Community anchor institutions need financial support so they can afford to purchase high-capacity broadband services.

by Gina Spade
The SHLB Broadband Action Plan includes the following:

Connecting Anchor Institutions: A Vision of Our Future

1 Broadband Needs Assessment and Planning for Community Anchor Institutions
2 Wi-Fi and Wireless Networking for Community Anchor Institutions
3 Partnerships, Sharing, and Community Anchor Institution Broadband
4 Promoting Competition for Community Anchor Institution Broadband Services
5 Broadband Infrastructure Policy and Community Anchor Institutions
6 Community Anchor Institutions Served by Government and Non-Profit Fiber Networks

7 **Broadband Subsidies for Community Anchor Institutions**

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Introduction

Studies show community anchor institutions (CAIs) often cannot afford to purchase the broadband capacity they need to serve their communities. While the E-rate and Rural Healthcare programs have been enormously helpful, many schools, libraries, and healthcare providers still report that they cannot purchase sufficient broadband because of the high cost or because robust broadband networks are not available. Many other anchor institutions—such as public media, public housing, community colleges, community centers, and other community-based organizations—do not receive federal subsidies for broadband connectivity and have even more trouble finding the resources to pay for high-quality broadband. Federal, state, and local governments need to address the connectivity challenges of tomorrow by providing additional financial resources and incentives to CAIs so that they can afford to purchase high-capacity broadband services.

Anchor Institutions Often Cannot Afford to Pay for the Broadband Services They Need

Broadband prices are often much higher than anchor institution can afford to pay. The Consortium for School Networking’s Third Annual E-rate and Infrastructure Survey finds, “Affordability continues to be the primary impediment for securing robust connectivity; this is particularly true for monthly service fees but also for initial capital costs.”1 EducationSuperHighway says, “Affordability is the number one barrier to meeting connectivity goals. Schools must dramatically increase the broadband they receive for the dollars they spend.”2 Public libraries report the same, with roughly 40 percent stating they cannot afford to increase bandwidth.3 Affordability concerns are especially high in rural areas. In the fall of 2015, Education Week ran a series of stories about the difficulties rural schools face in paying for broadband services. The stories summarized the plight of two school districts, one in New Mexico and the other in rural Mississippi:

● In Catron County, New Mexico, two school buildings in the towns of Quemado and Datil share a 22 Mbps connection and pay roughly $3,700 per month, when most U.S. schools can get similar speeds for roughly $550 per month.4

● In Calhoun County, Mississippi, the school district faces an even more expensive situation. Its 2,500 students share a 3 Mbps connection on a T1 copper line. This speed does not allow students to take state-mandated online tests or even conduct online research, yet the school district pays $9,275 each month.5

● Education Week’s Benjamin Herold concludes: “The E-rate is supposed to prevent against price-gouging. A provision known as the ‘lowest corresponding price rule’ says that telecoms can’t charge schools and libraries more than they ask comparable non-residential customers to pay. But in places like Catron County, determining such comparisons can be tricky, if not impossible. The FCC has also shown little ability to aggressively enforce its own rules.”6

In its 2014 E-rate modernization orders, the Federal Communications Commission (FCC) noted evidence of excessively high prices paid by schools. For instance, the FCC found that schools in Mahleur County, Oregon, were paying $1,000 per month for a single T-1 line (at 1.544 Mbps) and that the rate paid by schools in Iowa for a 45 Mbps connection varied between $210 and $3,375 per month.7
Rural health care clinics face similar problems. According to a group of health care policy experts:

[H]igher bandwidth and greater reliability comes with much higher prices in rural areas—as much as three times as expensive compared to urban areas—leading to a larger connectivity gap for more advanced medical services. Especially for telemedicine and other services that require rapid and reliable transmission of high volumes of clinical data, the broadband connectivity gap can be a considerable barrier to improving rural health.8

The American Library Association noted in public comments filed with the FCC before the E-rate modernization orders were released that:

Many, if not most, rural libraries pay disproportionately high costs for broadband services. For example, one library in Arizona’s Apache County pays more than $18,000 for 5 Mbps metro Ethernet service compared to a Maricopa County library that pays $11,000 for 100 Mbps service, annually. Similarly, an Idaho library near the Montana border is paying more than $1,300 each month for wireless 5 Mbps service. The only other choice for Internet is dial-up. In contrast, a suburban library near Boise pays $750 per month for 40 Mbps.9

Many anchor institutions cannot afford their share of the cost of broadband, even after receiving federal funds from programs like E-rate. This could be the result of insufficient local budgets or excessive pricing by broadband providers. Because there is little competition in rural areas, broadband providers may have little incentive to lower prices, especially because they realize the E-rate and Rural Healthcare programs will subsidize a portion of the cost.

