



RURAL BROADBAND DEPLOYMENT: STRATEGIES FOR CLOSING THE DIGITAL DIVIDE

A White Paper Report

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I. INTRODUCTION

The internet has become such a normal part of day-to-day life in modern society that many Americans fail to realize that millions of their fellow citizens, primarily those in rural areas, lack access to reliable and affordable internet connections. At this moment, while many urban American cities are currently preparing for the rollout of 300 megabit per second download speeds associated with 5G wireless networks, millions of rural Americans (and some in urban areas as well) lack access to connections providing even ten percent of those speeds.

This gap between Americans who have adequate high-speed internet connections and those who do not is often referred to as the “[digital divide](#).” The Federal government first began to monitor citizen access to broadband in 1996, following the passage of Section 706 of the [Telecommunications Act of 1996](#), the first major change to U.S. telecommunications law in nearly 70 years. Section 706 requires the FCC to initiate and annually update a report concerning the availability of advanced telecommunications capability to all Americans. Section 706 also charges the FCC with “encouraging the deployment on a reasonable and timely basis of advanced telecommunications services to all Americans.”¹

In response to the requirements set forth under Section 706, the FCC released its First Broadband Progress Report in 1999 and has continued to issue [annual reports](#) since then. This First Report begins by recognizing that advanced telecommunications technologies “can create investment, wealth and jobs. They can meaningfully improve the nation’s productivity and

¹ [47 U.S.C. § 1302 \(2019\)](#)

educational, social, and health care services. They can create a more productive, knowledgeable, and cohesive nation.”²

The First Report goes on to identify two primary challenges to the availability of advanced technologies: the technical challenges of building network access, and the manner in which regulatory regimes can treat different technologies. At a very high level, these obstacles remain unchanged twenty years later. Under closer scrutiny, the modern issue becomes distinct from that which Congress identified in 1996 when it passed Section 706. Unlike in 1996, the technology to deploy broadband services to every American citizen exists today. The challenge lies in crafting regulatory schemes that allow existing federal funding to be used in a manner most appropriate for the state or community in question. In the face of intense lobbying from the telecom industry, each state has taken a unique path in regulating this issue.

The challenge of expanding new technology into rural communities is not unique to broadband. Over the last century, the federal government has repeatedly partnered with state governments, private interests, and not-for-profit entities to ensure that every American had access to radio, wire, and eventually telecommunications services for a reasonable price. This policy position, called the “[Universal Service Concept](#),” ultimately led to the creation of rural electric or telephone cooperatives. These not-for-profit, member-owned cooperatives are able to borrow money from the federal government in order to build electric and telecommunications services in rural America. These same cooperatives are currently building a foundation to do much the same with broadband connectivity.

² FCC, *First Broadband Progress Report*, online at <https://www.fcc.gov/reports-research/reports/broadband-progress-reports/first-broadband-progress-report>.

This paper will explore the crucial nature of this issue as it relates to the real estate industry. It will also provide a brief history of deploying broadband in the United States, an overview of the current federal framework for encouraging broadband deployment, and summaries of a number of state regulatory strategies that stand out from the crowd, both positively and negatively.

II. BROADBANDS'S IMPACT ON RURAL COMMUNITIES

A. Impact on Community Stability and Growth

Internet access is recognized as a human right. As the United Nations Human Rights Council stated, “[i]ndividuals depend on digital access to exercise fundamental rights, including freedom of opinion and expression, the right to life and a range of economic, social and cultural rights.”³ Internet access is necessary to live and function in modern society, so much so that there have been many calls to regard broadband internet service as a utility, akin to electricity or water.⁴

Nearly one in five Americans, or approximately 62 million people, live in rural or frontier areas. These areas comprise 80% of the land mass of the United States. There are numerous reasons why reliable and fast internet is especially important to residents of these less-densely populated rural areas, most critical being that it is a crucial tool for economic development. A study by the Blandin Foundation examined five rural counties in Minnesota and concluded that the annual collective economic benefit for residents surpasses the investment in broadband in one to six years.⁵ Other studies have shown that broadband availability is a factor that can help

³ *Report of the Special Rapporteur on the Promotion and Protection of the Right to Freedom of Opinion and Expression*, March 30, 2017, online at <https://documents-dds-ny.un.org/doc/UNDOC/GEN/G17/077/46/PDF/G1707746.pdf?OpenElement>.

⁴ Teale, Chris, *Municipal Broadband Internet: The Next Public Utility?*, Smart Cities Dive, March 5, 2019, online at <https://www.smartcitiesdive.com/news/municipal-broadband-internet-public-utility/549461/>. The FCC, however, has taken a different view, holding that broadband internet service is in “information service,” and not a utility. *In the Matter of Restoring Internet Freedom*, Docket No. 17-108, January 4, 2018, online at https://transition.fcc.gov/Daily_Releases/Daily_Business/2018/db0104/FCC-17-166A1.pdf.

