

Bug Tussel & Jackson County Partnership

BUG TUSSEL WAS AWARDED A BROADBAND EXPANSION GRANT FOR A PROJECT IN JACKSON COUNTY!

As of July 2022, Bug Tussel was awarded a grant to equip Jackson County with a fiberoptic network, providing last-mile connections and creating additional capacity to support future projects. More details coming in future reports.

THE PARTNERSHIP

Bug Tussel Wireless is proud to be partnered with Jackson County through a bond that was issued in the winter of 2021 and a grant that was issued in the spring of 2022. The project will primarily take place during the fiscal year 2022, with Bug Tussel's goal to have towers completed and online by January of 2023 and fiber connections to follow.

THE PROJECT

The project, **ROAD to Digital Equality: Jackson County** is designed to equip Jackson County with a fiberoptic backbone network and wireless internet access through rural areas in the county. Bug Tussel will install 3 towers and 153.3 miles of fiber within 1-3 years, with options for expansion available as agreed upon by Bug Tussel and the county.

BUG TUSSEL UNIVERSITY *Providing Core Education to Rural Communities*

Bug Tussel University is a free educational program for adults who want to improve their basic technology skills, learn about computers, and more! Regular attendee and class host, Coloma Public Library Director Deborah Sadowski says, "Thanks to Bug Tussel for offering these classes! It's such a big thing for our little community." Class attendees have learned how protect their privacy on Facebook, how to search better online, and more.

Request a class in your area by calling us at **920-940-0158** or emailing us at bugtusseluniversity@bugtusselwireless.com.

Check out our comic book!

The Boys & Girls Club of Greater Green Bay and Bug Tussel Wireless partnered to create a unique comic book that tells the story of Buford, a local hero to communities and Bug Tussel mascot, as he explains the importance of the internet and connecting rural Wisconsin. Read the comic book online by scanning the QR code or visiting this web address:



https://www.documentcloud.org/documents/22076279-bugtussel-comic1_output?responsive=1&title=1

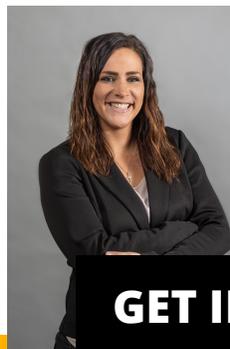
SALES & MARKETING

Bug Tussel ran Facebook ads targeting the county during the month of July.

Your sales representatives



Danielle Barnhart
Business Development Manager
Phone: (920) 396-7096
Email: danielle.barnhart@bugtusselwireless.com



Tammy Wiedenback
Regional Business Development Manager
Phone: (608) 609-3665
Email: Tammy.Wiedenbeck@bugtusselwireless.com

GET IN TOUCH

Customer Service
Phone: (877) 227-0924
Email: customerservice@bugtusselwireless.com
Website: bugtusselwireless.com

