

Broadband's Impact In Five Communities

Early results show that high-speed broadband has positive impacts for communities in rural Minnesota.

By Ann Treacy / *Treacy Information Services* and Bill Coleman / *Community Technology Advisors*

This article is excerpted from a study commissioned by Blandin Foundation, which supports broadband and other rural development projects in Minnesota. The full study, which includes detailed calculations of community investments and benefits, can be read at www.mnbroadbandcasestudies.org.

We were asked to study the impacts of broadband in five counties that received funding from Blandin Foundation. All the counties became familiar with Blandin's Minnesota Intelligent Rural Communities (MIRC) model, a holistic, broadband-based economic development strategy that embraces five community indicators of success: broadband, marketing and advocacy, knowledge workers, innovation and digital inclusion. Four communities used the model in planning sessions.

The ultimate goal of the MIRC model is to have a strong balance in each strategic area, and most communities deployed activities addressing each indicator. Part of the process is recognizing at the onset where a community is strong, deciding where it needs to become strong and working to make that happen.

We found that broadband is essential to a thriving community, but it is not a panacea, and it won't work in a vacuum. The featured communities have broadband, but they are successful because they also have strategies for using it.

STUDY METHODS AND FINDINGS

We used established formulas to calculate the economic impact of public investment in each

community. Though the numbers are imprecise, we believe they are representative. In three counties, the annual collective economic benefit for residents surpassed the public/community investment in one year. In one county, the benefit surpassed investment in slightly more than a year, and in the last county, it will take six years, but benefits will still surpass investment.

We gathered data for each county but found it difficult to track the impact of better broadband because although the impact may be immediate, the tools that measure impact are not. Often the most recent data available dates from 2015 or 2016, before most of the networks reached a critical mass. But one county has had broadband long enough to measure the impact, and that county has seen an increase in median income and population growth.

We also spoke to representatives from each community to gather firsthand accounts of the value of broadband investments. People mentioned that schools were improving and families were moving to the area. Signs of thriving were evident.

Though we included hard numbers whenever possible, we learned that value is in the eye of the user. For one, it means turning a \$400,000 business into \$4 million business. For

someone else, it means helping two kids with math homework at the same time. For others, it means keeping the local newspaper printing.

Following are highlights from our community interviews in the five counties.

BELTRAMI COUNTY

Bemidji Leads, a group of engaged and invested community members, has met monthly for 15 years. Members meet to create a vision of what they want their community to be, and then they work to make it happen. As Jim Benson, a former president of Bemidji State University, says, “They plan from the future.” They are intentional and holistic as well as specific. Broadband is a key component of their plan.

Bemidji is home to Paul Bunyan Communications, a member-owned cooperative created in the 1950s to bring infrastructure to its members. Today, Paul Bunyan’s purpose remains meeting the telecommunications needs of its owner-members. To this end, Paul Bunyan borrowed \$100 million in federal funds to bring the GigaZone, a world-class fiber-to-the-home network, to its members. Besides investing in infrastructure, Paul Bunyan has been an active partner in community efforts to drive broadband adoption and sophistication of use.

The GigaZone is more than connectivity; it’s a branding message that has caught on both for Paul Bunyan and the community. Existing customers want to convert to the GigaZone, and new customers ask for it by name; it makes Beltrami County a more desirable place to live. Communities throughout Minnesota are trying to woo the GigaZone into their areas.

Another key asset for promoting the use of broadband and technology is the LaunchPad, the local entrepreneur incubator that offers daily and monthly co-working space and ongoing programming, including training, mentoring, networking and community planning.

We met with representatives from Beltrami County at the LaunchPad. In the shadow of Paul Bunyan, they have built a cool technology buzz that has

matured enough to see some results. Their intentionality is striking both in the community’s determination to “plan from the future” and in the provider’s unique marketing of the GigaZone service.

