Mississippi's State Broadband Plan

2019 Update

Letter from Governor Phil Bryant

Broadband Internet has become the cornerstone of our national lives as Americans, and is no less important in Mississippi. It improves the way Mississippians perform their work and makes our people more productive. Broadband connects rural Mississippians to quality healthcare via telehealth and Remote Patient Monitoring. It improves educational opportunities for our children at school and in the home and provides streaming entertainment in our living rooms.

At the same time, Mississippi, like other rural states, faces a gap in broadband availability. That gap is closing thanks to the efforts of the private sector and government support for broadband deployment. Increasing reliance on smartphones as a key gateway to the Internet has also enabled more rural Mississippians to have real access to the Internet. However, more remains to be done.

Mississippi has a broadband plan. *Mapping Mississippi's Digital* Future was adopted the year I was elected Governor, and as I prepare to leave office we must review the progress we have made as a state. Broadband internet is a vital part of our economy, health, education, and quality of life so we must not be complacent about ensuring more access to broadband for our citizens.

We as a state have made enormous strides in our efforts to connect more of our citizens to the technology of the future. Hundreds of millions of dollars have been invested on broadband deployment, and more people are connected today than there were at the beginning of my Administration. I recently signed into law the Mississippi Broadband Enabling Act, which allows electric cooperatives to offer broadband to rural communities for the first time.

We continue to work with our federal delegation to pursue innovative rural broadband solutions. Our representatives in Washington – particularly Senator Roger Wicker, the Chairman of the Senate Committee on Commerce, Science, and Transportation – continue to lead the national discussion on this important subject. Mississippi wants to be the testbed for programs, policies, and funding that connect the most rural individuals and businesses.

This report is intended as an update of the state's original broadband plan and a review of the progress we have made in the past 8 years. As we look to the future, it is critical to our state's economic future that broadband availability and adoption continue to improve. I look forward to working with stakeholders to see the promise of the Internet reach all people and all corners of our great state.

Phil Bryant
GOVERNOR

Executive Summary

This document is intended to reaffirm the work done in 2011 to create the state's first broadband plan, *Mapping Mississippi's Digital Future.* When possible, the report will update broadband data for the state and provide examples of efforts on the part of many stakeholders to bring this vital resource to more Mississippians. This document is not intended to provide a comprehensive assessment of all of the initiatives underway. Rather, it will serve to inform the public and policy makers of the progress that has been made and the work left to do.

State Broadband Plan Development

In 2009, Governor Haley Barbour created the Mississippi Broadband Task Force to coordinate efforts by numerous state agencies and stakeholders on expanding access to broadband Internet. With the help of federal funds, the Mississippi Broadband Connect Coalition (MBCC) was created in order to develop a statewide broadband plan. The MBCC convened committees of subject matter experts in areas including broadband availability, adoption, healthcare, education, and others.

As a result of these efforts and the contributions of dozens of partners, *Mapping Mississippi's Digital Future,* the statewide broadband plan, was unveiled in the fall of 2011. This comprehensive report included recommendations designed to increase availability of and access to the broadband Internet.

In order to implement many of these recommendations and improve digital literacy and adoption rates, the Extension Broadband Education and Adoption Team (e-BEAT) was established through Mississippi State University's Extension Service. e-BEAT took advantage of the Extension Service's presence all across the state to bring training and resources to Mississippians who either were unaware of the benefits of broadband or were unable to access it. They held events and forums throughout the state in order to implement the recommendations of the state plan.

Broadband Connectivity

Broadband use depends on two critical factors: availability of broadband service and adoption (or use) of that service. The initial state plan looked at both critical precursors to broadband use. Not only are availability and adoption rates important, but broadband speed and latency rates are key determinants for productivity and the benefits that can be achieved for Mississippians. The standard definition used by the FCC and others for broadband is 25 Megabits per second (Mbps) for download speeds and 3 Mbps for uploads. At those speeds, many of the common Internet activities are possible.

Since the initial state broadband plan was adopted, broadband availability and usage has risen nationwide and in Mississippi. According to a Pew Research Center report[1], the percentage of the U.S. population using the Internet rose from 79% in 2011 to 89% in 2018. Home broadband use rose by 5% to a total of 65% of U.S. adults using broadband in the home. According to this same report, gaps in home broadband availability remain between rural, suburban, and urban communities. In 2018, that nationwide percentage gap ranged from 9-12% with rural populations consistently having less access to in-home broadband.

