

Rural Broadband: The Case for Acquiring Broadband in Liberty Grove

Economic, Education
and Healthcare...



Overview



A case for broadband
in Liberty Grove, WI

01 Overview of Rural
and Broadband

02 Impact

03 Case Studies

04 Broadband in
Liberty Grove

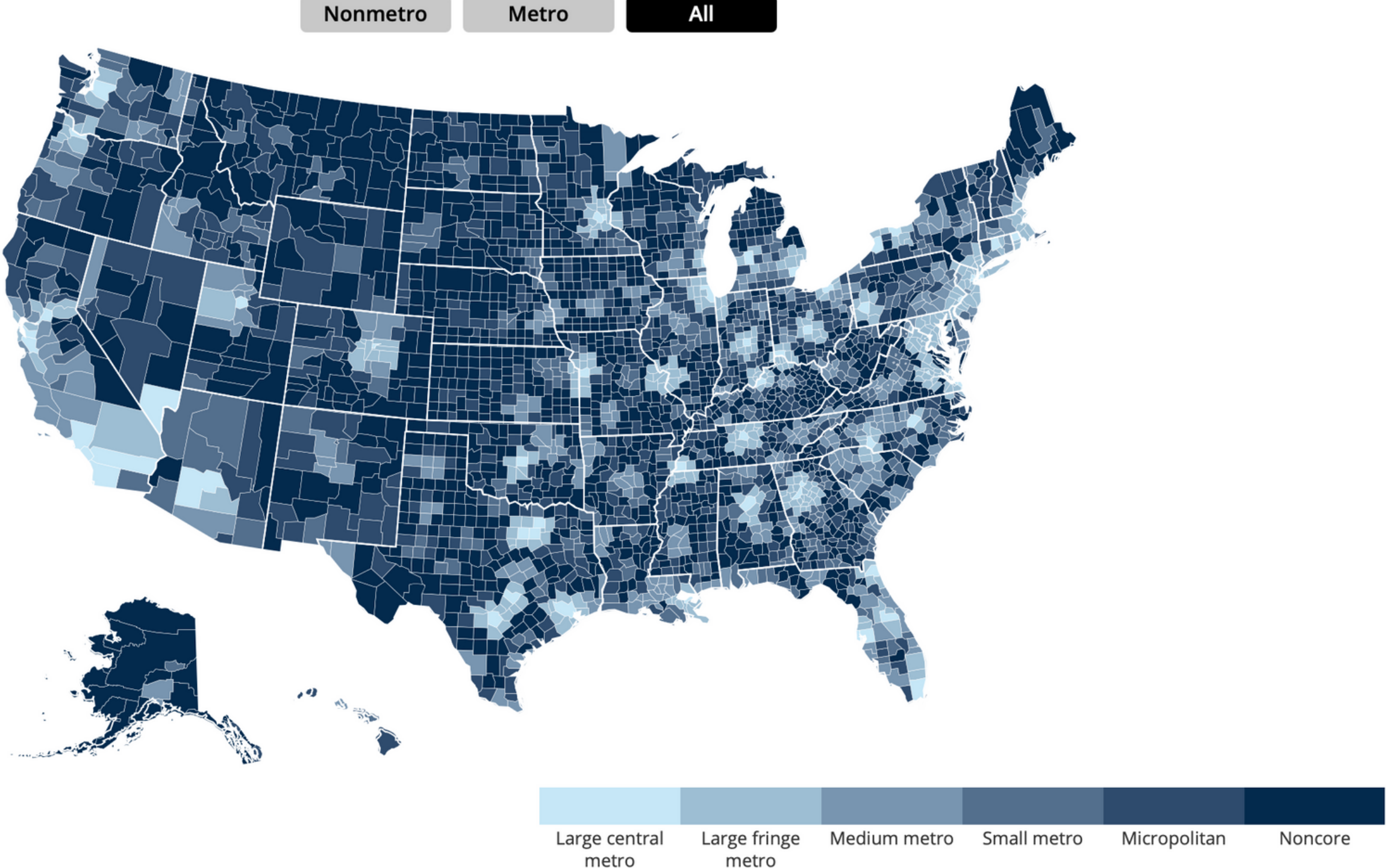
05 Conclusion and
Recommendations



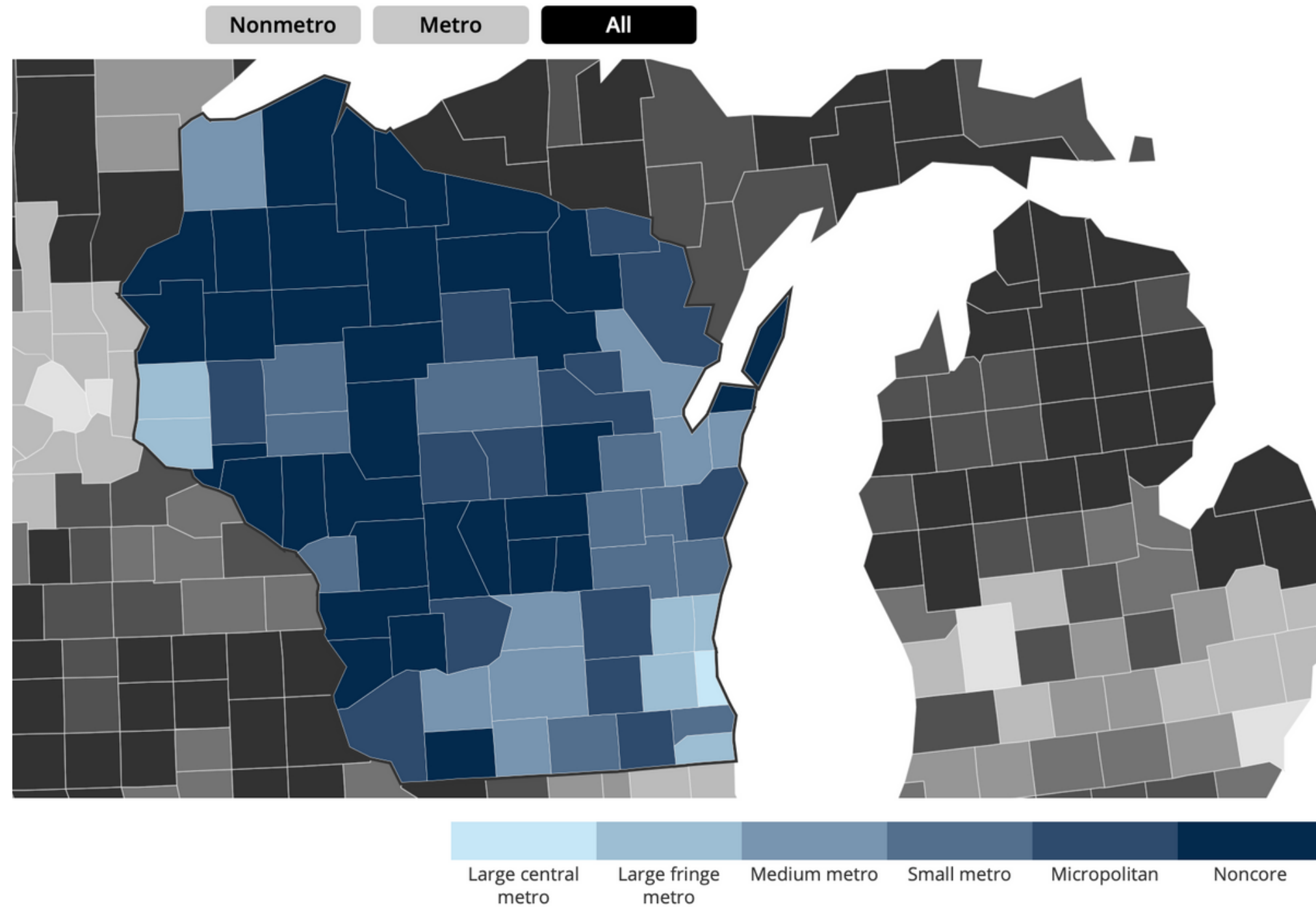
What does 'rural' mean?



