Missouri's Broadband Plan
May 2019

CURRENT SITUATION

More than 1.26 million Missourians do not have access to high speed Internet. Simply put, that's 20% of the state's population. According to the Federal Communications Commission (FCC), more than 1.04 million of those citizens reside in the rural parts of the state.[1] In today's technology-driven world, having access to broadband is more important than ever. The global economy relies on a multitude of technological platforms, many of which are powered by cloud-based systems and can only be effective when strong Internet services are present. The FCC's National Broadband Plan[2] emphasizes the critical importance of broadband as the ''foundation for economic growth, job creation, global competiveness, and a better way of life."

69% of Americans believe that people lacking broadband at home are at a major disadvantage in at least one of these five areas: looking for job opportunities, getting health information, learning new things, getting news and information or accessing government services.[3] To effectively plan for future improvements a good baseline understanding of what is broadband and what the baseline standards include. The term broadband commonly refers to high-speed Internet and includes several high-speed transmission technologies, such as fiber, wireless, satellite, digital subscriber line and cable.[4] Recently, the FCC defines broadband as a minimum to receive actual download speeds of at least 25 Megabits per second (Mbps) and actual upload speeds of at least 3 Mbps.[5]

Missouri statute further defines the baseline for Missouri broadband deployment as:

- An "Underserved" area are defined as being without wireline or fixed wireless access of at least 25 Mbps download and 3 Mbps upload

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[1] FCC. 2016 Broadband Progress Report, Appendix E.

[2] FCC National Broadband Plan – https::/transition.fcc.gov/national-broadband-plan/national-broadband-plan.pdf

[3] Pew Research Center, December 21, 2015, "Home Broadband 2015" Available at: http://www.pewinternet.org/2015/12/21/2015/Home-Broadband-2015/

[4] NTIA Broadband USA Glossary, October 2016: https://broadbandusa.ntia.doc.gov/sites/default/files/resource-files/bbusa_broadband_glossary.pdf

[5] As defined by the Federal Communications Commission: https://docs.fcc.gov/public/attachments/DOC-348770A2.pdf

- An "unserved" area to be without wireline or fixed wireless access of at least 10 Mbps download and 1 Mbps upload.[6]

Several challenges also face the provider community in rural deployment efforts, including: low-density of population, high construction costs, long spans of network or tower construction, difficult terrain, and no guarantee of subscriptions to the broadband service when installed. These factors impact the opportunity for a return on investment, deeming many projects unsustainable. The end result: citizens never receive access to high speed Internet, and the digital divide widens. The digital divide is defined as the gap between those of the populace that have Internet and other communication technologies and those that have limited or no access.[7] Purdue University researchers recently published the revised Digital Divide Index (DDI) incorporating the FCC Form 477 data and places Missouri's DDI at 55.46, a score derived from broadband access and adoption, and coupled with the state's socioeconomic factors, a value of 100 denotes the highest digital divide. Underlining the importance of provider partnerships and state participation to reduce and eventually close the divide. The table below shows Missouri thirteenth when benchmarked with other states in the 2018 Best in the Midwest analysis[8]:

National Ranking	State	DDI Score
2	Colorado	14.99
6	Minnesota	19.98
16	Illinois	36.72
18	Wisconsin	38.73
21	Nebraska	39.47
22	Iowa	39.99
23	Kansas	40.37
27	Georgia	45.32
32	Ohio	48.86
33	Michigan	51.10
35	North Carolina	52.52
38	Indiana	52.92
40	**Missouri**	**55.46**
41	Tennessee	66.88
43	Oklahoma	72.06
44	Kentucky	75.85
48	Arkansas	91.77

Over the past few years the federal government has committed substantial resources from the Federal Communications Commission (FCC) and the U.S. Department of Agriculture (USDA). Deploying broadband to high cost areas of America have traditionally been facilitated by the FCC's Universal Service Fund in reverse auctions for broadband providers to bid on eligible areas. The USDA receives appropriations from Congress to deploy resources in the form of broadband grants and loans to

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[6] Missouri Revised Statutes, Chapter 620.2450, 2018: http://revisor.mo.gov/main/OneSection.aspx?section=620.2450
[7] https://broadbandusa.ntia.doc.gov/sites/default/files/resource-files/bbusa_broadband_glossary.pdf
[8] Robert Gallardo, Digital Divide Index. *Purdue Center for Regional Development*, 2019, http://pcrd.purdue.edu/ddi

providers and communities. Even with the significant federal investment, more partnerships and investment is needed to achieve full broadband access in Missouri.

