bug tussel

ROCK COUNTY

WINTER REPORT

December 2022 - February 2023

btussel.com
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https://tinyurl.com/628j832m

OVERVIEW

While supply chain issues, winter weather conditions, and holiday closings caused delays for construction workers throughout the state, progress has continued on tower approvals and acquisition and fiber route design and approvals this winter.

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PROJECT SNAPSHOT

For a more detailed report of project status, see pages 4-5 and 8-9.

WIRELESS NETWORK

FIBER NETWORK

COMMUNITY ENGAGEMENT

ADS

Total People Reached: 1,014,720
Reached community members through television ads from December 2022-February 2023.

SOCIAL MEDIA

Total People Reached: 37,948
Reached community members through Facebook posts and ads from December 2022-February 2023.

SPONSORSHIPS

Reached Impact Sports Academy Baseball fans through sponsorship of the ISA Baseball tournaments taking place January-September 2023.

EVENTS

Bug Tussel's mascot, Buford, attended the Rotary Botanical Gardens light display in Janesville every Sunday in December.

Bug Tussel representatives attended FlannelFest in Janesville on February 25.

bug tussel UNIVERSITY

Technology Classes
Community members learned basic technology skills attending Bug Tussel University classes held at the Hedberg Public Library from December 2022-February 2023.

- 12/9 **Email Basics**
- 12/9 **Tech Help**
- 1/27 **How the Heck Does Wi-Fi Work?**
- 1/27 **Tech Help**
- 2/17 **Remove the Hassle From Passwords**
- 2/17 **Tech Help**

WIRELESS NETWORK PROJECT

Sites: 12

Funding Type: 2022 Bond / 2022 Loan / 2022 Grant & Bug Tussel contribution
Minimum Timeline: 2 years
Approval Date: August 2022

KEY STAGES

Includes 12 project-funded sites and other sites. Subject to change.

LIVE

4 Sites Complete

Towers are live and customers can be hooked up to the wireless network.

CONNECTIONS

4 Sites Complete

Connections to to appropriate utilities, power, and network are made and broadcast signals are tested.

CONSTRUCTION

4 Sites Complete

Site is prepared, foundation, road, and tower are built, and utilities and equipment are installed.

APPROVALS

4 Sites Complete | 6 Sites In-Progress

Permits are submitted to and approved by government and partner organizations.