⁵ Blandin Foundation, *Measuring Impact of Broadband in 5 Rural MN Communities*, October, 2017, online at <https://blandinfoundation.org/learn/research-rural/broadband-resources/broadband-initiative/measuring-impact-broadband-5-rural-mn-communities/>. In three of the five counties surveyed, the economic benefit surpassed investment in less than one year, and in one county, it took slightly more than one year. The fifth county, in which the benefits did not surpass the investment for six years, was the most sparsely populated and geographically remote county of the five.

convince businesses to locate in rural areas.⁶ Telecom expert Raul Katz notes that broadband construction can be an engine for job creation by encouraging the opening of businesses that did not exist before. Broadband also allows businesses to move functions to different areas in order to benefit from the availability of wider labor pools or lower factor costs. Additionally, companies can also rely on broadband to deploy distribution channels in unserved remote areas.⁷ Many rural areas suffer from a shortage of skilled workers, and broadband connectivity can be used to provide training that would otherwise be provided on an informal basis, if at all.⁸

Internet connectivity is a necessity for any business, as communications that used to take place by traditional mail or telephone (*e.g.* ordering supplies, or contacting customers) are now routinely and more efficiently done online. Businesses also find that the internet allows them to utilize new strategies. For example, farmers can use internet connectivity to follow market and weather conditions on a real-time basis. Internet connectivity also helps attract newer types of businesses that may not have considered locating in rural areas due to the impediments to easy communication. Self-employed individuals, like many REALTORS®, who spend most or all of their time working online have the option of moving to, or staying in, rural communities. As such, the economic impact of existing broadband access in rural areas is significant. In 2015, [rural broadband companies](#) contributed \$24.1 billion to the economies of the states in which they operated. Rural broadband also supported over \$100 billion in e-commerce in 2015.

⁶ Kim, Younjun, and Orazem, Peter, *Broadband Internet and New Firm Location Decisions in Rural Areas*, American Journal of Agricultural Economics, January 2017, abstract at <https://academic.oup.com/ajae/article-abstract/99/1/285/2452343>.

⁷ Katz, R.L., *The Impact of the Broadband Internet on Employment* in Pupillo, L., Noam, E., and Waverman, L. (eds), *Digitized Labor*, Palgrave Macmillan (2018).

⁸ Green, Anne, *Changing Dynamics of Rural Labour Markets* in Shucksmith, Mark, and Brown, David (eds), *Routledge International Handbook of Rural Studies*, Routledge (2016).

The benefits of high-speed internet are not limited to the commercial realm. Rural schools can use broadband internet to provide educational offerings that they might not otherwise provide, often due to the high cost of the offerings, the lack of teachers with expertise or licensure in the area, or the small number of students who are able to take advantage of the offerings.⁹ In addition, most states have publicly funded “[virtual schools](#)” that either supplement, or provide an alternative to, traditional classroom offerings. Broadband connectivity is essential in order to allow students to take advantage of the interactive synchronous communications and streaming video utilized by these virtual schools. Even students who are not enrolled in virtual classes will be able to engage in social interaction with others far beyond their home communities, thus overcoming one disadvantage of rural communities. Finally, broadband connectivity gives teachers and students access to instructional resources and materials that are unavailable locally.

Studying online is also an increasingly attractive option for higher education. Many universities and colleges offer students the opportunity of earning undergraduate or graduate degrees online. Approximately 2.8 million students, or 14% of all college students nationwide, are pursuing degrees entirely online.¹⁰ Students may opt for such programs for a variety of reasons, especially flexibility and the ability to complete their education while staying in their home community and not incurring the added expenses of room and board, and transportation. Broadband internet is indispensable for these students. Many online courses are conducted through video conferencing or voice conferencing, technologies that are most effectively used

⁹ Hannum, Wallace *et al.*, *Distance Education Use in Rural Schools*, *Journal of Research in Rural Education*, 24(3), online at <http://jrre.vmhost.psu.edu/wp-content/uploads/2014/02/24-3.pdf>.

¹⁰ *Welcome to College Degrees Online*, <https://www.collegedegreesonline.com/>, accessed October 31, 2019.

with broadband.¹¹ Expanding broadband coverage to rural areas gives students an affordable option for learning new skills or advancing the skills they already have, enhancing their quality of life.

The availability to connect with distant sources of information will also have a positive impact on a residents' health. Health care providers are increasingly relying on telemedicine or telehealth as a way of delivering services, and the U.S. government is actively promoting the use of telehealth, particularly "in rural and other remote areas that lack sufficient health care services, including specialty care."¹² [Telehealth](#) is "the use of electronic information and telecommunication technologies to support long-distance clinical health care, patient and professional health-related education, public health, and health administration." Broadband is essential for telehealth, which requires sufficient bandwidth to transmit audio and visual data in order to be most effective.¹³

In addition to improving the delivery of health care, broadband can be an important tool to improve public safety. Broadband can provide law enforcement and other first responders with access to more and varied information sources. Getting the right information to responders more quickly will result in more effective responses. Public safety services can be provided in a more timely and efficient manner.¹⁴

¹¹ Chapman, Shanika, *What Equipment is Needed for Video Conferencing?*, itstillworks, <https://itstillworks.com/what-equipment-needed-video-conferencing-4923197.html>, accessed October 31, 2019.

¹² Federal Office of Rural Health Policy, *Telehealth Programs*, <https://www.hrsa.gov/rural-health/telehealth/index.html> accessed September 19, 2019.

¹³ U.S. Dep't of Health and Human Servs., Office of the Nat'l Coordinator for Health Info. Tech., *What are the Technical Infrastructure Requirements of Telehealth?*, <https://www.healthit.gov/faq/what-are-technical-infrastructure-requirements-telehealth> accessed September 19, 2019.

¹⁴ U.S. Dep't of Homeland Security Cybersecurity and Infrastructure Security Agency, *Public Safety Communications Evolution*, January 2019, online at https://www.dhs.gov/sites/default/files/publications/Public_Safety_Communications_Evolution_FINAL_01222019_508C.pdf.