Anchor institutions other than schools, libraries, and health clinics likely face similar challenges obtaining affordable, high-capacity broadband, but there is little data collected to document the scope of this challenge.

State Universal Service Solutions

Fortunately, some states have developed programs to address CAIs’ funding and broadband challenges. Below are a few examples:

- The State of Maine was one of the first to recognize the need for a subsidy program to support the costs of connecting Maine schools and libraries to the Internet. In 1999, Maine created the Maine Telecommunications Education Access Fund (MTEAF), which collects funds from a small (less than 1 percent) surcharge on intrastate telecommunications services. The MTEAF, together with financial support from the FCC’s E-rate program, pays for the Maine School and Library Network (MSLN) to provide Internet access to approximately 950 schools and libraries in Maine.10 The MSLN recently upgraded its network by connecting to the middle-mile Three-Ring Binder fiber project funded by the U.S. Department of Commerce’s Broadband Technology Opportunities Program (BTOP).

- The California Teleconnect Fund (CTF) subsidizes select communications services to qualifying K-12 schools, community colleges, libraries, hospitals, health clinics, and community-based organizations. The CTF supports a telehealth network connecting almost 300 rural sites to a network of medical service providers.11

- The State of Wisconsin also has an intrastate subsidy program called the Technology for Educational Achievement (TEACH) program.12 TEACH subsidizes equipment purchases, installation, and a portion of the monthly service costs for access to the BadgerNet Converged Network (BCN) for more than 900
K-12 schools, technical colleges, public libraries, and other public and private institutions statewide. BCN is a broadband voice, video, and data network operated by a consortium of telecommunications carriers. (Note: TEACH is separate from the relatively new Broadband Expansion Grant program first authorized in 2013, which funds the build-out of new broadband networks to underserved areas of the state.)

- In 2009, Missouri Governor Jeremiah (Jay) Nixon (D-MO) established MoBroadbandNow, a public-private initiative created to facilitate the integration of broadband and information technology into state and local economies. Three years later, MoBroadbandNow launched a Rural Health Broadband Initiative, to support rural hospitals in underserved cities and towns with last-mile connections, health record cloud storage, disaster recovery support, and professional communication in real time. Between December 2012 and July 2014, the Initiative provided 15 awards to hospitals with 50 patient beds or less, with a total project amount of $375,000. In return, hospitals receiving grants were required to provide MoBroadbandNow with information, including case studies, on how new or upgraded broadband connectivity contributed to quality of life in rural Missouri in regard to health care and its associated costs. Hospitals were asked to document how new or improved broadband speeds affected areas of health care delivery. Participating hospitals were also required to become members of the Missouri Telehealth Network, one of the nation’s first public-private partnerships in telemedicine.

- Soon after creation of the FCC’s E-rate program, the Oklahoma Corporation Commission established a “special Universal Service Fund” to provide financial support for schools, libraries, and telemedicine. Under new legislation passed in May 2016, all schools and libraries must apply for federal support and then use the Oklahoma Universal Service Fund (OK USF). The OK USF now covers the balance of the cost after federal E-rate funding. While earlier legislation focused on raising libraries’ connectivity to 1.5 Mbps, the more recent legislation set bandwidth goals based on national bandwidth standards adopted by the FCC. This allows for administrative adjustments as FCC standards change without having to introduce new legislation whenever those standards change.

