

RS Fiber: A New Rural Internet Cooperative

RS Fiber in Minnesota, originally conceived as a two-county municipal fiber network, became a cooperative instead. Local governments provided seed financing.

By Scott Carlson and Christopher Mitchell / *Institute for Local Self-Reliance*

In south-central Minnesota, residents of 17 townships and 10 cities are forging a new path as they bring high-speed internet access to their communities by forming a telecommunications cooperative. RS Fiber, named after Renville and Sibley counties, is building an estimated \$45 million network to serve more than 6,000 households, farms and other businesses in an area of more than 700 square miles.

Winona-based telecommunications company Hiawatha Broadband Communications (HBC) provides telephone, television, and internet access over the network. “It is unique that a cooperative was created out of the thin air to own the network,” says Mark Erickson, the former Winthrop city manager who played a pivotal role in helping launch RS Fiber. “It’s not every day that a new cooperative, much less a telecommunications cooperative, is formed.”

The RS Fiber project was seven years in the making, built from the vision of local leaders and scores of resident volunteers who spearheaded an intense grassroots marketing campaign that included more than 100 informational meetings. Its story included overcoming the opposition of private, for-profit telecom companies, which saw the project as a threat, and evolving the project from its original conception as a publicly owned municipal network into a community-based co-op.

“One of the things I’m most proud of is the fact that 10 city councils from very small

rural communities saw the importance of the project right off the bat and stuck with it for seven years,” says Erickson, now director of Winthrop’s Economic Development Authority. “The other aspect that people find interesting is the fact that 17 very rural, conservative, skeptical and cautious township boards also ‘got it’ and voted to put their constituents’ tax dollars on the line to make it happen.”

The co-op’s funding model is also noteworthy. Because few investors were willing to fund a newly created fiber co-op, the local governments bonded for seed funding that became subordinate to debt from other private investors, including local banks. As long as the network hits its financial targets, no taxpayer dollars will be used. The co-op will repay its loans to the local governments with revenues from the network, but local taxes will make up the difference if it falls short.

RS Fiber is a promising model for the vast majority of rural communities stuck with slow and unreliable internet access. Without that access, they have fewer prospects for economic development, educational advancement and health care.

DIRE NEED FOR SPEED

RS Fiber Cooperative’s territory encompasses much of Sibley County and parts of Renville, McLeod and Nicollet counties. The lack of high-speed internet access created the demand

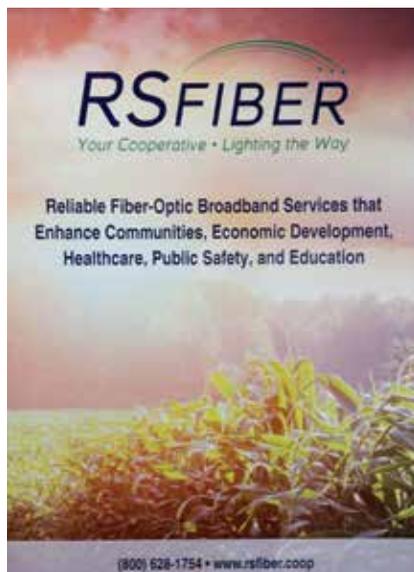
for the co-op. Where DSL and/or cable connectivity was available, the fastest internet speeds typically topped out around 3 to 4 Mbps downstream and less than 1 Mbps upstream. By today's FCC standard of at least 25 Mbps down and 3 Mbps up, most of the region did not have broadband access prior to the launch of RS Fiber.

This dearth of high-speed internet access has been a serious problem for residents and businesses, including farmers, who increasingly rely on internet connectivity to carry out their work. For example, Linda Kramer of Moltke Township (pop. 330) in Sibley County reported in 2011 that her family's DSL connection was far too slow for her husband, a soybean and wheat farmer, to upload reports to his business partners. He would often attempt to send out reports in the evening only to discover in the morning that they were still transmitting or that the connection had failed during the night.

