# MARATHON COUNTY
# BROADBAND TASK FORCE MEETING
## Agenda

Date & Time of Meeting: **Monday, December 19, 2022, at 3:00 P.M.**
Meeting Location: **Assembly Room, Marathon County Courthouse, 500 Forest St, Wausau, WI**

**Task Force Members:** Chair John Robinson, Jacob Langenhahn, Gary Gisselman, Mike Ritter, Jennifer Aarrestad, Tony Sherfinski, Eric Budleski, Milton Olson, Wade Carroll, Kurt Schoenroch, Jon Euting

***Task Force Purpose:*** *Develop recommendations identifying the potential role of Marathon County in facilitating the expansion of Broadband access in Marathon County. Review the Report: Broadband for Marathon County Broadband Assessment and Plan prepared by Design Nine and develop broad policies and partnership recommendations relating to the expansion of broadband/internet services throughout Marathon County.*

The meeting site identified above will be open to the public. However, due to the COVID-19 pandemic and associated public health directives, Marathon County encourages Task Force members and the public to attend this meeting remotely. Instead of attendance in person, Task Force members and the public may attend this meeting by **telephone conference**. If Task Force members or members of the public cannot attend remotely, Marathon County requests that appropriate safety measures, including adequate social distancing, be utilized by all in-person attendees.

**Phone #: 1-408-418-9388 Access Code: 962 376 748**

When you enter the telephone conference, **PLEASE PUT YOUR PHONE ON MUTE!**

1. **Call Meeting to Order**
2. **Public Comments (15 Minute limit)**
3. **Approval of the September 26, 2022, Broadband Task Force Meeting Minutes**
4. **Educational Presentations and Committee Discussion:**
   - A. Update on Grant Funded Broadband Projects
     1. Frontier (PSC 2022)
     2. Bug Tussel (PSC 2022)
     3. Charter (RDOF)
   - B. Status Report on Bug Tussel's Project
   - C. Speed Test Update
   - D. Marathon County Coverage Map
5. **Policy Discussion and Possible Action**:
   - A. Approach to Funding Sources: County, State, and Federal
     1. Broadband Equity, Access, and Deployment (BEAD) Program
     2. American Rescue Plan Act
     3. Affordable Connectivity Program – Federal Communications Commission (fcc.gov)
   - B. Process for determining priorities for future broadband expansion efforts
     1. FCC National Broadband Coverage Map
     2. Target Areas Based on Speed Test
     3. Other Factors
6. **Next Steps**
7. **Set Next Meeting Date**
8. **Adjournment**

"***Any person planning to attend this meeting who needs some type of special accommodation in order to participate should call the County Clerk's Office at 715-261-1500 or e-mail countyclerk@co.marathon.wi.us one business day before the meeting.***

**SIGNED** /s/ John Robinson
Presiding Officer or Designee

Emailed To: Wausau Daily Herald, City Pages, and Other Media Groups
Emailed By: T. Ranallo on 12/8/2022 at 3:30 pm

NOTICE POSTED AT COURTHOUSE
BY: T. Ranallo on 12/8/2022 at 3:30 pm

# MARATHON COUNTY
# BROADBAND TASK FORCE MEETING
# Minutes

**Monday, September 26, 2022, at 3:00 P.M.**
**Webex/Assembly Room, 500 Forest St, Wausau WI**

| Members | Present/Web-Phone | Absent |
|---|---|---|
| Chair John Robinson | P | |
| Jacob Langenhahn | | x |
| Gary Gisselman | P | |
| Mike Ritter | P | |
| Jennifer Aarestad | P | |
| Tony Sherfinski | | x |
| Erick Budleski | W | |
| Milton Olson | | x |
| Wade Carroll | | x |
| Kurt Schoenrock | | x |
| Jon Euting | W | |

**Also Present:** Valerie Carrillo, Gerry Klein, Kristin Lambrecht
**VIA Web or Phone:** Kimm Webber, Jean Maszk, Noor Hassan, Celeste Flynn, Scott Bohler, Luke Butzler, Michael Puerner, Tim Neumeyer, Brian Kowalski, Kurt Gibbs

1. **Call Meeting to Order:** Chair Robinson called the meeting to order at 3:05 p.m.
2. **Public Comments** (15 Minute limit) – Tony Omernick expressed concerns about internet service and lack of service repair from Frontier. He is concerned about having reliable internet service and asked what can be done now to have service that can be counted on.
3. **RITTER MAKE A MOTION; SECOND BY AARESTAD TO APPROVE THE AUGUST 22, 2022, BROADBAND TASK FORCE MEETING MINUTES. MOTION CARRIED.**
4. **Educational Presentations and Committee Discussion:**
   A. Update on Grant Funded Broadband Projects
      1. Frontier (PSC 2022) – Scott Bohler presented their fiber update. They are working with state PSC staff to finish the contract. Hopefully they are finalizing agreement in the next month or so. Then they will work with vendors and order materials. Limitations were discussed regarding older copper lines and replacing with new fiber optic cables. They are proposing to have this completed in two years.
      2. Bug Tussel (PSC 2022) – Kristin Lambrecht provided updates in the packet.
      3. Cirrinity (PSC 2021) – Scott Nyman was not present; Chair Robinson gave the update. They have completed the 2021 work and will be submitting for some of the reimbursement. They should be done in the Norrie area.
      4. Charter (RDOF) – Celeste Flynn presented. They have completed 240 passings and will be releasing 552 for October. They have challenges of running into granite rock and locating companies to keep up with the contracted activity. Moving forward, Celeste may have someone else represent Charter as she has a conflicting meeting.
   B. Status Report on Bug Tussel's Project – Kristin Lambrecht gave all updates in the packet.
   C. Speed Test Update – There have been no significant changes to speed test results. There is a new program from the FCC due to congress pushing for more accurate maps. This is being done through the broadband data collection program. Allowing local units to offer feedback regarding data. Will have more reliable date every 6 months.
   D. How the change from 4G/LTE to 5G cellular service has, and will, affect the average citizen? – Luke Butzler presented. His role is education outreach and support in the public safety space. 5G stands on three pillars – increase speeds from 4G, massive decrease in latency, and opening up more capacity on the network. Marathon county has seen increase in reinvestment and network expansion compared to

neighboring counties. Regarding coverage areas comparing 5G to 4G, 5G supports a small geographical area compared to 4G. 5G is more complex rollout with speed as the goal. The area will continue to be supported. They have more cell towers planned to help with service. Gerry gave additional background regarding cell towers and frequency. All towers are in Marathon County are 5G capable, with three currently online.

E. Wausau School District efforts to ensure access to the internet – Jon Euting presented. Jon gave an overview of the district demographics and the pandemic timeline. The provided, free of charge, hotspots to 250 families. They knew there was not adequate cell service for many families. Maps of Wi-Fi accessibility were available as well as adding external antennas to increase access. Approximately 1,700 students lacked internet bandwidth. They added 400 hotspots in fall of 2020. The district offered learning hubs for those without any access and hotspots didn't work at home. Once full back in school, only about 150 hotspots were still active and can be checked out as needed through the libraries. The cost of the hotspots was funded by the school district and then ESSER. Chair Robinson asked, if possible, to get granular data of where the hotspots were used. Jon noted this was done for access and a lack of provider or affordability was not considered.