Adapting to Anchor Institutions’ Broadband Needs

While some states and the federal government have programs that provide funding for anchor institutions, the demand for broadband services continues to grow and government programs need to be reformed to adapt to the changing marketplace. EducationSuperHighway estimates that the typical school district will need to triple its broadband capacity in the next three years. The FCC’s long-term target for schools, as recommended by the State Educational Technology Directors Association, is 1 Gbps Internet access per 1,000 users by 2018. The FCC also adopted the targets for libraries that were recommended by the American Library Association (ALA) – a minimum of 100 Mbps for libraries serving communities of less than 50,000 people and 1 Gbps for libraries serving larger communities.

In 2014, the FCC added $1.5 billion in annual support, indexed to inflation, bringing the E-rate program to about $4 billion per year. Recognizing the high costs of building additional broadband networks, the FCC also offered to award an additional 10 percent in E-rate funding to states that contribute their own funding to support 10 percent of the costs of special construction projects deploying fiber to schools and libraries. This decision could help make fiber connectivity more affordable, especially in rural areas.

But the FCC did not increase the percentage subsidy for rural schools and libraries that simply purchase service using existing networks. The FCC did allow schools and libraries to self-provision fiber—that is, construct, own, operate, and maintain their own network or a portion of a network—as long as they compare the costs of doing so to the costs of leased services. This option allowed the Calhoun County,
Mississippi, school district to seek bids for self-provisioning. That request for proposals led to the offer of fiber from existing carriers and, as of December 2015, Calhoun County schools now have access to fiber.

The FCC also required recipients of high-cost support to offer broadband service in response to a posted Description of Services Requested and Certification Form (FCC Form 470) to eligible schools and libraries at rates reasonably comparable to rates charged to schools and libraries in urban areas for similar services. The FCC directed its Wireline Competition Bureau to develop pricing benchmarks for these services, but so far, the benchmarks have not been released.

The FCC also reformed the Rural Health Care (RHC) program in 2012, but the reduction in the amount of subsidy from 85 percent for the RHC pilot program to 65 percent for the Healthcare Connect Fund (HCF) has thwarted the goals of the program. Partly for this reason, only a third of RHC funding has been committed for the HCF. Of the $236 million committed for funding year 2015 to date (through May 31, 2016), only $77 million was committed to HCF applicants. A significant number of rural health providers still have 5 Mbps or less, with many still using legacy copper. This is at least partially because healthcare providers struggle to raise the 35 percent match funding and have been unable to purchase necessary upgrades.

Government programs need to collect more detailed information about the levels of connectivity of anchor institutions and their needs for connectivity in the future. The FCC was able to increase funding for the E-rate program in part because two organizations (the SHLB Coalition and EducationSuperHighway) submitted studies estimating the costs of deploying fiber to school and libraries in rural areas. These studies made it clear that additional funding was necessary to ensure that rural schools and libraries have sufficient high-speed connectivity. Once additional data is collected about the prices of broadband access, policymakers will be in a better position to identify the amount of the subsidies necessary to ensure that anchor institutions can afford to purchase the broadband services they need.

Many anchor institutions other than schools, libraries, and health care providers do not receive federal government subsidies, yet they have significant needs for high-capacity broadband. Community colleges, community centers, public housing projects, public media, and other community-based organizations can provide valuable services for their communities, especially for low-income populations. State and local programs to make broadband service more affordable for these anchors would be especially helpful to the communities they serve.

**Network Sharing and Aggregation Are Valuable Methods of Reducing Prices and Costs**

In addition to providing direct financial subsidies to anchor institutions, policymakers can also reduce anchors’ connection costs by encouraging network sharing. As the National Broadband Plan recognized, the more users share a network, the lower the per-user costs will be. Some federal and state programs discourage network sharing by restricting programs to particular types of users, thereby creating “silos” that are inefficient and lead to duplicative investments. For instance, the E-rate program funds are restricted to “educational services” and “on-campus” use; whether these networks can or cannot be shared with other entities or uses is not clear.

There are several examples of shared networks that offer lower prices for anchor institutions. The nDanville Fiber project in Virginia began with an effort by the electric utility to deploy fiber to enhance its smart grid, and then expanded to schools, city offices, and public safety. nDanville then expanded again to serve commercial providers and residences, as well, offering more affordable services to all users.
The Corporation for Education Network Initiatives in California (CENIC), the research and education network in California, recently opened its network to carry library traffic. The BTOP-funded projects were designed to carry the traffic of all anchor institutions and have open interconnection so that their capacity can be shared with commercial customers. Aggregating demand on joint networks can lower prices to affordable levels for all users and thus can reduce the need for direct subsidies.