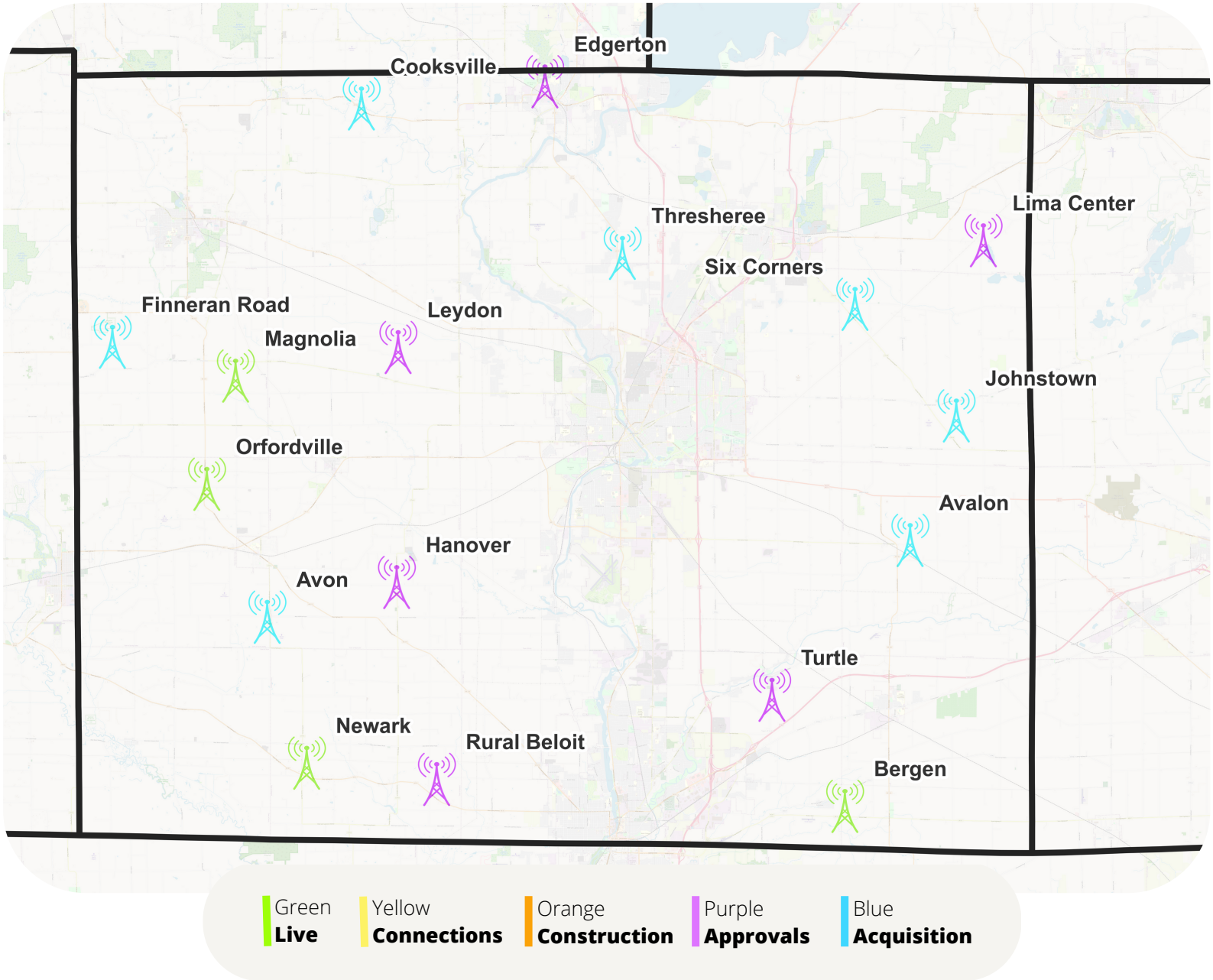
ACQUISITION

10 Sites Complete | 7 Sites In-Progress

Location for the site is scouted and, once a suitable site is found, a lease agreement with the landlord(s) is negotiated.