- Bemidji and Beltrami County are booming. They are a finalist for Best Minnesota Town of 2017. Enrollment at Bemidji State University (BSU) is up for the third year in a row. Twin Cities Business featured Bemidji in its February 2017 edition with a 10-page story, “Bemidji 2.0,” which called Bemidji “a high-speed, regional center of enterprise.”
- Mike Stittsworth bought his family’s butcher shop, Stittsworth Meats. In 2014, he posted a Facebook status promising a \$200 voucher to the person who shared the message the most times. That post went viral. He now has 63,000 Facebook fans, and customers start arriving 15 minutes after he posts a special. People take road trips to visit him; 57 percent of his customers are new. And he doesn’t even sell online – yet. (Refrigerated delivery is the hiccup; he’s working on it.) He is also working on an expansion involving processing local meat. He started with three employees and has plans for 27 full-time employees next year.
- Aircorp Aviation restores WWII aircraft from around the world. It uses broadband for promotion, research, part sourcing and cloud computing. Fabricating parts that are no longer available requires sharing large files and collaborating remotely in real time. The company developed software for project management and a platform for sharing documentation called the Air Corps Library, which is like Ancestry.com for airplane parts. Like genealogy, aircraft restoration is a passion, and Aircorp has visitors from around the world. It gets 30 to 40 requests for tours a month and hosts an event on Veterans Day for 300 people. That means tourism revenue for the community.

Aircorp could have located anywhere with broadband. It chose Bemidji because people in the area are good builders. It could not grow the business without broadband.

Annual revenue is \$4 million; General Manager Erik Hokuf says that without fiber, revenue would be more like \$300,000 to \$400,000. With broadband, the company is aiming for \$50 million in 10 years. Through its website and reputation, Aircorp has been approached by major airlines with requests to help fabricate parts – a major part of the reason that \$50 million over 10 years is possible.

- Broadband on Main Street has allowed small shops to stay in business. Up to 90 percent of their sales are now online. Broadband levels the retail playing field; when a big-box retailer moves in, it takes local money, but online local businesses do the opposite. Boutiques are booming in Bemidji. People can make money in a niche business by appealing to customers both locally and online.
- Broadband is making health care easier. Sanford Health, in Bemidji, the largest health care provider in the region, has gone digital. For patients, that means access to a health care portal to get health information and make appointments. It means e-visits, a cost-saving convenience that’s growing in popularity. Sanford can’t standardize remote care because not everyone in its service area has access to adequate broadband. Nevertheless, it is looking to add 50 doctors. Recruiting doctors will be easier because they will have a state-of-the-art workplace and broadband access at home, which means their children will have access for education and accompanying spouses will have increased employment opportunities.
- Paul Bunyan Communications hosted two highly successful GigaZone Gaming Championships, in which teams and individuals won real money for gaming. Recruiting participants was easy, and the events brought tourists to the area. It built



Paul Bunyan Communications sponsors an annual gaming championship that boosts tourism.

a buzz about the community and will lead techies and future techies to consider Bemidji when they look to relocate. Paul Bunyan has seen an increase in intern applications since hosting the event.

- At BSU, 15 to 18 percent of credits are generated online, and most classes have some online component. Not being place bound is valuable. Students can attend class from home, the school connects directly with the tribal college for collaboration, and the school can offer custom classes (such as graduate coursework for teachers) to multiple locations. This reduces costs for the school and the students. In surveys, students have ranked online classes tops for interaction.

An emphasis for BSU in the future is international recruiting. The university does about 90 percent of this recruiting without leaving the country. Broadband allows communication with recruits and in turn allows new students to stay connected to home as they transition to school.

CROW WING COUNTY

In 1999, the Brainerd Lakes Chamber of Commerce and the Brainerd

Lakes Area Economic Development Corporation (BLAEDC) held a leadership conference for local community leaders. They looked at the challenges of their internet capacity and decided they needed more bandwidth. At about the same time, another group of county and town leaders focused on the need for broadband for the schools came to the same conclusion.

In 2001, the school system levied for funding for schools and technology. It worked with local telephone provider Consolidated Telecommunications Company (CTC) on a plan to extend broadband to the rest of the community. As CTC deployed fiber, it laid strands for the schools and strands for general use. The schools worked to get public entities connected, and CTC worked to connect private companies.

