



# Vilas County Broadband Strategy

VILAS COUNTY ECONOMIC  
DEVELOPMENT  
CORPORATION

JULY 2020

# Why is VCEDC Leading Broadband Development?

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Resident, business, and stakeholder feedback – Vilas County Broadband is NOT sufficient

- Most of the county is considered unserved or underserved by federal and state standards

Lack of Broadband limits business growth

Improved broadband coverage is required for a robust tourism industry and to diversify Vilas County's economy to attract entrepreneurs, remote workers, and expanding businesses to secure its future



VILAS COUNTY ECONOMIC  
DEVELOPMENT CORPORATION

The Internet of Things (IoT) – It is now how things are done

- Businesses, especially eCommerce businesses
- Remote workers (115% growth in past decade before COVID-19)\*
- Tele-Education – COVID-19 exposed Broadband weaknesses
- Tele-Health – The future is here
- Communications – Virtually all communications are done on the Internet
- Entertainment – Many streaming options

VCEDC has the expertise within its Board of Directors to improve broadband in Vilas County

Towns appreciate VCEDC's guidance and advice

- "How do we start the process?"

\*<https://remoters.net/remote-work-trends-future-insights/>



# What is Broadband?

Data transfer from and to the World Wide Web (www) – [The Internet of Things](#)

- Email, photos, web browsing, video, TV, movies, documents, gaming, Tele-Education, health screening and monitoring (Tele-Health), thermostat monitoring, e-commerce, security systems and cameras, using the Cloud, telephone, video conferencing, secure tunneling, banking transactions, etc., etc.
- Almost anything you can imagine is possible on the Internet today
- The way today's business happens

It all takes bandwidth (amount and speed of data your "pipe" will handle)

Electrical service comparison

- You can have 30AMP service to your home or 400AMP
- Same with Broadband – 3Mbps or 1Gbps

*Businesses have symmetrical requirements - (ex. 100/100Mbps) and speeds over 1 Gbps.*

## How Much Speed Do I Really Need?

Here are some general download speed requirements based on everyday online activities:

- **Check email and browse the web:** 1-5 Mbps minimum
- **Stream HD content:** 15-25 Mbps minimum
- **Stream 4K content and play competitive online games:** 40-100 Mbps minimum
- **Stream 4K content, play online games, and download very large files:** 200+ Mbps minimum

Most of Vilas County has 10Mbps service or less

**The more connected devices, the more speed is required.**

# Types of Internet Delivery

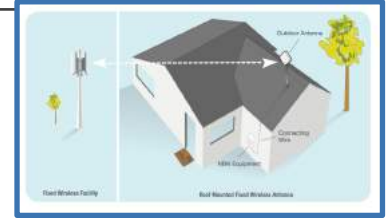
Fiber Optic Cable – Theoretically unlimited

- Today's speeds – 25Mbps to 1Gbps – Symmetrical – same speed up and down



Fixed wireless – Potential speeds to 1Gbps

- Today's speeds – 12 to 25Mbps – Asymmetrical – 12/3Mbps



Cable – Potential speeds over 1Gbps

- Today's speeds – 100 to 1Gbps – Symmetrical/Asymmetrical – 200/20Mbps



DSL – Telco companies – Copper lines – 100Mbps limit

- Today's speeds – 1 to 40Mbps – Asymmetrical – 20/1.5Mbps



Cellular – 4G/LTE – Up to 300Mbps/5G up to 10Gbps

- Today's speeds – 10 to 40Mbps – Asymmetrical – 15/5Mbps



Satellite

- Today's speeds – Up to 25Mbps – Asymmetrical – 25/2Mbps – Fraught with issues and expensive



Infrastructure Vilas County needs to do business globally.

# Reasons to Invest in Broadband

*Improving the quality of life for residents, property and business owners, and visitors*

## Economic

- Keep seasonal residents and visitors here longer (Telecommuting) resulting spending of \$74.18 per day per person#
- Encourage more visitors and families to spend time in Vilas County resulting spending of \$74.18 per day per person#
- Market Vilas County to new remote workers, e-commerce, and consulting businesses and as a Best Place to Live
  - Remote workers average annual salary - \$66,180+
- Recruit new and more employees for existing and new businesses
- Strengthen volunteerism for community events
- Increase property values from 5 to 11%\*
- Add to tax roll by developing new properties and businesses