The percentage of U.S. adults who rely solely on their smartphones for Internet connectivity as opposed to desktops or other devices at home rose from 8% of the population in 2013 to 20% in 2018, according to Pew.

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[1] Pew Research Center. "Internet/Broadband Fact Sheet." February 2018. https://www.pewinternet.org/fact-sheet/internet-broadband/

The Federal Communications Commission (FCC) reports that 72% of Mississippians have access to broadband. However, independent observers have found that those statistics across the country may not be completely accurate nor reflect the reality on the ground. The standard methods for reporting to the FCC have been called flawed because of the ability to overstate the true nature of broadband availability in rural communities.

Positive Steps in Mississippi

Despite the gaps that exist in Mississippi, as well as the rest of the nation, there have been many improvements to the broadband landscape in the state since the initial plan was adopted. The private sector has deployed thousands of miles of broadband infrastructure. Tens of thousands of new homes and businesses have access to high speed Internet, including several communities with Fiber to the Home access.

Mobile broadband coverage has expanded and now provides the majority of the state with Internet access through their smartphones. Particularly in rural parts of the state, mobile broadband access is providing Internet connectivity for Mississippians. High speed satellite-enabled broadband is also becoming more widespread in more rural parts of the state that may not be able to support terrestrial fixed broadband.

The Center for Telehealth at the University of Mississippi Medical Center has been nationally recognized as a Center of Excellence by the federal Health Resources and Services Administration. The Center is responsible for more than 500,000 patient visits in nearly every county in the state through its remote patient monitoring and interactive tools.

Mississippi's legislature has acted on numerous occasions to support the deployment of broadband infrastructure and new options for consumers. For instance, the Legislature passed and Governor Bryant signed into law an extension of a tax incentive designed to encourage broadband infrastructure deployment.

In the 2019 legislative session, the Mississippi Broadband Enabling Act was enacted giving rural electric cooperatives the opportunity to provide broadband services for the first time. This legislation provides a new vehicle to possibly bring broadband connectivity to parts of the state that have been too rural and sparsely populated to justify terrestrial broadband deployment in the past.

There are many private, public, and non-profit stakeholders doing important work in a variety of fields all across the state. While there are still gaps and we as a state have ground to gain in order to meet the national averages, there are positive steps in the right direction to a more connected Mississippi.

Mississippi Broadband Statistics and Broadband Survey Data

Broadband providers report on where they provide broadband access to the FCC on a regular basis. Due to the manner in which this data is required to be reported, broadband availability often can be overstated and inaccurate. Therefore, in this update to the state broadband plan we will use the FCC data for Mississippi but we will also include survey data compiled by the Mississippi State University Extension Service to try to paint a more complete picture of broadband availability.

FCC Data

Based on the FCC's "2018 Broadband Deployment Report,"[2] approximately 92% of Americans have broadband access through fixed terrestrial services (25 Mbps/3Mbps) and mobile LTE (5 Mbps/1Mbps). This is an increase from 2016 when 89.4% of Americans had access to broadband. From 2012-2014, the number of Americans that did not have access to either fixed terrestrial or mobile broadband fell from 72.1 million to 34.5 million – a decrease of nearly 50%.

Rural America continues to lag behind urban areas, with 68.8% having access as opposed to 97.9% in cities.

In Mississippi, the FCC reports that 72.3% of the population has access to fixed terrestrial broadband (25 Mbps/3 Mbps) while 99.7% have access to mobile broadband (25 Mbps/3 Mbps). They report that Mississippi's urban areas experience 95.3% of fixed broadband availability while only 49.9% of the rural population has access to fixed broadband. However, the FCC reports that 99.4% of rural Mississippi has access to mobile broadband.

