



BROADBAND & FIBER OPTICS

The citizens of Chatham County understand the value of future planning as evident by the County's numerous tree-lined squares, parks, and boulevards. Chatham County and the City of Savannah's concurrent fiber optic feasibility studies completed in 2017 were another contribution to the community's tradition of forethought.

In the past, housing, public spaces, transportation, and water were critical for community viability. Today, competitiveness, prosperity, and quality of life are determined by bits and bytes, code and data, networks, "smart" systems, and software applications. Indeed, digital technology has become the key to effectively managing and using conventional resources. It is creating new possibilities for business, commerce, education, healthcare, governance, public safety, and recreation. All of this depends on bandwidth and connectivity—the ability to move information quickly and flexibly from and to most anywhere.

The vast array of devices that permeates Chatham County is only going to increase. Those devices enable people to greatly improve and transform how they live, work, and play by connecting them to each other and giving them access to valuable information. Citizens can and will continue to use digital technology to interact with each other in unprecedented, highly informed, easier, and more dynamic ways.

Broadband has become essential to business, education, healthcare, and overall quality of life. Unfortunately, high-speed internet access remains out of reach for Georgians in many communities. Local governments are responding with new investments in technology. Building, running, and even using fiber-optic infrastructure is not a short-term endeavor.

These activities demand a clear vision for current and future citizens' expectations and requirements, require substantial input from local business and civic leaders, and benefit from principled thinking about the role of local government.

In summary, digital infrastructure can be used to deliver essential community services, enable a modern, connected economy, and support a higher quality of life.

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Network Technology

Broadband refers to high-speed internet services, which provide online content—websites, television shows, video conferencing, cloud services, or voice conversations—to be accessed and shared via computers, smartphones, and other devices. The Federal Communications Commission defines broadband to be at least 25 Mbps downstream to the device, and 3 Mbps upstream, though demands are increasing. There are multiple broadband delivery systems, though mainly cable, DSL, fiber, and wireless connect devices to the internet.

Fiber is considered the gold standard for supporting broadband, essential for fast, reliable connections. Fiber-optic cables—or just "fiber"—is a strand of glass the diameter of a human hair that carries waves of light. Using photons across glass, as opposed to traditional electrons across copper wire, fiber has the capacity to carry nearly unlimited amounts of data across long distances, literally at the speed of light. The term, "broadband" refers to the high-speed service, which enables devices to access online services.

Broadband is deployed throughout communities as wires that carry digital signals to and from users. The content comes into the local community from around the world via global, national, and regional networks. The local infrastructure is built, connected, and operated by internet and telecommunications companies that own the physical wires to each household.

Infrastructure that is aging and built on the older technologies result in slower, less reliable access to content. Due to capacity limits of this infrastructure, companies

INTERNET ACCESS

Reliable internet access is even more important now that many adults and children are working and learning from home. The impacts of COVID-19 on our community reinforced the importance of internet access in the home.

—Georgia Fiber-Optic Feasibility Study (2017)



cannot reliably provide high speeds, and often limit the amount of data consumers can use. Fiber provides the robust infrastructure that connect telephone and cable infrastructure between communities and around the world. It was originally used by telecommunications for their core infrastructure, to connect their major switching centers, and was only available to their biggest corporate and institutional customers. Today, fiber-optic is in homes and businesses throughout the world providing telephone and television as well as internet access services.

In summary, digital infrastructure can be used to deliver essential community services, enable a modern, connected economy, and support a higher quality of life. The end goal is for all of Chatham County to help its citizens get better connectivity and more bandwidth, while meeting its internal technology needs. Every jurisdiction in Chatham County should invest in fiber-optic infrastructure and related facilities to better serve its citizens, enhance quality of life and quality of place, and spur sustainable economic growth all while ensuring it is economically feasible, fiscally responsible, and practical.

