved broadband capabilities, these institutions will be better positioned to fulfill their vital missions in the 21st century.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Jen Leasure". The signature is fluid and cursive, with a long horizontal stroke at the end.

Jen Leasure
President and CEO
The Quilt

June 10, 2015