## Education

- Enhance and protect school enrollment
- Enable Tele-Education for our kids
- Promote distance learning for adults

## Engagement

- Keep us in our homes longer through Tele-Health and Tele-Medicine
- Video-conference with our families, friends, and anyone else
- Access any information and conduct research

## Entertainment

- Watch TV – cast away satellite dish, cable TV, and large monthly bills
- Stream movies (Netflix, Disney, Amazon, etc.) and other content
- Participate in global interactive gaming

#Source - University of Wisconsin-Whitewater, Economic Impact Study, "Broadband and Vacation Properties", Wisconsin" August 2014

\*Sources - <https://api.aae.wisc.edu/pubs/pdf/sps/stpap591.pdf>, <https://pdfs.semanticscholar.org/a680/be92844f5ada41662cb3893d8021fe4318c9.pdf>

+Source - <https://www.ziprecruiter.com/Salaries/Remote-Work-From-Home-Salary>

# VCEDC's Vision and Mission

Create a successful public-private partnership that stimulates sustainable economic growth throughout Vilas County.



Provide innovative leadership and regional infrastructure to improve the economic well being of businesses, communities, and residents; promote creation and retention of viable businesses and quality jobs; and provide increased opportunities for education strengthening workforce development.

# VCEDC's Broadband Objective

Ensure Vilas County has sufficient Broadband to sustain, grow, and diversify its economy and culture for future generations.



# VCEDC's Broadband Strategy

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Develop a Vilas County  
Broadband Inventory



Develop and document  
County/Town objectives



Develop and document  
County/Town strategies to  
achieve the objectives



Assist Towns to achieve their  
Broadband goals

Connect Towns with suppliers and  
suppliers with Towns.

# The Process to Date has Included

- Interviews - ~25
  - Towns
  - Tribe
  - City
  - Suppliers (both existing and potential)
- Technology Research
- Limited Coverage Analysis