Limited broadband services is a significant deterrent for future growth opportunities. Inadequate access permeates every sector of the economy with four significant areas experiencing challenges in Missouri's rural economies:

1. *Agriculture Challenges*

Agriculture is Missouri's leading economic driver with over 95,000 farms that employ nearly 400,000 people, export more than $2.5 billion[9] across the globe, and has a total of $88.4 billion in economic contributions to the State. Missouri farmers and ranchers are faced with rising challenges in competitive prices, weather, operating costs, and limited infrastructure, while needing to produce more to feed a growing global population. The agriculture industry is also undergoing a technological revolution, which is providing farmers and ranchers greater abilities to maximize land use, increase yields, individually manage herd health, adopt more sustainable practices, and lower operational costs. The full utilization and access to current (and future) technologies is constrained due to limited or no broadband connectivity in rural Missouri. The 2017 USDA Census for Agriculture reports 73% of Missouri farms have some kind of Internet access,[10] leaving 27% or 27,000 Missouri farms with access to high speed internet.

The USDA declared in a recently published report, "E-connectivity is not simply a rural issue; Internet expansion, economic productivity, and food security contribute to each citizen's quality of life, regardless of where they live. The benefits of broadband e-connectivity accrue not only to the producers using Next Generation Precision Agriculture technologies, but also to consumers throughout America and the world who value a safe and efficient food supply."[11] Missouri is second in the number of farms in the United States and ranks in the top 10 nationally for the production of eleven different agricultural products. Just as other sectors of the economy continue to learn, embrace, and utilize technology to access new markets and gain production efficiencies, Missouri's agriculture producers must be equipped with the connectivity tools to capture the same opportunities, and strengthen our position as a global leader in agriculture.

2. *Business Development Challenges*

Businesses expect available and affordable high-speed Internet as a basic utility. From payroll to e-commerce, many companies today rely on technology that requires significant broadband. In addition to infrastructure challenges Missouri's businesses also face mounting challenges in recruiting and retaining a quality workforce. Emerging trends in telecommuting strategies, remote technology platforms connecting rural entrepreneurs, and re-training rural workers into more high-tech positions has stabilized and advanced career opportunities once unattainable. In 'Unlocking the Digital Potential of Rural America,' a recent report released by the Technology Engagement Center of the U.S. Chamber of

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[9] "Economic Contributions of Missouri Agriculture and USDA Global Agriculture Trade System," Missouri Department of Agriculture, 2016, https://agriculture.mo.gov/economicimpact/county-pdf/MissouriAgForestryEconomicContributionStudy.pdf

[10] "Census of Agriculture, Volume 1, Chapter 1, Missouri," USDA, 2017, www.nass.usda.gov/Publications/AgCensus/2017/index.php

[11] "A Case for Rural Broadband," USDA, 2019, https://www.usda.gov/sites/default/files/documents/case-for-rural-broadband.pdf

Commerce and Amazon, 5,300 rural small businesses were surveyed nationwide. Of those who responded, 66% said poor Internet or cell phone connectivity negatively impacts their business and less than 45% of businesses have very good access to digital technologies.[12] Larger businesses typically are able to invest in broadband access, but the broadband build-out costs to small or home-based businesses is unattainable, thus limiting their access and ability to grow their business.

3. *Healthcare Challenges*

The significant shift in healthcare from a 'fee-for-service' to a 'value-based' model has given rise to telehealth services. Telehealth is the virtual delivery of healthcare services via computer or mobile device. The range of services include monitoring services, educational sessions, access to electronic medical records, and the opportunity to connect with medical professionals when concerns or health issues arise. Telehealth fosters patient and provider connections and offers efficiencies to rural areas with limited healthcare options. The American Hospital Association's 2017 Information Technology survey reported 76% of U.S. hospitals connect with their patients and consulting practitioners with telehealth systems, a drastic increase from 2010 where only 35% did. In the same 2017 survey, 61% surveyed are currently providing remote monitoring services, up from 43% in 2015.[13] Expanding broadband to the unserved and underserved areas of Missouri will provide the core infrastructure necessary to enable the full suite of telehealth options to care for and support rural populations accessing quality care and for older populations, to have the opportunity to age in place.