A benefit of broadband that is sometimes overlooked is its impact on civic engagement. Rural communities depend on volunteer participation for many functions that may be taken for granted in urban areas. Surveys show that internet users are more active participants in their groups than other adults, and that they are more likely to feel pride and a sense of accomplishment in their groups' efforts.¹⁵ Broadband use is especially significant in [driving civic engagement](#) and has been shown to have a significantly positive impact on specific measures of civic engagement, such as contacting public officials, boycotting a company, joining a sports organization, becoming an officer in an organization, and discussing politics with family or friends. Even when controlling for other factors that may impact engagement, such as income, those who have adopted broadband are significantly more likely to be engaged in their communities.¹⁶

Communities that lack broadband can often feel isolated, and cut off from the rest of society.¹⁷ As Robert DeBroux, Director of Public Policy and Federal Regulatory Affairs for TDS Telecom, puts it, "A community without broadband is not a community that is going to exist much longer these days."¹⁸

¹⁵ Purcell, Kristen and Smith, Aaron, *The Social Side of the Internet*, Pew Research Center, January 18, 2011, online at <https://www.pewinternet.org/2011/01/18/the-social-side-of-the-internet/>.

¹⁶ Whitacre, Brian, *Broadband and Civic Engagement in Rural Areas: What Matters?*, Mississippi State University Extension Service – Intelligent Community Institute, June 2015, online at <http://agecon.okstate.edu/faculty/publications/5120.pdf>.

¹⁷ Rogers, Kaleigh, *What it's Like to Live in America Without Broadband Internet*, Vice, April 16, 2018, online at https://www.vice.com/en_us/article/d35kbj/americans-who-dont-have-internet.

¹⁸ Walkenhorst, Emily, *Quarter of State Households Still Without Broadband Internet*, Arkansas Democrat Gazette, December 27, 2018, online at <https://www.arkansasonline.com/news/2018/dec/27/quarter-of-state-households-still-witho/>.

B. Impact on Real Estate



The advantages offered by high-speed internet make communities that can offer it more attractive to buyers of commercial and residential property, as well as to the businesses that support those sales. High-speed internet is important as families rely on the internet for more purposes. Typical applications, such as online banking and shopping, are made more convenient over high-speed networks. Other uses, such as “smart homes” that use [the internet of things](#), and “cutting the cord” (watching television over the internet, rather than relying on cable)¹⁹ are realistic options only with high-speed connections.

High-speed internet is a feature that homebuyers are looking for, with some real estate professionals reporting that prospective buyers show little interest in properties that do not include broadband.²⁰ Analyses of property values have concluded that broadband internet correlates to higher prices for real estate.²¹ A recent study shows that single-family homes with access to a 25 Mbps broadband connection have a price that is about \$5,977, or 3%, more than similar homes in neighborhoods with 1 Mbps. In rural areas the price premium is \$5,099.²²

¹⁹ Barnes, Jess, *60 Million Americans Will Cut the Cord in the Next Five Years, Study Says*, Cord Cutters® News, September 25, 2019, online at <https://www.cordcuttersnews.com/60-million-americans-will-cut-the-cord-in-next-five-years-study-says/>. The study “shows that two million Americans have already cut the cord so far in 2019. That’s after 3.5 million people gave up traditional Pay TV video subscriptions in 2018.”

²⁰ Knutson, Ryan, *How Fast Internet Affects Home Prices*, Wall Street Journal, June 30, 2015, online at <https://www.wsj.com/articles/SB11064341213388534269604581077972897822358>.

²¹ Molnar, et al., *The Impact of High-speed Broadband Availability on Real Estate Values: Evidence from United States Property Markets*, SSRN Electronic Journal, March 2013, online at https://www.researchgate.net/publication/256055568_The_Impact_of_High-Speed_Broadband_Availability_on_Real_Estate_Values_Evidence_from_United_States_Property_Markets. A working version of this article is online at <https://pdfs.semanticscholar.org/a680/be92844f5ada41662cb3893d8021fe4318c9.pdf>.

²² Molnar, Gabor et al., *High-Speed Internet Access and Housing Values*, Applied Economics, Vol. 51, No. 55 (2019) abstract at <https://www.tandfonline.com/doi/full/10.1080/00036846.2019.1631443>.

Broadband not only adds to the value of a property, but it shows up throughout real estate transactions. Consumers increasingly use online services for at least a part of the buying or selling process. Websites such as REALTOR®.com are the starting point for many buyers and sellers. Showing property online has also become commonplace. Real estate marketing is also making increased use of virtual reality and augmented reality.²³ VR and AR let customers see all of the features of a property as they are, not as flat photographs in a brochure, as well as letting them “visit” a property without leaving home.²⁴ Both environments require high-speed internet connectivity to be viable tools. Higher speeds will not only make the VR and AR experiences better and more realistic, but will allow more users to adopt and use the technology, by improving network capacity.²⁵ As consumers become more internet-dependent, more of the process will shift online.

Communication will be carried out online, and documents will be created, edited, and stored online. [Remote notarization](#), in which a signer personally appears before a notary at the time using audio-visual technology over the internet, is currently allowed in 22 states and is increasing every year. The process of contracting for the purchase or sale of real estate is also becoming more electronic and moving online. [Virtual real estate transactions](#), including online “meeting rooms” and eSignatures, let all of the parties to a transaction meet virtually to share

²³Virtual reality (VR) is an artificial, computer-generated simulation or recreation of a real life environment or situation. Augmented reality (AR) is a technology that layers computer-generated enhancements atop an existing reality in order to make it more meaningful through the ability to interact with it. *Virtual Reality vs. Augmented Reality*, Augment, <https://www.augment.com/blog/virtual-reality-vs-augmented-reality/###targetText=Augmented%20reality%20and%20virtual%20reality%20are%20inverse%20reflections%20of%20one,overlay%20to%20the%20real%20world>, accessed October 31, 2019.