Urban and Rural Populations in the United States



Urban and Rural Populations in Wisconsin

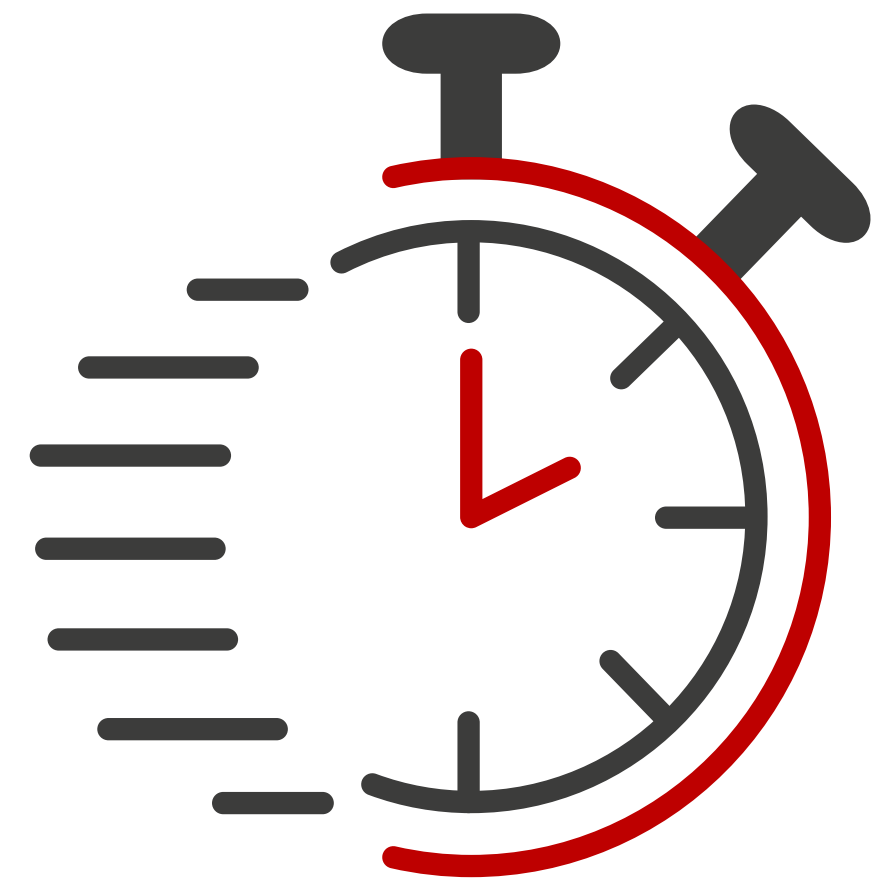


Currently **57 million**
Americans live in rural areas
and **1/3** of them do not have
access to broadband.



What is Broadband?

- Referred to as high speed internet faster than dial-up
- Federal Communications Commission defines as 25 Mbps Download and 3 Mbps upload
- Common speeds for:
 - Browsing: 1 Mbps
 - Video Streaming: 25 Mbps
- Many technologies now require 100 Mbps +



Broadband Internet Options

PLAN OPTIONS	RELIABILITY	SPEED	DEDICATED CONNECTION	DATA CAP
Fiber	High	Very High	Yes	No
Cable	Moderate	Moderate - High	No	Yes
DSL	Moderate	Low	Yes	Yes
Satellite	Low	Low	Yes	Yes
Fixed Wireless	Low	Low	Yes	Yes



The importance of broadband internet

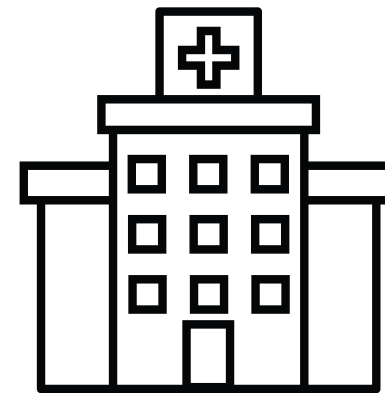


Three Main Areas



Economic

Charter Communications has made a \$668 million dollar investment in Wisconsin to serve underserved areas.



Healthcare

Broadband access increases better health outcomes, access to Telehealth services, and allow for more access to physicians for rural residents.



Education

Studies show that broadband access with higher internet speeds improves academic performance, including better tests scores and GPAs.