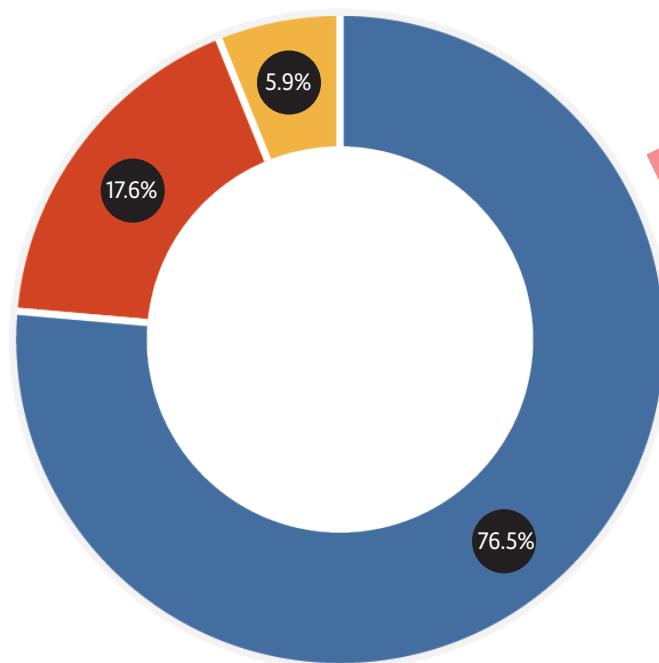
Barriers to Household Internet Subscribership

First, it is important to understand the reasons why households do not subscribe to internet services.

Remarkably, across all surveyed households, there were no households that reported they chose not to subscribe because they do not need the internet.

Results from the Chatham County Fiber Optic Feasibility Study shows in Figure 8.1 that of the non-subscribing Chatham County households, an overwhelming 76.5% say they choose not to subscribe to service because residential internet access is too expensive. This data allows us to understand whether non-subscribership is the choice of the household, or if their decision reflects local broadband market conditions, such as a lack of service availability near the home, or if the high cost of service discourages service adoption.

Figure 8.1-Most Important Reason for Non-Subscribing to Internet



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State of Broadband in Savannah

- Nominally strong, but inconsistent, residential offerings, including fiber-based services
 - Median: "up to" 300 Mbps/25 Mbps for \$150/mo.
 - Minimum: 1.5 Mbps/.768 Mbps for \$30
 - 75% of locations surveyed had no competitive options
- Fewer retail offerings for business
 - Business Median: "up to" 150 Mbps/25Mbps for \$264/mo.
 - Many locations with no competitive options
 - Incumbent and independent providers offer services on an individual case basis

SERVICE TOO EXPENSIVE

NOT AVAILABLE AT
MY HOME

TOO SLOW OR UNRELIABLE

Nearly 1 out of 5 Chatham County households (17.6%) that do not subscribe to broadband say that broadband is not available at their home. From a quality of service perspective, 5.9% of non-subscribing households say that available services are too slow or unreliable, perhaps dropping service from poor previous experience. However, every household responding to a 2016 survey recognized a need for the internet.



Nearly 1 out of 5 Households say
Broadband is not available at their homes

While these percentages are very telling of local broadband market conditions, Chatham County's findings conflict with national household averages. In fact, both Chatham County and Savannah households do not align with the most recent U.S. Department of Commerce research that identifies non-subscribing U.S. households with "no internet availability" at 48%, with "too expensive" the reason of 28% of U.S. households. These findings shine a light on issues beyond access to the internet and reveal a digital divide in Chatham County that is based more on cost of services.

