

# Topics in Community Broadband

## Q&A with Cheri Beranek, CEO of Clearfield

**C**learfield's fiber management equipment is used in many community broadband networks, and the company is known for working closely with small deployers – municipalities, telcos and others – to solve specific problems. Recently, **BROADBAND COMMUNITIES** had an opportunity to speak with Cheri Beranek, CEO of Clearfield, about current challenges and strategies for municipal fiber deployments. Following are highlights of that discussion.

**BROADBAND COMMUNITIES:** *What's driving the current boom in municipal fiber deployments?*

**CHERI BERANEK:** We're seeing broad interest from municipalities that are not getting the service they believe their communities deserve – and require – for quality of life or economic development that will let them compete in national and global markets.

**BBC:** *What challenges do they face?*

**CB:** There are many obstacles keeping them from making the leap forward from the “kicking the tires” stage. Two examples are financial obligations and technical competency. Even broadband service providers that are currently operating telephone or cable networks are not experts in this climate, and novices in the marketplace are definitely looking for help and assistance. They're being cautious; they're not just jumping in with both feet.

Clearfield actually views municipalities as similar to telephone companies, especially if they already operate utility infrastructure. Those that do are the best structured to build and operate networks.

**BBC:** *What does Clearfield offer in the way of “help and assistance”?*

**CB:** Clearfield College, which we offer at no cost, is a technical program run by some of our application engineers, who have built networks for telcos, cable companies or the military.

We also have a program in which we sit down with municipalities and draw a small subdivision – say 288 homes – and show them how we would build an optimal network. We pay engineering firms to provide models as proofs of concept for the municipalities to work through viability and feasibility studies. Then they can work with consultants to develop more specific plans and learn what they're doing without having to put out a lot of money up front.

**BBC:** *How does a municipal build differ from a telco build?*

**CB:** Really, building a network isn't very different for a municipality and a private enterprise. Municipalities sometimes get caught up in the idea of having to treat everyone equally, but we encourage them to think about it the way a private business would, by proving it out first. They've received the idea of stepping stones really well. They're much more viable entities if they can take it slow and prove it out. In fact, as long as a municipality owns the rights of way and controls the permitting process, it has an inherent advantage.

The difficulty isn't so much how to build the network but how to operate it with all the nuances – and that information is more difficult for us to offer.

**BBC:** *Is that why so many municipalities are exploring public-private partnerships?*

**CB:** Yes. The limitation for private carriers is that there's only so much capex to

go around, so they will deploy networks in the most profitable communities. But if the localities can do the financing, manage the rights of way and permitting, and then open up the networks for private operation, we believe that can be the best of both worlds.

We work with national carriers, too, and we see that they want to dictate the terms of these partnerships. Municipalities have to stick to their guns a little bit. When a private carrier wants to be the sole provider on a municipal network, that's the line that needs to be defined. That's the challenge in front of us.

There will be different models for partnerships, but there still have to be general standards. For example, Seattle did a study about whether it should have a municipally funded network and

came back with a recommendation of "No" because the municipality would not get the take rates to be viable. ... Sometimes a municipal network is appropriate, and sometimes it's not. There has to be a responsible assessment of how these networks can be profitable.

**BBC:** *How can municipalities encourage competition on their networks?*

**CB:** Personally, I believe that putting separate fibers in the same trench is the best model because it allows providers to have control over their planning. The most expensive part of the build is connecting homes ... but even there, a city can lay 1-inch conduit in the ground all the way to the premises and allow multiple providers to use it. Service providers can lay pushable fiber or additional microduct inside the conduit to leverage the city's deployment.

If you can separate the network builder from the operator, that expands the pool of operators beyond utility providers. Cities are good at building infrastructure and at tax financing – those are advantages they can leverage. By laying separate fibers, they avoid the other challenges of open access. Providers don't have to share fiber, and they have autonomy.

The biggest challenge is with video service, because without scale it's difficult to be competitive. ... There are two ways to deal with it: Either be a renegade and work with over-the-top video, or be transparent about programming costs and help create a consumer backlash. A lot of municipal providers find they can't compete without a bundle that includes video.

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## How FTTH Helps Communities

*The FCC asked, in a recent inquiry, whether communities that have wireless access of 10 Mbps/1 Mbps should be considered well-served in terms of broadband. Though this new approach could “solve” the rural broadband problem at the stroke of a pen, communities have not responded positively. The town of Leverett, Massachusetts, submitted the following comment to the FCC (edited slightly):*

Leverett is a rural community in Western Massachusetts, with a population of nearly 2,000 in about 800 households in 22.7 square miles, approximately 88 persons per square mile.