²⁴ Five Innovative Ways You Can Use Virtual Reality in the Real Estate Business, Ruby Garage, June 23, 2018, *online at* <https://rubygarage.org/blog/virtual-reality-in-real-estate>

²⁵ Newman, Daniel, *4 Reasons 5G is Critical for Mass Adoption of AR and VR*, Forbes, March 27, 2018, *online at* <https://www.forbes.com/sites/danielnewman/2018/03/27/4-reasons-5g-is-critical-for-mass-adoption-of-ar-and-vr/#324d1d6d1878>.

and review documents, and manage other transaction tasks. Some are even predicting that online tools using [artificial intelligence](#) will do property searches for buyers, eliminating the first step (selecting a property) in any purchase. If a real estate professional does not have access to broadband but has to rely on paper signatures and physical documents during the process, they may miss putting a deal together. In fact, some experts predict that in the near future, real estate transactions will be conducted entirely online.²⁶ The higher speeds offered by broadband internet will render the online aspect of real estate sales more efficient.

Buyers ask about the availability of broadband as regularly as they might ask about other amenities or services. The Hawai'i Seller's Real Property Disclosure Statement includes a space for disclosure of broadband access.²⁷ At least one other community has proposed requiring disclosure of broadband access in real estate listings and sales agreements.²⁸

Broadband has become so important to buyers that homes without broadband have become difficult to sell. As one author puts it, “[b]uying a house without broadband is starting to feel a lot like buying a house without electricity or running water – it’s not a home that most people would willingly buy.”²⁹ Millennials – [defined as those born between 1981 and 1996](#) – are leading the nation in adopting “smart home” technology that relies on broadband to function

²⁶ Lyons, Bill, *How All Real Estate Transactions Will Move Online in Three Years*, Realty Biz, December 5, 2018, online at <https://realtybiznews.com/how-all-real-estate-transactions-will-move-online-in-three-years/98751846/>.

²⁷ Hawai'i Association of Realtors®, *Seller's Real Property Disclosure Statement*, April, 2015, online at <http://www.theceshop.com/webapp/asset-storage/etsassets.synegen.com/ces-cms-dev/pdf/3c0bfe6f-2888-4924-80da-495901ecff7f/Sellers-Property-Disclosure-Statement.pdf>. This is not an official State of Hawai'i form, but one prepared by the Association.

²⁸ Washtenaw County, Mich. Bd. of Comm'rs, Broadband Sub-Committee, *Final Report*, November 29, 2018, online at <https://www.washtenaw.org/DocumentCenter/View/11048/Washtenaw-BoC-Broadband-Committee-Report-FINAL-Compiled>.

²⁹ Dawson, Doug, *Buying a Home With no Broadband*, POTs and PANs, June 21, 2018, online at <https://potsandpansbyccg.com/2018/06/21/buying-a-home-with-no-broadband/>.

properly.³⁰ Millennials are also relying on broadband for entertainment, by rejecting cable or satellite TV services, and using streaming services such as Netflix or Hulu.³¹ In Vermont, real estate professionals say that they are often unable to show homes without broadband access because buyers simply aren't interested. Meg Streeter, a REALTOR® who has been in the real estate business in Vermont for 32 years, says that "[i]n the last five to eight years, [broadband has] become a must-have." Streeter says that this is true even when the buyer is looking for a vacation home. Although she can't put a dollar figure on the value of high-speed internet, Streeter says that "[b]asically, if the house doesn't have it, in my opinion, it is unlikely to sell."³² This reluctance of buyers to purchase homes without broadband is a reluctance that spans the nation.

One frequently-referenced incident is the homebuyer in Washington state who was forced to sell his new home after only a few months, not only because the property did not have the broadband access the buyer needed for his at-home work, but it proved impossible to get broadband installed.³³ Working remotely has become the norm for over 50% of the American population. That number is expected to increase, as the mutual advantages to employers and

³⁰ The NPD Group, *One Quarter of Millennials Have Begun Building Smart Homes and Four-in-Ten Want One*, According to The NPD Group, June 23, 2015, online at <https://www.npd.com/wps/portal/npd/us/news/press-releases/2015/one-quarter-of-millennials-have-begun-building-smart-homes-and-four-in-ten-want-one-according-to-the-npd-group/>.

³¹ Littleton, Cynthia, *Cord Cutting Survey: 19% of Young Adults Have Dropped Cable or Satellite TV Service*, Variety, Dec. 22, 2015, online at <https://variety.com/2015/biz/news/cord-cutting-19-young-adults-24-pew-research-center-1201666723/>.

³² Picard, Ken, *How Does Broadband Access Affect Real Estate Property Values?*, sevendaysvt.com, June 13, 2016, online at <https://www.sevendaysvt.com/vermont/how-does-broadband-access-affect-real-estate-property-values/Content?oid=3418087>.

³³ Morran, Chris, *New Homeowner Has to Sell House because of Comcast's Incompetence, Lack of Competition*, Consumerist, March 25, 2015, online at <https://consumerist.com/2015/03/25/new-homeowner-has-to-sell-house-because-of-comcasts-incompetence-lack-of-competition/>. The buyer had, before he purchased the house, asked about the availability of broadband and had been assured that he would be able to receive it.

employees become even more apparent.³⁴ The work-at-home trend is not limited to “cutting edge” start-up companies. Established, traditional companies find that at-home work allows them to save on office space and other costs associated with having employees present physically. At-home work is also a good option for jobs that do not require a high-school or college diploma, such as telemarketing from home.³⁵ Some communities are even taking steps to encourage working remotely, as a way to entice newcomers to relocate there. Tulsa, for example, offers \$10,000 in cash to remote workers who can move to Tulsa within six months, and who have full-time remote employment with an employer outside Oklahoma.³⁶ [Vermont](#) has a similar program for new residents. Workers who don’t have home broadband will find themselves at a disadvantage, as the speed and capacity of a broadband connection is [essential](#) for effective remote work.