5. **Policy Discussion and Possible Action:**
   A. Approach to Funding Sources: County, State and Federal
      1. Broadband Equity, Access, and Deployment (BEAD) Program – There is a handout in packet. $42-45 billion to be make available to states in next 4-5 years for broadband expansion. The State thinks we may get up to one billion. These funds can be used for planning and employing internet to unserved and underserved.
      2. American Rescue Plan Act – We have earmarked but not allocated just under $4 million, based on commitments to Cirrinity, Bug Tussel, and Frontier. We pledged about $944,000 to Frontier as a match. We pledged $70,00 to Cirrinity and $142,175 to Bug Tussel. A resolution will need to be passed in relative to the funding. Corporation Counsel is working on a terms sheet for a loan match of $3 million with Bug Tussel that will be taken to the county board.
      3. ReConnect Loan and Grant Program through the USDA. – There is information in packet. $150 million will be available nationwide. Marathon County has not done well with these types of grants and loans in the past.
   B. Process for determining priorities for future broadband expansion efforts
      1. Target Areas Based on Speed Test – We need to continue to work with districts and presenting at the polls. We will also be working with the schools. We need to take the approved project maps and overlay with speed tests to see what areas are served to identify target areas moving forward. The FCC mapping will be out sometime in December and updated every six months. Discussion regarding affordability and access for Marathon County. We can work on better promotion of subsidies for those eligible. We need to work on connecting without using internet to access people that don't have internet access.
      2. Other Factors
6. **Next Meeting Topics**
      1. Digital Equity Update – Alyssa Kenny
      2. Telehealth challenges
      3. Rural school district challenges
      4. Prosperity partnership telework challenges
7. **Next Meeting:** October 24, 2022
8. **Adjournment**

   **AARESTAD MOTION TO ADJOURN MEETING, GISSELMAN SECOND. MOTION CARRIED UNANIMOUSLY. MEETING ADJOURNED AT 4:30 pm.**

Respectfully Submitted by,
Kathy Johnson

# New FCC National Broadband Map Released

On Friday, November, 18th the Federal Communications Commission (FCC) unveiled the *pre-production draft* of the new national broadband map. The new map is the most granular and up to date federal map of where broadband is and is not available across the country.

The map displays address-level availability and provider reported data for fixed and mobile broadband as well as data aggregated to larger areas – e.g., state, county, census place, and congressional district. Data can be examined by navigating the map's digital interface or by searching by state or address. The map also displays coverage data by provider.

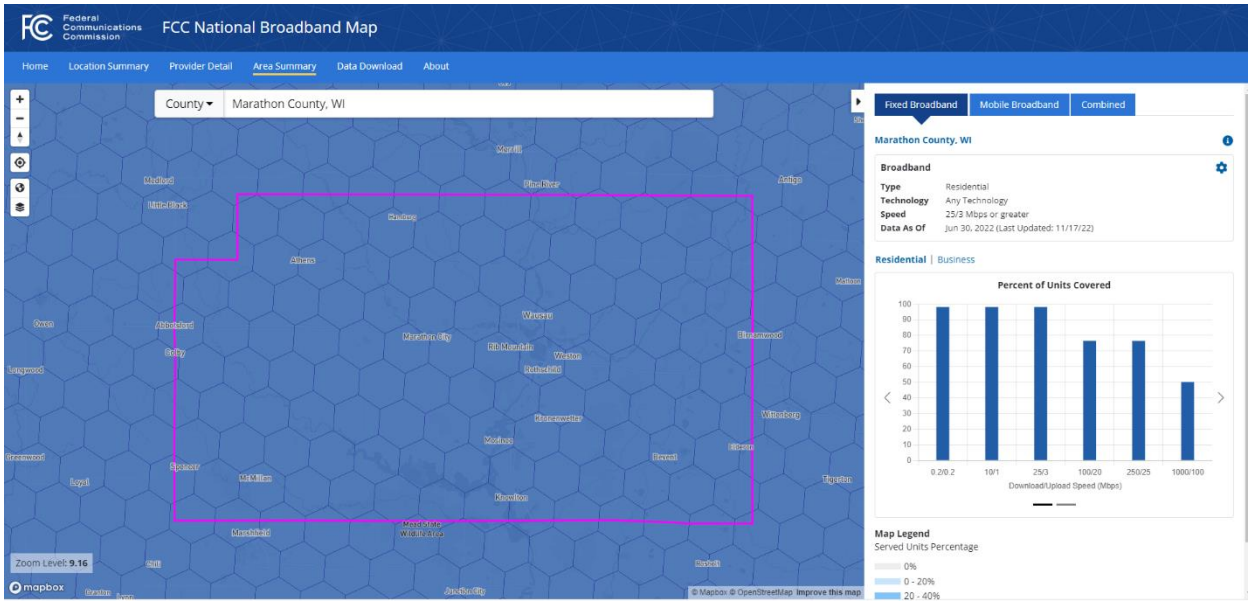
The FCC is seeking help to improve the data on the map by asking communities and individuals to submit a challenge or request a correction. These are 3 types of challenges:

- Availability challenges
- Mobile availability challenges, and
- Location challenges.

More information on the challenge process can be found on the, **How to Use the FCC's National Broadband Map help page: https://help.bdc.fcc.gov/hc/en-us/articles/10467446103579-How-to-Use-the-FCC-s-National-Broadband-Map**

To ensure valid challenges are incorporated into the map before federal funding allocations are made, the public are encouraged to submit challenges by **January 13, 2023**.

**Link to National Broadband Map: https://broadbandmap.fcc.gov/home**



# Internet for All: Connecting Wisconsin Kickoff Event Recording Available

On October 25th, 2022, the National Telecommunications and Information Administration (NTIA) and Public Service Commission of Wisconsin (PSC) hosted an Internet For All: Connecting Wisconsin Kickoff event in Wausau, WI. The event was developed in a partnership between the PSC and the Wisconsin Department of Public Instruction, the Office of Rural Prosperity, the University of Wisconsin-Madison Extension, and the Educational Communications Board.

This day-long event brought together critical stakeholders in Wisconsin from state and local governments, Tribal communities, federal agencies, and industry to discuss coordination on high-speed Internet infrastructure deployment and digital equity efforts as the state prepares to implement programs from the Bipartisan Infrastructure Law and launch Wisconsin's Internet for All initiative. **The event agenda can be found here: https://psc.wi.gov/Documents/broadband/20221025_WI-Local-Coordination-Agenda.pdf**

**Link to event recording: https://www.youtube.com/watch?v=Qiztfb2AWTM**

# Digital Equity and Inclusion Updates

### FCC Announces Affordable Connectivity Program Competitive Outreach Grants

On November 10th, the Federal Communications Commission released a Notice of Funding Opportunity (NOFO), a formal announcement of the availability of grant funds to develop innovative outreach strategies to reach historically underserved and unserved communities, raise awareness of the Affordable Connectivity Program (ACP), and help eligible individuals enroll in the program. The FCC has set aside up to $70 million in the NOFO for these two programs—$60 million for the National Competitive Outreach Program and $10 million for the Tribal Community Outreach Program. The grant program could support in-person enrollment assistance, digital campaigns, outreach materials, direct mail, and other outreach activities. The grant is due **January 9th, 2023**. If you are considering applying for a grant and wish to notify the PSC please email to share your information. Additional resources: NOFO, Webinar recording, and Fact Sheet.