4. *Educational Challenges*

Educational systems continue to incorporate technology to deliver curriculum, tutorials, and a variety of new resources for Missouri's students. 'One-to-one Initiatives' are underwritten by the local school district, where each student in the program is equipped with a technology device (tablet or laptop) for educational purposes. The benefits of introducing technology at an earlier age increases the digital skills of tomorrow's workforce, but does have its limitations when students are unable to access the Internet at home creating a "homework gap." The homework gap is defined as students without access to broadband Internet and broadband-related devices outside the school building.[14] However, the homework gap is not experienced by only rural students, but also by students in suburban and urban districts where affordability is the leading challenge versus access to broadband. The retention of Missouri's rural human capital is a critical factor, since 41% of rural Missouri counties are experiencing population decline.[15]

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[12] Nam Pham, Mary Donovan. "Unlocking the Digital Potential of Rural America," *American Innovators*, U.S. Chamber of Commerce, 2019, https://americaninnovators.com/rural-report/
[13] Fact Sheet: Telehealth, American Hospital Association, 2019, https://www.aha.org/system/files/2019-02/fact-sheet-telehealth-2-4-19.pdf
[14] Perrin, Andrew. "Digital Divide." Pew Research Center, 2019, https://www.pewresearch.org/fact-tank/2018/10/26/nearly-one-in-five-teens-cant-always-finish-their-homework-because-of-the-digital-divide/
[15] US Census Bureau, 2017 Population estimates, https://www.missourieconomy.org/indicators/population/pop_est_2017.stm

A TIME TO LEAD – MISSOURI'S BROADBAND GOAL

The State of Missouri has identified rural broadband deployment as a top infrastructure priority and will prioritize activities to achieve universal access to high-speed Internet, with speeds of at least 100 Megabits per second (Mbps) download and 20 Mbps upload, for all Missouri citizens by 2028.

The following milestones will be achieved to support the overall goal:
- ➢ Ensure access to broadband speeds of at least 25 Megabits per second (Mbps) download and 3 Mbps upload for 95% of households and businesses by 2025.
- ➢ Realize a household broadband adoption rate of 92% by 2027.

GUIDING PRINCIPLES

The following set of principles will guide every program, initiative, and activity undertaken by this plan:

1. Embrace all technologies that can deploy high levels of broadband service.
2. Encourage a team-based approach from public and private stakeholders to engage in all levels of deployment efforts.
3. The delivery of resources and programs to unserved and underserved areas of the state will have a customer centric approach, utilize data driven decision making, not be duplicative where sufficient service exists, be open and transparent, and compliment regional priorities.

IMPACT

The twenty-first century economy has not been fully realized in many rural areas of Missouri placing them at a competitive disadvantage because of the barriers in rural broadband deployment. Missouri must enable a more robust broadband network to unlock its economic potential and secure access for the 577,704 Missouri households currently without an Internet subscription.[16] Research authored by the Ohio State University documented households with a broadband connection can realize an estimated $1,850 in new economic benefit.[17] Utilizing this research to forecast Missouri household impact, conservatively applying this model at $1,500 per household, assuming not every household in Missouri will adopt broadband, estimating 247,500 Missouri households with new broadband access could realize $371+ million in new economic benefit.

Research from the University of Missouri documented that on average, farmers with access to high-speed Internet that implement precision agriculture technologies can experience a 6% increase in revenue.[18] Applying this impact model to Missouri's farms could yield up to $291 million annually in additional agricultural revenue.[19] This increase of revenue to Missouri's farmers and ranchers will have a cascading effect in operating more profitable operations, re-investment in their farms and ranches, the purchase of new equipment and materials which will support the surrounding communities with job

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[16] American Community Survey, 2013-2017, https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_5YR_S2801&prodType=table

[17] Feng Rembert, et. al, "Connecting the Dots of Ohio's Broadband Policy," Swank Program in Rural-Urban Policy, The Ohio State University, April 2017

[18] Thomas Johnson, et. al, "The Benefits of Expanded Broadband for Missouri Farms and Agribusiness," Community Policy Analysis Center, University of Missouri, October 2011