³⁴ Muhammed, Abdullahi, *10 Remote Work Trends That Will Dominate 2019*, Forbes, Dec. 21, 2018, online at <https://www.forbes.com/sites/abdullahimuhammed/2018/12/21/10-remote-work-trends-that-will-dominate-2019/#31afba3d7c72>.

³⁵ Flynn, Kerry, *Living Without Broadband In 2015: How 55 Million Americans Find Jobs, Study, Watch YouTube*, International Business Times, June 2, 2015, online at <https://www.ibtimes.com/living-without-broadband-2015-how-55-million-americans-find-jobs-study-watch-youtube-1943615>.

³⁶ Tulsa Remote, online at <https://tulsaremote.com/>, accessed November 1, 2019.

III. FEDERAL BROADBAND DEPLOYMENT PROGRAMS

The crucial nature of broadband access was acknowledged by the federal government in the 1990s, and has remained a priority since then. An important aspect of the broadband deployment challenges facing the nation is that the term “broadband” does not relate to a specific piece of technology, but to an evolving benchmark speed for internet access, currently defined by the FCC as an internet connection of 25 megabit download/3 megabit upload speeds (25/3).³⁷

More generally, “broadband” refers to high-speed internet access. As currently deployed, broadband is generally provided by four means of technology: cable modems, fiber-optic cables, mobile wireless, or over copper telephone lines. Fixed wireless technology and satellite are also options for broadband deployment.³⁸

The current FCC definition of broadband is generally understood to encapsulate a connection that allows a single person to use a single connected device without slowdowns or other connection issues.³⁹ In light of modern “wired” households, this definition is already outdated as streaming a single movie on a single device will consume the full bandwidth of a 25/3 connection.⁴⁰

5G wireless, which is currently being deployed in urban centers, offers the potential of peak speeds of 10 gigabits per second.⁴¹ “Gig” networks, which provide 1,000 megabit per second

³⁷ FCC, *2019 Broadband Deployment Report*, May 29, 2019, online at <https://docs.fcc.gov/public/attachments/FCC-19-44A1.pdf>.

³⁸ CRS, *Broadband Internet Access and the Digital Divide: Federal Assistance Programs*, January 9, 2019, online at <https://fas.org/sgp/crs/misc/RL30719.pdf>.

³⁹ Trostle, Hannah, *Why 25 Mbps/3Mbps is a reasonable minimum standard in 2018*, Community Networks, May 30, 2018, online at <https://muninetworks.org/content/why-25-mbps-3-mbps-reasonable-minimum-standard-2018>

⁴⁰ *Id.*

⁴¹ *What is 5G*, Verizon Wireless, <https://www.verizon.com/about/our-company/5g/what-5g#pHowFast5G>

download speeds, are also becoming more prominent, and likely represent the next benchmark for connectivity. In homes where homework, shopping, job applications, and house hunting are done online, and where every member of the family may have multiple “wired” devices, 5G or Gig speeds represent realistic thresholds for modern household connectivity.

Fortunately, efforts since 1996 have led to a significant number of Americans having access to ample broadband connectivity. As was the case with past technological innovations, deployment of this crucial technology in rural America has lagged behind. After the Telecommunications Act of 1996 put broadband on the Federal Government’s radar, 2001 saw Congress authorize the Rural Utility Service (RUS), a division of the U.S. Department of Agriculture, to expand its activities beyond traditional telecommunication loan and grant programs and to create a “pilot program to finance broadband transmission and local dial-up internet services” in rural areas.⁴² Equally important was the Telecommunications Act of 1996, which mandated that the FCC remove barriers to infrastructure investments and promote a competitive telecommunications market.⁴³

The resulting efforts led to hundreds of millions of federal dollars being made available annually via various appropriations mechanisms, all of which were directed towards the goal of developing broadband infrastructure in rural America. Ultimately, the federal government appropriated approximately \$2.7 billion via loan guarantee programs between 2001 and 2008.⁴⁴ These programs, while subject to various criticisms, have also gone out of their way to remove

⁴² CRS, *Broadband Loan and Grant Programs in the USDA’s Rural Utilities Service*, p. 3, March 22, 2019, <https://fas.org/sgp/crs/misc/RL33816.pdf>.

⁴³ FCC, *Telecommunications Act of 1996*, <https://www.fcc.gov/general/telecommunications-act-1996>.

⁴⁴ CRS, *Broadband Loan and Grant Programs in the USDA’s Rural Utilities Service*, p. 9, March 22, 2019, <https://fas.org/sgp/crs/misc/RL33816.pdf>.

barriers to deployment and encourage competition by allowing nearly any relevant entity to qualify as eligible for grants and loans.

The American Recovery and Reinvestment Act (ARRA) of 2009 raised the bar by appropriating \$7.2 billion towards broadband grants and loans via programs administered by the National Telecommunications and Information Administration (NTIA) and the Rural Utilities Service (RUS). The ARRA also required that the FCC create and submit to Congress a national broadband plan to ensure that every American has access to broadband, effectively extending the universal service concept to broadband connections. The FCC, in its initial report titled *Connecting America: The National Broadband Plan*, outlined a plan recommending access to and adoption of broadband as a national priority.⁴⁵

Since 2009, RUS has continued to develop the Rural Broadband Access Loan and Loan Guarantee Program. In 2016, the program was codified in the federal register, making ongoing broadband development loans widely available in rural communities. Other funding mechanisms such as Community Connect Broadband Grants⁴⁶ have received over \$250 million in appropriations, while the Telecommunications Infrastructure Loan and Loan Guarantee program provides \$690 million annually for “the construction, maintenance, improvement, and expansion of telephone service and broadband in rural areas.” Beginning in 1995, RUS has required that networks funded by this program offer broadband service as well.⁴⁷

⁴⁵ CRS, *Broadband Internet Access and the Digital Divide: Federal Assistance Programs*, p. 15, January 9, 2019, online at <https://fas.org/sgp/crs/misc/RL30719.pdf>.