### Broadband Label Information and Accessibility

On November 17th, 2022 the FCC unveiled new rules that will require broadband providers to display easy-to-understand labels to allow consumers to shop for broadband services.
The new rules, often referred to as broadband nutrition labels, will require providers to display at the point of sale, key information for consumers including prices, speeds, fees, data allowances and other critical information. The FCC has not yet announced the effective date for the labels. Read the FCC press release and see a sample label here.

### Digital Equity and Inclusion Stakeholder Group

The State of Wisconsin Digital Equity and Inclusion Stakeholder group meets monthly to inform the State Digital Equity and Inclusion Plan and works to strengthen the digital equity ecosystems in the State. In addition, the group has been discussing developing a digital navigator model, how to increase participation in the Affordable Connectivity Program and learning from other members. The next meeting will take place on December 13th. If you are interested in joining the stakeholder group please **email.**

## Articles of Interest

**By: Rebecca Cameron Valcq, Chairperson of the Public Service Commission**

**Connecting Our State: An Update for Wisconsin on Four Years of Broadband Progress**

This update from Chairperson Valcq, highlights the progress the state has made over the past 4 years on broadband expansion and provides information for consumers seeking additional information or wondering "When will broadband make it to my home and community?"

**Consumer Reports**

**Broadband Pricing: What Consumer Reports Learned From 22,000 Internet Bills**

This white paper from Consumer Reports collected and analyzed more than 22,000 consumer broadband bills. Many of the consumers who shared their bills also took internet speed tests and completed a survey on their satisfaction with and the reliability of their internet service. While this is not a nationally representative study and is not predictive of the broadband market, it is one of the most ambitious efforts of its kind to understand how much consumers are paying at a moment in time. Executive summary of the report is **here.**

## Governor's Task Force – December Meeting

The December meeting of the Governor's Task Force on Broadband Access is tentatively scheduled to take place on December 14th from 1:00 - 3:00 p.m. Please check the PSC calendar to confirm the meeting date and time.

The meeting and agenda will be posted on the PSC calendar.

# Bug Tussel County Reports are Here

Bug Tussel's monthly county reports are here! All current and past county reports can also be viewed on the following website: **https://btussel.com/about-us/partnerships/#community-reports.**

October 2022

# Marathon County

## The Partnership

**PROJECT**
Bug Tussel is a proud partner of Marathon County through a 2021 bond and a 2022 grant in Leathercamp. The projects, R.O.A.D. to Digital Equality and B.E.S.T. Program, will equip Marathon County with wireless internet access, a fiberoptic backbone network, and additional last-mile connections and creating additional capacity to support future projects.

**PRODUCT**
Bug Tussel will use fixed wireless sites to facilitate rapid expansion, followed by fiberoptic cable. These fiber projects will cover more than 200 miles throughout Marathon County and will provide a catalyst for future last-mile expansion. Standard packages for fiber will range from 300 Mbps to 1 Gbps download and upload speed. Standard packages for wireless will be 25 Mbps download and 5 Mbps upload speed.

**TIMELINE**
Bug Tussel has 3 fixed wireless sites throughout Marathon County, with 21 additional site in progress. Fiberoptic backbone/middle mile network construction is underway and will be online later next year.

## BUG TUSSEL UNIVERSITY

### October Classes:

*2 Classes*

- **Fun With Photos: How to Save, Share, and Edit Photos with your Smartphone** | October 11 | Marathon County Public Library - Mosinee Branch
- **Email Basics** | October 22 | Marathon County Public Library - Wausau Headquarters

### Upcoming Classes:

*Spread the word!*

- **Fun With Photos: How to Save, Share, and Edit Photos with your Smartphone** | November 19 | 10:00 a.m. | Marathon County Public Library - Wausau Headquarters
- **Tech Help** | 10:00 a.m. | December 3 | Marathon County Public Library - Wausau Headquarters

**Sign up or ask questions at (920) 940-0114:**

## SALES & MARKETING

### Ads

- **Facebook** ads promoting wireless internet and Bug Tussel University classes targeted the county during the month of October.
- The **Wausau Cyclones Ice Hockey** team shared Bug Tussel ads during their opening night game on October 14. The team also shared Bug Tussel ads and on their podcast.

### Sponsorships

- A **Business Educational Luncheon** supporting GiGi's Playhouse & Down Syndrome Awareness Month on October 12 was sponsored by Bug Tussel.

### Meetings

- The **Chamber Mosinee Business Meeting** on October 20 was represented by Bug Tussel.
- A **Meet & Greet** was hosted in Athens at Cocina on the Square on October 25 with a Bug Tussel representative where residents were able to ask questions about Bug Tussel services.

## Your sales representatives


**Ashley Bolden**
**Business Development Manager**
**Phone:**
**(608) 432-6308**
**Email:**
**Ashley.Bolden@btussel.com**



**Kristin Lambrecht**
**Regional Business Development Manager**
**Phone:**
**(920) 501-8515**
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*Report prepared by Melody Schuetz, Director of Bug Tussel Experience*
*Email: Melody.Schuetz@btussel.com*
*Phone: (920) 940-0158*

# TOWER STATUS

## On Air:

*3*

- Tower construction and installation complete.
- Internet is live and operational.

## Construction:

*13*

- Establish tower foundation.
- Construct tower by stacking from bottom to top.
- Install antenna, lines, and integrate network.

## Zoning:

*4*

- Submit permits and receive approval from local and federal agencies.

## Site Acquisition:

*4*

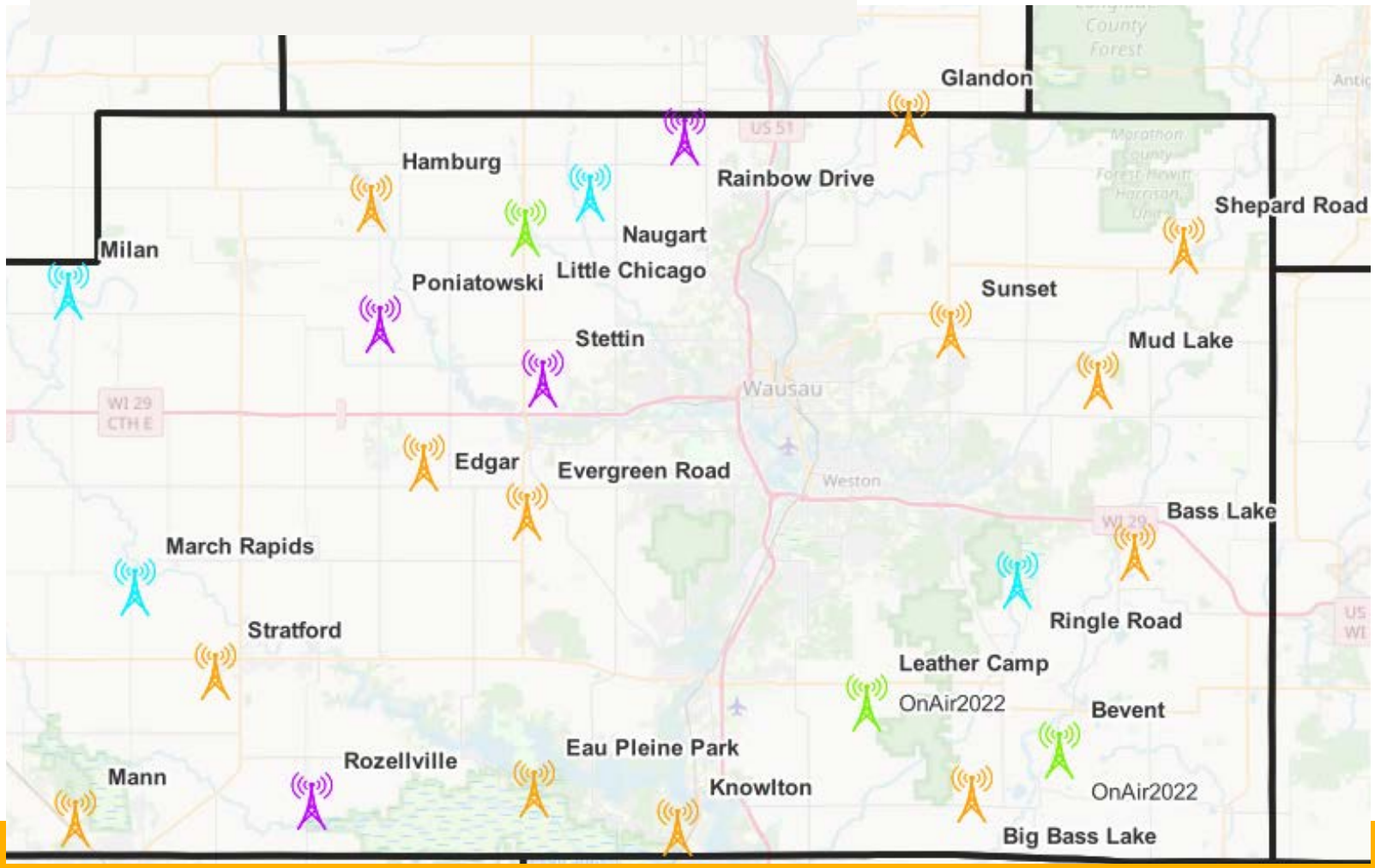
- Search for and determine tower site.
- Obtain lease from landowner.

