



ALACHUA COUNTY COMPREHENSIVE PLAN: 2011-2030 EVALUATION AND APPRAISAL ISSUE SUMMARY

May 1, 2018

STATEMENT OF ISSUE

Assess issues associated with provision of broadband internet in order to reduce access inequality; consider a “Communication Element” or policies in the Comprehensive Plan to ensure the provision of high speed internet and other communications infrastructure services.

INTRODUCTION

Broadband is a high data-transmission, high-speed internet connection. It provides a higher-speed of data transmission equivalent to 10 times that of dial-up service through phone lines. It also provides access to videoconferencing and other uses that require large amounts of data transmission.

In numerous studies, broadband has been shown to have a positive impact on economic development of an area. School children need ready quick-access to the internet and adults need to be able to access the internet for business, educational, social, medical and other opportunities. Electronic services replaced paper processes decades ago. The speed of accessing electronic services is the new evolution, driving the need for faster internet service. As witnessed during Hurricane Irma, internet access is also important to getting information to the public during disasters.

Currently a large geographical barrier to broadband exists that exacerbates the financial barriers. Unserved and underserved areas of the County are the eastern urban cluster and the rural areas of the County. Past attempts and federal government programs have not closed this gap and technology is constantly changing.

COMPREHENSIVE PLAN POLICIES RELATING TO ISSUE

Future Land Use Element 1.5.3 New residential developments shall provide for the provision of high speed internet access as specified in the land development regulations.

DATA AND ANALYSIS RELATING TO ISSUE

(Excerpted from Broadband.gov) Broadband includes several high-speed transmission technologies such as:

- Digital Subscriber Line (DSL)
- Cable Modem
- Fiber
- Wireless
- Satellite
- Broadband over Powerlines (BPL)

The broadband technology you choose will depend on a number of factors. These may include whether you are located in an urban or rural area, how broadband Internet access is packaged with other services (such as voice telephone and home entertainment), price, and availability.

Digital Subscriber Line (DSL)

DSL is a wireline transmission technology that transmits data faster over traditional copper telephone lines already installed to homes and businesses. DSL-based broadband provides transmission speeds ranging from several hundred Kbps to millions of bits per second (Mbps). The availability and speed of your DSL service may depend on the distance from your home or business to the closest telephone company facility.

The following are types of DSL transmission technologies:

- **Asymmetrical Digital Subscriber Line (ADSL)** – Used primarily by residential customers, such as Internet surfers, who receive a lot of data but do not send much. ADSL typically provides faster speed in the downstream direction than the upstream direction. ADSL allows faster downstream data transmission over the same line used to provide voice service, without disrupting regular telephone calls on that line.

- **Symmetrical Digital Subscriber Line (SDSL)** – Used typically by businesses for services such as video conferencing, which need significant bandwidth both upstream and downstream.

Faster forms of DSL typically available to businesses include:

- High data rate Digital Subscriber Line (HDSL); and
- Very High data rate Digital Subscriber Line (VDSL).

Cable Modem

Cable modem service enables cable operators to provide broadband using the same coaxial cables that deliver pictures and sound to your TV set.

Most cable modems are external devices that have two connections: one to the cable wall outlet, the other to a computer. They provide transmission speeds of 1.5 Mbps or more.

Subscribers can access their cable modem service by simply turning on their computers, without dialing-up an ISP. You can still watch cable TV while using it. Transmission speeds vary depending on the type of cable modem, cable network, and traffic load. Speeds are comparable to DSL.

Fiber

- Fiber optic technology converts electrical signals carrying data to light and sends the light through transparent glass fibers about the diameter of a human hair. Fiber transmits data at speeds far exceeding current DSL or cable modem speeds, typically by tens or even hundreds of Mbps. Typical residential service speeds are 20-30 mbps (megabits per second) download, and 5- 20 mbps upload speeds.
- The actual speed you experience will vary depending on a variety of factors, such as how close to your computer the service provider brings the fiber and how the service provider configures the service, including the amount of bandwidth used. The same fiber providing your broadband can also simultaneously deliver voice (VoIP) and video services, including video-on-demand.
- Telecommunications providers sometimes offer fiber broadband in limited areas and have announced plans to expand their fiber networks and offer bundled voice, Internet access, and video services.
- Variations of the technology run the fiber all the way to the customer's home or business, to the curb outside, or to a location somewhere between the provider's facilities and the customer.

