

Broadband in the Upper MN River Valley



Governor's Taskforce on Broadband

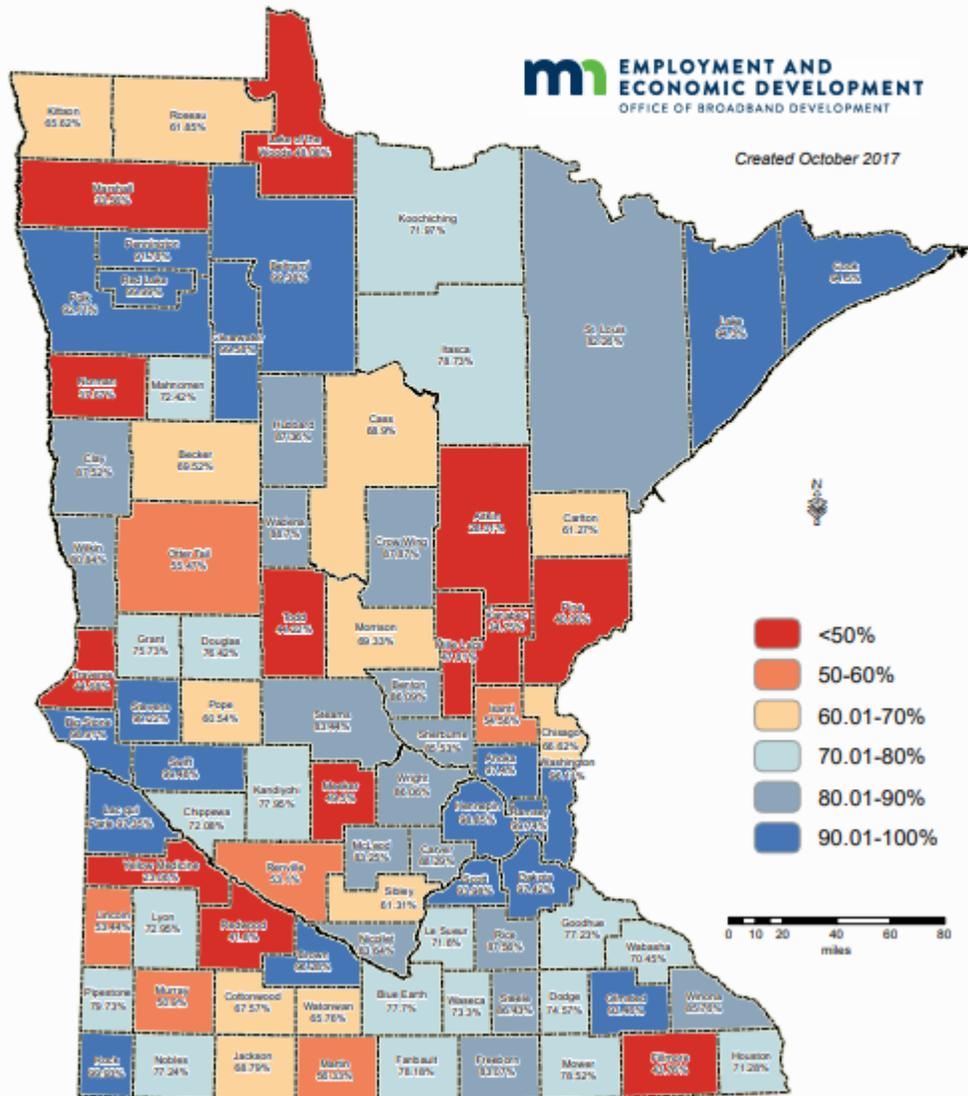
Benson, MN

June 7, 2018

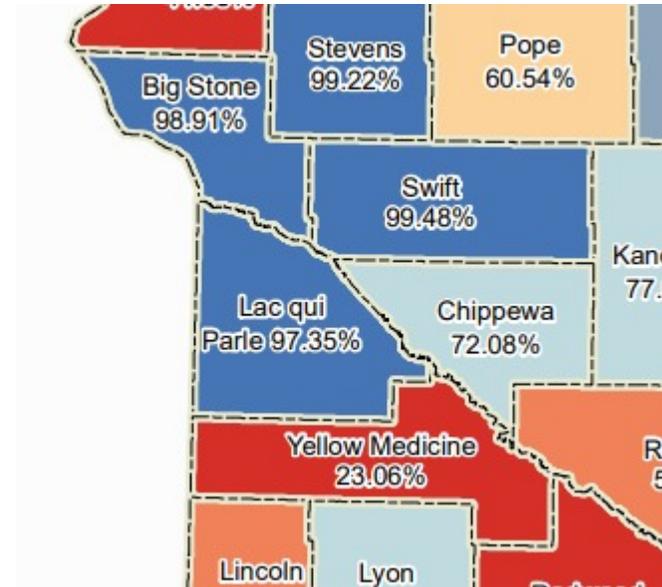
2017 Broadband Availability in the State of Minnesota

Percentage of Households Served by Wireline
Broadband Service by County

At Least 25 Mbps Download/3 Mbps Upload Speeds
Statewide Availability: 88.11%, Rural: 73.45%



How do we compare?



What has been happening? A LOT!!!