# UPDATES

Milan and March Rapids remain in site acquisition stage.

Civil construction (design and planning) has begun for Mann and is completed for Knowlton and Shepard Road. Stacking (building of the tower from bottom to top) for Edgar, Glandon, Hamburg, Stratford, Evergreen Road, Sunset, and Bass Lake is complete and equipment is installed. Crews are currently working on getting power to the towers.

Construction is nearly complete for Big Bass Lake, with anticipated live date in late November or early December.




**This map includes a rough estimate of site locations and may not accurately reflect actual tower placement.*

# Site Acquisition Timeline

6-12 MONTHS

## BOND EFFORT

Meet with county and municpalities, plan funding, provide due diligence, plan county network (towers and fiber). Several votes with different county committees. Final county board vote (often requires supermajority).

1-3 MONTHS

## SEARCH

Connect with property owners within a search ring (about 1 month). Evaluate properties, choose preferred location (about 1 month).

1-3 MONTHS

## LEASING

Work with landowner to agree to tower layout, lease terms, address title issues, etc. Often requires attorney review.

6-12 MONTHS

## GOVERNMENT APPROVALS

Obtain local permits (driveway permit, address, zoning/conditional use permit, etc). Often requires public notice and hearings.

Obtain federal regulatory approval, including from FAA, FCC, EPA, and other entities. Requires on-site soil, archeological, geologic, historical, etc. studies.

bugtussel BTUSSEL.COM/ABOUT-US/PARTNERSHIPS

# UPDATES

Contractors M.J. Electric and J & R Construction are making progress deploying conduit and installing fiber along the route. Conduit, the protection cable that will house the fiber, is installed by plowing or drilling. While progress moves more quickly through plowing, crews must use the drill in areas that contain hard rock. Hard rock is prevalent in the area where crews are currently working.

Progress has been made installing fiber. Fiber is inserted into the conduit through a process called "fiber blowing", a technique that sends fiber through conduit with a machine that travels through the conduit by bursts of air. After deploying fiber, sections of fiber will be spliced together with an optical laser.

**Completion of the Middle Mile (backbone) and Last Mile (distribution) in the county is anticipated in late summer 2023.**

# FIBER STATUS

## Connected

- Internet is live and operational.
- Connections can be made to customers in up to 3 weeks depending on customer and route location.
-

## Fiber

***95 miles completed***

- Fiber is sent through the conduit via Fiber Blowing, a technique using a machine on wheels that blows air to push the fiber through the cable.
- Sections of fiber are connected to each other via Splicing, the fusion of fiber with an optical laser.

## Conduit

***110 miles completed***

- Conduit, the protection cable that will house the fiber, is installed via Boring (with a drill) or Plowing.
- Handholes, Flowerpots, and Cabinets, access hatches that house utilities and connections, are installed.