The FCC also collects data on download/upload speeds for Mississippi.[3]

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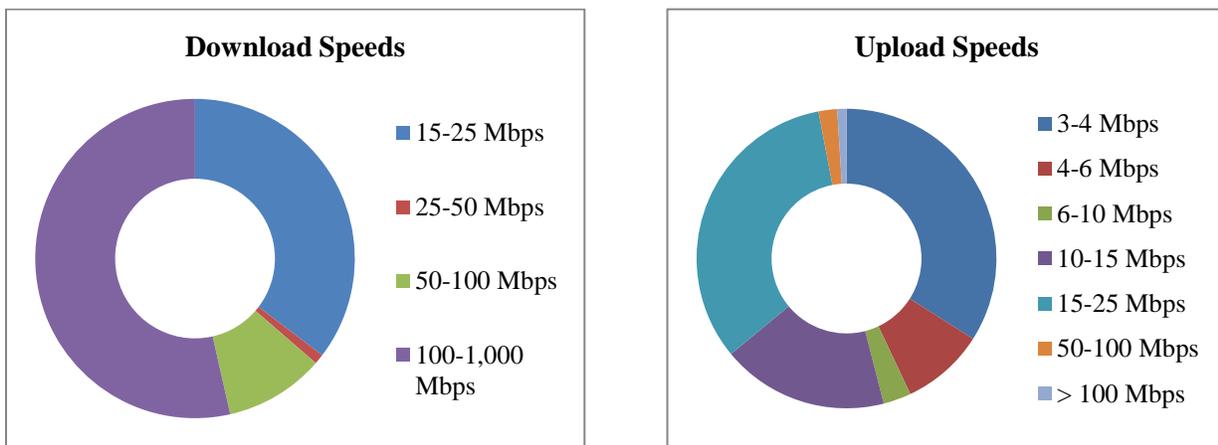
[2] Federal Communications Commission. "2018 Broadband Deployment Report." FCC.gov
https://www.fcc.gov/reports-research/reports/broadband-progress-reports/2018-broadband-deployment-report
[3] Federal Communications Commission. "Mapping Broadband Health in America, 2017." FCC.gov.
https://www.fcc.gov/reports-research/maps/connect2health/#ll=28.921631,-91.889648&z=5&t=broadband&bbm=in_adoption&dmf=none

Number of Residential Fixed Broadband Providers at 25 Mbps/3Mbps (2016)

This FCC map shows the number of providers offering residential broadband services of at least 25 Mbps download and 3 Mbps upload. https://www.fcc.gov/reports-research/maps/bpr-2016-fixed-25mbps-3mbps-providers/#7/32.999/-89.572/
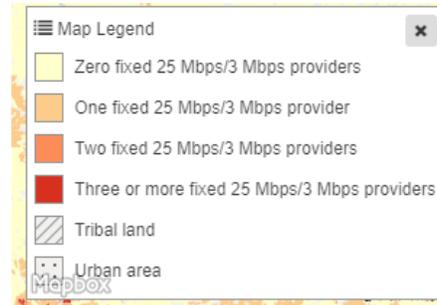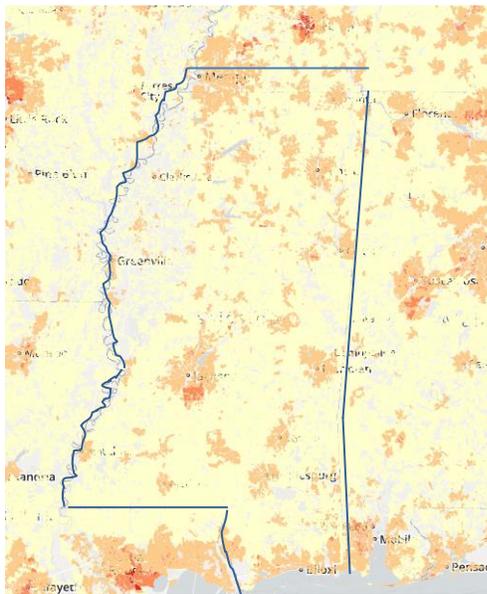

Residential Fixed 25 Mbps/3Mbps Broadband Deployment (2016)