⁴⁶ The Consolidated Appropriations Act of 2004 appropriated \$9 million “for a grant program to finance broadband transmission in rural areas eligible for Distance Learning and Telemedicine Program benefits.” Publicly available statute cited in CRS, *Broadband Loan and Grant Programs in the USDA’s Rural Utilities Service*, p. 6, March 22, 2019, online at <https://fas.org/sgp/crs/misc/RL33816.pdf>.

⁴⁷ CRS, *Broadband Loan and Grant Programs in the USDA’s Rural Utilities Service*, p. 8, March 22, 2019, online at <https://fas.org/sgp/crs/misc/RL33816.pdf>.

After ARRA funding expired in 2015, two ongoing federal programs have provided the bulk of the federal dollars allocated towards broadband deployment: the Universal Service Fund (administered by the FCC) and the various programs managed by RUS and the USDA. Most recently, the Consolidated Appropriations Act of 2018 granted \$600 million to RUS for a new rural broadband loan and grant pilot program and \$7.5 million to update the national broadband availability map in coordination with the FCC, while also modifying existing federal regulations in an attempt to create a more robust environment for broadband deployment.⁴⁸ The 2019 Act also focused largely on broadband deployment, appropriating \$350 million in broadband related funding over five years and setting forth a number of plans to drive broadband access in rural areas.⁴⁹

Despite the leaps and bounds broadband has taken in many parts of the country, current FCC mapping suggests that nearly 6% of Americans (19.4 million) lack 25/3 connectivity, a standard that is a decade old, and that is inadequate for all but the most basic internet use.⁵⁰ Most of these Americans live in rural communities.⁵¹ More troubling, this number is almost certainly too low, due to shortcomings of federal mapping efforts.

Beginning in the late 1990s, both the NTIA and the FCC have undertaken efforts to address the challenge of creating an accurate snapshot of broadband deployment. Creating deployment maps is problematic for a number of reasons, some based on the rapid growth of technology,

⁴⁸ CRS, *Broadband Internet Access and the Digital Divide: Federal Assistance Programs*, p. 22, January 9, 2019, online at <https://fas.org/sgp/crs/misc/RL30719.pdf>.

⁴⁹ <https://connectednation.org/wp-content/uploads/2018/12/Policy-Brief-BB-in-the-Farm-Bill-FINAL-1.pdf#targetText=The%202019%20Farm%20Bill%20makes,Americans%20to%20high%2Dspeed%20internet.>

⁵⁰ 2019 FCC Report, *2019 Broadband Deployment Report*, May 29, 2019, online at <https://docs.fcc.gov/public/attachments/FCC-19-44A1.pdf>.

⁵¹ CRS, *Broadband Internet Access and the Digital Divide: Federal Assistance Programs*, p. 2, January 9, 2019, online at <https://fas.org/sgp/crs/misc/RL30719.pdf>.

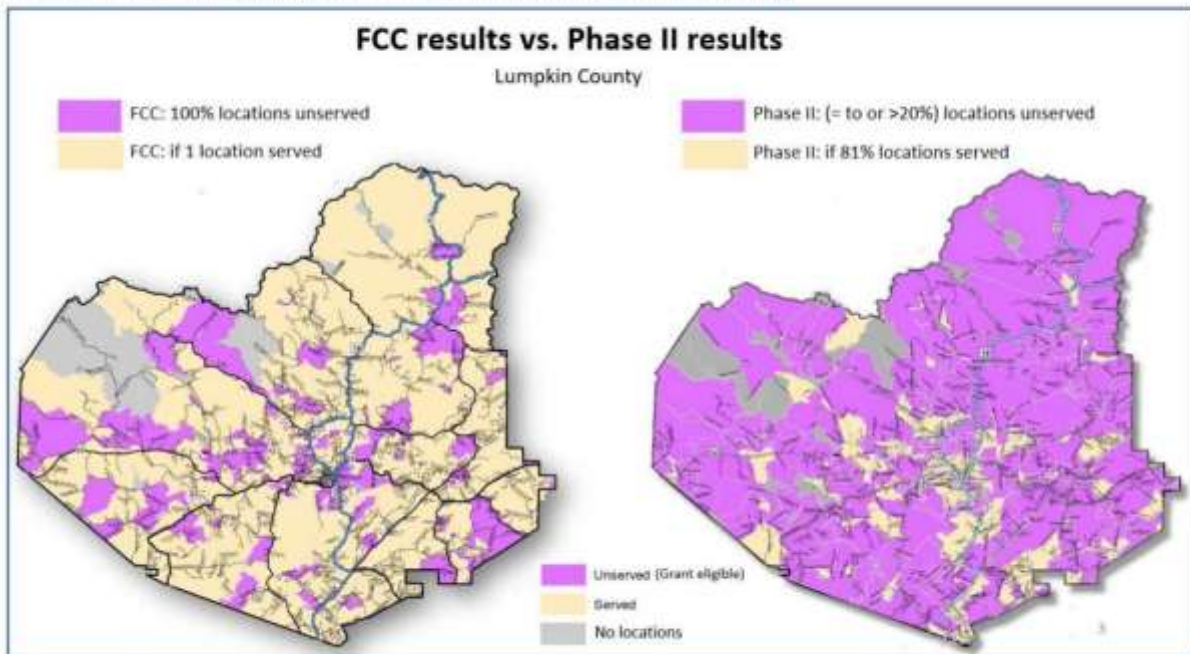
others due to shortcomings of the mapping programs themselves. The former will always be an issue, but the latter can be more easily addressed.