That effort built a bedrock for better broadband, and the effort is ongoing. The county received support through stimulus grants and Minnesota Border-to-Border grants to deploy fiber to the outskirts of the county.

Getting broadband is only half of the job. Project partners (the school district, chamber and BLAEDC) focused on getting their constituents to use broadband, especially on business

improvements with broadband. In 2016, Brainerd got funding from the Blandin Foundation to work on a Tech Talent Recruiter program to help build local technology skills and promote Brainerd as a tech-ready community. Crow Wing County also received Blandin Foundation support through its partnership with the Resilient Region, which led to classes for local businesses, an effort to recruit tech companies to the area, and computers for youth at risk.

Sheila Haverkamp, executive director of BLAEDC, explains the power of broadband: “For the last decade, our fiber optic network has been an important factor in helping startup companies grow and succeed here. And now we’re getting noticed from others throughout the state.” House prices are up, median income is up and Brainerd, the county seat of Crow Wing County, is getting noticed.

We met with representatives from Crow Wing County at the Chamber BLAEDC location in a room sponsored by CTC that had \$30,000 to \$40,000 in technology and gigabit access at our fingertips. It’s the same room where community members meet to learn how to better use technology.

- The Chamber of Commerce offers online marketing classes for businesses. It tries to be specific and practical in the classes, which serve everyone from medical centers to resorts. One attendee who sells underwater cameras attributed \$1 million to attending the class.
- To replace jobs lost in paper mills, the community focused on “tech services” for people who use technology. It promoted the need for, training for and availability of tech services. Now, 20 tech services companies employ 1,000 people. They all need broadband.
- In 2014, the Governor’s Fishing Opener was held in the Brainerd Lakes area. This was a big opportunity for a community to promote local tourism and hospitality. Crow Wing County was able to take full advantage of the opportunity with mobile hotspots

from CTC at the lake. It allowed everyone to upload selfies to their favorite social media channels.

- People come to Crow Wing looking for broadband. One millennial was moving to the area for a job but would buy a home only with internet access adequate for good gaming. BLAEDC found him a home with a CTC connection.
- A Brainerd employer told the city if it couldn't find 80 trained workers, it would have to leave. The local schools got an \$18 million Department of Labor and Industry grant to develop and offer technology training, degrees and certificates in the school and for workforce development. Companies can stay and grow in the area.
- Because the residents have broadband, the county is able to provide services online. That means 24/7 access to information and transactions. The county answers questions online, livestreams (and archives) meetings, and uses hosted software. Staff appreciate it because it allows them to focus on providing public service versus answering rote questions repeatedly.
- One resident shared, "On my street, we have four families that have shifted from seasonal to full-time owners."
- Resident Nate Grotzke said, "We didn't have high speed until two years ago. I have four kids, and they need broadband for homework. I don't know what we would have done for homework without broadband. In middle school, the kids were spending a ton of time on math at home to no avail. They weren't getting any real-time support. Now the online system tracks kids' homework. If we didn't have broadband to do that, we'd be done."
- Mark Prazak works for Microsoft, which has a large number of employees who work remotely. Now that he has gigabit access at home, his travel is reduced by a third. He used to travel a week per month. This year, he's traveled twice in seven months.

