

# Rural Communities Launch Publicly Owned Fiber Networks

Rural communities are deploying fiber as a way to future-proof and meet the long-term communications needs of homes, businesses, community anchor institutions and government agencies.

By Michael A. Solitro / *Sertex Broadband Solutions*

**H**igh-speed internet is now the heart of the economy. According to the Bureau of Economic Analysis, the digital economy is growing nearly three times as fast as the overall economy, at about 10 percent per year.

Today, a 100/50 Mbps connection adequately allows videoconferencing, surfing, streaming and gaming with multiple devices. Projections anticipate 2 gigabit upload and download speed requirements by 2030. Yet most of the nonmetropolitan United States still limps along without a wired connection capable of meeting the FCC's minimum 25 Mbps suggested speed. Without adequate broadband services, rural areas can't participate in one of the fastest growing sectors of the economy.

Cable companies claim to offer rates up to a gigabit per second, but hundreds of users can share these connections. When many users connect at the same time, the true rate per home can be as low as 4 Mbps. Cable was designed for asymmetric data speeds with higher downstream and lower upstream rates. With 45 million people working from home in the pandemic, this often-oversubscribed data transmission system has proven to be weak and inadequate.

Enter fiber broadband. Fiber is a future-proof technology that can easily meet the communications needs of homes, businesses, community anchor institutions and government agencies for decades. The capacity of a single strand of fiber optic cable is thousands of

times the capacity of any other wired medium. Without amplification, signals carry for miles with minimal signal loss, and fiber will not corrode on exposure to weather and other environmental conditions. This means lower maintenance costs and a useful lifetime of decades – a huge economic advantage.

But only a third of U.S. homes have access to the speed and reliability of fiber optic networks. Even in the densely populated Northeast, where several states are nearly 100 percent connected, many in small towns still struggle with DSL and underperforming, expensive cable connections. Cable may soon get even more costly in areas where true high-speed broadband is available. This year, Comcast is planning to begin charging its home internet customers in the Northeast and other areas for data usage over 1.2TB per month. And Comcast's competitors can't be far behind.

Recognizing broadband as an essential utility like roads and electricity, and tired of waiting for telecommunications giants to deliver promised high-speed internet services, a growing number of rural towns in the Northeast are taking back control by building publicly owned, last-mile fiber broadband networks in their communities.

With gigabit fiber networks, these remote communities can compete digitally with big cities and affluent suburbs. By building affordable, publicly owned, fiber-to-the-premises (FTTP) networks, municipalities can take



Construction has started on Block Island's \$8 million FTTP network that will provide reliable gigabit fiber broadband to every home and business on the island and help boost the local economy.

control of their telecommunications infrastructure and open the doors for growth.

### **PUBLIC-PRIVATE COLLABORATIONS GIVE COMMUNITIES CONTROL**

The challenge in bringing reliable broadband to rural areas is buildout costs. When small populations are spread across large geographic areas, hundreds of miles of network infrastructure must be built, often through remote and rugged terrain. Infrastructure installation is expensive, and telecommunications giants are unwilling to invest in sparsely populated areas with limited opportunity for profit.

To ensure affordability, a public-private partnership between a local government and private providers can leverage a municipality's ability to finance capital projects at low long-term interest rates. For taxpayers, access to public bonding means the cost for a publicly owned fiber network can be extremely affordable. By owning the networks, communities manage expensive – and often uncontrolled – ISP relationships and create infrastructure that pays for itself. In addition, using networks to deliver advanced services can even generate revenue.

In a public-private scenario, towns have a low-risk way to chart their

broadband future. Municipalities finance the fiber infrastructure and manage rights of way – things governments are familiar with doing. A community's financial investment is limited to network buildout and excludes the service side.

The private entity builds the infrastructure, maintains the fiber and equipment, and runs the business and operational end of the network. It handles sales and marketing, customer service, technology updates and customer demands – functions private entities do well. For their investment, private network operators and ISP partners benefit by quickly accessing new markets without building infrastructure at their own expense.

Just as a municipality would fund any infrastructure investment, local governments can access capital markets and use grants or low-cost public financing methods, including municipal or revenue bonds, to fund network development. No private entity has access to funding with similar rates and terms.

In New Shoreham, Rhode Island, located 12 miles offshore on isolated Block Island, residents and businesses have been struggling for years with underperforming satellite and DSL service. A tourist community with just 1,000 year-round residents and a seasonal population of up to 20,000,

New Shoreham recently committed to building an \$8 million FTTP network that will provide gigabit high-speed internet along with phone service to every home and business on the island.

The town is creating this network in partnership with Sertex Broadband Solutions, a provider of fiber optic infrastructure deployment services to unserved and underserved areas. The municipality will own all passive and active electronic elements of the island network, including conduit, underground and aerial fiber cabling and drops to about 1,700 properties. Sertex will engineer, furnish and install all conduit, cabling, drops and the necessary electronics to deliver the service. Once the network is operating, Sertex and the network's ISP will handle operations, maintenance and customer service.