The most common complaint in this area relates to the FCC Form 477, the vehicle used to create the current National Broadband Map. This form makes it easy to overstate broadband availability due to the fact that data is collected at a census block level. Specifically, a census block is considered served by broadband if “there is broadband service (or the strong potential of broadband service) to one or more locations.”⁵² In rural areas, this can mean that an entire community can be considered “covered” if a single home has a strong likelihood of receiving broadband service. The 2018 Appropriations bill provided \$7.5 million to address this issue, but a more robust programmatic overhaul will likely be required in order to more accurately address mapping issues.

The following map illustrates the divergence between the FCC mapping protocol and the more strenuous definitions and methodology employed by the state of Georgia in mapping the availability of broadband access in Georgia. Like Georgia, many states do not rely on FCC mapping, but do their own, before developing strategies for broadband deployment.

⁵² CRS, *Broadband Internet Access and the Digital Divide: Federal Assistance Programs*, p. 11, January 9, 2019, online at <https://fas.org/sgp/crs/misc/RL30719.pdf>.

Phase I FCC Mapping vs Phase 2 Enhanced Mapping



Further complicating this issue is the fact that making broadband available is only the first part of the battle. As encapsulated by the universal service concept, broadband must not only be available, but it must be affordable. Adoption, in contrast to availability, refers to the extent to which American households actually subscribe to and use broadband.

For private internet service providers, extending broadband infrastructure can be extremely expensive. The costs associated with deployment for ISPs is generally thought to be at least \$18,000 – 22,000 per mile of fiber deployed.⁵³ In many rural areas, bringing broadband to just a few homes may take multiple miles of backbone, plus the additional cost of last-mile connectivity. This cost is then passed along to the consumer, making them less likely to “adopt” by purchasing a subscription.

⁵³ OTELCO Fiber Infrastructure: Where, when, why, and how, <https://www.otelco.com/fiber-infrastructure/>.

There are, of course, alternatives to a fiber optic backbone such as satellite, copper wire, wireless (cell phones), or cable modems. Each of these options will likely serve to expand broadband connectivity, if even as just a stopgap. Solutions cannot, however, focus on a single piece of technology, as the unique challenges presented by the geographical scope of the nation demands multiple technological solutions.⁵⁴

No federal program or initiative will ever be viewed as perfect, and all of the funding mechanisms and regulatory rollbacks of the past 20 years have been subject to any number of criticisms. Despite some shortcomings, however, it cannot be argued that the federal government has failed to recognize the importance of closing the digital divide, nor have they failed to provide funding mechanisms designed to allow any number of players to enter the ISP marketplace.

The modern regulatory battle is instead taking place at the state level, where the telecommunications lobby has expended vast sums of money to prevent competitors, particularly not-for-profit or public entities, from entering state marketplaces. The impact of these lobbying efforts is most evident when viewing the trajectory of state regulations that either create roadblocks for or entirely bar publicly owned municipal broadband networks. By 2018, 20 states had passed this type of law. As of April 2019, that number had risen to 25 states.⁵⁵

Many of the regulations put in place at the state level directly prohibit non-private entities from developing broadband infrastructure, despite the fact that these non-private actors meet

⁵⁴ 2018 Consolidated Appropriations Act states that “funding should be prioritized to areas currently lacking access to broadband service, and investments in broadband shall consider *any technology* that best serves the goals of broadband expansion.” CRS, *Broadband Loan and Grant Programs in the USDA’s Rural Utilities Service*, p. 10, March 22, 2019, online at <https://fas.org/sgp/crs/misc/RL33816.pdf>.

⁵⁵ Chamberlain, Kendra, *Municipal Broadband Is Roadblocked or Outlawed In 25 States*, BroadbandNow, April 17, 2019, <https://broadbandnow.com/report/municipal-broadband-roadblocks/>

all federal eligibility requirements. Other states have not yet statutorily empowered not-for-profit rural electric cooperatives from expanding into the broadband marketplace. Regardless, targeted advocacy at the state level is undoubtedly the most powerful means to impact both the availability and adoption of broadband services.

IV. STATE GOVERNMENT STRATEGIES TO DEPLOY BROADBAND

Currently, each of the 50 states has implemented some formal measure to address broadband implementation within the state. Some programs have been in place for decades, while others have only been established within the past year or two. Regardless, all states are now unanimous in the sentiment that broadband must become accessible and affordable in order for state residents to keep up with the modern world.

States vary in the means through which they are addressing broadband deployment. While every state has established some form of a “Broadband Council,” “Office of Broadband Development,” or “Broadband Mapping Project,” not every state has actually legislated in a manner that best serves those constituents who lack affordable and reliable broadband connections. In fact, many existing laws are actually designed to do the opposite by unnecessarily protecting internet service providers (ISPs) from competition.

An excellent analogy for the broadband marketplace can be drawn to the amortization schedule of purchasing a house. In the first few years of ownership, most of the mortgage payment goes to interest, rather than principal. Over time, however, ownership becomes more profitable, and equity builds more quickly. Broadband networks are much the same.