The town owns LeverettNet, a last-mile, gigabit, fiber-to-the-home network it constructed to connect all residents to the internet. The town contracts with third parties to provide network operator, internet service provider and maintenance services, the costs of which are borne by subscribers.

Prior to construction of LeverettNet, Leverett residents had only limited internet access via satellite and DSL, both of which impose severe limits on connection capacity and speed. These limits constituted a serious impediment to public safety – police, fire, and highway – as well as to the town school and library. LeverettNet greatly enhanced public safety and

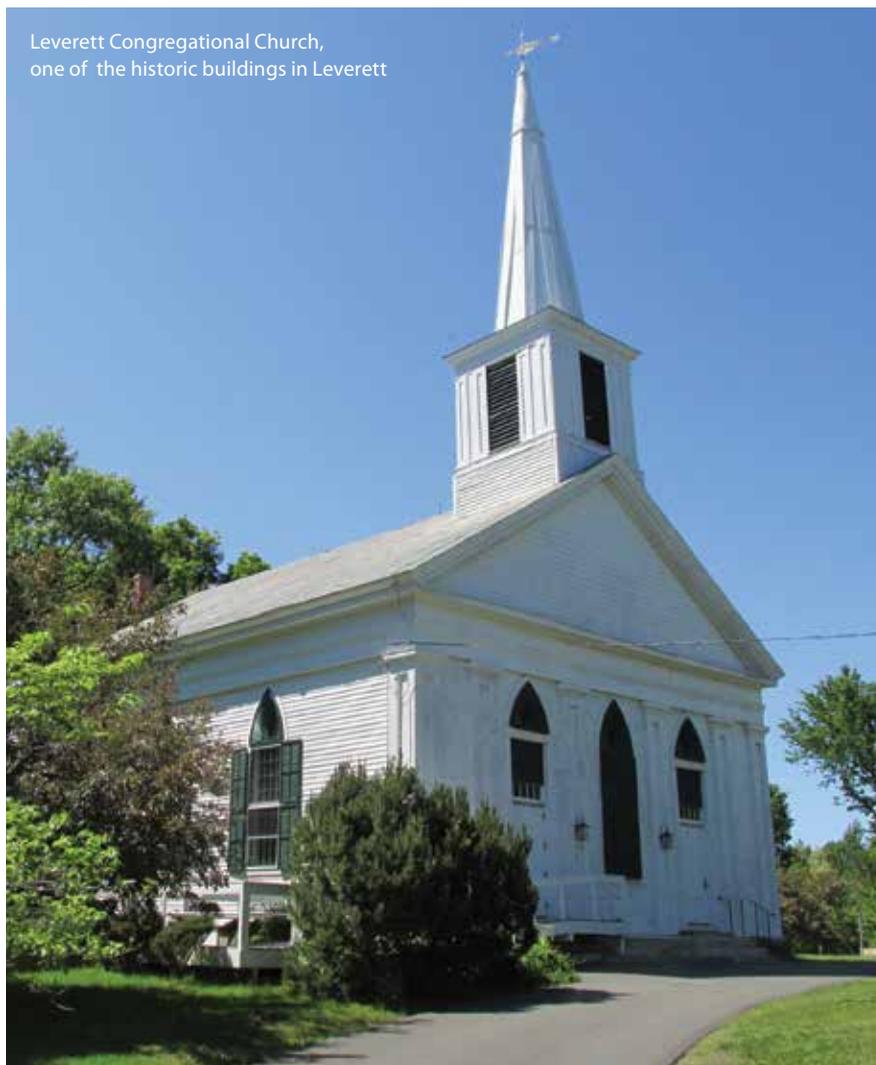
educational operations.

The availability of LeverettNet also improved the business climate in town, allowing existing businesses to expand and new businesses to open. Further, the availability of high-speed broadband improved real estate and rental markets. In short, the deployment of advanced telecommunications technology through a public-private broadband partnership transformed the Leverett community.

“Advanced telecommunications” – as the statutory definition states – “enables users to originate and receive high-quality voice, data, graphics, and video telecommunications.” In our experience, the emphasis on “originate and receive” has special importance for businesses – home-based and telecommuting – that work with large data, graphics, and video transmissions. Mobile access, especially as subject to throttling of download speed, limited upload speed and data caps, cannot provide sufficient internet access to sustain information entrepreneurs.

