# THE FUTURE IS FIBER

## BENEFITS OF FIBER OPTIC INTERNET

### Fiber is Faster

In simple terms, fiber optic technology allows information to be coded and sent in a beam of light down a glass or plastic pipe.

Since light moves at 186,000 miles per second across the fibers, connections aren't bound by speed limitations.

Fiber-to-the-home (FTTH) is the fastest and and most efficient method of providing greater bandwidth and higher speeds to homes, businesses, farms, and entire cities.

Connecting endpoints directly to fiber optic cable provides a more robust, reliable, and faster way of delivering internet.

One strand of glass fiber is the size of a human hair and can provide multiple dwellings with broadband.

Having fiber internet can increase a home's value by up to 3%.

Fiber is impervious to electrical resistance caused by storms.

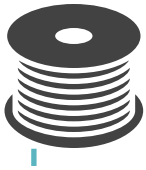
Fiber provides two-way transmission speeds - upload and download - of over a gigabit per second. (Compared to the average national speed of 12 megabits via traditional cable or DSL!)

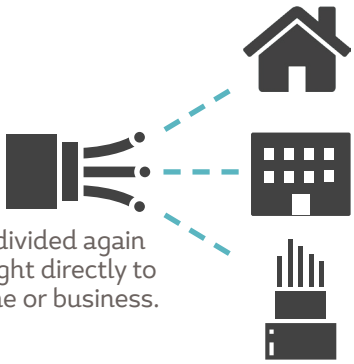
**1GIG (1,000Mbps)**

### How Does It Work?

Fiber is buried in the ground and brought from the "Control Office" to various sub-panels.

Fiber is split multiple times to deploy it to multiple locations.





Fiber is divided again and brought directly to each home or business.

Internet is distributed through the business or home via network equipment and/or WiFi routers.

Everyone's happy because they have fast reliable internet!

### Fiber is Futureproof

As older technologies stretch the limits of their performance or speed, constant improvements in fiber optic technology and equipment can improve how much bandwidth is available - ***without having to deploy new networks.***

## Fiber Connects Communities

Smart Rural Communities are those in which more than 50% of their service areas have broadband speeds of 25 mbps download / 3 mbps upload or better.

This provides:

- opportunities for online trainings, e-learning, and continued education
- growth of home-based businesses
- access to telehealth for all ages and abilities
- telecommuting for employees
- better work/life balance
- more opportunities for "aging in place"

Fiber Construction in Rural Minnesota

SMART RURAL COMMUNITIES®

## Fiber Optics

- Transmitted through light, making it safer and more reliable.
- No weather related interference since fiber is buried underground and generally has a direct connection to the home or business.
- No limitiations on speed.
- Ideal for nearly any terrain - hills, forests, flat, etc.
- More reliable, with faster speeds and longevity.

**VS.**

## Fixed Wireless

- Transmitted via radio waves - like a microwave.
- Line of sight between receiver and house/ business is required.
- Works best in flat areas - plains, fields, farms, etc.
- Fog and other adverse weather conditions can affect the signal strength.
- Sometimes faster to install and less expensive to deploy

## Fiber Fosters Partnerships

Fiber deployment can be expensive and time-intense. Partnerships and collaborations - across industries - allow for creative broadband solutions, especially in rural areas where resources may be stretched thin.

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