# Results



### Current Providers



SonicNet  
Wireless



ChoiceTel Fiber



Charter/Spectrum Cable



ChoiceTel WiFi



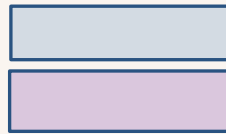
CenturyLink DSL



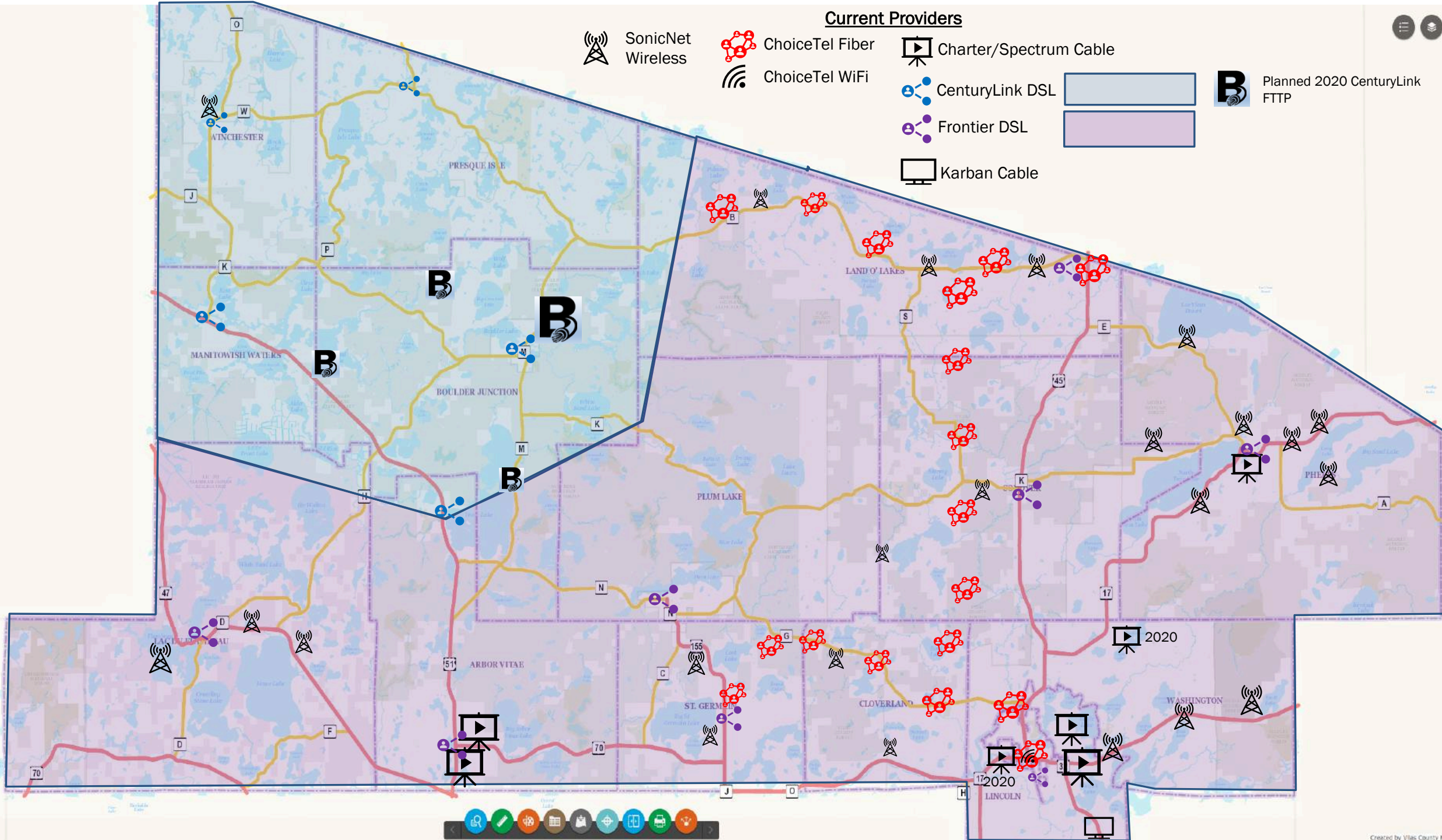
Frontier DSL



Karbon Cable



Planned 2020 CenturyLink  
FTTP

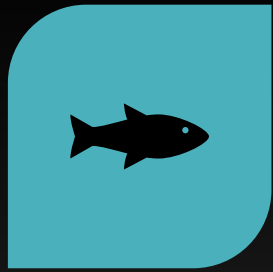


# Town/Tribe/City Detail

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# Best Positioned Today

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EAGLE RIVER



LAND O'  
LAKES



LINCOLN



WASHINGTON

Town/City	Provider (ISP)	Technology	Speeds	Coverage
Eagle River				
	ChoiceTel	FTTP	25M to 100M	City of Eagle River and then North on Hwy. 45 to Co. G and then north and south on spurs
	ChoiceTel	WiFi Network	Fast speeds	Downtown area
	Frontier	DSL	Up to 25M	Throughout the City
	SonicNet	Fixed Wireless	5M to 25M	Mainly east of the City of Eagle River
	Charter/Spectrum	Cable/Fiber?	200M to 1G	West side of Eagle River. Area around Illinois and Adam Streets.

Town/City	Provider (ISP)	Technology	Speeds	Coverage
Lincoln	Frontier	DSL	12M/3M max	Throughout Town, but very poor speeds. Many less than 1M.
	ChoiceTel	FTTP	25M to 100M	Fiber in small area in NW corner of Town
	Charter/Spectrum	Cable	200M to 1G	Close to Eagle River. Eagle Heights N and NE of ER. Hwy. 45 to Clearwater. Loon Lake Road down to Bloom Road
	Karban Cable	Cable	up to 25M	Small area on far south part of Town

Town/City	Provider (ISP)	Technology	Speeds	Coverage
Land O' Lakes				
	ChoiceTel	FTTP	25M to 100M	Fiber comes in from the south and then moves west to Palmer Lake and into the village
	Frontier	DSL	1.5M max	Throughout the Town, but service deteriorates quickly away from the village.
	SonicNet	Fixed Wireless	5m to 25M	Three towers, but coverage is limited.