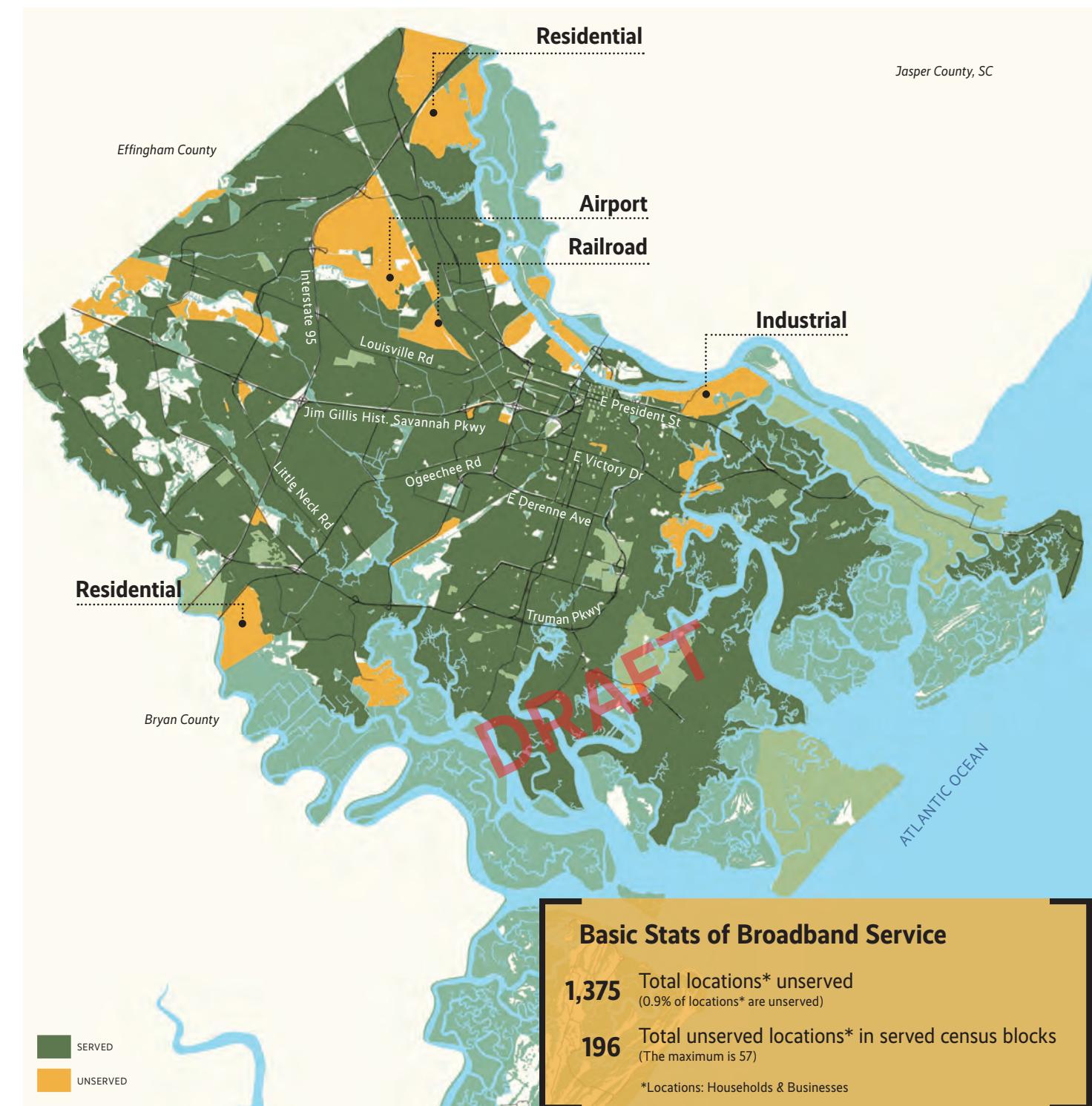


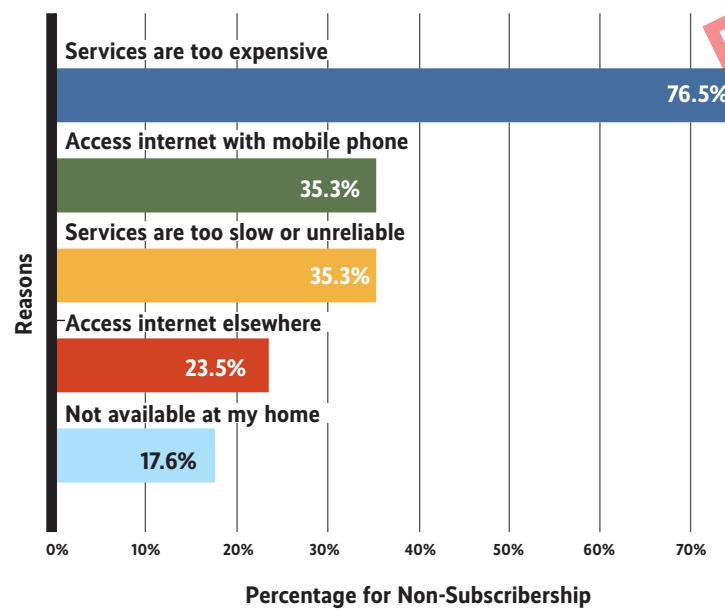
Figure 8.3-Broadband Access Map

This could be an indication of current service providers charging too much for service but could also reveal the economic conditions of some households in the county. Indeed, the notion of being "too expensive" is a relative term, as what could be out of financial reach for some households and income levels could be considered discretionary spending for other households.