This FCC map shows where fixed residential broadband services of at least 25 Mbps download and 3 Mbps upload is deployed and where it is not deployed. https://www.fcc.gov/reports-research/maps/bpr-2016-fixed-25mbps-3mbps-deployment/
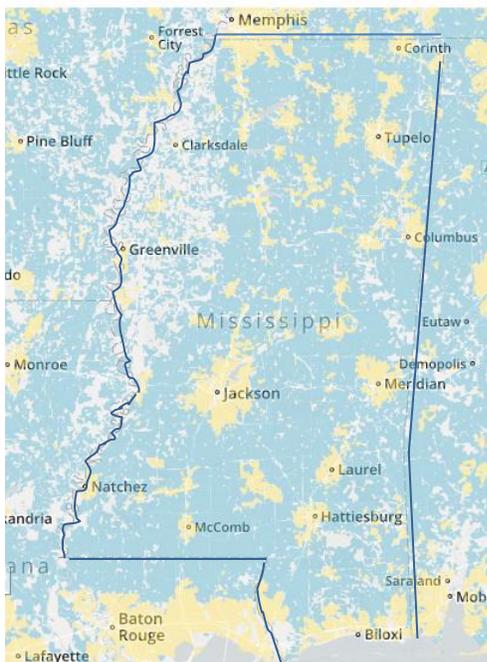
LTE Coverage – YE 2016
Source: Based on Jan. 2017 Mosaik, Dec. 2016 Form 477, and 2010 Census data. Note that the number of service providers in a census block represents network coverage only. Network coverage does not necessarily reflect the number of service providers that actively offer service to individuals located in a given area. https://www.fcc.gov/reports-research/maps/nationwide-lte-coverage-ye-2016/
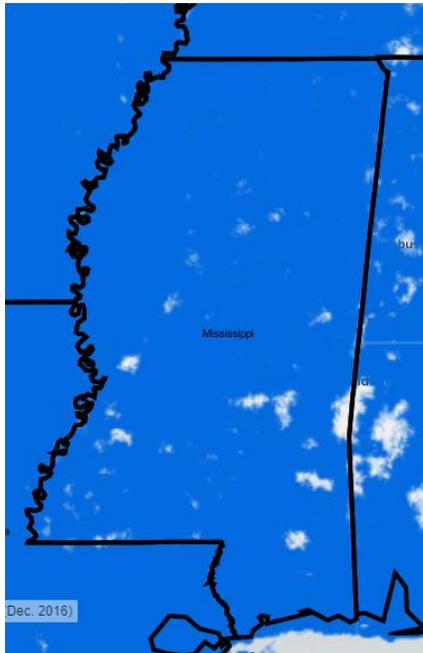
*Mississippi State University Extension Service Broadband Usage Surveys*

Mississippi State University Extension Service (MSU-ES) is an educational outreach service provided by the university with offices in nearly every county in the state. Because of that reach and legacy, the state contracted with them during the development and implementation of the state broadband plan in 2011. In order to implement elements of the broadband plan, MSU-ES created the Extension Broadband Education and Adoption Team (e-BEAT). e-BEAT conducted a series of surveys of Mississippians to better understand the broadband landscape in the state and then determine progress over time.

Three different audiences were surveyed from 2011 to 2014: households, municipalities, and small business owners. The household and municipalities surveys were conducted at the beginning of e-BEAT's efforts in 2011 and again in 2014 to determine progress made in increasing digital literacy and broadband adoption.

Below is a sampling of the data that emerged from those e-BEAT surveys. Information on demographic breakdowns, methodology, and full results can be found within the e-BEAT Final Report (2014).[4]

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[4] Roberto Gallardo, PhD. "Extension Broadband Education & Adoption Team (e-BEAT): Final Report." Mississippi State University Extension Service, 2014.