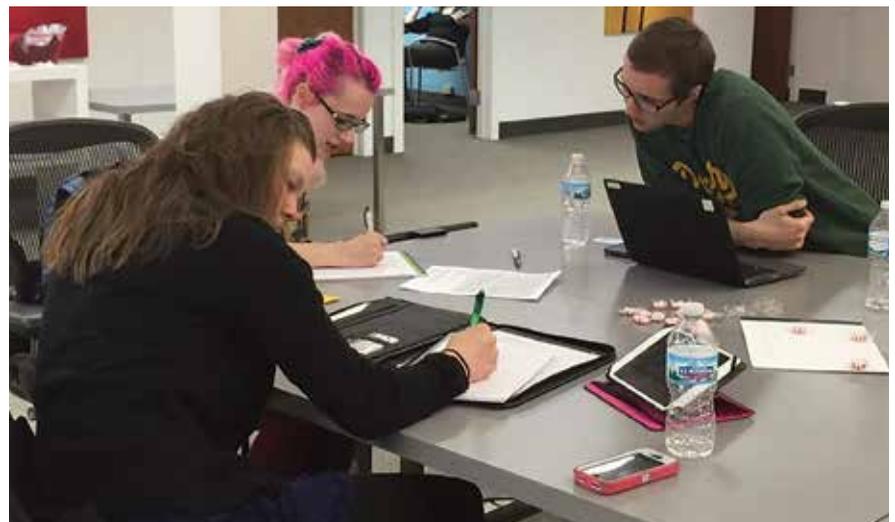
GOODHUE COUNTY

Red Wing, the county seat of Goodhue County, is served by Hiawatha Broadband Communications (HBC) and has had fiber access for almost seven years. In 2009, Red Wing partnered with HBC to apply for ARRA funding but was not considered unserved enough to qualify, so HBC forged ahead without grant funding. HBC evolved as a successor to an innovative, not-for-profit education initiative, and its vision remains "to enhance and enrich the lives of those we serve."

Red Wing was a Blandin Broadband Community and through the program worked to boost broadband adoption. The effort was led locally by Red Wing Ignite, a local organization that is part of a national effort to encourage communities that have gigabit access to make good use of it. Red Wing Ignite is an incubator, a convener and a supporter of technology in the schools and business community.

- Red Wing and Goodhue County are thriving. They were a finalist in Deluxe Corporation's Small Business Revolution – Main Street contest. They were the first rural community to become a US Ignite community. In 2014, they hosted what might have been the first rural hackfest in the United States and was certainly the first in Minnesota.

- BIC, a pen manufacturer, has a facility in Red Wing that needs symmetrical 300 Mbps access. HBC supports that need with fiber to the premises. Without those speeds, the BIC facility would have to consider moving or stop growing. Neither option is good for BIC or Goodhue County.
- Kohlnhofer Farms has sophisticated hog operations, including networked cameras and other monitoring of the hogs. It uses a combination of fiber and HBC's Air Wireless service to track the animals. Less staff time is spent monitoring hogs, and it is easier to follow market prices, ensuring that the hogs are sold at the right time.
- Before 2016, educators were required to physically show up for work, even on snow days, to get work credit. Now when school is canceled because of weather, Red Wing educators can work on professional development from the comfort and safety of their homes. This means no time loss for them, increased safety and easier work/life balance for teachers who are also parents.
- Xcel Energy has two plants and an operations center in Red Wing. Broadband keeps everyone working reliably. Field staff now use tablets to make immediate updates about outages and upgrades. Broadband



Red Wing Ignite offers co-working space with printers, Wi-Fi and gigabit access.

access is a key piece of any disaster recovery plan.

- Woodruff Marketing now does 90 percent of its work online. Creative staff upload huge files; what would have taken hours to upload 15 to 20 years ago (or with a slower connection) now takes minutes. They also work with a lot of video. The company started in 2004 with one person and now has 17. The owner explained, “The company could exist without fiber, but it wouldn’t be growing.”

LAKE COUNTY

In 2010, Lake County received an ARRA award of \$66.3 million to improve broadband access; about \$10 million of the award was an outright grant, and the rest was a low-interest loan. The community was optimistic, and the need was great. A broken steam pipe caused a 12-hour internet outage over three counties in northeast Minnesota, and local providers estimated it would be 10 to 15 years

before they upgraded their connection.

There were bumps along the road to getting fiber to the community, and bumps remain. Portions of the county are not yet served with fiber, there is still an outstanding loan, and local provider Lake Connections is looking to sell the network, which is managed by Consolidated Telecommunications Company (CTC). But local champions are unapologetic because they accomplished what they set out to do, and they are reaping benefits.

Lake County boosted broadband adoption and increased user sophistication by becoming a Blandin Broadband Community in 2013–2014. It gave computers to low-income families, provided hours of training to a wide range of people and purchased community iPads to get people started using technology.