Still, survey responses show that Chatham County households recognize a need for the internet. As seen in Figure 8.4, when asked why the household did not subscribe to household internet services, an overwhelming number of households report that services are too expensive (76.5%), roughly a third (35.3%) rely on their mobile devices, while the same percentage (35.3%) rely on access to the internet outside the home. Outside the home could mean at work or school, the library, or even public Wi-Fi locations around town. Lastly, and not insignificantly, 17.6% of county households report that the internet is not available at their home.

Some important observations can be made in comparing these two sets of data. First, while cost of service appears to be the reality of market conditions in Chatham County,

Figure 8.4—Reasons for Non-Subscribership from Chatham HH



two additional reasons hint at possible workaround solutions for non-subscribing households that need internet access; "access internet with mobile phone" and "access internet elsewhere".

Reflecting a national trend, internet-enabled mobile devices are emerging as a necessary substitute for home internet access. A remarkable 35.3% of non-subscribing households report their mobile phone as a reason their household does not subscribe to internet services. These homes do not willingly choose mobile over wired connections; they use their mobile phones out of necessity because wired residential service is too expensive. Where cost is an issue, if given the choice between wired home internet access or inferior and costly mobile internet access, most will choose mobile wireless because of the voice and mobility aspects. Likewise, no non-subscribing Chatham County households say they do not subscribe to services because they access internet elsewhere. Yet when given the opportunity for multiple responses, that response increases to 23.5% of households that access the internet outside the home, possibly at work, school, or a public place such as a library or a restaurant likely because they have no affordable choice for their household.

To get an idea of how many non-subscribing Chatham County households would subscribe to services if given the opportunity, a series of questions in the same 2016 survey gauged how much the internet is a part of their household functions.

Taken together, the survey of non-subscribing households clearly indicates that Chatham County residents recognize the importance of the internet to their household and would likely adopt services if available at an affordable price.

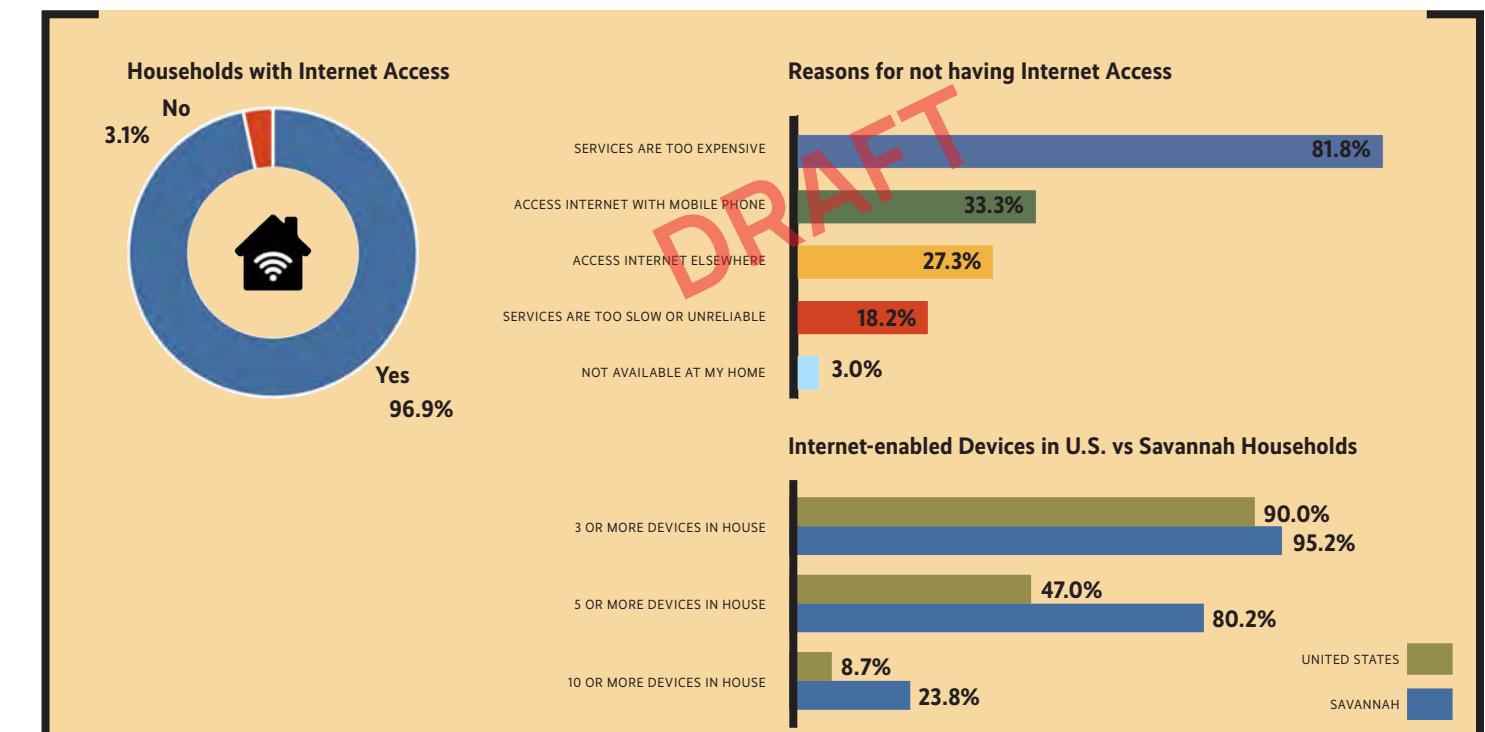
Summarized from Chatham County, Georgia Fiber-Optic Feasibility Study (May 2017 Magellan Advisors), as well as the City of Savannah Municipal Fiber Feasibility Study (May 2017 Magellan Advisors)