TOWER STATUS



On Air: 20*

**Includes AT&T only towers*

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



Under Construction: 2

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



Zoning: 1

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



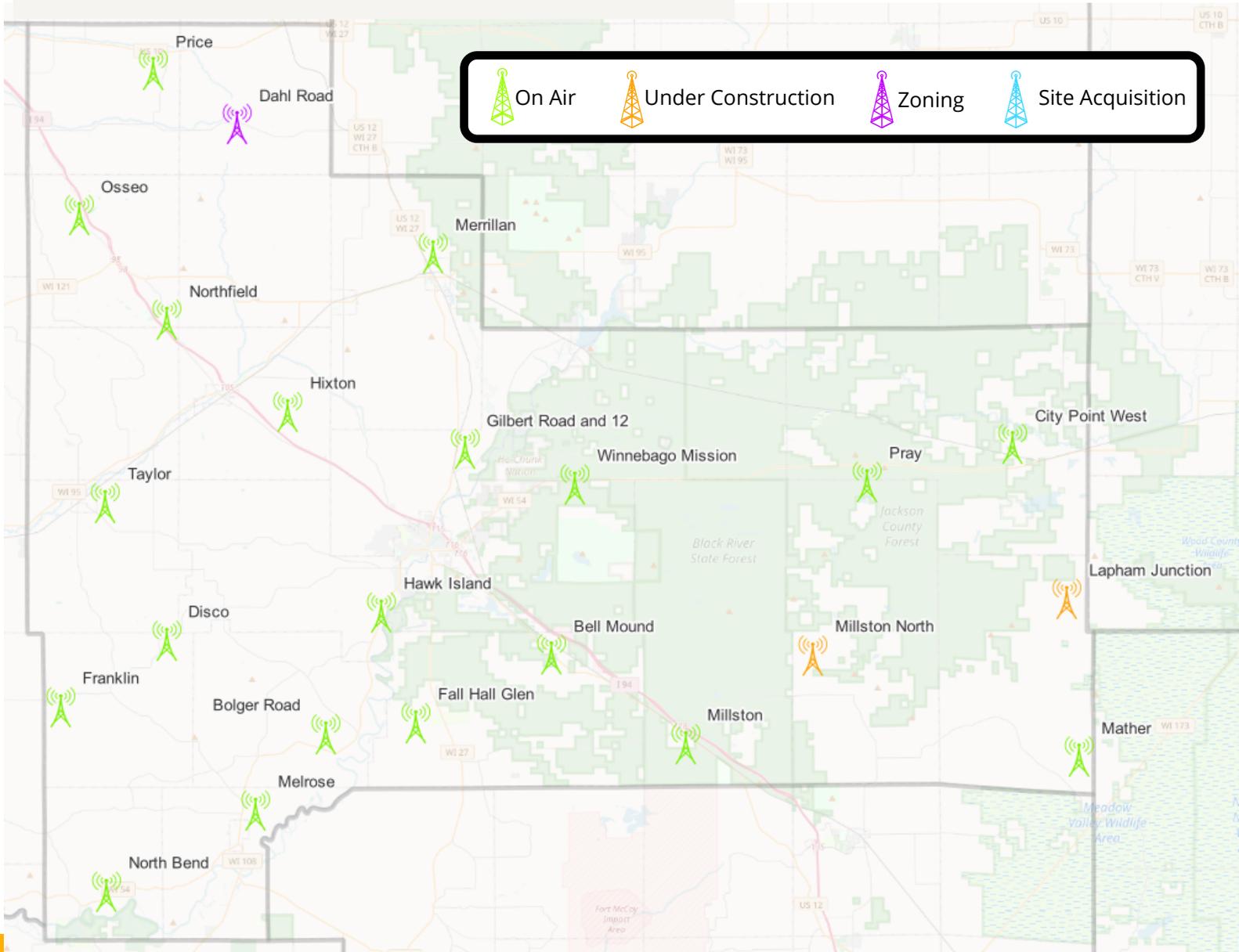
Site Acquisition: 0

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

TOWER SITES IN PROGRESS

Tower site Dahl Road (latitude 44.539807, longitude -91.004269) remains in zoning status while final regulatory steps are completed. Zoning status is the process of submitting permits and awaiting approval from various local and federal government agencies. The projected date when approval will be received to move forward with construction on these towers is early September.

Construction continues for two sites, Lapham Junction (latitude 44.267903, longitude -90.335224) and Millston North (latitude 44.23542, longitude -90.53816), as crews await the delivery of equipment. This equipment is expected to arrive by the end of August.



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

FIBER NETWORK

Engineering Resumed Mid-July

Engineering work was on pause until mid-July in order to review and approve purchase requests. This summer, engineers are mapping the entire fiber route, determining what type of equipment is needed for each area, and making decisions regarding routing based on in-the-field landscape needs. Engineering will take a couple of months to complete.

Submitting Permits Early

Bug Tussel staff will begin the process of submitting permits earlier than usual in order to speed up the project.

Construction Date Adjusted

The route will be built in 20-30 mile segments to allow the contractor to start this fall. Construction start date has been moved to early September. The contractor will be Elexco Inc.

FIBER STATUS



On Air: 0 miles

- Fiber is installed.
- Connections to towers are complete.
- Internet is live and operational.



Under Construction: 0 miles

- 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.
- 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 pieces with an optical laser.