We met with community leaders, educators and entrepreneurs at the new Two Harbors high school. Median household income is growing, house

prices are climbing and residents say more families are moving in because of the broadband connection. It’s an additional asset to the community: there’s Lake Superior and there’s fiber.

Although the county is served, the region is not, and the disparity is clear. Broadband makes some areas more desirable but leaves the unserved at a real disadvantage. The school has to mitigate that imbalance when developing curricula because not every student can do online homework from home.

- Lake County is picturesque. It reaches from Lake Superior to the Boundary Water Canoe Area to the Canadian border. Tourism is the leading industry. While some folks thought broadband might distract vacationers, it’s drawing more people and allowing people to stay in the area longer. Resorts find that guests extend their visits when they can work while away. Each day of extension means greater revenue for the local shops, restaurants, lodging and attractions.
- Lake County deployed Wi-Fi with a fiber backhaul at the campground in time for the summer season. People are amazed at the speeds. Despite a summer of rain, there was a record number of campers, up 22 percent from normal. Better broadband is certainly a contributing factor.
- What local residents enjoy about broadband is the freedom to live where they want with the lifestyle they want, which often means by the lake or in the woods. Areas considered too remote for broadband in some counties are attracting new families in Lake County.
- Incoming resident Patrick Krekelberg of Krekeltronics can live anywhere he can get online, but he needs enough broadband to collaborate in real time with clients and partners to provide technology integration solutions. That means fiber. He is planning to move his family of six to Two Harbors soon. His wife homeschools their four children, which also requires high-speed broadband.
- Chris Swanson’s digital marketing firm, Pure Driven, has a distributed

KEY TAKEAWAYS

- Broadband is necessary but not sufficient. Like a treadmill in the basement, broadband is helpful only when it is used. Community members need training and encouragement. Community institutions, such as schools and health care providers, need to clear away other barriers to achieve higher uses of technology.
- Smart communities plan from the future. They work to get ahead of the curve by studying demographics, technology shifts and trends. Rather than trying to catch up to what others are doing, they lead.
- Smart providers build for future demand, not current usage.
- Sufficient broadband is invisible. Communities that have broadband quickly take it for granted and assume that sufficient broadband is in place – just like electricity.
- Economic developers and community leaders are able to devote their time and attention to implementing innovative, tech-based economic development strategies rather than on improving broadband access. This gives them a distinct advantage over unserved counties in which local teams spend countless hours pursuing broadband deployment and struggling with limited bandwidth and unhappy residents and businesses.
- Innovative communities build a buzz. It doesn’t take a gig to get 63,000 Facebook fans (as one butcher in Bemidji has done), but it takes a culture of use, which means access, training and encouragement to use technology.

workforce of 16 employees and 25 full-time contractors scattered around Minnesota. He produces content for businesses all over the world, which means a steady stream of data to and from the cloud. They use a centralized phone system that supports video conferencing and constant collaboration. With asynchronous broadband, communication and content sharing wouldn't work; superfast broadband gives him an advantage over competitors, even those in large cities.

- John Bathke, a local realtor, got his fiber connection two years ago; prior to that he had DSL that was slow and poor quality. Uploading images to the real estate website is much easier now. The morning we met, he had uploaded 11 photos in 3 seconds – a job that would once have taken an hour. He has seen more folks from cities (Duluth, St

Paul, Minneapolis) look at the area as housing becomes more pinched back home. People want homes with broadband, especially for vacation homes. The week we spoke, John had two ready buyers – one from Canada, one from Missouri. Both said their top needs were broadband and electricity. Conversely, people “on the wrong side of the lake” with limited or no broadband are unable to sell their houses.

- Most, but not all, Lake County students have broadband at home. Not even the mobile hotspots work in some areas. However, the schools have been able to move parent communication online. They no longer send paper notes, report cards or warning notes home, savings printing costs. More important, parents get involved in students' education in real time. Instead of waiting until midterm to hear about any issues, parents can (and do!)

check students' work online when intervention can be most helpful.