The lack of widespread high-speed internet access worried Superintendent Tami Martin of the Gibbon-Fairfax-Winthrop (GFW) School District, who feared that her students would be left along the roadside of the educational superhighway. In spring 2010, the district's school board allocated \$335,000 to buy iPads for all its high school students – the first district in the nation to do so.

But Martin says it has been difficult for many students in her district to make the most of this technology. Even in 2015, more than 50 percent of the students had internet connectivity problems when they left school, Martin estimates.

"I think the ability to utilize our iPads to the extent we want has been greatly limited," Martin says. "We do not do much of the flipped classroom design because so many of our students cannot access the internet to complete their lessons off site. We have some of our students who sit outside of the public libraries and the schools after hours and in the evenings to get wireless access. As you know, Minnesota is not a



A poster in the RS Fiber office explains the project's goals.

climate [in which] this can happen most of the year." (In a "flipped" classroom, teachers videotape their lectures and have students watch the lesson the evening before. Then during class the next day, the students do their work, a practice that maximizes engagement with their teachers.)

Those concerns deeply resonated with Jacob Rieke, a fifth-generation family grain farmer from Fairfax (pop. 1,180) who has two preschool-aged daughters. "Am I actually putting them at a disadvantage with their peers in

the cities?" Rieke asks. "It does make you wonder, 'Should I find a different place to live where there is better access? ... That was probably one of my strongest motivations for continuing with the project, at least just to level the playing field.'"

A NEW HOPE: THE CO-OP AWAKENS

Co-ops are self-governing, member-owned associations of people who voluntarily band together for mutual social, economic, and cultural benefit. These organizations are democratically run and make decisions based on the best interests of members. Unlike a for-profit company, which could sell a locally owned fiber network to an out-of-state company, co-ops are structurally resistant to losing local oversight because they are rooted in and democratically accountable to their communities.

Anyone who takes services from RS Fiber is a member (or patron) of the cooperative and can vote at its annual meeting. Equity investors in the co-op who do not take services also have voting rights, but those who only lend funds to the co-op do not have voting rights. To avoid conflicts of interest, none of the 17 members of the board of directors is an elected official.

The local governments in the RS Fiber territory sold general obligation tax abatement bonds to raise funds that were lent to the cooperative as seed funding.



The main network operations center in Winthrop, Minnesota, was built in summer 2015.

Workers unload reels of conduit in Winthrop, Minnesota, in spring 2015.



These funds helped unlock additional investment and funding opportunities.

The network began construction in July 2015. By the start of 2016, RS Fiber had laid 96 miles of fiber-optic cable to connect 11 wireless towers and offer fiber-to-the-home access to 877 homes and businesses in Gaylord and 638 in Winthrop. Residents can choose from 50 Mbps, 100 Mbps, or gigabit symmetrical service.

About 85 percent of the co-op's service territory now has access to its wireless service, called Air Broadband. With antennas located on municipal water towers and other structures such as grain elevators, the wireless service provides 25 Mbps service for those who have to wait for the fiber to pass their premises. It will also generate revenues that the co-op will use to pay its debt and finance future fiber expansion.

Residents within 5–7 miles of the RS Fiber territory may also subscribe to Air Broadband if the service reaches them, and they are considered co-op members.

Total phase-1 costs are estimated at \$16 million for the fiber backbone that connects the 10 cities, the FTTH network that connects homes and businesses in those cities and the wireless service. The first phase is expected to be completed by the end of 2017.

In phase 2, the cooperative plans to spend about \$30 million to build out the rest of the fiber optic network to the 17 rural townships, bringing the

network to the area's many farms. The original plan was to build to every farm in the county, but the Sibley County Board backed out of the project, and each township had to decide for itself whether to join the project. Phase-2 work is scheduled to start in 2018 and end by 2021.

Network financing began with the cities providing an initial loan to the co-op. The 10 cities raised \$8.67 million, mostly through 20-year general obligation taxable tax abatement bonds at a 4.5 percent interest rate. One city opted to lend funds it had available rather than bond. The co-op then raised the balance of funds needed from various other loans, a grant, and new market tax credits. In phase 2, the townships will lend the co-op funds, just as the cities did in phase 1.