## Permits

***145 miles completed***

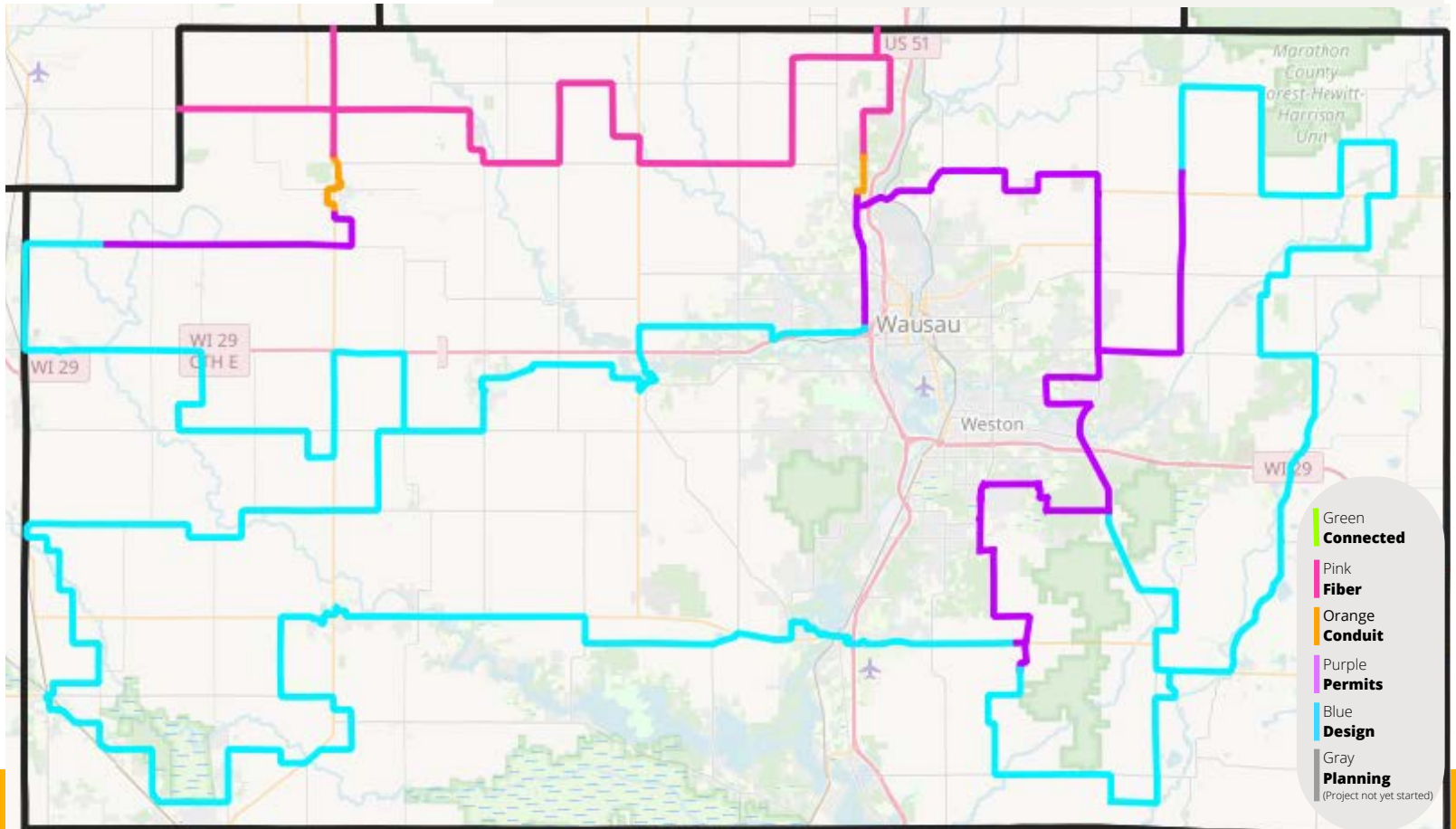
***15 miles in progress***

- Permits for work in areas along the route are submitted.
- Permits are approved by appropriate parties.

## Design

***280 miles completed***

- Fiber route is mapped.
- Route is traveled to determine equipment and landscape needs.
- Sections are Re-designed as needed.




**This map includes a rough estimate of the fiber network and may not accurately reflect final route.*

# How is a Fiber Network Created?

## Did you know? A fiber network is like a highway system.

**Long Haul Fiber** is like an *expressway* connecting main points across very large areas together. This is the *core* network that hooks up internet connections from state to state and, on a larger scale, country to country.

The **Middle Mile** is like a *highway* connecting cities together. This is the *backbone* that connects cities, counties, and states and creates a national network.

The **Last Mile** is like a *road* that travels from the highway to individual neighborhoods, including FTTH (fiber-to-the-home), FTTP (fiber-to-the-premises), etc. This is the *distribution* that connects the internet network to customer's homes, businesses, and government agencies. This is often the costliest and most challenging part of the network to create.

**Bug Tussel specializes in building Middle Mile and Last Mile networks.*

**Installing a fiber network requires 4 major steps:**

**DESIGN THE ROUTE, OBTAIN PERMITS, INSTALL FIBER, AND CONNECT TO CUSTOMERS.**

## DESIGN THE ROUTE *(Engineering)*

### Map the Route
Determine the best route for the network and outline in advanced mapping software.

### Travel the Route
Travel the route to determine equipment and route needs based on the landscape. For example, areas with hard rock conditions will require specialized equipment such as a directional drill.

### Update Design
Route design is then updated as needed based on landscape requirements, permit needs, etc.

## OBTAIN PERMITS *(Zoning)*

### Submit Permits
Submit permits to local and federal agencies in order to obtain authorization before beginning installation.

### Await Approval
Await approval and re-submit or re-design if approval is denied.

## INSTALL FIBER *(Construction)*

### Deploy Conduit
Install conduit (a protective cable that will house the fiber) into the ground via plowing or boring (with a directional drill).

### Install Access Hatches
Place access hatches in areas (often underground) where intersections will be made, the route changes direction, or fiber will be dispersed. These hatches (which include handholes, flowerpots, and cabinets) will act as utility boxes where fiber connections can be made.

### Insert Fiber
Run fiber through the conduit. The most common way to insert fiber is through a process called fiber blowing, which uses a machine to move the fiber through the cable via bursts of air. This reduces friction and the risk of damage to the fiber.

### Connect Fiber
Connect sections of fiber to one another by splicing, the process of fusing pieces of fiber together with an optical laser.

### Connect to the Internet
Connect the fiber route to the internet, often by hooking up to the larger worldwide network via connection to a switch, a mobile tower, or another connecting point.

## CONNECT TO CUSTOMERS *(On Air)*

### Connect to Customer
Install fiber from the closest access point (a handhole) to customer's ONT (optical network terminal, which converts light signals to electrical signals) in their home or business.

### Set Up Internet
Customer sets up home network system through router and ONT connections.

# Marathon County
November 2022 Report


## BUG TUSSEL EXPLODES IN GROWTH

A funny thing happened on Steve Schneider's way to retirement: He says he found "the secret sauce" for rural broadband expansion.

If you want to learn more about Steve's "Retirement Project" and the mission that Bug Tussel has undertaken, visit btussel.com/news/bug-tussel-explodes-in-growth to see the full Green Bay Press Gazette Article.

## NOVEMBER BUG TUSSEL UNIVERSITY CLASSES

- Using the Internet to Keep Your Brain Healthy | 11/8 | Marathon County Public Library - Mosinee Branch
- Facebook for Beginners | 11/5 | Marathon County Public Library - Wausau Headquarters
- Fun With Photos | 11/19 | Marathon County Public Library - Wausau Headquarters

Learn about our upcoming classes at btussel.com/free-tech-education/attend-a-class

## COUNTY PARTNERSHIP

Bug Tussel is a proud partner of Marathon County!

- 2022 Grant (Leathercamp)
- 2021 Bond

The projects, **R.O.A.D. to Digital Equality** and **B.E.S.T. Program**, will equip the county with fixed wireless sites to facilitate rapid expansion, followed by fiberoptic cable. These fiber projects will cover more than 200 miles throughout the county and will provide a catalyst for future last-mile expansion.

## MARKETING & SALES

**Ads & Sponsorships**

- Daily Facebook wireless internet ads
- Wausau Cyclones Ice Hockey Sponsorship (including on-ice, podcast, dasher board, and PA announcement ads)

**Events**

- Meet and Greet at Memory Lanes in Athens on November 3
- Meet and Greet at Jumpers Bar in Marathon City November 4
- Meet and Greet at Cocina on the Square in Athens on November 18

## YOUR SALES REPRESENTATIVES

**ASHLEY BOLDEN**
(920) 501-8717
Ashley.Bolden@btussel.com

**KRISTIN LAMBRECHT**
(920) 501-8515
Kristin.Lambrecht@btussel.com

## GET IN TOUCH

**CUSTOMER SERVICE**

(877) 227-0924
customerservice@btussel.com
btussel.com

*Report prepared by Melody Schuetz, Director of Bug Tussel Experience*
*Email: Melody.Schuetz@btussel.com*
*Phone: (920) 940-0158*

# Towers

## On Air: 3

- Tower construction and installation complete.
- Internet is live and operational.
- Customers are ready to be connected, with unique installation for each connection taking additional time.

## Construction: 13

- Design and plan the tower build (civil construction).
- Construct tower by stacking from bottom to top.
- Install utilities such as equipment, antenna and lines.
- Integrate connections to internet network.

## Zoning: 4

- Submit permits.
- Awaiting approval from local and federal agencies.

## Site Acquisition: 4

- Search for and determine tower site.
- Negotiate and sign lease in cooperation with landowner.