SIBLEY COUNTY

Sibley County has worked on broadband in partnership with Renville County and area towns for more than 10 years. Early on, they decided to focus on fiber to the farm because, despite the higher cost, they wanted to ensure that everyone got access. The original plan was to work with the local governments, but they had trouble reaching consensus with all communities. That opened the door to a new solution – a cooperative.

RS Fiber was born. In phase 1, the 10 cities committed to an \$8.7 million bond for an economic development loan to the RS Fiber Cooperative to construct the fiber backbone that connects the cities and an FTTH network in each community. In phase 2, which could begin in 2019, the 17 townships will be asked to lend \$5

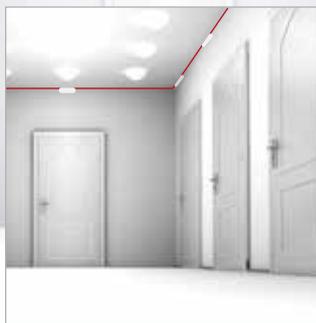


InvisiLight® Optical Solutions

For Your Indoor/Outdoor Optical Fiber Applications



ILU
In Unit



MDU
In Riser and Hallway



Facade
Outside Building

ONE SOLUTION for the home and building

Contact us today! www.ofsoptics.com

million to the cooperative to begin construction of a fiber-to-the-farm network. The cooperative will make the bond payments on behalf of the cities and townships and borrow another \$42 million from various bank sources to construct and operate the network.

RS Fiber hired HBC to manage the network buildout, operations and marketing. It offers fixed wireless services (50 Mbps down and 25 Mbps up) to hold customers over until fiber is available.

Knowing that access is only half the battle, RS Fiber created a plan to increase demand for and use of broadband in the community. It offers classes for the community, including computer basics and more specialized classes; computers for low-income households; and an Innovation Center with hotspots, broadcast technology and a drone obstacle course. RS Fiber also became a US Ignite community.

We met with representatives from Sibley County at the Winthrop and Gaylord courthouses. The group was led by Mark Erickson, who has been involved in the FTTH project in the area. The network is still being deployed, and digital inclusion efforts are underway, so there's a lot of learning going on.

- A medical school is planning to open in Gaylord in 2018. Easy access to Minneapolis and St. Paul and the rural location were selling points, but broadband was a necessity. The medical school is expected to have an enrollment of 600 students. It will add at least hundreds of professional and support service jobs to Gaylord and surrounding communities. The Gaylord City Council and the medical school owner plan to work together to stimulate the local economy as other businesses related to medical education open offices in Gaylord.
- Winthrop News, Winthrop's local newspaper, used to take 30 to 60 minutes to upload to the printer. Often that connection timed out, putting the paper in danger of losing its printing time slot. Now

it takes minutes to upload. Having two people working online at the same time used to be difficult. Now the company is looking at building a website and using live video. It has started to use Facebook to reach the 20–30-year-old demographic that wasn't reading the weekly newspaper, and is working on monetizing that effort.

- The city of Winthrop is upping its social media profile. It is active on Facebook and created a mobile app (Winthrop on the Go) to promote the city. The app has been downloaded more than 500 times, including by many people from outside the area. It's a good tool to promote tourism and recruit new residents.
- At least one happy grandma reports that her grandson moved his computer to her house for better gaming. His family (which doesn't yet have fiber installed) doesn't mind, as having him off their connection means better speeds for the rest of them.
- Access for farms was a goal for Sibley County. Focusing only on the higher-density cities and towns would have been cheaper, but farmers are using the fixed wireless solution to monitor the fields at work and the house when they're away.
- Families are moving into the areas that have broadband. People have seen more homes sold in areas with fiber; some are snatched up from Craigslist before they are formally listed. As the mayor of Gibbon said, "It's good to hear kids playing ghost in the graveyard again."

CONCLUSIONS

These five communities provide models for economic development and community vitality in rural Minnesota. By using advanced broadband networks as a foundation, they are attracting talented people and significant investments. Community leadership helped create these advanced networks, and continued leadership will be essential to making full use of internet-based technologies into the future.