Wireless

- Wireless broadband connects a home or business to the Internet using a radio link between the customer's location and the service provider's facility. Wireless broadband can be mobile or fixed.
- Wireless technologies using longer-range directional equipment provide broadband service in remote or sparsely populated areas where DSL or cable modem service would be costly to provide. Speeds are generally comparable to DSL and cable modem. An external antenna is usually required.
- Wireless broadband Internet access services offered over fixed networks allow consumers to access the Internet from a fixed point while stationary and often require a direct line-of-sight between the wireless transmitter and receiver. These services have been offered using both licensed spectrum and unlicensed devices. For example, thousands of small Wireless Internet Services Providers (WISPs) provide such wireless broadband at speeds of around one Mbps using unlicensed devices, often in rural areas not served by cable or wireline broadband networks.
- Wireless Local Area Networks (WLANs) provide wireless broadband access over shorter distances and are often used to extend the reach of a "last-mile" wireline or fixed wireless broadband connection within a home, building, or campus environment. Wi-Fi networks use unlicensed devices and can be designed for private access within a home or business, or be used for public Internet access at "hot spots" such as restaurants, coffee shops, hotels, airports, convention centers, and city parks.
- Mobile wireless broadband services are also becoming available from mobile telephone service providers and others. These services are generally appropriate for highly-mobile customers and require a special PC card with a built in antenna that plugs into a user's laptop computer. Generally, they provide lower speeds, in the range of several hundred Kbps.

Satellite

Just as satellites orbiting the earth provide necessary links for telephone and television service, they can also provide links for broadband. Satellite broadband is another form of wireless broadband, and is also useful for serving remote or sparsely populated areas.

Downstream and upstream speeds for satellite broadband depend on several factors, including the provider and service package purchased, the consumer's line of sight to the orbiting satellite, and the weather. Typically a consumer can expect to receive (download) at a speed of about 500 Kbps and send (upload) at a speed of about 80 Kbps. These speeds may be slower

than DSL and cable modem, but they are about 10 times faster than the download speed with dial-up Internet access. Service can be disrupted in extreme weather conditions.

Broadband over Powerline (BPL)

BPL is the delivery of broadband over the existing low- and medium-voltage electric power distribution network. BPL speeds are comparable to DSL and cable modem speeds. BPL can be provided to homes using existing electrical connections and outlets. BPL is an emerging technology that is available in very limited areas. It has significant potential because power lines are installed virtually everywhere, alleviating the need to build new broadband facilities for every customer.

POTENTIAL STRATEGIES FOR ADDRESSING ISSUE

The Alachua County Commission has discussed helping to fund the City of Gainesville's proposal to study the creation and implementation of a fiber master plan for the GRU service area in order to lower prices and increase internet access speeds for residents. The ultimate goal as described by Gainesville's Broadband Connectivity Subcommittee is to provide free or the lowest priced internet for residential and business service in the United States. This study would cover areas that GRU provides service to currently. Much of the County's mapped urban cluster is in this area and these residents could benefit. The rural area of the County is not served by GRU however, and would not necessarily benefit from the results of this study.

At issue is determining the most efficient and cost effective way to provide unserved and underserved residents with broadband while maintaining a cost that is affordable to the majority of the population and the ability to subsidize those that cannot afford it.

The Comprehensive Plan policy cited above, *Future Land Use Element 1.5.3 New residential developments shall provide for the provision of high speed internet access as specified in the land development regulations*, is being met with all new subdivisions in the Urban Cluster. The real issue is providing service to already established subdivisions that lack high-speed internet, and providing service to rural areas of the County. The Comprehensive Plan guides the future growth and development of the County. The challenge here is to determine how to reach already developed areas.