- ▶ 2008: Authored an unsuccessful application to the U.S. Dept. of Commerce EDA for broadband service in Appleton.
- ▶ 2008: Completed a regional broadband service inventory with the Blandin Foundation
- ▶ 2009: Completed local business surveys identifying broadband use for the U of MN Crookston EDA University Center
- ▶ 2010-2012: Selected and a Minnesota Intelligent Rural Community (MIRC) by Blandin and worked with six local technology based demonstration projects.
- ▶ 2013: Participated in a process to develop a County EDA in Big Stone County to serve as a financial mechanism for financing broadband in the County.
- ▶ 2014: Authored two applications to the MN Border to Border Broadband program for fiber to the premise in un and underserved areas in Swift and Big Stone County. Big Stone County was funded.
- ▶ 2014: Authored an unsuccessful USDA Connected Community grant for Big Stone County.
- ▶ 2015: Developed a second application for Swift County to the MN Border to Border Broadband program for fiber to the premise in un and underserved areas.
- ▶ 2015: Led a feasibility study for a regional public sector fiber network. This project was jointly funded by the counties and the Blandin Foundation.
- ▶ 2015: Selected by the Blandin Foundation as a MN Broadband Community and working on several regional projects:
 - ▶ Regional IT Staff Professional Development Network
 - ▶ Regional Online Message Development Plan
- ▶ 2016: Facilitated community discussions and workshops in Appleton and Madison around the interest and need for improved broadband access.
- ▶ 2016: Developed strategies for broadband in CEDS and DevelopMN
- ▶ 2017: Facilitated community discussions and workshops in six cities in Yellow Medicine and Chippewa Counties around the interest and need for improved broadband access.
- ▶ 2017: Chippewa and Yellow Medicine County were part of 6 counties that developed county based feasibility studies for broadband.
- ▶ 2017: Authored an unsuccessful Border to Border grant for Yellow Medicine County.
- ▶ 2017: Authored a successful Border to Border grant for broadband in the City of Watson and the SW corner of Lac qui Parle County.
- ▶ 2018: Completed a regional internet speed test.
- ▶ 2018: Developed our regional broadband case studies.

Integrated Strategies

DevelopMN - 2016 Comprehensive Development Strategy for Greater Minnesota
&
UMVRDC 2016-2021 Comprehensive Economic Development Strategy (CEDS)



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100% of businesses and households in Minnesota will have access to federal broadband goals currently set at 25MB/sec down and 6MB/sec up by 2025.

ACTION PLAN	Tasks	Champion	EDA	Partners
1. Meet with all cities and counties that are currently underserved with broadband access	Help cities and counties understand where their community is at with access	UMVRDC	Financing partner for comprehensive broadband infrastructure	
	Provide education to local elected officials			
	Discuss opportunities to improve and use broadband			
1. Connect communities to tools kits to start broadband conversations	Facilitate community conversations	UMVRDC		Blandin
	Coordinate education panels			
	Connect communities to Blandin TA			
1. Meet with local providers to discuss future opportunities	Determine project / funding possibilities	UMVRDC Cities / Counties	Financing partner for comprehensive broadband infrastructure	
	Aid communities in survey work to validate demand / feasibility			
1. Work with local EDAs to promote availability of high speed broadband	Determine how broadband can be included in a marketing plan	EDAs Cities Counties		UMVRDC Realtors Employers Chambers
	Work with employers to promote			
1. Collect stories about how broadband has made a difference in the region	Send consultants to meet with people who have been impacted by broadband to collect stories	UMVRDC Providers EDA's		University of MN Center for Small Towns

How does broadband internet help our communities?

- Drives Commerce
 - Creates new opportunities to participate in the global economy
 - 360 Design House Images
 - SpecSys
 - Impact Innovations
- Enriches Education
 - Allows educators and students to access information and resources from around the world
 - Online educational coursework
 - Helps teachers connect with parents, post assignments, incorporate multimedia into their lessons
- Enhances Healthcare
 - Supports long distance healthcare services and increases patients' contact to specialists.
 - Speeds the transmission to medical information



How does broadband internet help our communities?

- Improves Safety
 - Fire, police, and other public safety officials can communicate seamlessly and reliably to prevent and respond to emergencies-allows for data sharing capabilities.
- Gives Farmers Advantages
 - Precision Ag technology provides farmers with the ability to increase yields.
 - Rely on “real time” data specifically with weather reporting
 - Considering the entire nation depends on American agriculture, broadband internet in rural areas benefits everyone.
- Connects Communities
 - Allows for communities to share information, resources, and services