The Utah Education and Telehealth Network (UETN) offers a different model. UETN manages a large network that provides broadband capability to Utah schools, colleges, libraries, clinics, and hospitals. The network saves Utah institutions thousands of dollars per month by purchasing Internet access in bulk from multiple competing Internet service providers. UETN has also been instrumental in reducing broadband costs throughout the state. High-speed broadband costs have been reduced by at least 50 percent in most areas of Utah, largely due to UETN seeking bids for aggregated Internet services each year. Through this strategy, UETN has driven aggregated Internet access costs for the state down to less than $1/Mbps. As an added bonus – the underlying private sector broadband infrastructure that distributes the aggregated Internet access is almost entirely composed of scalable fiber.

**Recommendations**

As noted above, community anchor institutions face significant challenges when trying to acquire affordable broadband, especially when budgets are tight or shrinking. Below are some recommended actions that support the goal of affordable high-capacity broadband services for all anchor institutions:

- Policymakers at all levels of government should strive to collect better data on broadband deployment to, and adoption by, anchor institutions. This data can help identify broadband needs more precisely and target funds more efficiently. In particular, efforts should be made both to measure existing broadband capacity and to estimate the future broadband needs of anchor institutions, including the cost of both deployment and ongoing service.

- The FCC should lower the amount of funding required of applicants to the Healthcare Connect Fund from 35 percent down to 15 percent, the amount required for the Rural Health Care pilot program.

- The FCC can take more assertive action to enforce the “lowest corresponding price” rule in the E-rate program to make sure that broadband providers are not inflating their prices because of the E-rate discount.

- By the end of 2016, the FCC should develop national pricing benchmarks for broadband services to ensure that schools and libraries in high-cost areas are able to purchase broadband offerings at rates that are reasonably comparable to similar offerings to schools and libraries in urban areas.

- If they have not done so already, states should establish their own programs to support anchor institutions’ broadband expenses either to supplement the federal programs or to support anchor institutions that do not receive federal subsidies. Those states that have already adopted such programs should modernize them to ensure they are designed to promote high-speed broadband connectivity that CAIs will need for the future.

- States can reduce broadband expenditures by aggregating broadband traffic onto shared networks serving all government buildings and services, rather than encouraging separate and duplicative networks.
As in Utah, states can create or fund umbrella state entities to (1) procure, provision, and manage network facilities for anchor institutions, (2) offer technical assistance and other consulting services to anchor institutions to help them take advantage of the broadband services available to them, (3) help schools, libraries, and rural health care providers apply for federal universal service funding, and (4) obtain the best pricing via aggregated demand.

States should take advantage of the FCC’s offer to provide an additional 10 percent of E-rate funding by considering special construction projects to deploy high-speed fiber connections to schools and libraries.

Policymakers should encourage competition among broadband providers and should look favorably on new entrants into the broadband marketplace. More competition should result in more widespread broadband availability and lower prices.

Resources for Further Reading

FCC’s 2016 Broadband Progress Report
The FCC’s Congressionally-mandated report determining whether “advanced telecommunications capability” -- broadband -- is being deployed to all Americans in a “reasonable and timely fashion.” If the answer is negative, the Act requires the FCC to “take immediate action” to speed deployment. (January 29, 2016) http://transition.fcc.gov/Daily_Releases/Daily_Business/2016/db0129/FCC-16-6A1.pdf

FCC’s E-rate First Modernization Order
The FCC took major steps to modernize and streamline the E-rate program and focused on expanding funding for Wi-Fi networks in elementary and secondary schools and libraries across America. (July 11, 2014) https://apps.fcc.gov/edocs_public/attachmatch/FCC-14-99A1.pdf

FCC’s E-rate Second Modernization Order
The FCC aimed to ensure that all schools and libraries have access to high-speed connectivity by increasing the E-rate program spending cap to adequately support that connectivity. (December 11, 2014) https://apps.fcc.gov/edocs_public/attachmatch/FCC-14-189A1.pdf

