BROADBAND DEPLOYMENT TECHNOLOGIES

What Technology Makes Sense for Serving an Unconnected Community?

FIBER

Fiber optic cables are hard-wired connections that use small glass fibers to transmit data via light pulses.

Pros:

Provides high maximum speeds and a reliable connection not affected by weather or geography

Fiber is associated with lower maintenance and scalability costs, and can often be considered more cost-effective in the long-term

Con:

Materials are high cost and capital expenditures for deployment can be time consuming – especially in remote regions

CABLE/COAXIAL

A dual-use technology that allows transmission of both television and internet signals through a single copper cable

Pros:

Cable connections are generally available at a lower cost and can support moderate internet use

Copper cables are cheaper to manufacture than fiber-optic cables, and existing copper networks lower the costs of network expansion

Con:

Copper cables cannot reach the same speeds as fiber optics and have lower bandwidth capacity

FIXED WIRELESS

Uses a receiver to communicate with a nearby ground service station that is connected to a wired network to establish broadband connection wirelessly

Pros:

Does not require expensive infrastructure, no need to bury 'last-mile' cables or wires to connect residences

Can provide a high-speed connection that can perform comparably to a wired connection

Con:

Obstructions such as hills, trees, rain, or fog can impact the reliability of the connection. A clear line of sight is required.

SATELLITE TECHNOLOGIES

Uses an individual satellite receiver to connect wirelessly with satellites placed in orbit to provide internet connectivity.

Pros:

Does not require expensive ground-based infrastructure, it is widely available, and is resilient to natural disasters.

Can provide high speed connections for areas that are particularly low-density

Con:

Satellite technology is prone to higher latency and lower speeds in the connection because the signal must travel further, and is more affected by weather disturbances and/or existing network traffic

Questions to Consider:

- Are there providers in my area who are offering any of these broadband technology services?

- Have I had discussions with internet service providers about technological solutions in my community?

- Have I conducted a feasibility study in my community? A needs assessment? What do communities in my county express is the best solution?