RS FIBER'S DEEP IMPACT

"The demand from people in the towns and rural [areas] has been tremendous," says Toby Brummer, RS Fiber Co-op general manager for HBC, which is designing, building and managing the high-speed network. "We have walk-in customers wondering, 'When is service ready?' People in the country [asking], 'When can we get hooked up?' The demand is definitely there, and it's really turning into quite a big deal because people are really excited to get the service."

RS Fiber is providing a dramatic upgrade in internet speeds. The co-op's wireless service is far faster than pre-RS Fiber DSL and cable, and the fiber service is even faster, despite being priced similarly.

Rieke, the Fairfax farmer and an RS Fiber beta tester, now gets internet speeds of 25 to 30 Mbps symmetrical from the Air Broadband wireless service. That's enough for him to share reams of business-related data with his advisers. Together, they determine via email where best to plant seeds based on soil conditions and topography.

Cindy Gerholz, vice chairperson of the RS Fiber Co-op board, notes these faster internet speeds are vital for agriculture. "There is a need for that speed; it is not a wish list," she says.

Co-op members appreciate the cost savings and the simple, easy-to-understand pricing model. "Cable and satellite companies charge all over the place and have all kinds of promotions going on," says Erickson. "Right now, if you are a new Mediacom customer (and I understand they are offering it to customers who want to switch to RS Fiber), you can get voice, video and data for \$30 a month plus fees."

One reason the city of Brownton (pop. 743) joined the RS Fiber project was to have more choice. For example, Erickson says, in nearby Hutchinson (pop. 15,000), where many Brownton residents work, Mediacom offered a service package that was \$40 to \$50 a month less than the one in Brownton. When a Mediacom representative was asked to explain the difference in pricing between the two cities at a Brownton city council meeting, Erickson says he answered, "It's because there is no competition in Brownton for cable. There is competition in Hutchinson as the local phone company offers IPTV."

As for his personal experience, Erickson notes, "When I had Mediacom, they started me low and raised the price. I started out paying \$70 a month for a decent package on DISH, and within two years, it was \$120. So I switched to DIRECTV and



Conduits were fed into the mini NOC in Gaylord, Minnesota, in fall 2015.

followed the same formula. RS Fiber doesn't play that game because HBC doesn't play that game. One price. No contract. No special introductory deals. It is what it is."

Less than a year after kickoff, the RS Fiber network has already sparked new economic development. The Minnesota College of Osteopathic Medicine (MNCOM) announced plans in May 2015 to set up services in a former school building in Gaylord. Officials with the osteopathic college credit the arrival of the RS Fiber network for providing the necessary technological infrastructure.

"Without the RS Fiber Cooperative project, the city of Gaylord would not have even known about the opportunity to attract the proposed medical school," says Phil Keithahn, chief financial officer of the proposed college. "Higher educational institutions require gigabit internet access. Without this access, Gaylord would have had no chance of attracting the school to south-central Minnesota."

Erickson agrees. "We have that opportunity because of the FTTH network," he says. "Without it, no medical school."

The business community in the Renville-Sibley region believes high-speed internet access will have benefits across the community: "A high-speed, affordable, accessible and reliable gigabit internet network, such as that provided by RS Fiber Cooperative, is not only essential for economic development; it is also essential for education, health care, and attracting and retaining people who want to live in the area," says Keithahn, also the owner, CEO and president of ProGrowth Bank in Gaylord and the chief financial adviser to the RS Fiber Cooperative. "While it is difficult to forecast how much development will be generated, internet access will increasingly become a differentiator for economic and housing development."

For example, ProGrowth Bank has locations in Gaylord, Nicollet, and Mankato. Though some locations have higher capacity connections, the data connection between the Gaylord and Nicollet locations currently consists of bonded T1 lines (3 Mbps). The slow connectivity limits the productivity of bank employees because the banking industry has transitioned to electronic documents and online banking for internal and external use.