A telecommunications system deserving the label “advanced” provides symmetrical speeds so that uploads and downloads receive equal treatment. A system that prioritizes download, though it may currently suffice for consumers of information, will not serve those who *produce* information. Information producers working in Leverett, including CGI services, authors, software engineers, graphic artists, etc., require *symmetrical* high-speed internet access. Indeed, LeverettNet makes it possible for these entrepreneurs to work in Leverett at all.

In short, an equation of mobile and fixed telecommunication technologies fails to recognize needs of information producers and restricts future development of information work and businesses. Encouragement and support of network technologies adequate to the needs of information producers have special significance in ensuring economic and demographic viability of rural areas like Leverett, where “brick-and mortar” businesses cannot be sustained.



Leverett Congregational Church, one of the historic buildings in Leverett

Photo credit: John Phelan

## Fort Morgan, Colorado, Launches Fiber Project

“The city government has always operated on exceptional customer service,” says Brent Nation, water resources and utilities director for Fort Morgan, a city of 11,000 in northeastern Colorado. That’s why the city council didn’t like what it heard when it began renegotiating its cable franchise agreement in 2015. Citizens were unhappy – and vocal – about the poor quality of the service and the low internet speeds that incumbent providers offered.

Fortunately, Fort Morgan had options. An institutional fiber network was already in place, started about 15 years ago under a state program called the Beanpole Project. By 2015, the network reached all the city offices and utility substations, providing gigabit speeds internally. In addition, the city was one of the first to vote to exempt itself from Colorado Senate Bill 152, a 2005 law that prevents municipalities from creating their own broadband networks; that vote authorized it to take matters into its own hands. It had even studied the feasibility of providing broadband to residents.

During the cable franchise negotiations, the city council heard about the fiber-to-the-home network that Longmont, a larger city about 80 miles away, had installed, and dispatched Nation to meet with and learn from the Longmont team. After visiting Longmont, attending trade shows and researching fiber optics, Nation recommended that Fort Morgan build a citywide fiber-to-the-home network. The city engaged Manweiler Telecom to begin designing the system in 2016, and in 2017, it budgeted \$2.3 million for the backbone phase of the project, which is now complete.

However, unlike Longmont, which operates its own network, Fort Morgan preferred to contract out to a private provider. While it built the fiber backbone, it issued an RFI looking for a private partner. Its preferred model is similar to Huntsville’s (see p. 40), in which the city owns the infrastructure up to the property lines, and the private partner installs the drop cables and provides services. However, Fort Morgan expects to have only a single private partner under a time-limited contract.

### A FAST-MOVING PROJECT

Six companies responded to the RFI, and in August, the city announced it would begin negotiations with Allo Communications, a company that provides FTTH services in Nebraska. Negotiations are still ongoing. If the city can’t reach a satisfactory arrangement with Allo or another company, it is willing to become the network operator and ISP, Nation says.

Like Huntsville, Fort Morgan plans to allocate funds from its debt-free electric utility to pay for the entire network (or whatever portion of it is not funded by the private partner). The city council could opt at a later date to pay back the electric utility, but because the network is used primarily to manage the electric grid, it isn’t required to do that.

Once Fort Morgan has a contract with a service provider, it will work with the partner to promote the network to

potential customers. That shouldn’t be a hard sell. Businesses, especially, “are just dying to get hooked up to something faster than what they have right now,” Nation says. The city will prioritize connecting business districts, to the extent that that makes sense from a construction standpoint. However, Nation points out that many businesses are as concerned about the connectivity their employees can get at home as they are about the connectivity to their offices. “So many people want to telecommute,” he says.

The city hopes to have its first customers online in six to eight months. “I’m getting very excited about this as we start to see the finish line,” Nation says. “I hope it will go along as smoothly as it has so far.” ❖

The advertisement features the COS SYSTEMS logo at the top. Below it, the text reads "COS Service Zones" and "Know Where Your Customers Are Before You Build Your Networks". The main content is titled "Demand Aggregation - The Complete Solution" and lists seven benefits with checkmarks: "Divide your area into competing fiberhoods", "Survey the community", "Set fiberhood take-rate targets", "Sign up customers before build-out", "Build where take-rate targets are met", "Deploy incrementally based on ROI", and "Real-time data from YOUR customers". On the right side, there are two circular callouts: "27% TAKE RATE" and "54% TAKE RATE". At the bottom, it provides the website "www.cossystems.com", the phone number "800-562-1730", and a "TOP 100" award badge.