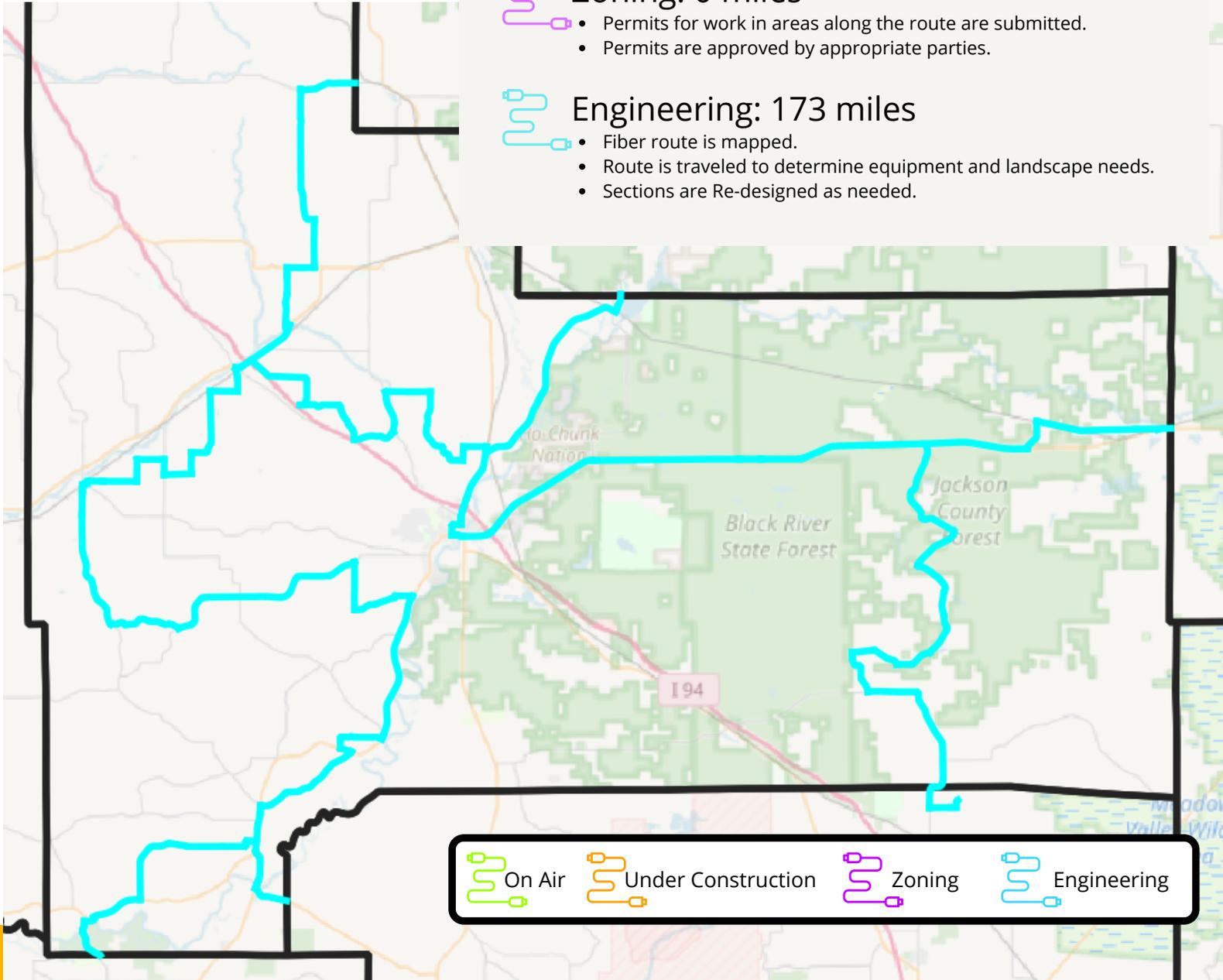
Zoning: 0 miles

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



Engineering: 173 miles

- 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.

The **First Mile** 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. 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 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.

Re-Design

Re-design the route 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 the customer's home or business.

Set Up Internet

Customer connects router and modem to internet cables to establish home network.

