How High-Speed Fiber Broadband Benefits Public Education

Communities can help bridge the homework gap and digital divide by building their broadband networks.

By Chase Gregory / *NSG Consulting*

The COVID-19 pandemic spotlighted two major issues with the current U.S. public education system: A significant digital divide is causing many students to fall behind because they do not have proper internet access, and many schools and communities do not have enough resources to address that problem effectively.

Despite these issues, online learning continues to be incorporated into lesson plans, even when schools have returned to in-person classes. This means that unless many students' lack of internet access is addressed, the digital divide will continue to grow.

Fortunately, next-generation internet services provided by local governments, utilities, electric co-ops and tribal governments offer cost-effective, reliable alternatives to traditional, for-profit internet service providers. When a familiar local entity provides high-speed internet service, it provides an opportunity for people to "shop local" and support a sense of community for a necessity that significant corporations have chiefly supplied.

EDUCATION IMPACTS OF DIGITAL DIVIDE

According to a 2021 report by Boston Consulting Group, Common Sense Media, and the Southern Education Foundation, as many as 12 million K–12 public school students across the country are caught in the digital divide, lacking adequate internet connectivity or proper devices to participate in online education.

To understand what that means, consider a Michigan State University study (https://tinyurl.com/98j38a4k), which found that middle and high school students with faster, more reliable home internet had an average grade point average (GPA) of 3.18. In contrast, those with no internet access had a GPA of 2.81. Although that's only a difference of about 0.4, it is more significant than it sounds.

A University of Miami study found that a one-point increase in high school GPA raises annual earnings by around 12 percent for men and 14 percent for women. By those numbers, a GPA that's 0.4 points lower could lead to a loss in annual adulthood earnings of about 5 percent, which the Boston Consulting Group study estimated would cause a $22-$33 billion annual gross domestic product (GDP) loss and result in lower tax contributions and higher government expenditures.

BROADBAND'S BENEFITS FOR EDUCATION

Incorporating broadband infrastructure as a service provided by local governments or public utilities means everyone can access fast, reliable internet at an affordable rate. This means that more students will be able to participate in online classes in general and will be able to:

- access after-school online education modules

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- handle homework assignments that require internet access
- access necessary research for more significant projects
- explore topics of interest on their own time
- learn the computer skills necessary to secure a job in the future.

Students who may still lack the necessary devices to connect to a fiber broadband network can take advantage of its benefits in other ways, such as faster access to computers at public libraries.

GETTING STARTED

Access to network professionals who offer turnkey services will help expedite the planning and implementation of a fiber backbone for a city.

Once a municipality, utility or co-op has decided to build out its broadband infrastructure, it is time to get funding in place for the project. The federal government has dedicated funding for broadband through legislation, including the Coronavirus Aid, Relief, and Economic Security (CARES) Act of 2020, the American Rescue Plan Act (ARPA) of 2021, and the Infrastructure Investment and Jobs Act of 2021.

This funding is prioritized to help unserved and underserved areas and areas lacking affordable or reliable broadband. It supports connecting anchor institutions such as schools, libraries and higher-education organizations, among other community-support agencies, to address the educational digital divide. ❖

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CHESAPEAKE, VIRGINIA, BEGINS BUILDING COMMUNITY FIBER NETWORK

The City of Chesapeake, Virginia, started building out the Chesapeake Connects fiber network in September. It's partner in the project is Magellan, a Denver-based firm offering broadband and telecom planning, deployment and management services, from project inception and engineering to implementation and continuing operations. Over the past three years, the city and Magellan have partnered to plan and design the network, which spans 160 miles and connects more than 200 local government sites. A few factors drove the city to undertake the project, including that its growing capacity needs could not be satisfied by current network solutions that were underperforming and costly. The city led a master planning process to aggregate schools, libraries and all municipality, utility, public safety, traffic and behavioral health sites into a single network that will operate as Chesapeake Connects, a City of Chesapeake enterprise.

Magellan will provide turnkey project management, construction management and construction inspection services, overseeing daily construction activities as the owner's representative for the city while buildout occurs over the next 24 to 30 months. The city will initially deploy the network internally to connect its facilities and sites. Chesapeake eventually plans to work with service providers and enable them to access the web to complete last-mile distribution projects in areas where unserved and underserved households are located.