Town/City	Provider (ISP)	Technology	Speeds	Coverage
Washington				
	SonicNet	Fixed Wireless	5M to 25M	7 towers
	Charter/Spectrum	Cable	200M to 1G	Expanding around Deerskin Lake in 2020
	Frontier	DSL	0-12M/0-3M	Throughout Town, but poor speeds

# Have Some Capability, but Need More

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Arbor Vitae

Boulder Junction

Cloverland

Conover

Manitowish Waters

Phelps

Presque Isle

St. Germain

Winchester



Town/City	Provider (ISP)	Technology	Speeds	Coverage
Arbor Vitae				
	Charter/Spectrum	Cable	3M to 6M/200M to 1G	In and around the Town hall.
	CenturyLink	DSL	100M in a very small area down to 1.5M or less.	Hwy 51 along Trout Lake on north end of Town.
	Frontier	DSL	Dial-up speed up to an unknown speed	Throughout Town

Town/City	Provider (ISP)	Technology	Speeds	Coverage
Cloverland				
	SonicNet	Fixed Wireless	5M to 25M	2 towers
	ChoiceTel	FTTP	25M to 100M	Fiber goes north of Highway G to Conover
	Frontier	DSL	up to 25M	Spotty and unknown. Frontier moved to DSL a few years ago, but no one seems to get 25M (24M) service and they do not know the coverage.

Town/City	Provider (ISP)	Technology	Speeds	Coverage
Boulder Junction				
	CenturyLink	DSL	100M in a very small area down to 1.5M or less. Average in Town <10M	2020 FTTP project planned to 1/2 of Town
	Frontier	DSL	1.5M max	Far South and SE part of Town

Town/City	Provider (ISP)	Technology	Speeds	Coverage
Conover				
	Frontier	DSL	??	Decent speed and coverage along K to the East and Hwy. 45. Good coverage at the Conover Town Hall
	SonicNet	Fixed Wireless	5M to 25M	2 towers
	ChoiceTel	FTTP	25M to 100M	Fiber goes north in Town along S and then continues north to Land O' Lakes

Town/City	Provider (ISP)	Technology	Speeds	Coverage
Manitowish Waters				
	CenturyLink	DSL	100M in a very small area down to 1.5M or less. Average in Town <10M	About the same amount of fiber infrastructure as Boulder Junction. Best areas along Hwy 51 and Powell Road. Town Hall can have 100M.

Town/City	Provider (ISP)	Technology	Speeds	Coverage
Phelps				
	Frontier	DSL	Up to 100M	Coverage limited to the areas around their office
	SonicNet	Fixed Wireless	5M to 25M	7 towers
	Charter/Spectrum	Cable	200M to 1G	Downtown Phelps area

Town/City	Provider (ISP)	Technology	Speeds	Coverage
Presque Isle				
	CenturyLink	DSL	100M in a very small area down to 1.5M or less. Average in Town <5-10M	Most of town is unserved or underserved. Likely 80 to 90%. About the same amount of fiber infrastructure as Boulder Junction

Town/City	Provider (ISP)	Technology	Speeds	Coverage
St. Germain				
	ChoiceTel	FTTP	25M to 100M	Fiber comes in from east and connects to 155 moving south down 70 to elementary school.
	Frontier	DSL	<1.5M to 15M	Throughout Town, but poor speeds
	SonicNet	Fixed Wireless	5M to 25M	2 towers

Town/City	Provider (ISP)	Technology	Speeds	Coverage
Winchester				
	CenturyLink	DSL	100M in a very small area down to 1.5M or less.	About the same amount of fiber infrastructure as Boulder Junction
	SonicNet	Fixed Wireless	5M to 25M	1 tower

# Most Opportunity to Improve

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Lac du Flambeau

Plum Lake



Town/City	Provider (ISP)	Technology	Speeds	Coverage
Lac du Flambeau				
	Frontier	DSL	Up to 18M in spots	Downtown area, but speeds drop quickly away from town to near dial-up speed.
	SonicNet	Fixed Wireless	5M to 25M	3 towers.

Town/City	Provider (ISP)	Technology	Speeds	Coverage
Plum Lake				
	Frontier	DSL	18M or less	DSL only available within 4 miles of town, but outside of 2 miles speeds are very low.

# Key Takeaways

Broadband is critical infrastructure essential for diversifying and growing Vilas County's economy

Great opportunities exist

Broadband is generally poor and below federal and state baselines – Baseline is 25Mbps