ProGrowth Bank anticipates that RS Fiber services will enable all locations to have much higher capacity, with download speeds going from 100 to 500 Mbps and upload speeds from 10 Mbps to 500 Mbps. Despite the much improved service, it expects its costs to fall dramatically, from \$1,700 per month to \$400 per month.

THE FARMS STAY IN THE PICTURE

Expanding a fiber optic network to the many rural townships and distant farms is a significant financial challenge. The buildout cost to the farms is estimated to average \$10,000 per premises passed, four times the cost in the cities. Some rural passings were estimated at \$15,000-plus, Erickson says. However, much of the enthusiasm for the network came from those rural areas because they had the worst internet access.

The cost disparity prompted some people to push for the farmers to pay more. However, the communities jointly agreed to average the costs, balancing the high cost of the rural buildout against the much lower construction costs in the cities. "The

Why farmers shouldn't pay more for internet service even though connecting them is more expensive: "The cities are here because of the farms, and the farms need the cities for trade."

city councils decided to treat everyone equal," Erickson says. "City and rural residents have a symbiotic relationship. The cities are here because of the farms, and the farms need the cities for trade."

SEEDING THE COOPERATIVE

From late 2014 through mid-2015, the cooperative retained Keithahn's firm, Sterling Capital Advisors, to explore construction arrangements and potential sources of financing for RS Fiber.

Forming a new fiber co-op to compete with established networks, some of which are owned by large telephone companies, was unprecedented. Though those firms offer slow connections on last-generation networks, they can do it at a very low price when faced with competition. Keithahn recognized that securing financing would be challenging.

Rural Utilities Service loans, which finance many rural fiber builds, were unavailable to RS Fiber because at least one telephone company in the footprint had an outstanding RUS telecommunications loan. The program rules at the time did not allow for a competing loan. Keithahn was forced to get creative.

He ultimately found that local government bonds could unlock other sources of capital. Local governments did not have the capacity to provide all the capital RS Fiber Cooperative needed, but they could provide a substantial fraction. The cities would bond to raise funds and make an economic development loan to the co-op. The trick was making the loan subordinate to future debt, which made senior loans to the co-op more appealing to other investors.

However, if the co-op could not repay all its debts, the cities would be repaid last. Given this structure, the cities had to issue general obligation bonds, meaning that local taxes would have to make up any difference if the co-op could not make the full payment. Because the network is expected to improve property values, the cities issued tax abatement bonds, which are similar to tax-increment financing.

They issued taxable rather than tax-exempt bonds because the purpose of the funds, to build a network owned by a co-op, does not qualify as tax-exempt. The co-op is considered a private entity even though it is open to anyone taking service. As a result, the interest rate is approximately 4.5 percent rather than the tax-exempt rate of close to 2 percent.

Prior to creating the co-op, the local governments had formed a joint powers board (JPB) to explore their regional options for a fiber network. The JPB became the vehicle for organizing the bond sale and then the loan to the co-op. Rather than dealing with 10 loans, one from each local government, the co-op has one loan from the JPB. Each local government lent funds in proportion to its population.

RISKY BUSINESS

"Without the general tax obligation, the RS Fiber project would not have started," Keithahn said. "In this case, the customers for RS Fiber Cooperative are generally the same as the taxpayers who provided the financial support through the issuance of the bond funding. And as customers, they are also member stockholders of RS Fiber. As long as the taxpayers also sign up for RS Fiber services as customers of

the cooperative, the likelihood that the bond will require an assessment on taxpayers is reduced significantly."

Those who have no interest in the fiber cooperative may have to pay higher taxes if the cooperative struggles financially. However, the other benefits to the area – increased property values, more economic development, and so forth – may justify this risk. For example, a 2015 study by the Fiber to the Home Council Americas found that access to fiber may increase a home's value by up to 3.1 percent.