Comments from Community Meetings in Appleton and Madison

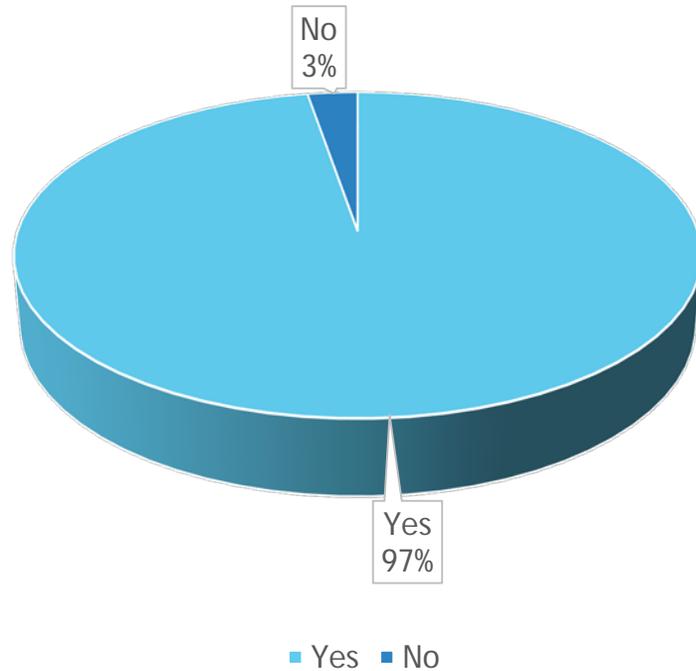


- "I would get internet if we had Fiber"
- "Tried running the speed test 3 times"
- "We had Mediacom, but cancelled because of customer service and internet service"
- " I just got an Ipad, so I'm just in the learning stage"
- "I was unable to load the upload speed-Dish Internet is awful"
- "Slow"
- "No need for internet"
- "I am not able to utilize movie or TV streaming systems at this time with the slow speeds"
- "Unable to conduct test"
- "I was not able to do the speed test as the internet company restricted the access"
- "We would like tv, internet, and telephone"
- "Connection error several times on upload"
- "All of my internet is very slow, it shuts off when on Facebook or playing games. VERY UPSETTING"
- "I pay \$127 for 50/5 speed. After 2 years of fighting with Mediacom, they fixed it to 50/5. I worked for 1 week, then back"
- "It does not perform upload test"
- "Internet doesn't work a lot of the times"
- "No computer"
- " Cost of internet is too high, need another provider other than Mediacom to provide competition"
- "I couldn't get an upload speed"
- "Expensive"
- "Federated has been an excellent provider, I would love to have them available for TV & phone in Appleton as well"
- "Need some competition for cable services"
- "I do a podcast and I keep losing signal"
- "Attempted several times to do test and every time I got a message that stated-Finding a Test Server"
- "Very dissatisfied with Mediacom and their outrageous prices for such poor quality"
- "If this is a tax payer funded in anyway, I am not in favor"
- "I would be willing to change to any reliable company that was controlling cost"
- "Just moved here so I am not connected yet, but will require internet for home computer, Roku, Netflix, and Hulu"
- "Wouldn't switch unless cheaper"

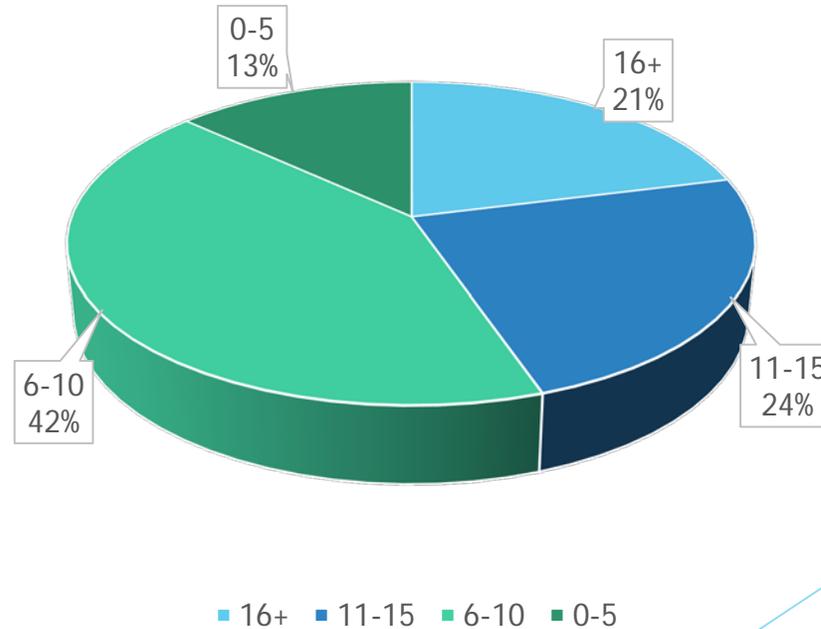
Wired Wednesday Survey Results from Chippewa and Yellow Medicine Counties



Do you have internet?



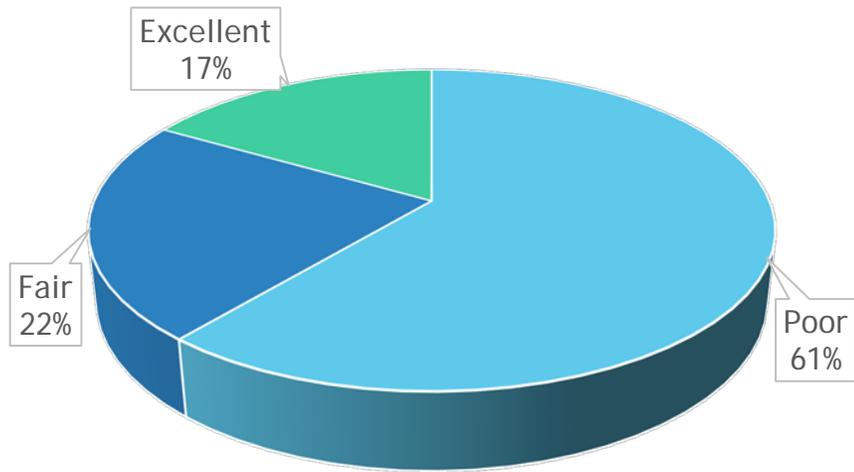
How many devices do you have in your household?



Wired Wednesday Survey Results from Chippewa and Yellow Medicine Counties

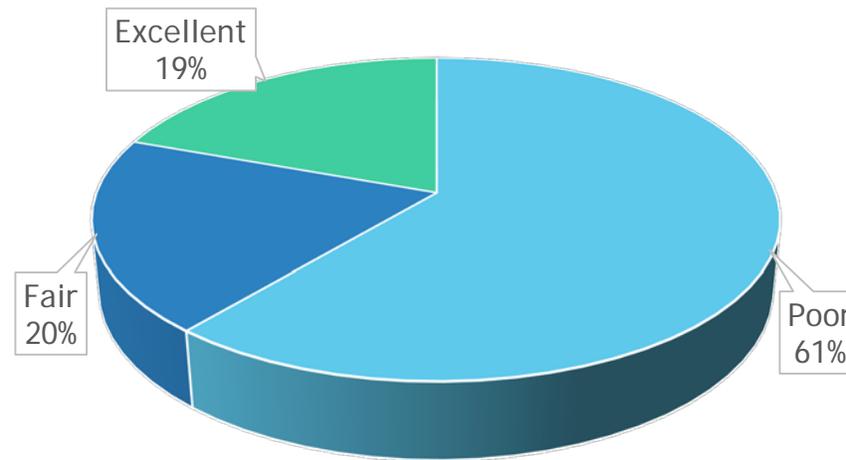


What is your current satisfaction with the speed of your broadband?



■ Poor ■ Fair ■ Excellent

How dependable or reliable is your broadband?