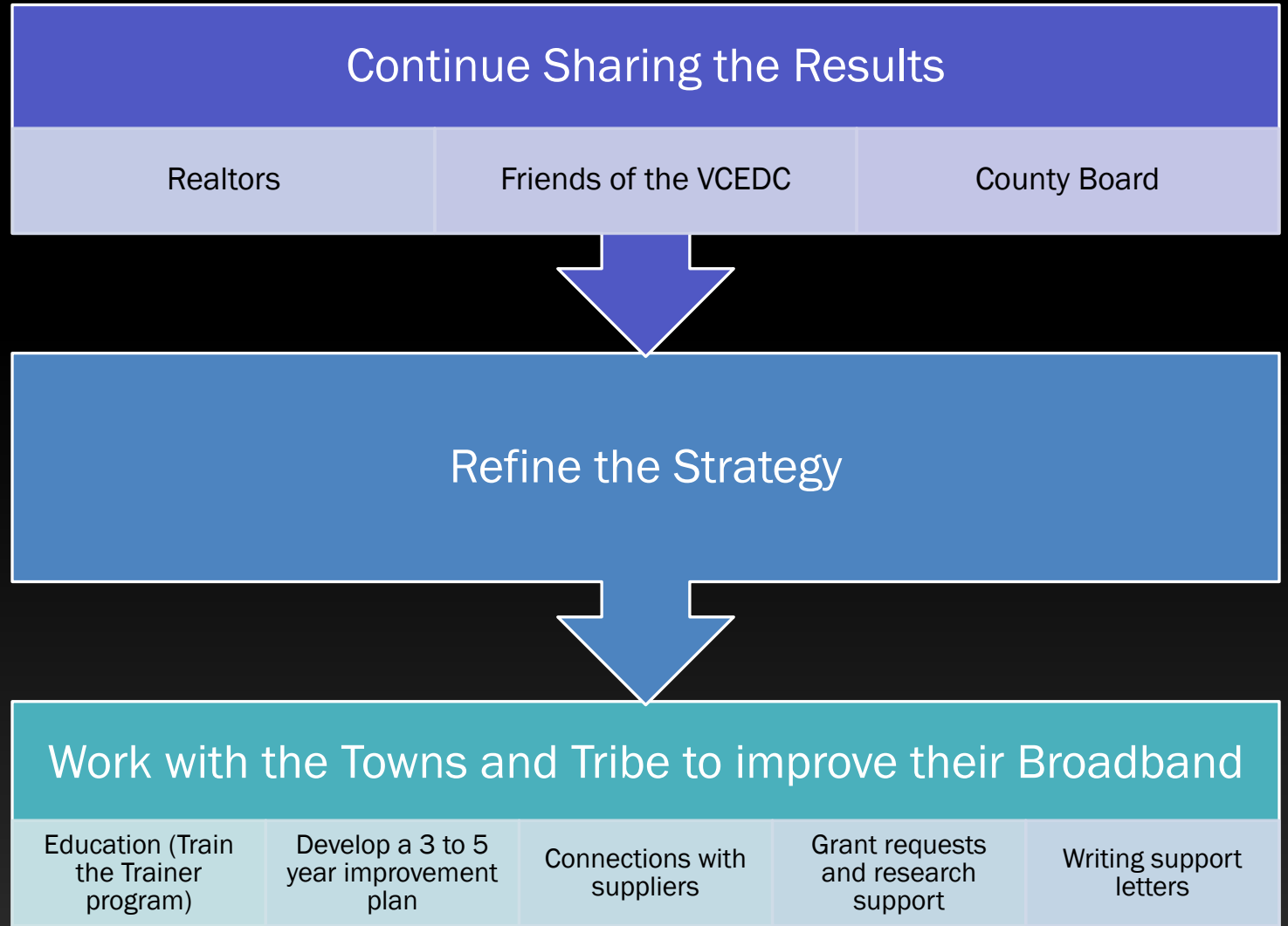
Each town is unique and a single solution is not realistic

Towns can help each other by creating the story to get grants and leveraging synergies with suppliers

We must help providers be successful through marketing their service (Everyone is successful strategy)

Towns appreciate and need VCEDC leadership to facilitate and guide the broadband improvement process

# Next Steps



# Potential 2021 Projects

WI PSC Grant Applications  
Due on December 1, 2020

Boulder  
Junction

Manitowish  
Waters

Presque  
Isle

St.  
Germain

Others?

# Broadband Improvement Advice



Understand the  
need/do a survey



Research – Know  
your stuff



Engage community  
leaders and ALL  
stakeholders



Present  
professional  
information and  
make the business  
case



Be positive



Create your own  
opportunities



Do what is best for  
your community



# VCEDC Resources

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[Broadband Information](#)



Supplier Contacts



1x1 Discussions



Town/Tribe Meeting Support

What are your  
questions and  
feedback?