Per the council's analysis, that increase amounts to about \$5,400 from a property of \$175,000, roughly the equivalent to adding a fireplace or half a bathroom to a house. In the worst-case scenario, if the network cannot pay back its loan and taxes have to cover the bonds, the average cost will be \$10 to \$15 per month per property. That is a scenario in which the network generates zero revenue and no asset can be liquidated, an all-but-impossible result.

If RS Fiber does struggle financially, it will most likely still be able to make partial payments, and the benefits from the network will almost certainly outweigh any tax subsidy to cover the rest of the payments. RS Fiber officials are confident there will be plenty of RS Fiber subscribers, given that community surveys showed 55 percent or more of respondents pledged to participate in the network.

OTHER PEOPLE'S MONEY

Several local investors and banks, including ProGrowth Bank, The First National Bank of Fairfax, CornerStone Bank and MidCountry Bank, chipped in for RS Fiber, providing \$3.75 million in senior secured construction loans for phase 1. Rural Electric Economic Development Inc. (REED) is also providing \$1.5 million in term loan financing to RS Fiber. REED is a South Dakota-based nonprofit organization whose geographic reach includes Minnesota rural electric cooperatives.

In addition, Renville-Sibley Cooperative Power Association has applied to the U.S. Department of Agriculture for two loans totaling

\$1.3 million as part of the Rural Electric Development and Grant Loan Program, according to Keithahn. The local banks, REED, and the Renville-Sibley Electric Cooperative are RS Fiber's secured lenders, entitled to the first claim of loan repayment from operating cash flow or liquidation of RS Fiber assets. "The secured lenders will be repaid in full before all other funding provided by lenders or investors," Keithahn says.

The First National Bank of Fairfax made a construction loan to the RS Fiber Cooperative of up to \$500,000. "We are involved in the community," says Ron Winch, president of the First National Bank of Fairfax, explaining why his bank is supporting RS Fiber. "We believe we need [RS Fiber] for people in our community. This project is as important to me as when Fairfax brought in rural electricity and natural gas."

Besides its construction loan, the First National Bank of Fairfax plans to make an equity investment of \$50,000 in RS Fiber under the "public investment welfare authority" provisions of the Office of Comptroller of the Currency (OCC), the regulator of federally chartered banks.

The federal agency gave the Fairfax bank permission to make that investment in 2015. This dispensation can allow local banks to better support essential local projects. Under the OCC authority, a national bank may undertake investments that promote the public welfare, allowing those financial institutions to make investments not otherwise permitted. These investments must primarily benefit low- and moderate-income individuals, benefit low- and moderate-income areas or other areas targeted by a governmental entity for redevelopment, or receive consideration as a "qualified investment" under the Community Reinvestment Act. Qualifying areas may also include distressed or underserved nonmetropolitan, middle-income areas, according to Tim Herwig, an OCC community affairs officer.



An HBC technician feeds fiber lines to Calix E7 OLTs in the main network operating center.

"This is especially important to rural fiber optic networks, as there are limited low- and moderate-income areas in rural America," he says.

Herwig believes The First National Bank of Fairfax is the first community bank in the nation to apply the public welfare authority for this purpose. Banks supervised by the Federal Deposit Insurance Corporation and the Federal Reserve Banks may also apply to their regulators for permission to make similar investments in fiber optic networks that meet the public welfare definition, he says. RS Fiber has set a precedent that allows local banks in rural areas to better invest in their communities. Because of the high cost of building these networks, a new tool for local banks to invest in needed projects is a welcome development.

RS Fiber also received a financial boost from the state. The Minnesota Office of Broadband Development awarded RS Fiber a \$1 million grant to expand service in unserved areas, which it will do in phase 1 by connecting homes close to the fiber running between cities and wireless access points.

The cooperative also expects to receive more than \$3 million through the New Markets Tax Credits program, part of a federal community development tax initiative administered by the U.S. Department of the

Treasury. The program is designed to provide investors with credits against federal income tax in return for new investments made in eligible businesses and commercial projects in low-income areas.

Finally, the RS Fiber project also benefited from a Blandin Foundation matching grant that originally allowed the communities to begin studying the project.