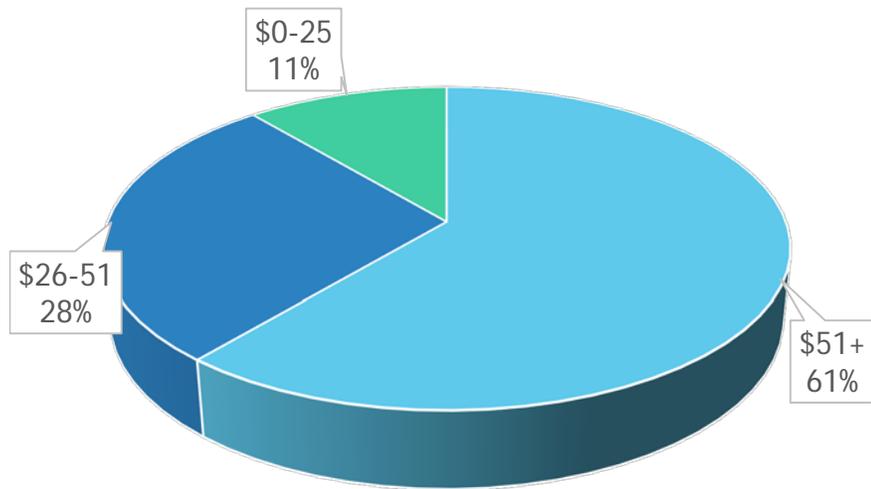


■ Poor ■ Fair ■ Excellent

Wired Wednesday Survey Results from Chippewa and Yellow Medicine Counties

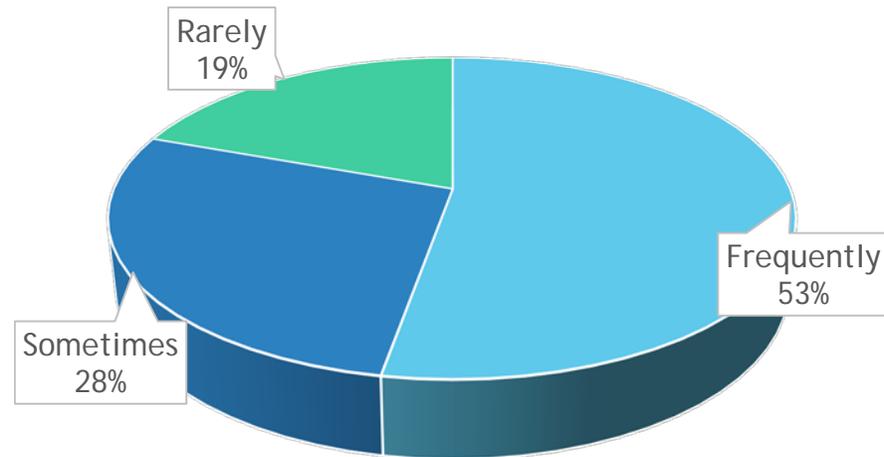


How much do you currently pay for your internet?



■ \$51+ ■ \$26-51 ■ \$0-25

Do you ever lose connectivity or dependability of your internet?