[19] 2017 USDA Ag Census, Missouri State Data, p. 17 – total income from farm-related sources $4.85B*6% increase

opportunities, consumables, and charitable contributions. In addition to the positive impacts on revenues, the full scale usage of precision agriculture will reduce consumption of certain inputs and decrease costs. The USDA's Case for Rural Broadband reports producers who utilize precision agriculture will burn 40% less fuel, lower water usage by 20-50%, and reduce up to 80% of chemical applications. The same report also documented that connected technologies are poised to transform agricultural production and create a potential $47-$65 billion in annual gross benefit for the United States.[20]

The unrealized economic impact of digital tools and technology for small businesses in rural America was recently analyzed by the Technology Engagement Center of the U.S. Chamber of Commerce and Amazon, citing small businesses in rural Missouri (annual average 2014-2017) could facilitate an additional $1.8 billion in sales and spur 8,094 additional jobs. Interestingly enough in the same national survey of rural businesses, 40% of total sales for all rural businesses come from online sources.[21] The actual impact will need to be benchmarked and collected as new infrastructure is deployed, but can be accomplished in partnership with planning organizations and future research methodologies. Today's business environment no longer exists solely in the brick and mortar shops. Home-based and work from home opportunities have increased, becoming new strategies for business development.

Missouri's return on investment will be realized in the mid to long-term growth indicators. Given the current commitment of $5M+ for the rural broadband grant program the state will immediately realize a dollar-for-dollar match from private sources. A systematic way to document the return on investment must be developed and communicated to all stakeholders. New broadband deployments will provide immediate benefits to Missouri households, farmers and ranchers, small businesses, healthcare providers, and educators. The deployment of broadband must also be coupled with initiatives and programming designed to increase overall adoption of the new services. Research from the World Bank quantifies an increase of the overall adoption rate of at least 10% can yield an increase of the economy's GDP by 0.9%-1.5% over time.[22]

RECOMMENDATIONS OVERVIEW

Missouri will embark upon a comprehensive approach to broadband development in six strategic focus areas. Although not interdependent on one another, each of the activities listed below will provide a logical sequence to achieve universal access and widespread adoption.

OBJECTIVES

1. **Increase broadband data collection and utilization.**
    ➢ Publish broadband definitions and terminology
    ➢ Create Missouri broadband coverage and adoption maps
    ➢ Semi-annually report on national broadband maps
    ➢ Research the economic and environmental benefits of precision agriculture in Missouri
    ➢ Document the homework gap and promote best practices in closing the digital divide

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[20] "A Case for Rural Broadband," USDA, 2019, https://www.usda.gov/sites/default/files/documents/case-for-rural-broadband.pdf
[21] https://americaninnovators.com/rural-report/
[22] Yongsoo Kim, et al., "Building Broadband: Strategies & Policies for a developing World," World Bank, 2010, http://siteresources.worldbank.org/EXTINFORMATIONANDCOMMUNICATIONANDTECHNOLOGIES/Resources/282822-1208273252769/Building_broadband.pdf

➢ Quantify the number of rural students utilizing online courses and seek to increase overall usage for Missouri's educational systems
➢ Survey rural health facilities utilizing telehealth services and seek ways to increase usage in rural Missouri
➢ Post aggregated survey results, studies, analyses undertaken by this plan
➢ Promote new broadband research and emerging technologies

2. **Accelerate broadband infrastructure and access.**
➢ Launch the State of Missouri broadband grant program
➢ Identify rural employment centers in need of enhanced broadband infrastructure
➢ Disseminate annual broadband provider surveys to ascertain barriers and opportunities in accelerating broadband
➢ Survey rural governmental entities on broadband efforts
➢ Assemble best practices of broadband deployment policies and agreements

3. **Leverage partnerships to accelerate broadband efforts.**
➢ Endorse and promote a broadband planning toolkit for communities to utilize
➢ Establish a broadband advisory team with representation from public and private stakeholders
➢ Create a set of broadband survey templates for communities, counties, and regions to utilize for broadband planning processes
➢ Implement a regional broadband planning framework
➢ Host an annual broadband summit for stakeholders and citizens interested in leading broadband efforts
➢ Collaborate with the agriculture sector to demonstrate best practices in precision agriculture
➢ Implement a 'broadband ready' designation for counties