# UPDATES

**Site Acquisition**
Milan and March Rapids remain in site acquisition stage.

**Zoning**
Federal permits have been submitted and are awaiting approval from federal agencies for these sites:

- Pontiatowski
- Stettin
- Rozellville
- Mann (civil construction is in progress)

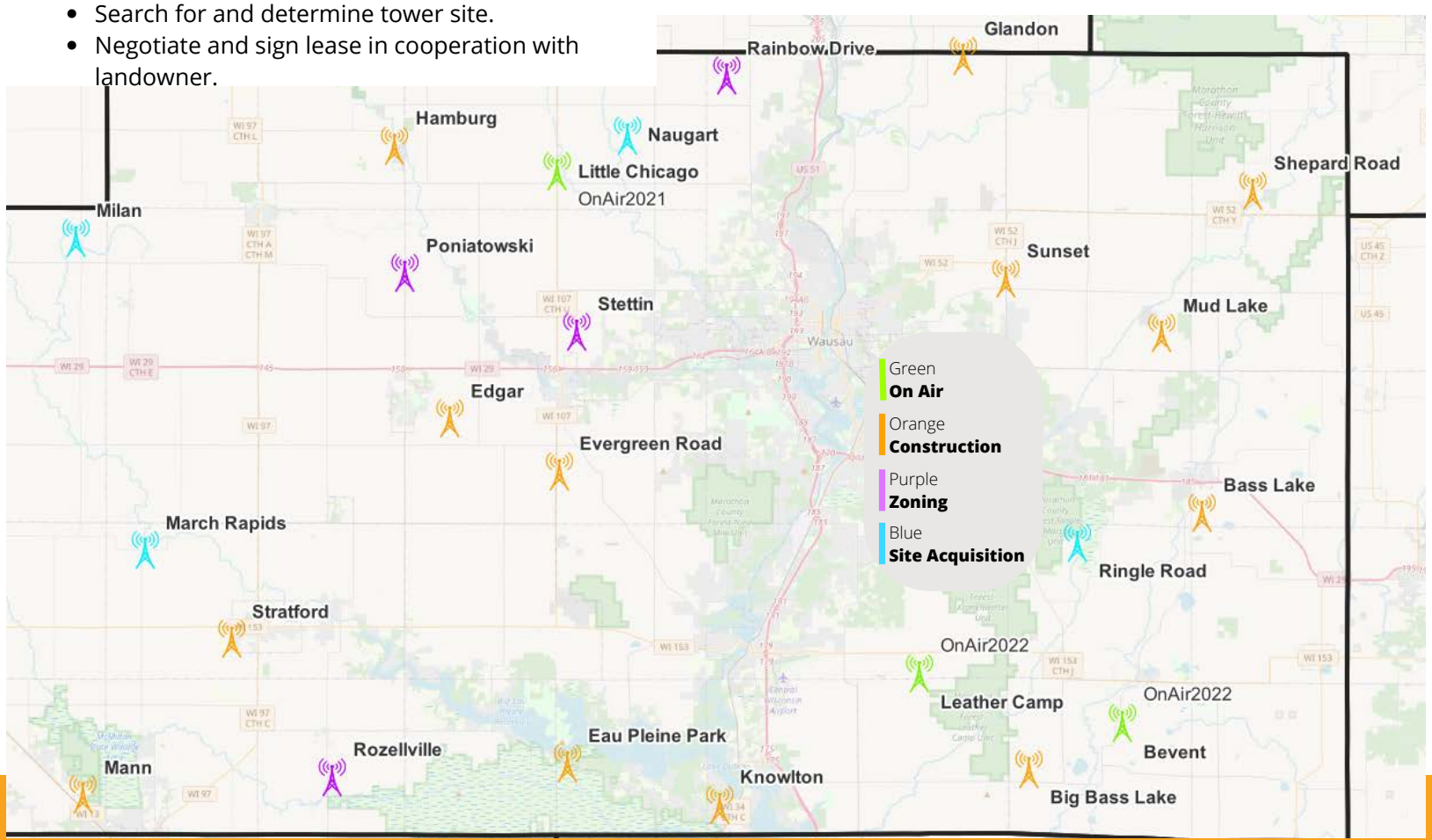
Bug Tussel teams are currently analyzing a collocation possibility for Rainbow Drive.

**Construction**
Civil construction (designing and planning the tower) has begun for these sites:

- Mann
- Mud Lake

Tower stacking (the construction of the tower itself) for the below sites is completed. Next steps involve installing utilities and integrating internet connections.

- Eau Pleine Park (stacked 11/7)
- Knowlton (stacked 11/16)
- Shepard Road (stacked 11/25)
- Edgar
- Glandon
- Big Bass Lake
- Bass Lake
- Stratford
- Hamburg
- Evergreen Road
- Sunset

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# Site Acquisition Timeline

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1-3 MONTHS

## SEARCH

Connect with property owners within a search ring (about 1 month). Evaluate properties, choose preferred location (about 1 month).

1-3 MONTHS

## LEASING

Work with landowner to agree to tower layout, lease terms, address title issues, etc. Often requires attorney review.

6-12 MONTHS

## GOVERNMENT APPROVALS

Obtain local permits (driveway permit, address, zoning/conditional use permit, etc). Often requires public notice and hearings.

Obtain federal regulatory approval, including from FAA, FCC, EPA, and other entities. Requires on-site soil, archeological, geologic, historical, etc. studies.

bugtussel BTUSSEL.COM/ABOUT-US/PARTNERSHIPS

# Fiber

## Connected:

- Fiber network is complete and connected.
- Internet is live and operational.
- Customers are ready to be connected, with unique installation for each connection taking additional time.

## Fiber: 98 miles completed

- Fiber is sent through installed conduit via fiber blowing, a technique using a machine on wheels that blows air to push the fiber through the cable.
- Sections of fiber are connected to each other via Splicing, the fusion of fiber with an optical laser.

## Conduit: 125 miles completed

- Conduit, the protection cable that will house the fiber, is installed via boring (with a drill) or plowing.
- Access hatches that house utilities and connections (such as handholes, flowerpots, and cabinets) are installed.

## Permits: 145 miles completed

### (50 miles in progress)

- Permits for work in areas along the route are submitted.
- Awaiting approval from local and federal agencies.