Percent Households Using the Internet at Home or Elsewhere (2011 & 2014)
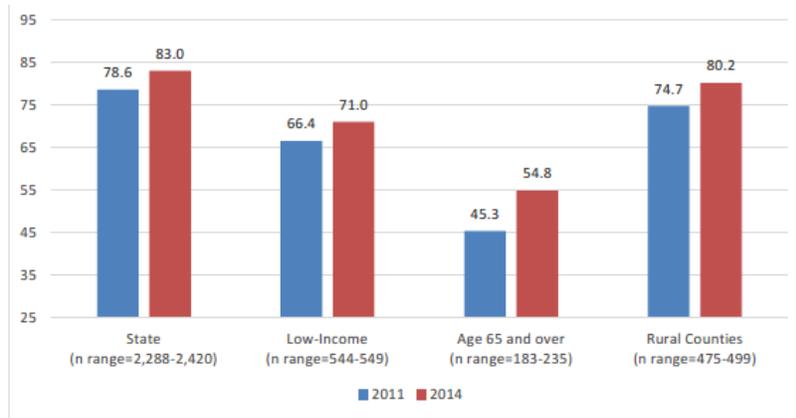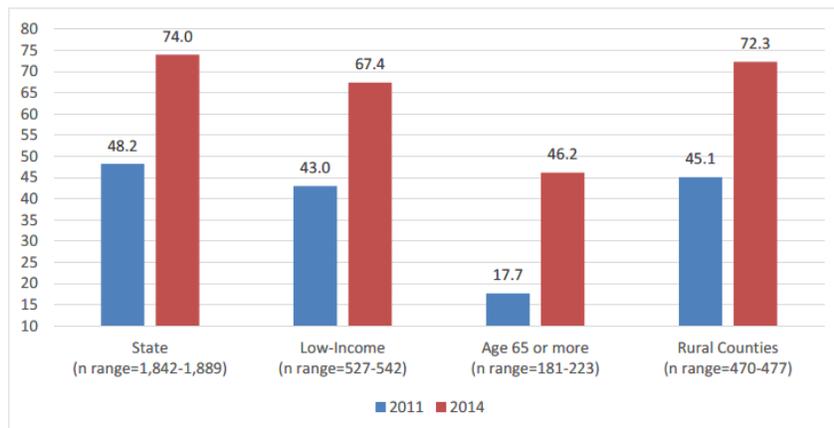

Note: Low-income refers to households making less than $30,000 per year.

Percent Households Accessing Internet Often Using a Desktop, Laptop, Netbook Computer (2011 & 2014)
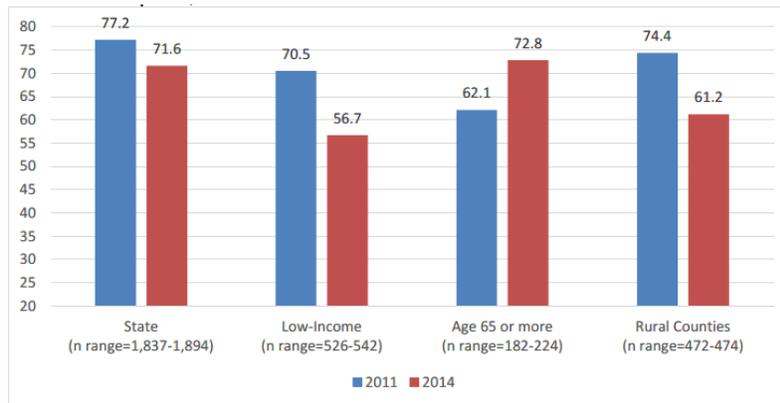

Note: Low-income refers to households making less than $30,000 per year.

Percent Households Accessing Internet Often Using a Cell/Smartphone (2011 & 2014)

Note: Low-income refers to households making less than $30,000 per year.

For those individuals that did not regularly access the Internet, the e-BEAT survey asked them what barriers kept them from going online. In 2011, the main reason cited was "Don't Need/Not Interested." However, by 2014 the leading barrier to broadband adoption was "Too Expensive." It is also useful to see that the number of Mississippians who did not believe that the Internet was important to their lives or that they did not understand how to use it dropped from 2011 to 2014. However, cost, security concerns, and lack of digital literacy were persistent barriers to Internet adoption over the course of the two surveys.
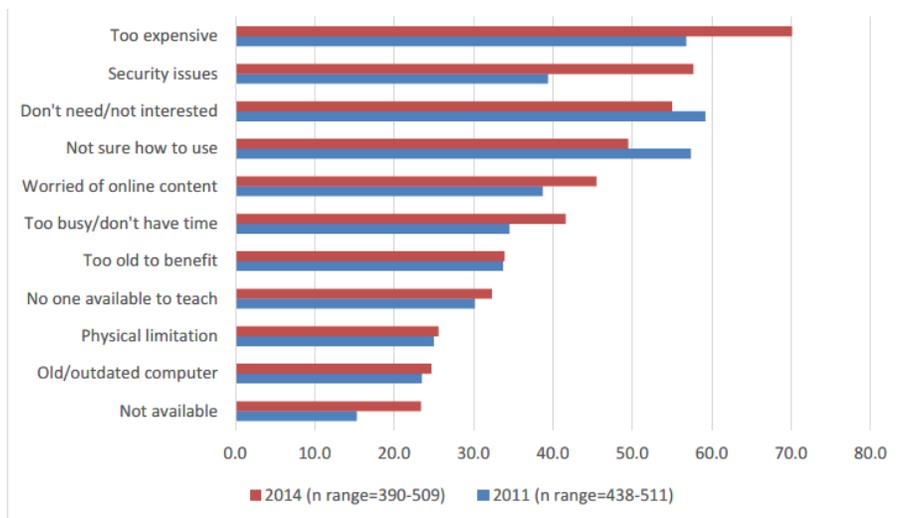
Note: Data is sorted in descending order based on 2014; only somewhat/strongly agree responses are included.