These communities are well-positioned to do so.

Some factors most important to making broadband work – population size (or density) and an engaged provider – are out of the control of communities. But Lake and Sibley counties have proved that it is possible to make broadband work without those things. In both cases, two factors made broadband possible – tenacious leaders and public/community investment. In Sibley County, community vision helped attract a committed provider partner that has been a key asset to the project's success.

For Lake County, the opportunity to apply for federal funding stimulated interest and action. County commissioners had the courage to move forward despite the risk. Their path has been bumpy, but the commissioners stand by their decision. Their vision, leadership and tenacity have been key to getting the network built. The community benefits will come. This is true in most hard-to-serve rural places: Local leadership matters. Most communities look to outside parties for expertise on the technical choices involved, but local community champions are needed to drive the vision and follow through.

In Sibley County, citizens stepped up to create a cooperative. Many tireless leaders stepped forward to drive this approach and build the momentum needed to move forward with public funding.

Community leadership is essential to maximize broadband use. Improvement requires a concerted effort throughout a community with the fortitude to put in the time it takes.

The primary role of the provider partner is to provide broadband that is adequate today and will meet the needs of tomorrow. A provider that makes broadband an asset, not a deficiency, is needed. An engaged provider is the best-case scenario for a community in need of better broadband. In three case study communities, the provider took the lead on broadband connectivity and participated in community efforts to increase use and sophistication of use.

In Beltrami County, beyond bringing GigaZone fiber network to the region, Paul Bunyan Communications participates in the local co-working space and hosts an annual online gaming championship. Paul Bunyan's CEO is chair of Greater Bemidji, the local economic development organization. In Crow Wing County, CTC invested in equipping a meeting room in the local economic development office that can be used for training and other meetings and provided grants and technical assistance to area schools. Its COO is on the board of the Brainerd Lakes Development Corporation. In Goodhue County, HBC was active in getting Red Wing Ignite started and with continuing operating and project funding.

Lake and Sibley counties started their own broadband organizations – one a government enterprise and one a broadband cooperative – when they

failed to find willing provider partners. These investments in their future required significant capital and human commitment and were risky and controversial among folks who doubted the communities would benefit in the long run. Perhaps in part because the economic future of both community and provider are so closely tied, both new provider entities took active roles in supporting community broadband adoption efforts.

Community leadership is essential to maximize the economic benefits of broadband use. Four communities set improved broadband services as priorities, and two (Lake and Sibley) made extraordinary local efforts to achieve that goal. Beltrami has been lucky to partner with a locally owned, community-minded cooperative provider that has been a national leader in bringing world-class, gigabit-speed, symmetrical fiber networks to hard-to-serve rural areas.

Finally, each community created civic infrastructure to support this long-term work; leaders meet regularly at multiple levels to maximize the economic benefits of broadband investments. Examples include economic development boards of all types, chambers of commerce and their committees, Blandin Broadband Community steering committees, and county commissioners and city councils. ❖

Ann Treacy is the owner of Treacy Information Services, which helps businesses and nonprofits use the internet to provide or gain access to information. Bill Coleman is the owner of Community Technology Associates, which helps communities improve local broadband networks and spur use of broadband for economic development. Contact Ann at atreacy@treacyinfo.com and Bill at bill@communitytechnologyadvisors.com.

WideOpen Delivers Open Access Networks



We plan your Gigabit network

- Network business and financial plans
- Financial models and pro formas
- Take rate analyses and cash flow projections
- Funding strategies and financing development
- Network architecture and specs for fiber and wireless



We build your Gigabit network

- Construction management
- Vendor selection for fiber and wireless equipment
- Contractor selection and procurement management
- Service provider selection and negotiation



We operate your Gigabit network

- 24/7/365 network operations center
- Service provider management
- Marketing and public awareness
- Equipment and fiber asset management



WIDEOPEN NETWORKS

THE GIGABIT SOLUTION

www.wideopennetworks.us
 Call us at 540.552.2150