## Design: 300 miles completed

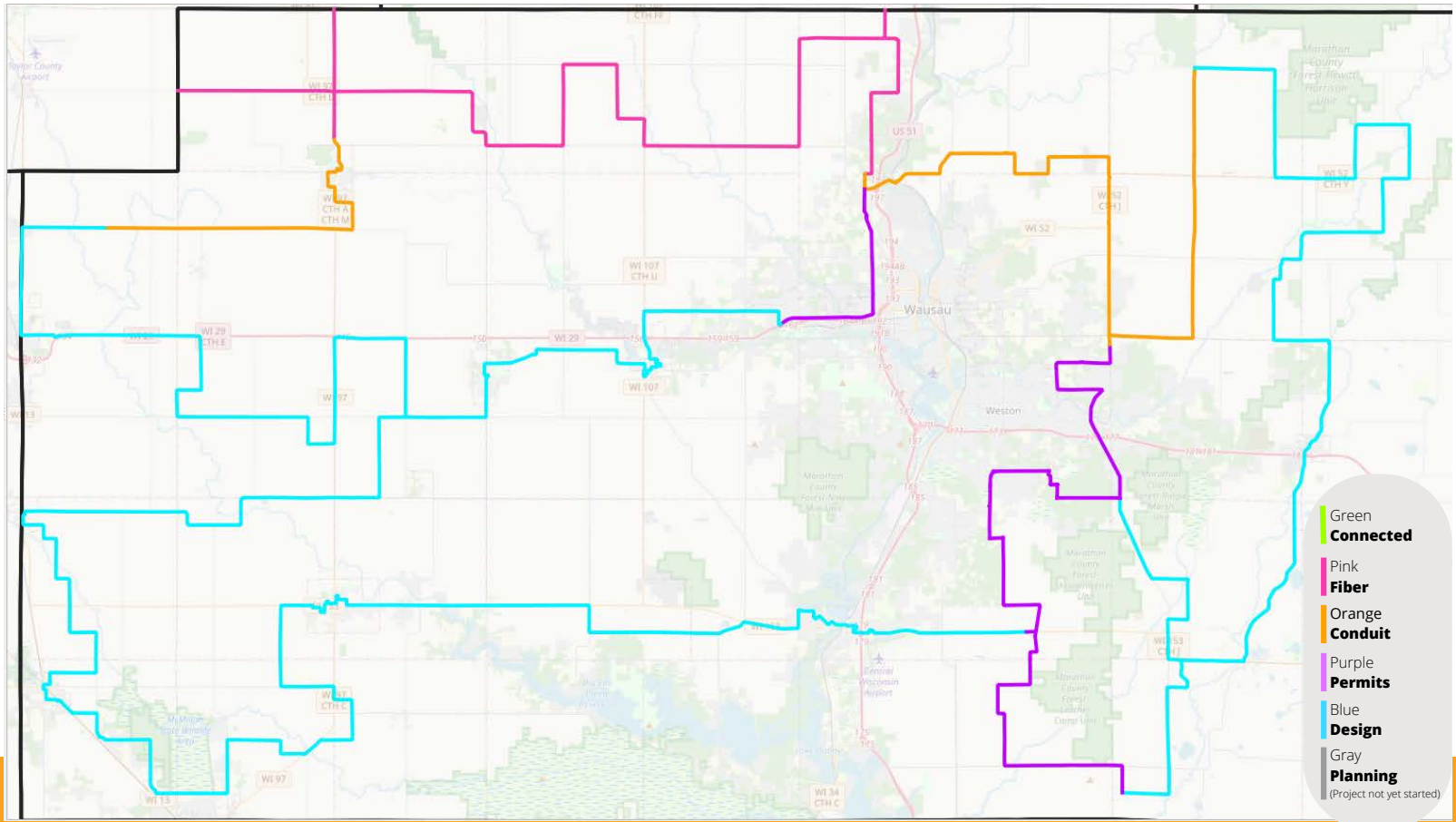
### (200 miles in progress)

- Fiber route is mapped.
- Route is traveled to determine equipment and landscape needs.
- Sections are re-designed as needed.

## UPDATES

Construction on fiber projects has begun slowing down as the ground freezes, however crews plan to continue working throughout the winter. Due to permitting challenges established in the city of Wausau this winter, Bug Tussel teams have been delayed in getting permit approval on areas of the route going through Wausau.

**Completion of the Middle Mile (backbone) and Last Mile (distribution) in the county is anticipated in late summer 2023.**




**This map includes a rough estimate of site locations and may not accurately reflect actual tower placement.*

# How is a Fiber Network Created?

## Did you know? A fiber network is like a highway system.

**Long Haul Fiber** is like an *expressway* connecting main points across very large areas together. This is the *core* network that hooks up internet connections from state to state and, on a larger scale, country to country.

The **Middle Mile** is like a *highway* connecting cities together. This is the *backbone* that connects cities, counties, and states and creates a national network.

The **Last Mile** is like a *road* that travels from the highway to individual neighborhoods, including FTTH (fiber-to-the-home), FTTP (fiber-to-the-premises), etc. This is the *distribution* that connects the internet network to customer's homes, businesses, and government agencies. This is often the costliest and most challenging part of the network to create.

**Bug Tussel specializes in building Middle Mile and Last Mile networks.*

**Installing a fiber network requires 4 major steps:**

**DESIGN THE ROUTE**, **OBTAIN PERMITS**, **INSTALL FIBER**, AND **CONNECT TO CUSTOMERS**.

## DESIGN THE ROUTE *(Engineering)*

### Map the Route

Determine the best route for the network and outline in advanced mapping software.

### Travel the Route

Travel the route to determine equipment and route needs based on the landscape. For example, areas with hard rock conditions will require specialized equipment such as a directional drill.

### Update Design

Route design is then updated as needed based on landscape requirements, permit needs, etc.

## OBTAIN PERMITS *(Zoning)*

### Submit Permits

Submit permits to local and federal agencies in order to obtain authorization before beginning installation.

### Await Approval

Await approval and re-submit or re-design if approval is denied.

## INSTALL FIBER *(Construction)*

### Deploy Conduit

Install conduit (a protective cable that will house the fiber) into the ground via plowing or boring (with a directional drill).

### Install Access Hatches

Place access hatches in areas (often underground) where intersections will be made, the route changes direction, or fiber will be dispersed. These hatches (which include handholes, flowerpots, and cabinets) will act as utility boxes where fiber connections can be made.

### Insert Fiber

Run fiber through the conduit. The most common way to insert fiber is through a process called fiber blowing, which uses a machine to move the fiber through the cable via bursts of air. This reduces friction and the risk of damage to the fiber.

### Connect Fiber

Connect sections of fiber to one another by splicing, the process of fusing pieces of fiber together with an optical laser.

### Connect to the Internet

Connect the fiber route to the internet, often by hooking up to the larger worldwide network via connection to a switch, a mobile tower, or another connecting point.