The backbone network and drops are the largest capital cost for the project. The town has committed to installing all the drops while crews are on-site during the construction process. This commitment is financially efficient and will help promote market penetration. Once a network is operational, the typical cost to run an aerial service drop to a suburban home is approximately \$700 with an added \$370 for electronics, which totals \$1,070 for an installation just 250 feet from the right of way. (Drops in remote



Over the past four years, as many as 23 small towns in the Berkshires of western Massachusetts have chosen to construct more than 1,600 miles of FTTP networks, connecting some 17,000 rural customers to gigabit-speed internet service.

areas and underground installations come at a much higher price.)

By running drops to every premises during network construction, New Shoreham is picking up the installation costs for individual customers, an investment that should incentivize any hesitant property owners to join the network. The town is financing the islandwide buildout using 2 percent municipal bonds with 40-year terms. The town will recover many of the network's costs for construction, maintenance and operations through subscriber fees, which, combined, are less than the price residents are currently paying for poor internet and phone service.

By financing only fiber cabling and conduit, the town can secure loans with 40-year terms. If it tried to finance cabling and electronics, terms would be far shorter because of the limited life span of the equipment.

The public-private model gives local governments choice and influence over broadband decision-making. More reliable, more responsive, more affordable networks replace existing, achingly slow, monopoly-controlled services.

## EMPOWERING RURAL ECONOMIES

Reliable, high-speed internet access delivered by municipally owned fiber networks improves the productivity of existing businesses, allows telecommuting, creates new jobs and attracts new businesses to remote communities. It incentivizes younger people to stay in a community, draws new residents, encourages tourism, and strengthens real estate markets.

High-speed communications networks can also promote social good and human services by simplifying access to health care, enhancing public

safety services, improving schools, enhancing the offerings of libraries, and allowing remote enrollment in higher education and participation in the arts. Because these networks are locally owned and operated, the millions of dollars in savings they generate can be reinvested in the local economy.

Over the past four years, as many as 23 small towns in the Berkshire region of western Massachusetts have chosen to construct more than 1,600 miles of FTTP networks that to date have connected some 17,000 rural customers to gigabit-speed internet service. These communities and many others throughout the country are experiencing:

- **Improved real estate values:** When people look for communities to move into, the presence and speed of internet connectivity is an important factor. Research by the Fiber Broadband Association found that having a fiber broadband connection increases property values by 3.1 percent, and that private properties with 1 Gbps connections sell for an average of 7 percent more than those with 25 Mbps or lower.
- **Residential growth:** FTTP availability attracts people looking to move from urban areas and keeps existing residents in town, increasing a community's tax base. Often newcomers are young families that use local schools and support local businesses and institutions. The presence of a gigabit fiber network can be the reason people choose one community over another.
- **Business growth:** High-speed internet access allows local businesses to expand, invest and seek new opportunities by connecting them regionally, nationally and globally. Some connected towns are even recruiting corporations to relocate or add facilities in their communities.
- **Job creation:** As existing businesses grow and new businesses are created thanks to FTTP access, new jobs are created. Many fields are now knowledge-based rather

than location-based, and employees can choose to live anywhere that has a reliable high-speed connection for videoconferencing and accessing information.

- **Health care benefits:** FTTP networks provide greater access to health care without traveling long distances. Telemedicine can improve health outcomes for people inclined to delay medical visits if they must travel to see a doctor. Communities with healthier populations enjoy stronger local economies because the economic burden of health care costs is reduced. And communities with younger populations naturally have lower health care demands.
- **New income sources:** There are a few ways FTTP networks can generate revenue. For example, in a tourist location such as Block Island, the town could set up a commercial Wi-Fi network that all visitors can access for free. Local

High-speed communications networks promote social good by simplifying access to health care, enhancing public safety services, improving schools, enhancing the offerings of libraries, and allowing remote enrollment in higher education and participation in the arts.

businesses can advertise on the network, and the town can collect some or all the advertising revenues. Private, subscription-based Wi-Fi networks in hotels, marinas and other closed communities could also be a source of new income.

FTTP networks can literally transform both the character and the economic status of stagnant rural

communities. With public-private models, the cost of entry is no longer a barrier, and doing nothing is no longer an option. ❖

*Michael A. Solitro is the founder and CEO of Sertex Broadband Solutions, an expert in fiber optic infrastructure deployment in unserved and underserved areas in the Northeast.*



INTEGRITY INTO EVERYTHING  
**BIG PICTURE.**  
SMALL DETAIL.

**BROADBAND**

Finley pushes the boundaries of broadband network design and capabilities to uncover new product and service opportunities to optimize costs and drive revenue growth for our customers. We will find the optimal way to bring high-speed broadband to your community, constituents or customers.

**(800) 225-9716 | FINLEYUSA.COM**

**FINLEY**