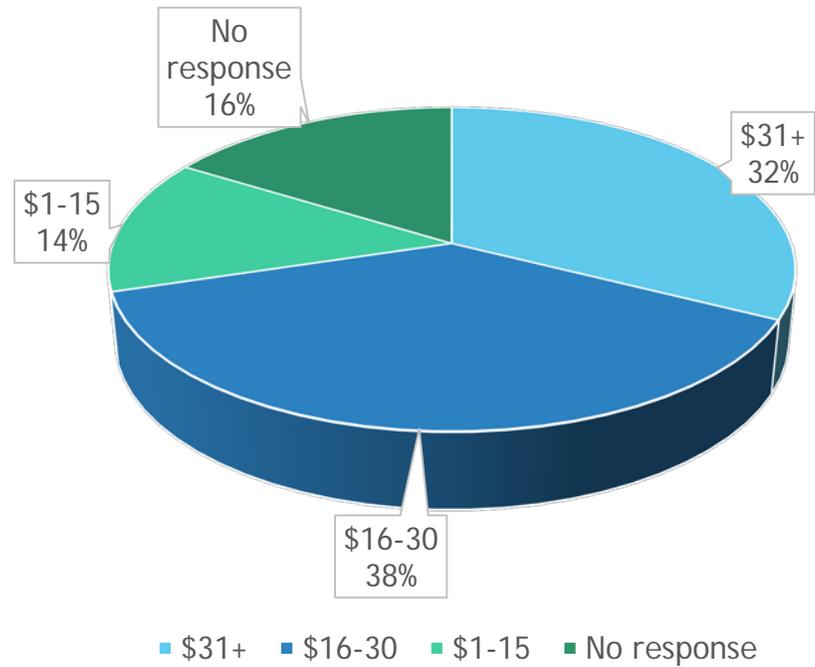


■ Frequently ■ Sometimes ■ Rarely

Wired Wednesday Survey Results from Chippewa and Yellow Medicine Counties



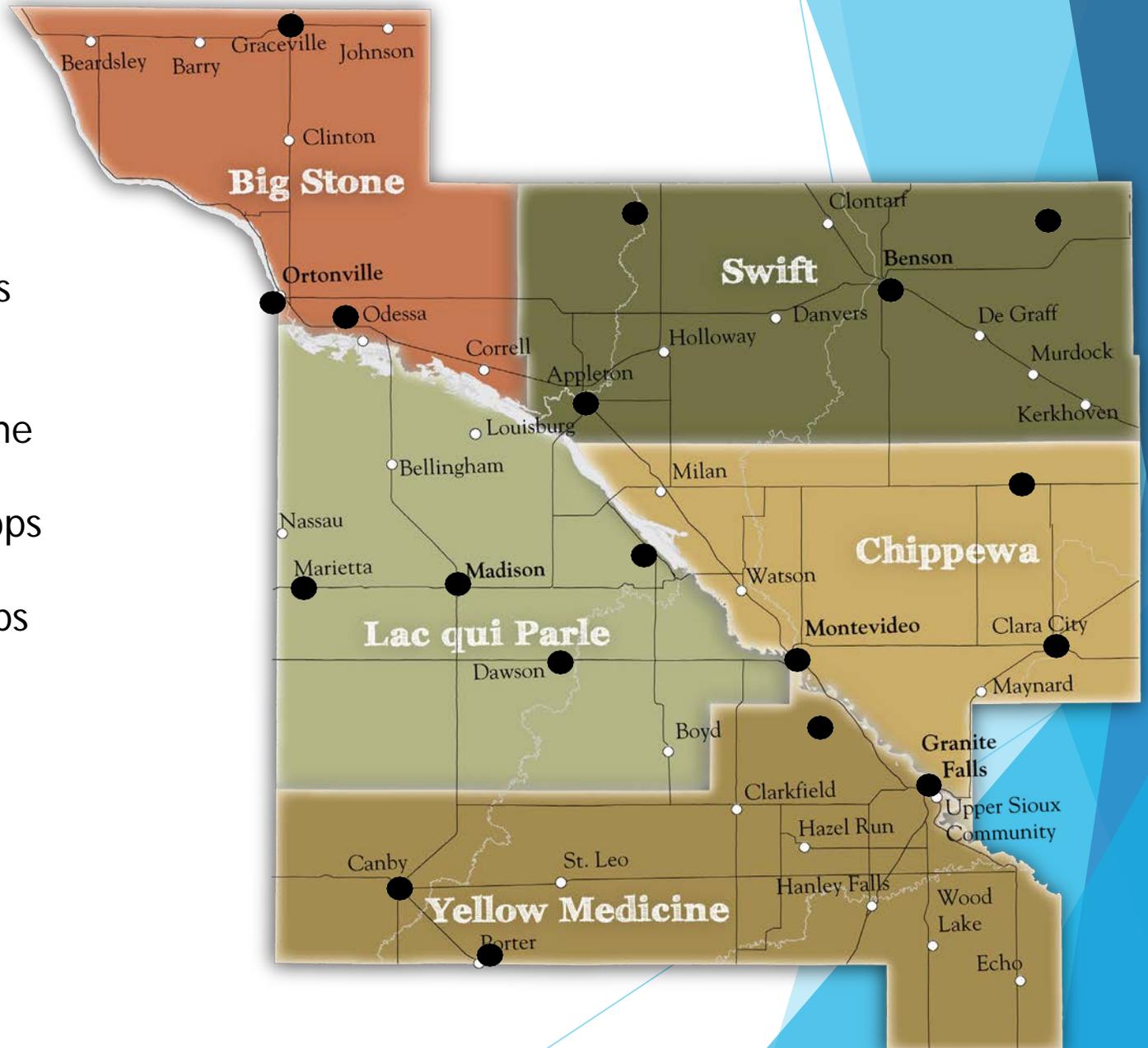
How much more are you willing to pay for faster, more reliable internet?



Regional Internet Test

The UMVRDC collected 35 internet speed tests from board members and employees

- Cost Ranged from \$44-160/month (some bundled services)
- Download speed ranged from 0-103 Mbps
 - Average was 26.5 Mbps
- Upload speed ranged from 0-49.87 Mbps
 - Average was 16.8 Mbps



Regional results

Home	Work	Mobile	Wired Connection	City	Within City Limits	Outside City Limits	Provider	Cost	No Bundle	Yes, with TV	Yes, with Phone	Yes, with TV and Phone	Ping	Download	Upload
x		x		Clara City		x	Clara City Exchange (HDI net)	\$44.00x						0	0
	x	x		Appleton	x		Verizon Wireless	\$125.00x					100	0.63	0.58
	x	x		Graceville	x		Verizon							1.42	0.96
				Montevideo									76	2.5	0.46
x		x		Dawson		x	Fronteir	\$50.00x					44	2.51	40
				Montevideo									108	3.25	0.053
x		x		Madison	x		Fronteir	\$62.98x					154	3.49	0.92
x		x		Madison?	x		Fronteir	\$62.98x					154	3.49	0.92
		x		Ortonville	x		Midco	\$129.00		x			33	3.77	4.45
x		x		Appleton	x		Media Com	\$150.00				x	17	4.42	2.2
x		x		Canby			Frontier						31	5.91	0.35
		x		Granite Falls			Verizon Wireless (?)						72	6.03	1.68
x			x	Benson	x		Century Link	\$90.00			x			9.62	0.75
x		x		Madison?	x		Fronteir	\$70.00				x	33	11	1.2
	x		x	Madison	x		Fronteir						51	14.8	0.94
x		x		Appleton		x	Farmers Mutual	\$69.95				x	47	15.46	21.03
				Hegbert Township											
x		x		Township		x	Federated	\$110.20				x	8	16.76	12.53
x		x		Madison?	x		Fronteir	\$70.00				x	30	18	1.7
	x			Rural Odessa			Federated	\$160.00				x	7	19.63	19.58
x			x	Dawson		x	Farmers	\$92.00			x		48	20	20.27
x			x	Marietta		x	FMTC	\$100.00			x		6	20.04	19.98
x			x	Madison		x	Farmers Mutual	\$91.18x					49	20.23	12.76
	x	x		Madison?	x		Fronteir	\$115.00				x	44	20.4	0.9
		x		Ortonville	x		Verizon Wireless						85	32.3	13.84
	x		x	Benson	x		Spectrum Charter					x	28	43.2	4.35
x			x	Appleton		x	Farmers Mutual	\$69.95				x	13	47.32	49.87
x		x		Graceville									4	47.87	49.04
				Lac qui Parle Township											
x		x		Township		x	Farmerstel				x		4	47.87	49.04
x		x		Benson		x	Federated	\$92.59			x		4	47.98	48.67
	x		x	Appleton	x		Federated	\$84.95x					4	48.18	48.38
x		x		Madison	x		Mediacom	\$92.00x					21	49.16	45.08
x			x	Benson	x		Spectrum Charter	\$101.00				x		68.75	5.35
	x		x	Graceville	x		Mediacom	\$54.00		x			17	78.69	10.37
	x		x	Benson	x		Spectrum Charter	\$54.99					12	90.61	94.3
x			x	Porter	x		Midco	\$140.00				x	13	103.77	6.96

Regional Public Sector Feasibility Study

Could there be a coordinated system to share a network, provide redundancy, and encourage coordinated services?

