GigAustin.org

See Glossary of Terms on back

Fiber optic cable is the <u>best choice</u> of technology for Ultra Broadband in Austin—

• Fastest data transfer speeds

• Most reliable

• Future-proof: as head-end technology improves it will send more and more data over the same fiber

• Signal travels long distances without degradation

• Does not corrode

• Does not generate heat

• Isn't damaged by lightning

• Not easily affected by water

What is proposed in Austin?

• Fiber optic cable

• Installed to each premises (home, business, school, etc.)

• Up to 1 gigabit per second (Gbps) data transfer speeds to those that subscribe

• Austin and rural Austin sites within the school district
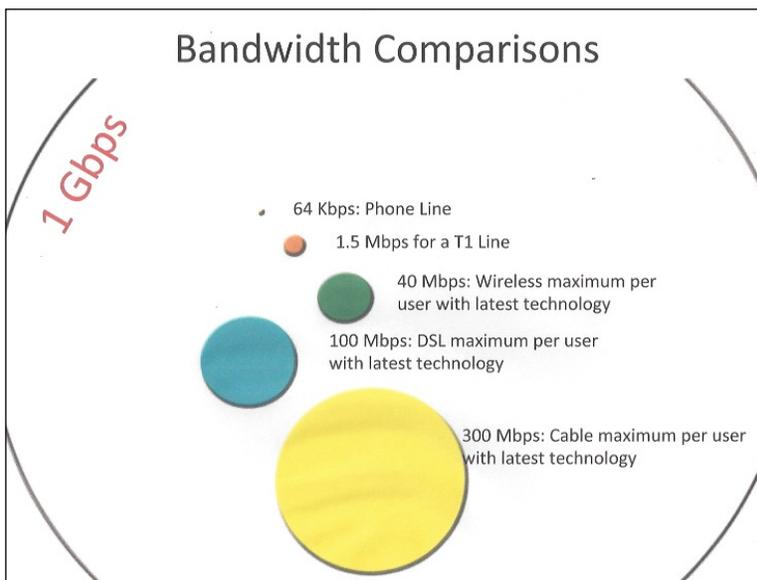
How does fiber-to-the-premises help a community?

• Increased property values

• Telecommuting is easier, increased employee recruitment and retention

• More efficient local government

• Improved public safety during emergencies.

• Advanced health care—real-time virtual doctor visits

• Students can learn from home, including real-time virtual classroom experiences

• Competitive advantage to businesses

How much will it cost?

Initial studies indicate a capital cost of about $35 million to build a FTTP network in Austin.

The Gig Austin team is pursuing a variety of funding options including funds from the FCC and the Minnesota Office of Broadband Development. Local taxes are not being pursued for capital funds at this time.

The goal of the Gig Austin project is to keep data service <u>affordable for all Austin residents and businesses.</u>

Bandwidth Comparisons

1 Gbps

64 Kbps: Phone Line

1.5 Mbps for a T1 Line

40 Mbps: Wireless maximum per user with latest technology

100 Mbps: DSL maximum per user with latest technology

300 Mbps: Cable maximum per user with latest technology

What did the community survey show?

• 300 surveyed

• 40% low-income, 47% middle-income,13% high-income

• Strong support for the Gig Austin concept

• Community-based entity offering broadband at current rates can expect a healthy subscription rate.

• 92% would consider switching if they could get much faster internet service for same price.

• 11-question survey

• Conducted Sept-Oct 2014

GLOSSARY

Ultra-Broadband: Generally, it refers to technology supporting data transfer speeds of 50 Megabit per second (Mbps) and above. For the purposes of the Austin study, Ultra-Broadband refers to data transfer speeds of 1 gigabit per second (Gbps).

Data Transfer Speed: Describes how fast data moves as it comes to any given device (computer or phone) and is generally indicated by bits per second (bps) or Megabits per second (Mbps).

A typical phone line delivers 64,000 bits per second (bps). A T1 line delivers 1.5 million bps (1.5 Megabit). A typical DSL connection delivers 10 to 20 million bps (10-20 Megabit). A wireless connection can deliver up to 40 million bps (40 Megabit). A cable connection can deliver up to 300 million bps (300 Megabit). A fiber optic cable connection can deliver up to **one billion**—1,000,000,000—bps (1 Gig) and would be scalable to higher speeds in the future.

The best residential speeds offered within the Austin area today are 60 Megabits per second—or 60 million bits per second.

Fiber optic cable: A fiber optic cable is a glass cable containing one or more optical fibers that are used to carry light. The optical fiber elements are typically individually coated with plastic layers and contained in a protective tube suitable for the environment where the cable will be deployed. Cable can be buried or installed on poles.

Data is transmitted by light signals transmitted over the fiber. The equipment used to send the light signals keeps getting better and better. Equipping an existing fiber network with new electronics and with lasers that pulse light faster can vastly increase available bandwidth without changing the fiber itself.

A multi-fiber cable

Fiber-to-the-premises (FTTP): Fiber-to-the-premises infrastructure provides broadband data connections (e.g. for Internet access) to homes, businesses and other structures directly with optical fibers. Projects not including businesses or other structures are known as Fiber-to-the-home or FTTH.

Customer Penetration Rates: The rate of customers within a given geographical area subscribing to a given data service organization. For example: Company A has a penetration rate of 60%. Company B and Company C split the remaining customers with 28% and 12% rates.