e-BEAT also surveyed municipalities to understand how local governments were using the Internet to interact with their constituents and provide services to Mississippi residents. Municipalities with websites increased from 2011 to 2014 as did the governmental services provided online.

Percent Municipalities Having Online Services (2011 & 2014)
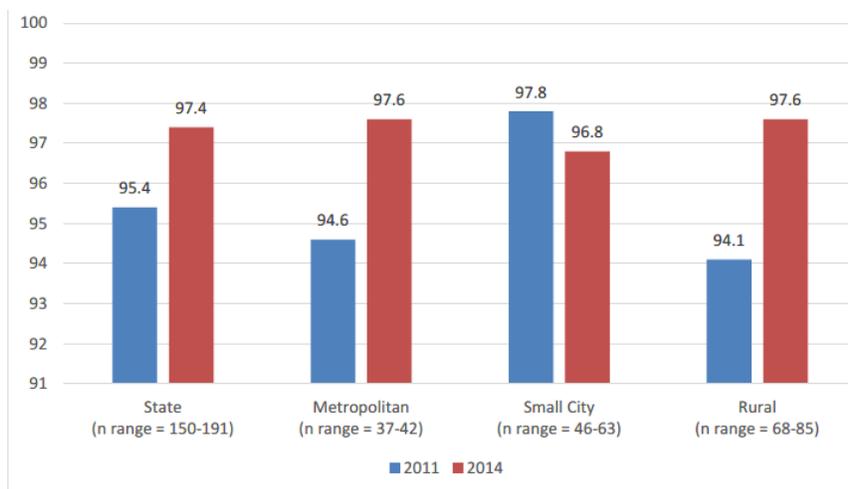
The e-BEAT team also worked one on one with small businesses around the state and conducted a survey in 2013 to gather information on how businesses were using and benefitting from the Internet. Nearly half of Mississippi small businesses surveyed by the e-BEAT team had a website and social media presence, but there were still barriers to further online activity.

Percent Responses by Perceived E-Commerce Barriers (2013)

Barrier	Percent
No time	23.6
Too expensive	22.6
Prefer personal contact	21.4
No tech skills	18.1
No knowledge	18.1
Internet speed	14.4
Risk of viruses/hackers	10.0
Prod/Serv not suited	8.6
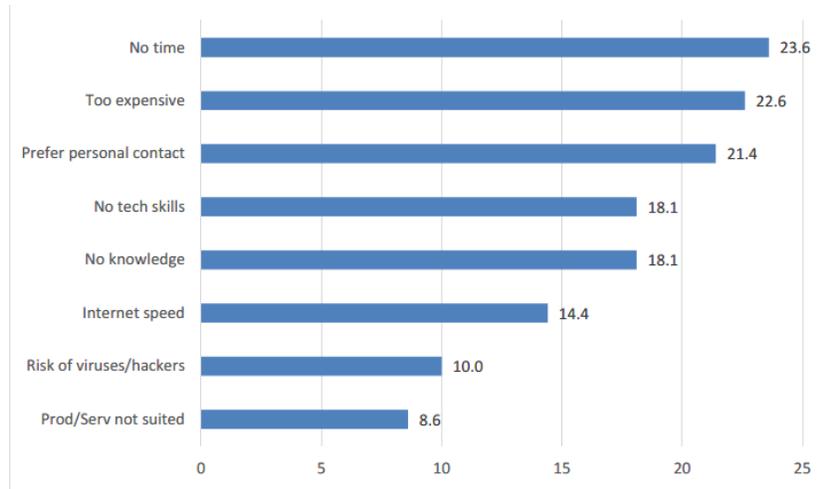
n range = 185-199

The e-BEAT team performed many valuable tasks associated with implementing the state broadband plan. Those activities will be discussed later in this document. These survey results are intended to provide a glimpse into the positive trajectory for broadband usage and adoption in the state.