Findings

More than 200 public offices & agencies in the region all using public dollars to purchase internet access.

- E-rate
- MN.IT

New fiber network ring to install 191 miles of fiber between key connections in the region = \$15.5 million

Opportunities to share IT support services

Opportunities to improve data back up and disaster recovery options

Collaborating on joint procurement



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Broadband in Big Stone County



“Minnesotans have a proud history of innovation,” said Lt. Governor Tina Smith in February 2015. “Ensuring that all Minnesotans have access to high-speed broadband internet is critical to unleashing the next generation of dreamers and innovators. These new infrastructure investments will help Greater Minnesota communities compete in the global economy.”

Big Stone County and Federated Telephone Cooperative Fiber to the Premise Partnership Project

Big Stone County was one of the original MIRC (Minnesota Intelligent Rural Communities) cohort groups with the Upper Minnesota Valley Regional Development Commission. With a wide range of projects through that effort, getting local businesses online within the county was a highlight.

Through that effort, Big Stone County established a working relationship with Federated Telephone Cooperative to determine how they could make service available to 1,072 unserved premises across their county.

The Big Stone County broadband infrastructure project cost \$7.92 million to construct. \$4 million of the project came from funds raised through tax abatement bonds and the county loaning the bond proceeds to Federated. The other \$3.92 million came from the Minnesota Border to Border Grant authored by the Upper Minnesota Valley Regional Development Commission. The final project ended up almost \$1 million over budget due to the underestimating of prevailing wages needed for the project construction and the extra costs of hand digging in fiber along the narrow band of

infrastructure corridor along Big Stone Lake. The additional funding was provided by Federated Telephone and brought the total cost to almost \$9 million.

The Minnesota Office of Broadband Development funding was established by the Minnesota State Legislation in 2014 to facilitate rural broadband projects.

In addition to connecting local businesses and providing local online learning opportunities, 45 percent of the new service drops with this project were to farming operations that now can make use of high-tech agricultural and agribusiness applications.

Investments in our region

Case Study on the 2014 Big Stone County
Border to Border Grant



Broadband in Lac qui Parle County



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As anticipated, the network has allowed home commerce to expand. Jean Menden of Boyd, MN uses her fiber connection for her jewelry business. In addition to an improved online store, she now accesses video tutorials to improve her silversmith skills. Jean was quoted in the "All Hands On Deck" report completed by the staff at the Community Broadband Networks Initiative for the Institute for Local Self-Reliance Sept 2014

"If you had two hours, you could watch a 10-minute video. You would become frustrated, shut it down and be done for the day. Now there is no reason to shut down."

Investments in our region

Case Study on the 2010 Lac qui Parle County
ARRA grant

Farmers Mutual Telephone Company and Lac qui Parle County Fiber Connectivity

Farmers Mutual Telephone Company worked in partnership with Lac qui Parle County to bring fiber broadband connectivity to their county and turn it into one of the best-connected counties in the state. Through this strong public, private partnership approximately 1,700 locations that had no real access were now connected to fast, reliable fiber broadband.

A 2009, a feasibility study funded by the Lac qui Parle County Economic Development Commission, Farmers Cooperative, and a Blandin Foundation grant was utilized to

support a \$9.6 million dollar American Recovery and Reinvestment Act (ARRA) award in August 2010. 50% of the award was in grant funds which reduced the risk of the project for Farmers Mutual.

With the projected additional \$3-4 million still needed to complete the project, Lac qui Parle County agreed to loan the cooperative \$1.5 million from their budgeted county cash reserves if the funds were required to be necessary.

Farmers Mutual worked diligently to keep project costs down, to keep the cost just under

\$10 million, much closer to its original estimate. Thus, not requiring access to all the itemized loan funds allocated from the county.

The fiber deployment project was completed in the summer of 2014.



Broadband in Swift County



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"In one innovative, shared risk project, a state grant and a county bond issuance, a private company would deploy next-generation broadband in Swift County, a rural area in west central Minnesota that has a population of only 10 people per square mile"

CTC Technology & Energy, Engineering and Business Consulting President Joanne Hoyis' testimony before the US House of Representatives Committee On Energy and Commerce Subcommittee on March 21, 2017

Investments in our region

Case Study on the 2015 Swift County Border to Border Grant

Swift County and Federated Telephone Cooperative Fiber to the Premise Partnership Project

Swift County and Federated Telephone Cooperative received the highest award of the 2015 Border to Border Grant cycle administered through the Minnesota Office of Broadband, with the grant totaling \$4.95 million.

The project was estimated to deliver high-speed, fiber internet service to 600 households, 425 businesses, and 75 community institutions, including 13 townships.

With total project costs at \$12.5 million, Federated sought the county's backing because no

source of funding exists that had the capacity to lend the amount of money needed for the project or provide the long terms to make it financially feasible for the cooperative. A loan in the private sector would only be for 10 years with an additional refinance needed after that to pay the balance. With the volatility of a higher interest rate 10 years later, they risked the project sinking.

Swift County chose to sell \$7.8 million in general obligation bonds, and lend the funds to Federated at the current interest

rate for 20 years. Federated provided a \$1 million cash security in the event of missed payments. The project financing was complete with the addition of the \$4.95 million-dollar grant authored by the Upper Minnesota Valley Regional Development Commission.

The final project cost came in almost \$1 million under the estimate and those funds were returned to the State. Cost savings resulted from lessons learned in from being over budget on the Big Stone County project and managing construction cost pay and estimating hand digging expenses.