Economic Impact

- Increased innovation in communities, studies show up to 5% productivity gain in manufacturing
- Enterprise relocation, increase in employment
- Formation of businesses
- Broadband infrastructure jobs



Healthcare Impact

- Healthcare in rural areas is significantly less accessible than urban areas
 - This inequity affects about 75% of rural Americans
- Issues with doctor deserts
 - longer distances for patients to see a physician
- Rural hospital closures
- Improved telehealth consults and appointments



Education Impact

- Broadband access is recognized as a key technology necessary for educational achievement
- Poor broadband in rural areas is related to 7 percentiles lower placement on standardized tests such as the PSAT and SAT
- Lack of education for digital skills necessary for future jobs

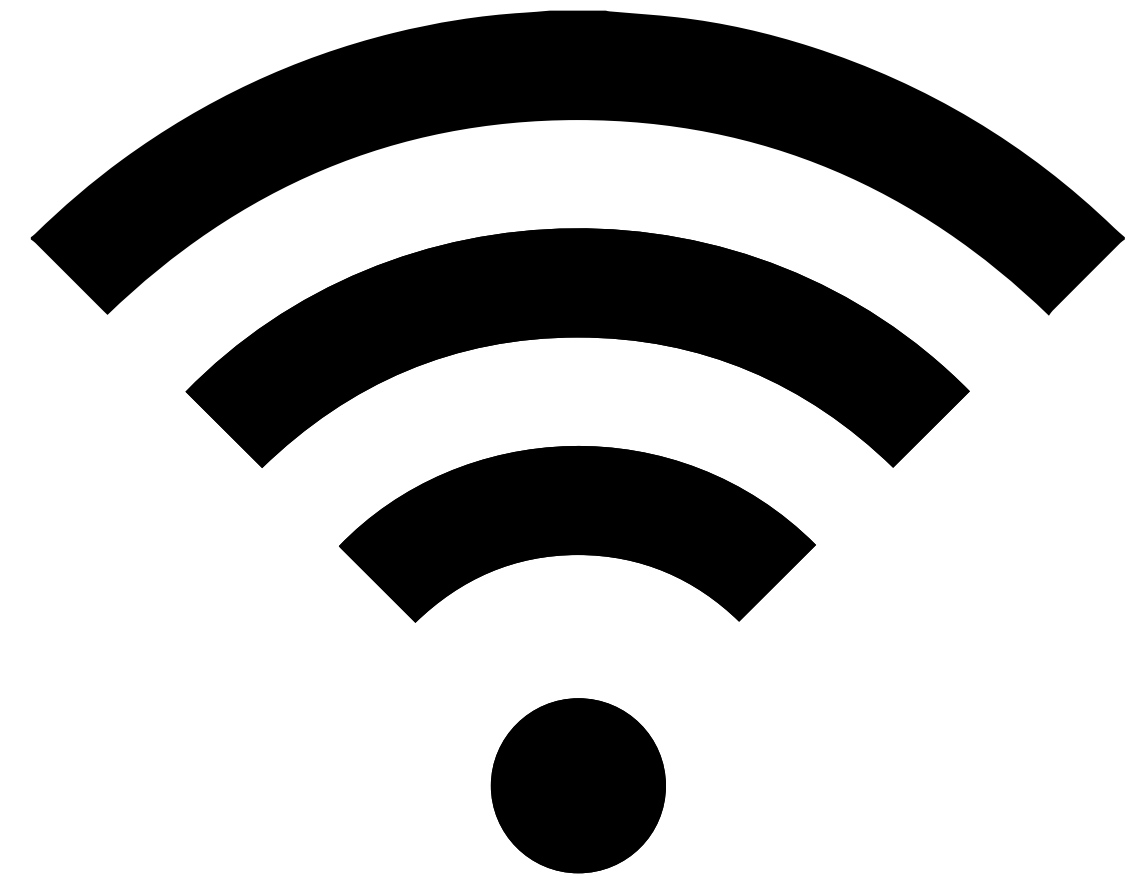


Case Studies



Chippewa County, WI

- Home to a failing business park
- Failing broadband made it unattractive to new businesses
- Partnership with state, county and a service provider to create a fiber broadband internet and attract new business.