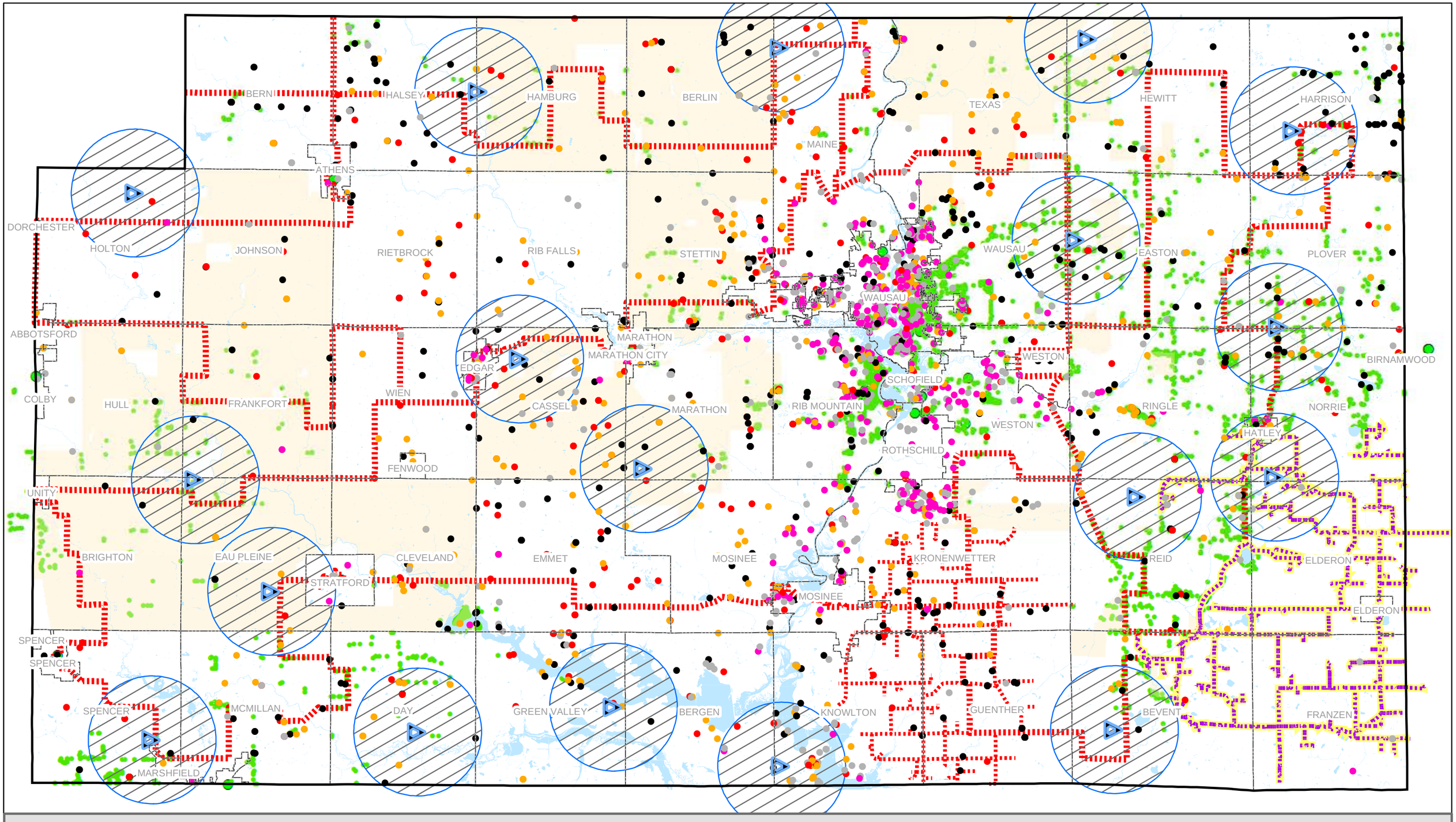
## CONNECT TO CUSTOMERS *(On Air)*

### Connect to Customer

Install fiber from the closest access point (a handhole) to customer's ONT (optical network terminal, which converts light signals to electrical signals) in their home or business.

### Set Up Internet

Customer sets up home network system through router and ONT connections.




# Marathon County Broadband Planning

Draft broadband_project_rev2.pdf

Bug Tussel Towers
2.5 Mile Tower Buffer
Fiber Optic line
WTC/Cirrinity (existing fiber)
Charter RDOF
Frontier Points
Frontier Points

**Speed Test Survey**
**Download Speed**
0 - 4.9
5.0 - 9.9
10.0 - 24.9
25.0 - 99.9
100 +

N
W E
S

Source:
Bug Tussel KML
Frontier KML
NCWRPC - Speed Test
WTC/Cirrinity KML

# THE BROADBAND EQUITY, ACCESS AND DEPLOYMENT (BEAD) PROGRAM OVERVIEW

## FUNDED BY THE BIPARTISAN INFRASTRUCTURE LAW

### Where we are today...

#### Many Americans lack access to affordable, reliable, high-speed Internet

America runs on high-speed internet. A strong internet connection powers our economy and supports education. It fosters better public health. And, it connects loved ones and strengthens social ties. But not everyone is connected. Too many Americans are cut off from the opportunities that high-speed internet makes possible. That's why we're working to bring high-speed internet to all Americans.

### ... and where we're going

#### The BEAD Program includes $42B for high-speed Internet access

Funded by the Bipartisan Infrastructure Law, BEAD is a federal grant program that aims to get all Americans online by funding partnerships between states or territories, communities, and stakeholders to build infrastructure where we need it to and increase adoption of high-speed internet. BEAD prioritizes unserved locations that have no internet access or that only have access under 25/3 Mbps and underserved locations only have access under 100/20 Mbps.

## Select BEAD program details

**Eligible entities**

1. All 50 States, District of Columbia, and Puerto Rico
2. Other Territories: U.S. Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands

**Example eligible uses of funds**

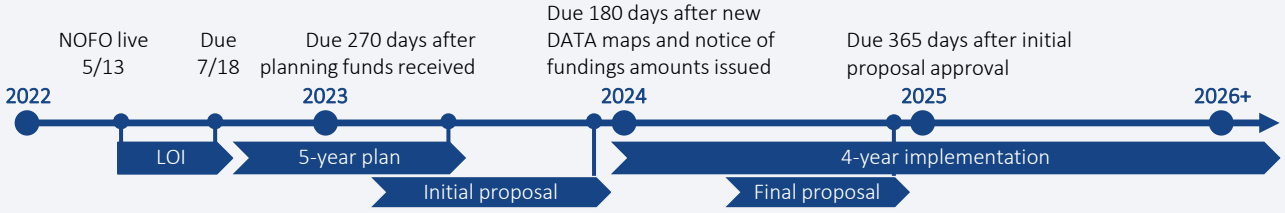
1. Planning for the deployment of high-speed Internet, including conducting research, collecting data, outreach, and training
2. Deploying or upgrading Internet in unserved or underserved areas or improving service to community anchor organizations
3. Installing Internet and Wi-Fi in multi-unit residential buildings
4. Adoption and digital equity programs
5. Workforce development programs and vocational training

**Ways to get involved**

Eligible entities must conduct coordination with local governments, Tribes, community orgs, and individuals within their jurisdiction. Members of the public are encouraged to contact U.S. states, the District of Columbia, Puerto Rico, and territories to learn about more ways to get involved.

## Timeline

Timeline approximate unless exact date specified



# AFFORDABLE CONNECTIVITY PROGRAM

## WHAT IS IT?

The Affordable Connectivity Program is an FCC program that helps connect families and households struggling to afford internet service.

**The benefit provides:**

- Up to $30/month discount for internet service;
- Up to $75/month discount for households on qualifying Tribal lands; and
- A one-time discount of up to $100 for a laptop, desktop computer, or tablet purchased through a participating provider.

## WHO IS ELIGIBLE?

**A household is eligible for the Affordable Connectivity Program if the household income is at or below 200% of the Federal Poverty Guidelines, or if a member of the household meets at least one of the criteria below:**

- Participates in any of the following assistance programs: SNAP, Medicaid, Federal Public Housing Assistance, Veterans Pension or Survivor Benefits, SSI, WIC, or Lifeline;
- Participates in any of the following Tribal specific programs: Bureau of Indian Affairs General Assistance, Tribal TANF, Food Distribution Program on Indian Reservations, or Tribal Head Start (income based);
- Participates in the Free and Reduced-Price School Lunch Program or the School Breakfast Program, including through the USDA Community Eligibility Provision;
- Received a Federal Pell Grant during the current award year; or
- Meets the eligibility criteria for a participating broadband provider's existing low-income internet program.

## TWO STEPS TO ENROLL

**1**

Go to **AffordableConnectivity.gov** to submit an application or print a mail-in application

**2**

Contact your preferred participating provider to select an eligible plan and have the discount applied to your bill.

Some providers may have an alternative application that they will ask you to complete.

Eligible households must both apply for the program and contact a participating provider to select a service plan.

## LEARN MORE

**Call 877-384-2575**, or

Visit **fcc.gov/acp**