Broadband in the City of Watson, Chippewa County and SW Lac qui Parle County



Kyle Jones, Watson resident and owner of Firestorm Films, states in his testimonial of support that the lack of internet service available causes him to drive to the home of his daughter in the Minneapolis/St. Paul metropolitan area in order to transmit large media files overseas to business clients in Scotland. He states that as a result of this project he would be able to transmit files, increase productivity and avoid unnecessary travel as well as keep up to date on important business information, and correspond and connect with colleagues and business contacts

Farmers Mutual Telephone Company, City of Watson and SW Lac qui Parle County Fiber Connectivity Project

Farmers Mutual Telephone Company (FMTC) worked in partnership with the UMVRDC and the City of Watson to bring fiber broadband connectivity to their city, while also including a small unserved area in Lac qui Parle county, furthering its position as one of the best-connected counties in the state. Through this strong public, private partnership approximately 156 locations that had no real access would now be connected to fast, reliable fiber broadband.

The City of Watson and SW Lac qui Parle County broadband infrastructure project will cost \$1.55 million to construct. The City of Watson's cash share of

the project was \$400K and they considered bonding then loaning the funds to Farmers but in the end they had a building, a small section of fiber from their cable tv and some land that Farmers needed to complete the project and sold the fiber and building for \$1 and completed a 99 year lease on the land to serve as their share of the project. \$760.5K will come from a Minnesota Border to Border Grant authored by the Upper Minnesota Valley Regional Development Commission. The remaining \$791.5K project cost will be borne by FMTC.

The Minnesota Office of Broadband Development funding was established by

Minnesota State Legislation in 2016 to facilitate rural broadband projects. The grant was awarded in late 2017.

Broadband is identified as a high priority in the regional strategic plan and will help support job creation and economic prosperity throughout the region. Numerous businesses responded through letters of support that this will help them create jobs and be more competitive. New jobs related to farming, home-based start-ups, commercial expansions, and new non-employers are all possible with broadband infrastructure, along with improved accessibility for all residents to health care and education opportunities.

Investments in our region

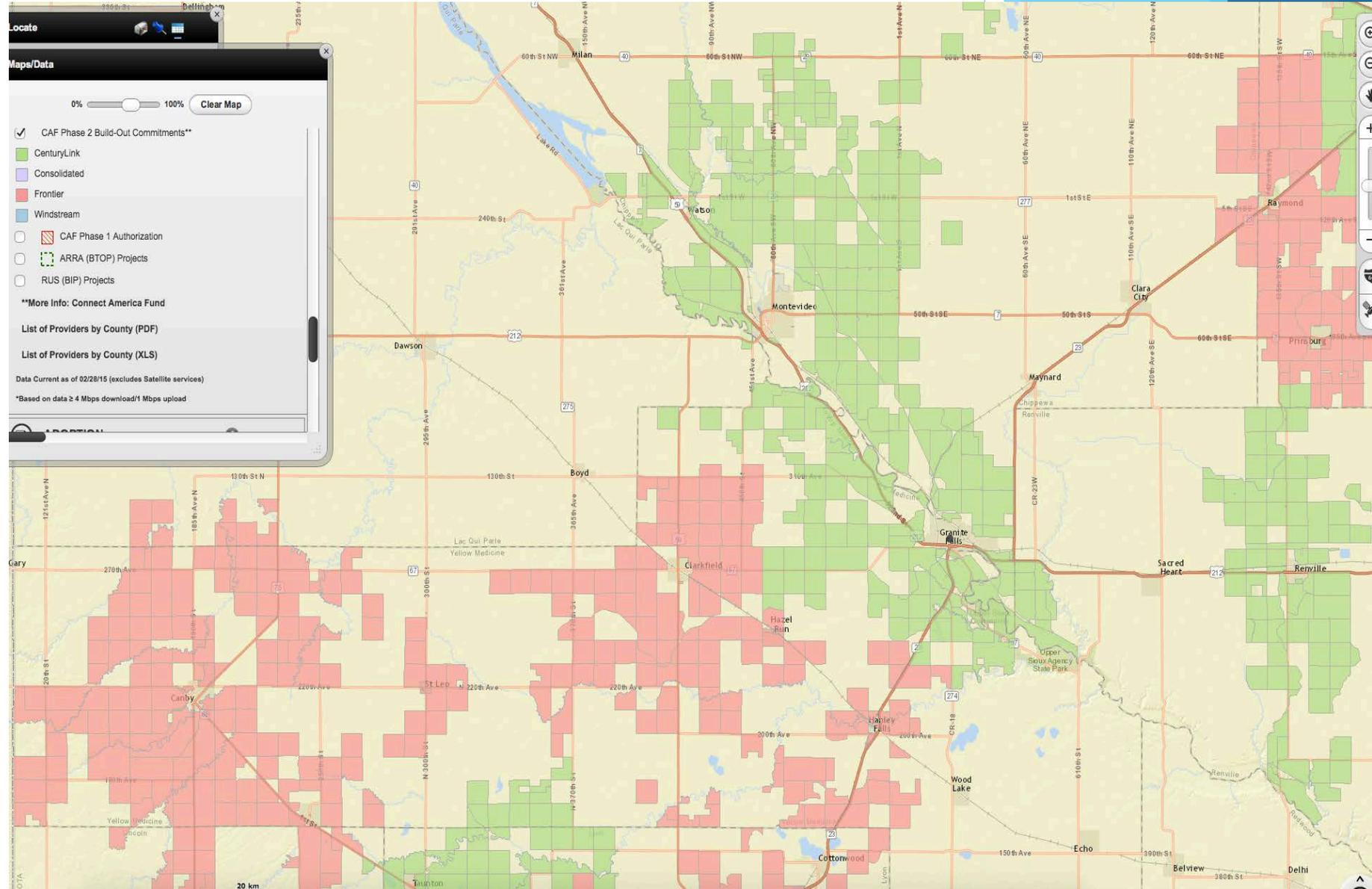
Case Study on the 2017 Watson and rural SW Lac qui Parle County Border to Border Grant



CAF 2 Funding Investments

CenturyLink plans to offer ADSL2 services (some fiber in the backbone with copper to the premise) only within its Incumbent Local Exchange Carrier (ILEC) footprint/territory. They are implementing a CAF2 project in fairly large portions of Yellow Medicine and Chippewa counties, along with small bits of the other 3 counties.