4. **Increase Broadband Adoption & Awareness**
➢ Develop a broadband communications plan
➢ Partner with Missouri's rural library system and promote available resources and technology to the regions they serve
➢ Promote digital literacy, online safety, and financial assistance programs to populations of need
➢ Support regional campaigns to increase adoption and utilization of broadband, such as businesses, agricultural producers, and community institutions

5. **Promote Efficiencies and Opportunities in Broadband Development**
➢ Monitor and promote federal broadband funding programs
➢ Facilitate efforts to streamline access and partnerships within state and federal assets
➢ Based on provider input, prioritize the top three to five recommendations for future policy or administrative implementation
➢ Develop a dig-once policy for state, county, and municipal consideration
➢ Research and recommend alternative funding and broadband implementation tools based on area needs
➢ Inventory and promote post-secondary opportunities for individuals seeking technical or professional skills in the broadband or utility construction industry

➢ Annually host regional agribusiness development sessions to build on existing market strengths
➢ Explore additional ways the healthcare industry can be reimbursed for telehealth services

STRATEGIC FOCUS AREAS – OBJECTIVES DEFINED

In order to move Missouri forward and achieve universal access for our citizens, it will require state leaders to mobilize resources, empower communities, leverage partnerships with broadband providers, and search for innovative and cost-effective ways to deploy high-speed Internet. The plan was developed with the consultation of industry and association partners, outreach to stakeholder groups, and discussions with a cross-section of government leaders. The strategies articulated in this plan will increase availability, adoption, affordability, and opportunities for all of Missouri's citizens to compete in today's global economy.

OBJECTIVE #1: Increase Broadband Data Collection and Utilization

Broadband data collection is a critical component in measuring progress and impact. It articulates a story where successful implementation has occurred, and identifies where additional investment is needed. Access to timely and quality broadband data is pivotal to determining future policy decisions and prioritizing where limited public resources should be allocated for broadband infrastructure projects. Broadband data from the Federal Communications Commission's (FCC) Form 477 is collected twice a year and provides an overview of Missouri's broadband coverage by census tract. A new national mapping initiative is underway to update data collection models for the FCC and determine a proof of concept where providers report coverage by location, rather than by census tract. Missouri is one of two states identified to participate in the 'Broadband Mapping Fabric'[23] pilot project. Missouri will undertake several key initiatives to strengthen its data gathering techniques.

Strategies:

- Publishing a core set of broadband definitions and terminology, including those defined in Missouri statutes by July 15, 2019. The utilization of a consistent set of definitions will allow for consistent language and reference for local broadband planning efforts.

- Reporting semi-annually on updated maps and datasets provided by the Federal Communications Commission (FCC), United State Department of Agriculture (USDA), and the National Telecommunications and Information Administration (NTIA) beginning September 1, 2019.

- Promoting new broadband research and emerging technologies in quarterly communications beginning October 1, 2019.

- Creating Missouri broadband adoption and coverage maps utilizing existing data sets available from the FCC, USDA, Census Bureaus, and other available data sources by October 15, 2019.

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[23] https://www.ustelecom.org/broadband-mapping-initiative-action-center/

- Establishing baseline data of rural health centers and hospitals utilizing telehealth strategies by December 1, 2019.
    - Establish a regional goal with healthcare stakeholders to increase the number of clients able to access telehealth service.

- Supporting research studies to quantify the economic benefits in Missouri of utilizing precision agriculture and value-added technologies.

- Publishing survey results, research, and analysis undertaken by this plan for public consumption beginning January 15, 2020.

- Determining the number of rural students from Missouri's public and higher education systems utilizing online courses by February 1, 2020.
    - Establish a goal by region to increase the number of rural students utilizing online educational opportunities.

- Partnering with the Department of Elementary and Secondary Education (DESE) to document the homework gap of Missouri students. Publish best practices for regions, districts, and communities to undertake in closing the homework gap in rural, suburban, and urban districts by March 1, 2020 (i.e. mobile service options, device lending).

OBJECTIVE #2: Accelerate Broadband Infrastructure and Access

The State of Missouri has a significant opportunity to work alongside broadband providers and communities to seek mutually beneficial ways to accelerate the build-out of the broadband network. Willingness to innovate and partner will certainly allow for the robust broadband network to be installed and the commitment of state resources and coordinated programming will advance a number of new opportunities.