Next Steps

Reiterating the recommendations, the next steps move Chatham County toward developing and realizing county-wide fiber-optic infrastructure goals. Many of these recommendations center around forming local collaborations to aggregate demand and formalize broadband-friendly policies across the county. Many of the next steps are low-cost, organizational, and policy-oriented steps that will lead to a broader fiber-optic partnership and county-wide fiber-optic deployment.

These findings shine a light on issues beyond access to the internet and reveal a digital divide in Chatham County that is based more on cost of services.

Household Survey Findings



AN ISSUE INTENSIFIED BY COVID-19

All learning, services, commerce, most workplaces and daily interactions online require a high-speed connection to the internet. As communities around the world adapted to a world with COVID-19, broadband connectivity and access became more critical than ever before.

Chatham County was forced to find new ways to work, go to school, communicate, and connect. In the United States alone, state and local directives urged millions of Americans to stay in and, when possible, work from home.

It is possible that at the end of the COVID-19 crisis, the future will look different from the world we left when the crisis began in 2019.

BROADBAND & FIBER OPTICS GOALS

GOAL 1

Ensure all of Chatham County has access to broadband services

Internet is critical in today's world both on the residential and business side. Areas of Chatham County are still experiencing gaps in cellular coverage and limited access to high-speed internet service even though there are multiple providers.

Internet providers are working to extend fiber and new 5G wireless technology; however, some rural areas are experiencing a reduction in coverage as these new technologies are implemented.

Objectives:

- Ensure all new housing developments have fiber infrastructure
- Ensure public spaces, such as libraries and schools, have broadband infrastructure
- Work with SEDA to offer incentives for developers to invest in broadband
- Find ways to advertise existing broadband to attract businesses and development.
- Improve understanding of existing and preparedness for future communication technologies



GOAL 2

Improve broadband services in unserved Chatham County, Georgia

As the community grows and continues to require more and better broadband infrastructure, the County and jurisdictions within the County will determine what level of investment into fiber it is comfortable making, based on the overall benefit received.

Objectives:

- Recognize fiber-optic networks as a long-term infrastructure
- Work to become a designated Georgia Certified Broadband Ready Community
- Incorporate Broadband Friendly Policies
- Coordinate Fiber Deployment with Capital Projects
- Pursue sources of significant funding such as SPLOST for solidifying each jurisdiction's share of fiber partnership