The financing for RS Fiber Cooperative is a testament to a dedicated group of people who were determined to fund the infrastructure their communities needed to thrive in the digital economy. It fundamentally rests on the capacity of local governments to issue general obligation bonds, subordinate their stake to other investors and thereby take the vast majority of the financial risk from the project.

One other element greatly helped the project get started. Rather than building fiber out to everyone immediately, the co-op built fiber to the areas with the most density, where it would get the fastest return on its investment. Simultaneously, it built the wireless service to immediately offer needed service to the townships that otherwise had little or no internet access. This gave the township residents better access and immediately began generating revenue that can finance the phase-2 fiber expansion to every premises. This



Reels of fiber and conduit were unloaded and stored in Winthrop, Minnesota, in summer 2015.

business plan also gave investors more faith in the project's viability.

GRASSROOTS MARKETING, UNCHAINED

RS Fiber is committed to grassroots outreach. Early on, supporters formed a citizens' marketing committee to educate the public about the technology and the details behind the business and financial plans. They created one of the most successful educational efforts of any community network. The marketing committee traveled the region, conducting as many as three meetings a day in a single location (morning, afternoon, and evening to maximize educational opportunities) – more than 100 meetings between 2010 and 2014. Over the course of the project, approximately 85 people were involved with the committee.

The marketing committee members also went door-to-door to inform residents and promote the RS Fiber project. Community response was enthusiastic, with one woman saying the project was “the biggest no-brainer” and offering to take pledge cards door-to-door in Green Isle (pop. 514).

Another key activity involved mailing out 14,400 copies of a **BROADBAND COMMUNITIES**/Fiber to the Home Council publication called *What Fiber Broadband Can Do For Your Community*, a 30-page booklet more commonly called the FTTH Primer. The primer offers basic facts about fiber optic networks and how they work, the case for fiber, and examples of success stories. The mailings, which each household received twice, were done in

two batches of 7,200 copies, with one copy sent out in the summer of 2011 and the second one distributed a year later.

Many people read the FTTH Primer, and organizers claimed it was among the most effective tools for raising public awareness and education about the project. **BROADBAND COMMUNITIES** sent bulk shipments at no charge or for the price of shipping if expedited shipping was necessary.

The marketing committee also engaged in other public relations, using Facebook, a dedicated website, billboards, county fair booths, and advertising in several local community newspapers that totaled more than \$20,000, Erickson says. The newspaper ads included meeting announcements and testimonials for RS Fiber from community leaders.

This marketing was essential in the face of strong opposition from the existing telephone companies. As Erickson noted on multiple occasions, that opposition provided a big challenge because people tend to trust “Ma Bell.” Erickson heard rumors that he would personally profit from the network, not the only whopper he confronted.

The marketing committee from RS Fiber should serve as a model for any community seeking to educate its businesses and residents. The committee readily acknowledged the risks involved with its approach, but the community overwhelmingly decided the risks of doing nothing were far greater.

CONCLUSION

RS Fiber offers several important lessons for those seeking to improve

internet access locally. The most important lesson is that these networks can require considerable organizing. RS Fiber advocates spent years educating the community. They gave people many opportunities to learn about the project and question those putting it together. They helped keep enthusiasm high despite numerous setbacks that could have derailed the project.

Another key lesson is that the community could use its local government capacity to issue bonds to provide seed funding to the co-op. Because the loan from local governments to the co-op is subordinate to other loans, local banks and other entities had very little risk for their investment. This allowed the co-op to raise enough capital to start the project.

The combination of wireless and fiber is also important. Most people immediately had an option that was much faster than anything they could get previously, and the network began generating revenues that could be reinvested. Some feared that a wireless network might be seen as sufficient and the fiber would not be expanded. But because everyone taking service has a vote, they can demand that the fiber be extended.

Finally, the power of locally rooted solutions cannot be overstated. This co-op is democratically accountable to the community. In the decades to come, the co-op will remain motivated to keep prices reasonable, invest in new technologies and otherwise ensure the region can thrive. That is a long-term solution the community can bank on. ❖

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