Strategies:

- Create and disseminate a broadband provider survey to ascertain barriers and opportunities in accelerating broadband in Missouri by July 15, 2019. Determine three to five key areas for additional research, recommendation, and implementation in calendar year 2020.

- Create and disseminate a survey of rural governmental entities on any buildings and/or assets in need of broadband services by August 15, 2019.

- Launch the Missouri Broadband Infrastructure Grant Program by September 15, 2019. The grant program will be designed to leverage public/private partnerships to connect the unserved and underserved areas of the state.

- Identify rural employment centers that lack adequate broadband services and coordinate a retention strategy for each of the six DED regions by November 15, 2019.

- Collect, aggregate, and disseminate best practices from broadband providers on One Touch Make Ready (OTMR) contracts, joint-use agreements, co-location agreements for access to fiber and towers, and design standards for installing fiber conduit in the Right of Way (ROW) by February 15, 2020.

- Research and recommend the viability of local governments creating or expanding special assessment districts to assist in deploying broadband in unserved and underserved areas by September 1, 2020.

- Leverage E-Rate funding opportunities to ensure 100% of Missouri's rural school buildings and libraries have access to broadband services by January 2021.

OBJECTIVE #3: Leverage Partnerships to Accelerate Broadband

Achieving universal access by 2028 will necessitate Missouri's regions, counties, and communities to also plan for additional broadband expansion. While one standard broadband solution will not meet every community's needs, the planning efforts should be implemented by local leaders to fully understand their broadband landscape. Encouraging more localized broadband planning teams will more accurately reflect community or regional circumstances. Local broadband teams should establish a goal, engage all stakeholders and providers, choose an organizational model, and create a culture of shared responsibility for the work.

Strategies:

- Research available broadband toolkits and promote a designated toolkit to regions, counties, and communities for utilization in broadband planning efforts by July 15, 2019.

- Establish a Broadband Advisory Team with diverse representation of public and private stakeholders by September 1, 2019. The advisory team will serve as stewards of the plan, meet at least twice a year, and provide advice and counsel to the Broadband Leadership Team and the Office of Broadband Development.

- Create a set of broadband surveys that can be utilized by regions, counties, and communities to gather data and insight on broadband access, opportunities, and barriers by September 1, 2019.

- Implement a regional broadband planning framework, in consultation with the Missouri Association of Council of Governments (MACOG), by October 1, 2019.

- Plan and convene an annual statewide broadband summit in June of each year, for organizations and citizens seeking to be more engaged in broadband initiatives.

- Collaborate with the agriculture sector to demonstrate best practices in precision agriculture at regularly scheduled events and conferences.

- Implement a 'Broadband Ready' designation for counties by April 1, 2020.
    - Host training sessions to educate stakeholders by September 1, 2020

- Encourage economic, community, and workforce professionals to include broadband as a priority in their development plans and provide a representative on community, county, or regional broadband advisory teams.
    - o Sponsoring capacity-building efforts for economic, community, and workforce professionals and local leaders will be essential in advancing more broadband awareness and advocacy in the communities they serve

- The Office of Broadband Development will serve the lead resource to public and private stakeholders interested in expanding broadband infrastructure or programs.

OBJECTIVE #4: Increase Broadband Adoption & Awareness

Raising the awareness of broadband availability and increasing the adoption rate is pivotal in realizing the full impact and growth potential for areas receiving new or expanded broadband infrastructure. 80% of Missouri households have a broadband Internet connection,[24] confirming much is yet to be done to achieve an adoption rate of 92% by 2027. States with existing broadband programs focus on raising the awareness of current providers, promote available financial assistance programs to populations of need struggling with affordability, and coordinate efforts with partners to increase digital literacy skills. Digital literacy refers to the ability to leverage current technologies and the Internet to interact with the world.[25] Programs to address the affordability of broadband services exist from private carriers and the federal government. However, such services need to be inventoried and communicated to the public.