North Dakota

- More likely to have fiber internet access than urban areas of the United States
 - 77% of the entire state has access to fiber internet compared to the 44% of the United States
- Created by a collaboration of 15 independent broadband providers including private, public, and cooperatives



Beltriam County, MN

- Telecommunications company borrowed \$100 million dollars in federal funds to bring broadband to community
- Increase in business to the community including
 - viral post at local butcher shop
 - **90% of sales online**
 - healthcare offering e-visits and cost saving solutions
 - **College offering 15% of classes online**



Crow Wing County, MN

- Early adopted to broadband, began efforts in 1999
- In 2001 the school system levied for technology for the schools which resulted in the local government working with a telephone company to extend broadband into community
- Broadband has helped create over 1,000 new jobs for the community
- Increase in full-time residents from seasonal homeowners because of their internet connection



Red Wing, MN

- Home to BIC, a pen manufacturer
- Required 300 Mbps upload and download in order to continue business in the community
- Community benefited by installation of broadband, and continued manufacture of BIC pens
- A case for why FCC minimum of 25 mbps download and 3 mbps upload is an outdated standard of broadband



Liberty Grove Benefits

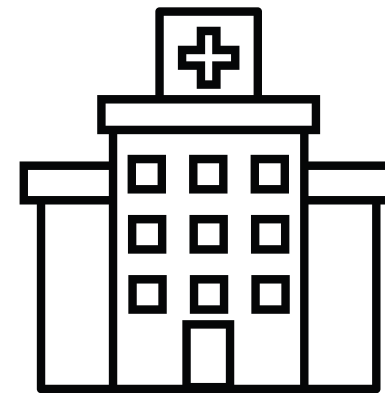


Liberty Grove Broadband Benefits



Economic

Estimated that part-time residents would **spend 12.1 days longer** at vacation properties. This in total for all industries has **an estimated increase of 4.2 million dollars.**



Healthcare

Access to **telehealth**, ability to call Door County Medical Center from homes more easily.



Education

Access for students to work on homework, study materials, and school **from home.**



Current Legislation and Funding Options





Questions?

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Cooperative Broadband



Overview

01 Why Co-ops?

02 Cooperative Basics

03 Applying the model
to Broadband

04 Cooperative Finance

05 Common Challenges

06 Co-op Options for
Liberty Grove



Problem:

Like much of rural America, Liberty Grove is too sparsely populated to attract a private internet service provider (ISP) willing to provide high quality broadband internet.

The cost of bad internet:

- lower quality healthcare
- lower quality education
- extra difficulty attracting businesses & young professionals
- worse economic outcomes for existing Liberty Grove businesses
- less economic activity from part-time residents & tourists



How can a Co-op Help?

Co-ops provide a model for communities to come together to fill a need that investor-owned companies are unwilling to fill because of a low return on investment.

Co-ops also give the community control over the business:

- Greater responsiveness and accountability than investor-owned companies.
- Provides service at-cost.
- Builds community wealth.



What is a cooperative?



Cooperatives are businesses owned and democratically managed by their members.



Types of Cooperatives

Consumer (Willy Street Co-op & Washington Island Electric)

Housing (Madison Community Co-op & Co-op City in the Bronx)

Worker (Union Taxi Cab Co-op)

Producer / Marketing (Land O' Lakes)

Purchasing (NE MPLS Investment Co-op)

Multi-stakeholder (multiple member-classes)



Structure



Image Source: University of Wisconsin Center for Cooperatives,
<https://uwcc.wisc.edu/resources/governance-2/>



Applied to Broadband

Members = broadband consumers

Board of Directors = elected members and special non-member experts who have experience in broadband

Manager = general manager hired and supervised by the board to run the broadband service

Employees = hired by the general manager to implement and operate broadband service



Landscape of Co-op Broadband

1930s & 1940s: FDR's Rural Electrification Act offers loans to rural communities willing to create their own electric co-ops. Rural electric co-ops take off, eventually serving 2/3 of US landmass.

1950s: REA expands to offer loans to rural telecommunications co-ops.

1990s - 2021: Electric and telecommunications co-ops begin to leverage their existing infrastructure and cooperative know-how to expand into broadband.