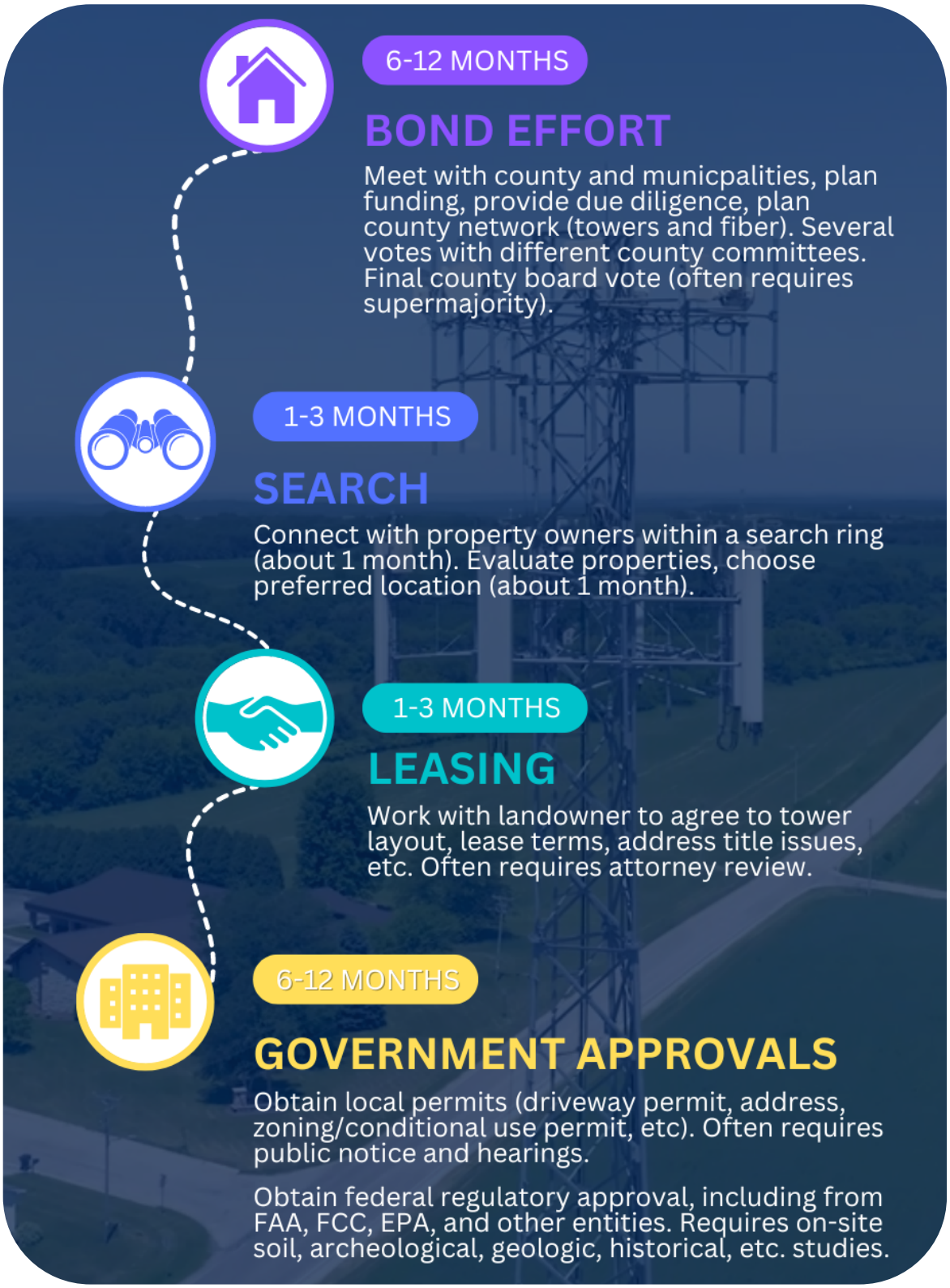
MAP - WIRELESS NETWORK

Representation of project-funded sites and other sites. Subject to change.



SITE ACQUISITION TIMELINE

btussel.com/about-us/partnerships



CUSTOMERS

FIXED WIRELESS

Total Subscribers: 41
Total current accounts subscribed to Bug Tussel fixed wireless service.

Pre-Sold Customers: 17
Total interested in fixed wireless service, including prospective customers and sales leads.

FIBER

Potential Customers: 1,433
Total homes within 100 feet of planned fiber route.

Pre-Sold Customers: 20
Total interested in fiber service, including prospective customers and sales leads.

TOP CUSTOMER SERVICE REQUESTS:

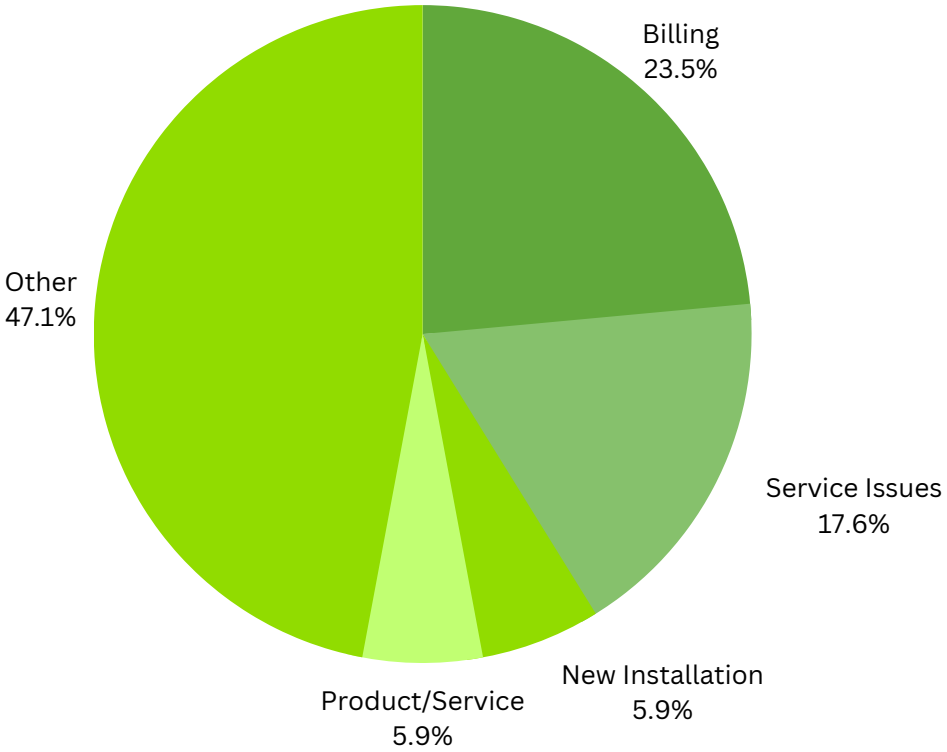
BILLING
Assistance with billing information, making payments, etc.

SERVICE ISSUES
Slow Wi-Fi, internet service interruption, other individual service issues.

NEW INSTALLATION
Customer is set up with new service

PRODUCT/SERVICE
Questions about Bug Tussel service or products

PORTAL
Questions about Bug Tussel's web portal, including settings, access, etc.



FIBER NETWORK PROJECT

Mileage: 145.8

Funding Type: 2022 Bond / 2022 Loan / 2022 Grant & Bug Tussel contribution
Minimum Timeline: 2 years
Approval Date: August 2022

KEY STAGES

Includes all projects and phases, with backbone and distribution. Subject to change.