Efforts to Improve Broadband Access and Adoption

Since the state's broadband plan was formally adopted in the fall of 2011, stakeholders from the public and private sector have been working to improve the level of broadband deployment and adoption in Mississippi.

These activities began with the outreach and training conducted by MSU-ES's e-BEAT teams to implement the state broadband plan. The private sector has continued to make extraordinary investments into terrestrial and non-terrestrial broadband infrastructure. State government has acted over and over to support policies to encourage broadband deployment and make broadband a resource for the people of the state.

Broadband Plan Implementation

After the initial release of the state broadband plan in the fall of 2011, the e-BEAT teams began working across the state to implement the recommendations of the plan. They divided the state into six regions – each with their own unique goals and challenges – and devoted staff and years of efforts to improve the broadband landscape in those regions.

The full recap of their efforts, accomplishments, and challenges can be found in the Final Report[5], but some of their notable highlights can be found below.

- 22 educational programs to train people in digital literacy, ranging from Facebook 101 to Internet Security
- A Technology Academy to train librarians in broadband enabled skills so that they could assist the public in using the Internet
- "Bricks to Clicks" program, in conjunction with local economic developers and chambers of commerce, to help small businesses go online and participate in e-commerce
- 18 municipalities created new websites for their citizens working through the state's website vendor, Mississippi Interactive
- Reached more than 22,000 Mississippians in pursuing greater digital literacy and Internet adoption
- Assisted small rural towns in deploying limited-area WiFi as a way to draw more traffic downtown
- Held 60 digital literacy training sessions in the Delta region

As shown in the survey data above, the e-BEAT team's efforts working with local communities throughout Mississippi had an impact. Their work was important and helped improve digital literacy and broadband adoption for thousands of Mississippians.

Broadband Infrastructure Deployment

Broadband infrastructure is primarily a function of private sector investment. The providers in Mississippi have made incredible investments over the past several years in order to deploy additional broadband Internet infrastructure. Because of these investments, more Mississippians have access to high speed Internet than ever before.

Since January 2013, Mississippi-based telecommunications company C Spire has added over 5,000 route miles to its fiber network in Mississippi. Over 20% of that network growth serves C Spire's 1 Gigabit

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[5] Roberto Gallardo, PhD. "Extension Broadband Education & Adoption Team (e-BEAT): Final Report." Mississippi State University Extension Service, 2014.

Fiber to the Home customers across the state of Mississippi. The remainder serves enterprise, research, and educational customers through direct fiber connectivity or enhanced mobile backhaul capacity.

Since the end of 2014, the number of C Spire 1 Gigabit fiber to the home subscribers has increased by nearly 6,000% and continues to grow.

AT&T has invested nearly $700 million in Mississippi wired and wireless networks from 2015-2017 in an effort to densify and extend coverage into more areas of the state. The company has deployed 1.9 million strand-miles of fiber throughout Mississippi, connecting businesses and homes to high speed Internet.

As part of its participation in the FCC's Connect America Fund, AT&T has committed to deliver high-speed broadband to more than 134,000 locations in rural parts of Mississippi by the end of 2020. To date, the company has already made that service available to more than 80,000 homes and businesses across rural parts of more than 60 counties in Mississippi.

Viasat Inc, a satellite-enabled broadband provider, is currently serving approximately 20,000 customers in Mississippi with broadband service. The service offering allows customers to access up to 100 Mbps broadband service plans. In addition, Viasat was the winning bidder for 13,891 additional service locations in Mississippi during the Connect America Fund II (CAF II) auction held by the FCC in 2018.

These are just a few examples of the private sector deployment of broadband services in the state. Many other providers are using innovative approaches to ensuring that our citizens have access to high speed Internet for their businesses and personal lives.

State Policy Actions

In the 2019 Legislative Session, Speaker of the House Philip Gunn authored House Bill 366, the Mississippi Broadband Enabling Act. This legislation grants electric cooperatives the authority to establish affiliates for the purpose of serving high-speed broadband Internet. Electric cooperatives are not mandated to provide broadband services, and it sets up safeguards in the legislation such as requiring a feasibility study prior to establishing the broadband affiliate. The bill passed overwhelmingly in both chambers and was signed into law by Governor Bryant.