Today: Lots of federal and state money is available for rural broadband projects, both for electric and telecoms co-ops and new broadband co-ops.



Co-op Finance (a broad overview)

1. After doing community outreach and conducting feasibility studies, a community decides to create a co-op.
2. They file articles of incorporation with Wisconsin Dept. of Financial Institutions and adopt bylaws. They fundraise start-up capital.
3. Members buy equity in the co-op. The co-op uses this equity along with other start-up capital to start the business.
4. Once the co-op is operational, members pay for the co-op's services and the co-op uses this money to continue to operate.
5. When possible, the co-op returns extra revenue to the members at the end of the fiscal year based on each member's "patronage."



Capital Intensive Co-ops

Where else to get money when member equity is not enough?

- Government grants & loans (USDA, FCC, WI PSC)
- Loans from banks & credit unions
- Membership loan programs
- Charitable donations
- Sale of preferred shares to investors*

*Wis. Stat. 185 caps dividends on preferred shares at 8% and makes sure they're always at the boards discretion and not available if the cooperative would be undercapitalized



Common Challenges

1. Capitalization
2. Membership Identification
3. Free Rider Problems
4. Slow Decision Making
5. Member Education Costs



Options for Liberty Grove

1. Do everything yourself
2. Partner with an existing co-op, telecom company, or utility provider (either build network and lease it, or build administrative capacity and lease a partner's network)
3. Use municipal fiber-optic infrastructure built by Liberty Grove
4. Buy an investor-owned ISP and convert it



Case Studies

Partnerships:

Southeast Ohio Broadband Co-op -- Leases space on Verizon cell towers & state-owned first-responder radio towers to provide fixed wireless service; implements creative solutions like using one house with direct line of sight to a tower to send a signal to other houses without direct line of sight. Working on FTTP (*Funding came from the county's allocation of CARES Act dollars to a wireless broadband service*).

Tennessee Appalachian Electric Co-op -- Partnering with Foursight Communications, a telephone co-op conglomerate. AEC has fiber backbone for substation communications and fiber throughout its electric grid, which it leases to Foursight. Foursight maintains transport nodes & electronics, provides office reps, home & business installation, and takes trouble calls. AEC members become Foursight customers. (*Funding for partnership came from state funds and the FCC's Rural Digital Opportunity Fund*)

RS Fiber Co-op (Minnesota) -- RS Fiber partnered with Hiawatha Broadband Communications, a private ISP to operate a mixed fixed-wireless and fiber-optic network built by RS Fiber. Their network started with fixed wireless and is expanding into fiber. (*Funding came from local municipalities, which bonded over half the start-up cost & loaned the bond money to the RS Fiber.*)

Lease a Municipal Network:

Wired West Co-op (Massachusetts) -- Wired West is a co-op of municipalities that is creating an open access fiber to the Premises network. It will sell access to this network to private internet service providers.

Appendix

Seven Co-op Principles

1. Voluntary and Open Membership
2. Democratic Member Control
3. Member Economic Participation
4. Autonomy and Independence
5. Education, Training, and Information
6. Cooperation among Cooperatives
7. Concern for Community



Taxation

Most cooperatives are taxed under **Subchapter T**

Subchapter T cooperatives are taxed only once, either at the cooperative or member level, depending on how the cooperative allocates and categorizes revenue

Broadband Coops are tax exempt under **501(c)(12)** which covers utility cooperatives, and pay no federal or state income tax, as long as:

1. 85% of revenue comes from members
2. Operate on a cooperative basis, meaning the cooperative is democratically controlled by members and extra revenue is allocated on basis of patronage
3. Keep adequate records of member equity and not retain more revenue than necessary



Liability

Cooperatives provide standard corporate **limited liability**, meaning members, directors, and employees are not personally liable for acts of the cooperative, or actions they take on behalf of the cooperative, unless these actions are a breach of their duties of loyalty and good faith to the cooperative.



Governing Documents

Articles of Incorporation

Necessary to create the cooperative entity; must pick 5 incorporators to act as the initial board until a official board is elected

Bylaws

Governs the internal affairs of the cooperative; will be ratified by the membership

Membership Agreement

Controls the relationship between the members and the cooperative; assigns rights and responsibilities to members