Frontier recently accepted some CAF2 funding within its ILEC footprint. They will deploy DSL technology, with some fiber in the backbone. Guaranteed service will be 45 down/6 up, but those closer to the DSL equipment cabinets may get speeds up to 115/12. Businesses can usually get connections of 40/10.

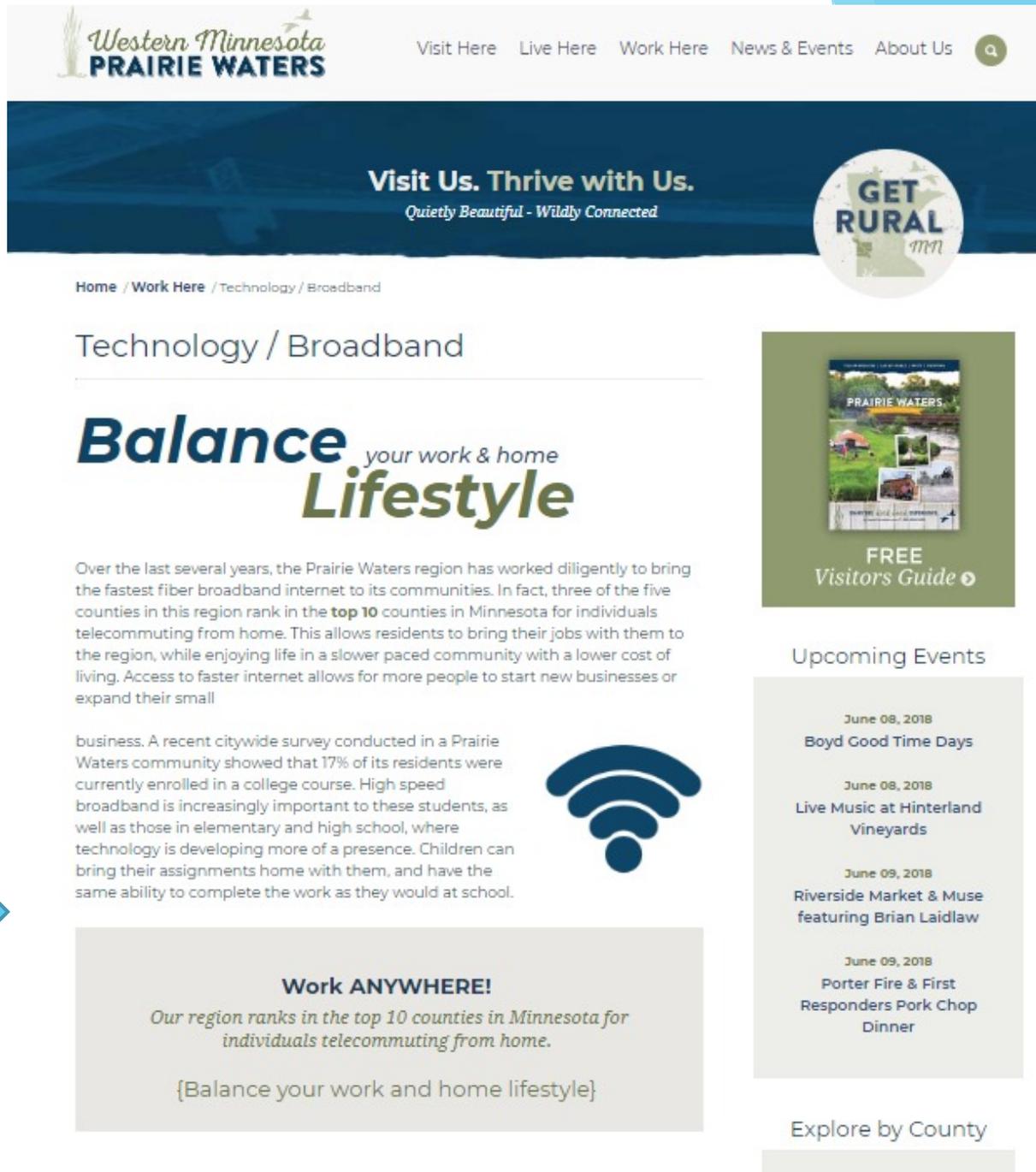


Lessons

- It takes local champions and patience to build relationships with providers
- It takes creativity to develop the right finance solutions
- It takes grant financing matched with local investment
- Each project is different and unique in its partners and financial solutions
- Need advocacy networks and sharing of stories

Opportunities

- ▶ Chippewa and Yellow Medicine Counties are interested in building out broadband in their counties.
- ▶ Cities are often “holes in the donut”. Not eligible for B2B funds but often have less capacity than the rural residents.
- ▶ What public sector agencies are willing to connect and coordinate broadband?
- ▶ Promote the excellent service available in a large part of the region. 



The screenshot shows the Western Minnesota Prairie Waters website. The header includes the logo and navigation links: Visit Here, Live Here, Work Here, News & Events, and About Us. A search icon is also present. The main banner features the text "Visit Us. Thrive with Us. Quietly Beautiful - Wildly Connected" and a "GET RURAL MN" button. The breadcrumb trail reads "Home / Work Here / Technology / Broadband". The article title is "Technology / Broadband" and the main heading is "Balance your work & home Lifestyle". The article text discusses the region's efforts to bring fast fiber broadband to its communities, highlighting that three of the five counties rank in the top 10 for telecommuting. A Wi-Fi icon is placed next to the text. A call-to-action box at the bottom of the article says "Work ANYWHERE! Our region ranks in the top 10 counties in Minnesota for individuals telecommuting from home. {Balance your work and home lifestyle}". On the right sidebar, there is a "FREE Visitors Guide" download button and a list of "Upcoming Events" including "Boyd Good Time Days", "Live Music at Hinterland Vineyards", "Riverside Market & Muse featuring Brian Laidlaw", and "Porter Fire & First Responders Pork Chop Dinner". At the bottom of the sidebar is a link to "Explore by County".

Contact Information

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