The Mississippi Legislature in the last few years has also acted to reauthorize a tax credit that encourages broadband infrastructure deployment. This statute provides for a credit against the state income and franchise tax liability of any telecommunications enterprises that makes investments into broadband deployment. Equipment used by those enterprises for the purpose of broadband deployment are also given an ad valorem property tax abatement for a period of ten years.

Telehealth

Mississippi has made great strides in the past 8 years in the emerging field of telehealth and Remote Patient Monitoring and is now recognized as one of the national leaders in this arena.

For more than 15 years, the Center for Telehealth at the University of Mississippi Medical Center has been providing care for patients around the state while also developing the framework for this innovative technology to operate in the national healthcare system. The Center for Telehealth connects patients and caregivers to UMMC health care providers remotely, in real time, using video calls and interactive tools. According to UMMC, more than 500,000 patient visits in 69 of the state's 82 counties have been recorded since the center began with just three sites, expanding to more than 200 sites today, not including the homes of patients.

In 2017, the Center was named a Telehealth Center of Excellence by the Health Resources and Services Administration, a division of the U.S. Department of Health and Human Services. This designation allows the Center to be at forefront of national policymaking by assessing the impact of telehealth on healthcare spending, creating new and/or refining payment methods, improving physician and patient awareness, and expanding its overall research portfolio.

The Center for Telehealth provides remote, on-site access to caregivers in more than 35 specialties, including urgent care, trauma, mental health, dermatology, cardiology, infectious diseases, and Alzheimer's and dementia care. Pediatric telehealth specialties include remote concussion evaluation, cardiology, neurology, psychiatry, genetics and urology.

None of this would be possible without the broadband Internet backbone that connects these doctors and resources to patients throughout Mississippi.

School Connectivity through e-Rate

The Telecommunications Act of 1996 refined the traditional concept of universal service to include information technology services. The Universal Service Administrative Company, with the FCC, works to ensure connectivity for all people, regardless of income level or location. This is accomplished through several mechanisms, one of which is the Schools and Libraries program (commonly referred to as e-Rate).

This program provides steep discounts for telecommunications and internet services for schools and libraries. In Mississippi, the Department for Information Technology Services (ITS) coordinates and administers the program. As a result of their efforts over the 21 years of the program, 100% of Mississippi schools and 99% of libraries participate in the program.

Since 2011, Mississippi schools and libraries have been eligible to receive more than $ 255 million through the e-Rate program. The state has received more than $700 million since Mississippi began participating 21 years ago.

With this vital assistance, schools and libraries are able to deploy new broadband technology and equipment so that children and adults and can access the Internet. In many cases, schools and libraries are the only option to connect to broadband so these locations provide an invaluable service to the population.

Conclusion

Mississippi's leaders in the public and private sector have continued to pursue more and better broadband Internet access for the people of this state since the initial state broadband plan was first adopted. *Mapping Mississippi's Digital Future* was always intended as a state plan that was action-oriented and not just another plan to sit on a shelf. Mississippi's state plan was and continues to be a list of action items across a number of policy and practical areas.

From the earliest days of the state plan's adoption, policy leaders, educational organizations (e-BEAT), and the private sector have steadily worked to deploy additional broadband infrastructure, educate the population about how to benefit from broadband connectivity, and improve the digital literacy levels of our citizens.

This public-private collaboration has led to more broadband availability at higher speeds across the state. It has led to greater adoption rates by Mississippians, greater use of e-commerce by our businesses, more healthcare options, and more governmental services provided online for our citizens.

Like all rural states in the country, Mississippi still has far too many people living without access to broadband Internet, and more has to be done to connect those individuals and businesses. Our state policymakers, private sector and community leaders, and our federal Congressional delegation continue to work together address those gaps. Mississippi has benefitted from federal funding programs that try to expand the availability of rural broadband and will continue to pursue those funding options.

Ongoing collaboration among policymakers, the private sector, educational institutions, and community leaders is essential if we are to see continued progress on closing the broadband gap. The state broadband plan can be a conduit for pursing that joint purpose.