Strategies:

- Develop a broadband communications plan by August 1, 2019.
    - o Track and report on broadband development projects on a quarterly basis
    - o Celebrate broadband build-outs throughout the state, including providers utilizing programs from the FCC, USDA, DRA, Missouri Broadband Infrastructure Grant Program, and other programs designed to accelerate broadband deployment
    - o Promote federal, state and other available programs that can assist with broadband deployment and increasing adoption rates on a quarterly basis
- Partner with Missouri's Library System to promote its resources, technology, and opportunities for community outreach by September 1, 2019.
- Identify and promote digital literacy, financial assistance, and online security/safety programs to populations of need, businesses, and agricultural producers by January 1, 2020.
- Collaborate with business training providers to routinely offer seminars on business technology, software, establishing an online presence, and other e-commerce strategies.
    - o Support digital literacy efforts to increase utilization in agriculture businesses
- Ensure 100% of rural health centers, medical offices, and hospitals can offer telehealth services including wellness education, monitoring, digital literacy, and aging in place opportunities to the regions they serve
- Promote regional campaigns to increase adoption and utilization of broadband services in unserved and underserved communities by August 1, 2020

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[24] Broadband USA citing 2016 American Community Survey, NTIA, and FCC
[25] https://broadbandusa.ntia.doc.gov/sites/default/files/resource-files/bbusa_broadband_glossary.pdf

OBJECTIVE #5: Promote Efficiencies and Opportunities in Broadband Development

As more Missouri communities, counties, and regions prioritize broadband deployment, additional technical resources and information exchanges will be needed to ensure success. The Office of Broadband Development will serve as conduit and facilitator for public and private entities to share best practices, efficiencies, and lessons learned from past deployment efforts. The State of Missouri will emulate the American Broadband Initiative, released in February 2019, [26] by proactively seeking ways to leverage state assets, determining other programs to support broadband deployment and reducing the administrative burden where possible.

Strategies:

- Monitor broadband efforts and funding opportunities from the Federal Communications Commission (FCC), United States Department of Agriculture (USDA), United States Department of Commerce - Economic Development Administration (EDA), United States Department of Commerce National Transportation and Information Administration (NTIA), Delta Regional Authority (DRA), and Congress. Update stakeholders on a quarterly basis beginning July, 2019.
- Evaluate over the length of this plan if the FCC increases its minimum standard definition of download and upload speeds, and seek modification to Missouri's minimum standard definition for broadband capability.
- Analyze the provider survey results and, in consultation with the Broadband Leadership Team, recommend three to five strategies for inclusion in future policy discussions. Reporting overall results at the annual Broadband Summit.
- Develop a model dig-once policy for right of way (ROW) maintained by state, county, and local governments for their consideration by March 1, 2020. The policy will incorporate best practices, solicit feedback from all major stakeholders, and monitor any federal legislation implementing dig-once.
- Streamline access and partnerships within state and federal state assets. Providing best practices and insight to counties, municipalities, and regions seeking to adopt similar strategies.
- Facilitate regional agribusiness development sessions to build on existing market strengths and researching emerging opportunities with new technological advancements.
- Inventory and promote post-secondary opportunities for individuals seeking technical or professional skills in the broadband or utility construction industry by January 1, 2020.
- Explore opportunities for health care providers to submit reimbursements for telehealth services.
- Research and recommend alternative funding sources and tools that can assist providers and communities in accelerating broadband build-out in unserved and underserved areas.

Conclusion

The time is now for Missouri to accelerate broadband to its rural citizens. The strategies devised in this plan necessitate a spirit of partnership and innovation from all sectors to overcome existing barriers. As

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[26] "American Broadband Initiative: Milestones Report," National Telecommunications and Information Administration,2019, https://www.ntia.doc.gov/files/ntia/publications/american_broadband_initiative_milestones_report.pdf

with any coordinated effort to implement new strategies there will be risks that need to be identified, anticipated, and managed to reach the best possible outcome. Efforts will need to be undertaken to manage the legal aspects of broadband development, sharing best practices in managing public-private partnerships, and provide the necessary guidance to structure a win-win situation for Missouri's citizens. Residents, businesses, and communities are relying on public and private leaders to eliminate the digital divide and provide opportunities for growth in rural Missouri.

To ensure continuous improvement in Missouri's broadband deployment efforts the Broadband Leadership Team, under the direction of the Governor's Office, will semi-annually review, update, and execute new revisions to the broadband plan.

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