FCC’s Rural Health Care Order

Connecting America: The National Broadband Plan

Additional Coordination and Performance Measurement Needed for High-Speed Internet Access Programs on Tribal Lands

2015 State of the States
Education Superhighway report on the state of broadband connectivity in America’s public schools. (November 2015) http://stateofthestates.educationsuperhighway.org/

Broadband Quality in Public Libraries
American Library Association report on public library technology infrastructure and how it is used to enable digital inclusion in communities nationwide. (April 2015) http://www.ala.org/offices/sites/ala.org.offices/files/content/Speed_Test_FINAL_0.pdf

3d Annual E-rate and Infrastructure Survey
Consortium for School Networking asked K-12 school leaders and technology directors from around America about the state of connectivity in their districts and the impact they’ve felt from changes to the E-rate program. (2015) http://www.cosn.org/Infrastructure2015

Anchor Institutions: An Interpretive Review Essay

Progress on National Broadband Plan Goals
The Benton Foundation tracks implementation of the National Broadband Plan. https://www.benton.org/initiatives/national_broadband_plan/agency/5016

Impact Aid
Department of Education explainer on assistance to local school districts with concentrations of children residing on Indian lands. http://www2.ed.gov/about/offices/list/oese/impactaid/watisia.html#b
Endnotes


6 Herold, “‘They Rake Us Over the Coals.’”


8 Mohit Kaushal, Kavita Patel, Margaret Darling, Kate Samuels, and Mark McClellan, “Closing The Rural Health Connectivity Gap: How Broadband Funding Can Better Improve Care,” Health Affairs (April 1, 2015) http://healthaffairs.org/blog/2015/04/01/closing-the-rural-health-connectivity-gap-how-broadband-funding-can-better-improve-care/


11 The CTF program is run by the California Public Utilities Commission and is designed to encourage adoption of advanced modern communications technologies and support the goal of universal access for all Californians. Using a surcharge on end users’ intrastate phone bills, the CTF disburses more than $100 million annually to telecommunication and Internet service providers, reimbursing them for offering a 50 percent discount on their services to organizations that provide Internet access directly or offer services that would help them have access to the same opportunities and information. The discount is applied after federal funding so it effectively cuts the cost for schools, libraries and health care facilities in half. See http://www.cpuc.ca.gov/ctf


17 “Bill signed modernizing Oklahoma Universal Service Fund,” The Daily Ardmoreite (May 12, 2016).

18 E-rate First Modernization Order at ¶34.


20 Additional information about the value of aggregation and network sharing is contained in “How Partnerships, Aggregation, and Coordination Can Improve Community Anchor Institution Broadband” in this Action Plan.


OPEN, AFFORDABLE, HIGH-CAPACITY BROADBAND for COMMUNITY ANCHOR INSTITUTIONS IS AN ATTAINABLE GOAL, BUT ONLY IF WE REACH TOGETHER.

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Share on social media about SHLB’s Broadband Action Plan and the Grow2Gig+ Campaign.
Tweet @SHLBCoalition and follow using #Grow2Gig.
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LEARN
Stay informed and learn about the best broadband policies and examples of how to improve anchor institution connectivity by reading and contributing to SHLB Coalition’s Action Plan web portal.

ADVOCATE
Reach out to policymakers at the local, state, and federal level and help us fight for digital equity.

“Grow2Gig+: Anchors Advance Communities” is the SHLB Coalition campaign to make gigabit speeds for anchor institutions a national priority. “Connecting Anchor Institutions: A Broadband Action Plan” is a crucial component of the Grow2Gig+ campaign, which also includes an interactive website that provides a hub for discussion, updates, and information to guide these national efforts. Gigabit broadband for community anchor institutions is an attainable goal, but only if we reach together. Help us Grow2Gig+! www.shlb.org/action-plan
The **Schools, Health & Libraries Broadband (SHLB) Coalition** is a 501(c)(3) advocacy organization that supports research and public policies that promote open, affordable, high-capacity broadband connectivity for anchor institutions and their communities. Founded in 2009 in Washington, DC, the SHLB Coalition receives financial support from its non-profit and corporate members and from the Bill & Melinda Gates Foundation. For more information, visit [www.shlb.org/](http://www.shlb.org/).

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