LIVE
Fiber is live in select areas and customers can be hooked up to the network.

CONNECTIONS
Fiber is connected to appropriate sections, utilities, and power and network signal is tested.

FIBER
Fiber is placed in conduit and sections are spliced together.

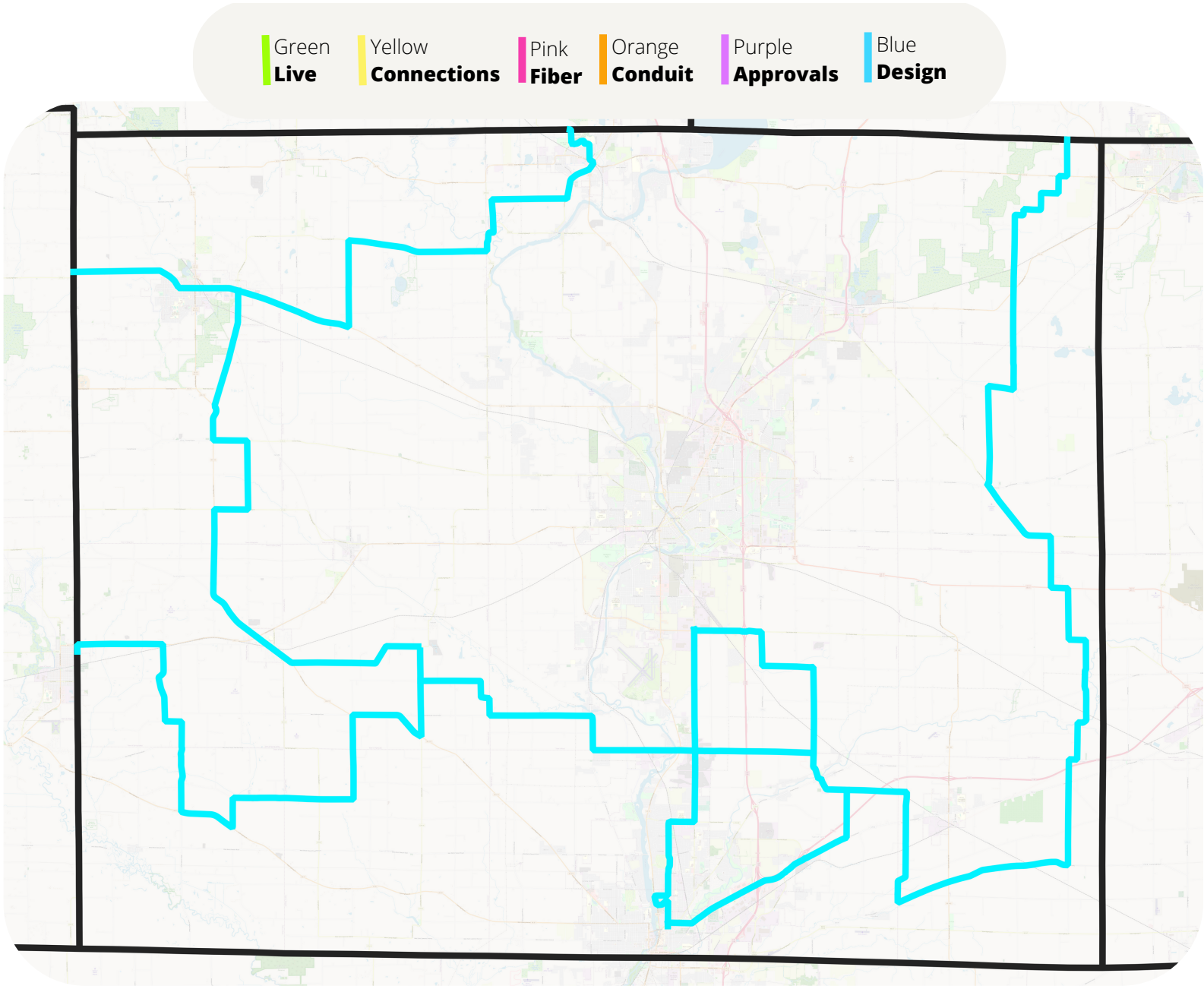
CONDUIT
Conduit cable and other utilities are installed.
Construction is expected to begin Spring 2023.

APPROVALS
139 Miles In-Progress
Permits submitted to and approved by government and partner organizations.

DESIGN
139 Miles In-Progress
Route is designed, planed, and engineered.

MAP - FIBER NETWORK

Representation of backbone. Subject to change.



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.

INSTALLING A FIBER NETWORK REQUIRES 4 MAJOR STEPS:

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.