

Local Technology Planning Team Resources

Broadband Terms to Knowⁱⁱ

Backbone – The part of a communications network that acts like the central nervous system; a central hub from which all parts of the network extend.

Backhaul – A terrestrial communications channel linking an earth station antenna to a local switching network or population center.

Broadband – As defined by the National Telecommunications and Information Administration, broadband describes always-on, high-speed Internet access.

Cable Modem – Enables cable operators to provide broadband using the same coaxial cables that deliver pictures and sound to your television set. Most are external devices with two connections: one to the cable wall outlet, the other to a computer. They provide transmission speeds of 30 Mbps download and 1 Mbps upload, up to 100 Mbps download and 10 Mbps upload.

Cellular – A mobile communications system that uses a combination of radio transmission and conventional telephone switching to permit telephone communications to and from mobile users within a specified area.

Community Anchor Institutions – A public or private school, a library, a medical or healthcare provider, a museum, a public safety entity, a public housing agency, a community college, an institution of higher education, a religious organization, or any other community support organization or agency.

Contention Ratio – The number of subscribers that are sharing the connection at the same time.

Dig Once Policy - The installation of accessible, buried conduits during various infrastructure projects to enable providers to affordably install fiber with ease by running it through available conduits at a later time.

DSL (Digital Subscriber Line) – Wireline transmission technology that transmits data faster than dial-up over traditional copper telephone lines already installed to homes and businesses. DSL-based broadband provides transmission speeds ranging from several hundred Kbps to Mbps.

Fiber (Fiber Optic Cable) – A technology that converts electrical signals carrying data to light and sends the light through transparent glass fibers about the diameter of a human hair. Fiber optic transmits data at speeds far exceeding current DSL or cable modem speeds.

ISP – Internet service provider.

Last Mile – The actual portion of a network that provides broadband service to end users such as households, businesses, community anchor institutions, public safety entities, etc.

Latency – A way to measure speed (ping time). An analogy is Broadband, aka bandwidth, which is how wide or narrow a pipe is. Latency is how fast content moves from one end to the other in the pipe. Latency is measured in milliseconds; the lower the latency the faster.

LEO – Low Earth Orbit; An Earth-centered orbit relatively close to the planet; LEO is used to support satellite infrastructure for telecommunications or broadband.

LTE – Long Term Evolution; A 4G wireless broadband technology that provides speeds up to 100 Mbps download and 30 Mbps upload.

Middle Mile – Network infrastructure that does not deliver services to customers, but which provides for interoffice transport, backhaul, connectivity, or special access to service providers.

NBAM – National Broadband Availability Map; NTIA received funding from Congress in 2018 to update the NBAM in coordination with the Federal Communications Commission. Congress directed NTIA to acquire and utilize data from available third-party datasets. NTIA built upon existing partnerships with states and local governments to identify data from state, local and tribal governments, owners and operators of broadband networks, educational institutions, nonprofits, and cooperatives to create the map. Learn more about the map at <https://broadbandusa.ntia.doc.gov/resources/data-and-mapping>.

Satellite – Wireless broadband typically used in remote or sparsely populated areas with variations in speed and availability based on satellite angle, terrain, and weather considerations.

Spectrum – The range of electromagnetic radio frequencies used in the transmission of sound, data and television.

Technology Neutrality – The freedom to select and utilize technologies based on the unique needs and requirements of individuals, businesses or organizations.

Underserved Area – A geographic area of the state in which there is no provider of broadband internet service that offers a connection to the Internet with a capacity for transmission at a consistent speed of at least 100 megabits per second downstream and at least 10 megabits per second upstream.

Unserved Area – A geographic area of this state (Florida) in which there is no provider of broadband Internet service.

Wireless – Connects a home or business to the Internet using an over-the-air radio link between the customer and the service provider’s facility. Wireless broadband can be mobile or fixed.

5G – 5th generation wireless telecommunications standards usually associated with network speeds of up to 1 gigabit per second or more.

Talking Speed in Bits:

Bandwidth – Amount of spectrum to transmit signals without distortion or loss of data.

Bit – smallest unit of digital information.

bps – Bits per second (notice the lowercase “b”).

Byte – 8 bits.

Bps – Bytes per second (notice the capital “B”).

Kbps – Kilobits per second (1000 bits per second).

Mbps – Megabits per second (1 million bits per second).

Gbps – Gigabits per second (1 billion bits per second).

Tbps – Terabits per second (1 trillion bits per second).

Then there are the “bands”:

C-band – Frequency band with uplink 5.925-6.425 GHz, downlink 3.7-4.2 GHz. The C-band is primarily used for voice and data communications as well as backhauling.

Ka Band – Frequency band with uplink 26.5-40GHz; downlink 18-20 GHz, this band is primarily used for two-way consumer broadband.

Ku Band – Frequency band with uplink 14 GHz; downlink 10.9-12.75 GHz, with more powerful transmission from the satellite; more susceptible to rain fade than C-Band.

L-Band – Frequency band from 1 to 2 GHz, this band is the result of the down-conversion of the received downlink satellite signal from the LNB.

X-Band – Frequency band with uplink 7.9- 8.4 GHz, downlink 7.25 – 7.75 GHz, this band is primarily used for military communications and Wideband Global Satcom (WGS) systems.