The greatest cost of building a network is actually building or buying it. Over time, network subscriptions pay down the cost of infrastructure, making the fruits of that infrastructure more valuable to the owner. This reality provides a massive competitive advantage to existing ISPs, as they have already accrued their greatest costs and built a subscriber network. They can set pricing to undercut competition that is still paying off the initial buildout prices. Consequently, legislation

hindering the development of competing networks is unnecessary, as the market itself will protect existing entities. Despite this fact, many states protect existing ISPs.

State regulatory regimes regarding broadband deployment can generally be sorted into two groups. The first group consists of states which, like the federal government, have limited regulation as much as possible in order to foster creativity and to allow broadband providers to tailor solutions to the realities of the community in question and the best available technology. The second group does the opposite, directly prohibiting many entities, particularly municipalities, other localities, and rural electric and telecommunications cooperatives, from building, owning, managing, or providing broadband networks and services.

Regardless of how states have regulated in the past, there are a number of obvious trends developing. Perhaps the most effective is also the most recent: states statutorily [empowering rural cooperatives](#) to provide their customers with broadband internet service as well as telephone or electricity. Some states have gone even further and have granted cooperatives the right to use existing power and telephone-line easements for broadband as well.

States have also empowered municipalities and local government entities to deploy publicly owned networks, either as competition for private providers, or as a means to fill the void where private deployment is not profitable or feasible. This arena is generally more contentious. There are currently 25 states with regulations that either restrict or outright ban municipally owned networks, an increase from the 20 states with that type of regulation in 2018. Like any solution, [municipal networks are not a cure-all](#) for rural deployment or urban adoption, and can in some cases be catastrophic for the community in question.

Finally, public/private partnerships remain a valuable tool in broadband deployment. Many of these partnerships exist in the form of physical networks that are co-owned or co-managed by public and private entities, but some more aggressive partnership models exist as well.

Overall, the activity in each state reinforces that an open regulatory playing field fosters the broadest variety of solutions. The next section examines a number of state schemes demonstrating the need for creative and varied problem solving at the state and local level. The following map groups all 50 states according to regulatory conditions which either promote or hinder broadband deployment.

A. Active States with Unrestrictive Broadband Legislation



Indiana⁵⁶

Population: 6,666,000

Rural population with fixed 25/3 access: 67.40%

Indiana has been particularly active in the broadband deployment arena since 2009, when the Indiana Broadband Mapping Program was created using federal grant funding. This program, housed in the state Office of Technology went on to conduct a multi-year, multi-agency effort to map underserved areas in the state. The fruits of this effort are published by the state government and are also provided to the FCC in order to support development of FCC mapping.

In addition to mapping efforts, Indiana law has empowered state agencies to undertake a number of activities designed to close the digital divide. These efforts include establishing a rural broadband fund through the Office of Community and Rural Affairs which awards grants to broadband services providers who have not received federal funding,⁵⁷ and a Department of Transportation initiative allowing the DOT to create a broadband corridor program to manage the installation and maintenance of broadband infrastructure.⁵⁸

Most importantly, Indiana became a focal point in the fight to close the digital divide when Governor Eric Holcomb signed the [Facilitating Internet Broadband Rural Expansion \(FIBRE\) Act](#) into law. This law, which passed with broad bipartisan support in 2017, began a legislative trend to empower rural electric cooperatives to use easements for their electric poles to deploy broadband infrastructure.

⁵⁶ All state populations and 25/3 connection levels available in [2019 FCC Broadband Deployment Report](#).

⁵⁷ [Ind. Code ch. 4-4-38 \(2019\)](#)

⁵⁸ [Ind. Code ch. 8-23-5 \(2019\)](#)

In the two years since the FIBRE Act was passed, a number of the state’s electric cooperatives have entered the broadband marketplace. In 2019, Governor Holcomb announced that two electric cooperatives would receive nearly [\\$7 million in grants](#) from state grant programs designed to foster broadband infrastructure investment in unserved segments of the state. The value of this type of development is immense. In 2018, Purdue University’s Center for Regional Development estimated that if broadband were deployed in all rural areas of the state, the resulting net economic benefit to the state would be nearly \$12 billion.⁵⁹

Beyond grant programs, an open regulatory scheme and the empowerment of rural cooperatives, the Indiana state government has sought out partnerships with the private sector by partnering with Microsoft Corp. and Watch Communications in order to connect 50 Indiana counties with high-speed initiative. This effort, a part of [Microsoft’s Airband initiative](#), is seeking to use both existing and developing technology to connect more than one million people in the state, 440,000 of whom are currently living in unserved rural areas.



Georgia

Population: 10,429,000

Rural population with fixed 25/3 access: 77.60%

Like Indiana, Georgia is working to eliminate the digital divide using a multi-faceted approach. The state’s efforts began in 2009, when the Georgia Broadband Mapping Program was created using a \$5.2 million federal grant. From this foundation, the Georgia legislature passed the [Achieving Connectivity Everywhere \(ACE\) Act](#) in 2018. The ACE Act serves as a framework for the Georgia Broadband Deployment Initiative

⁵⁹ Purdue Univ. Ctr. for Regional Dev., *Research & Policy Insights: Estimation of the Net Benefits of Indiana Statewide Adoption of Rural Broadband* (Aug. 2018), online at <https://www.pcrd.purdue.edu/files/media/006-RPINsights-Indiana-Broadband-Study.pdf>

(GBDI), which will “coordinate activity among 5 state agencies to implement 13 projects directed by legislation.”⁶⁰

Among the most important aspects of the ACE Act was the creation of a regulatory landscape that fostered development using a number of approaches. The existing state code was amended to allow nonprofit corporations that furnish telephone services to also furnish broadband services either directly or indirectly,⁶¹ to allow electric cooperatives to provide broadband services,⁶² and to streamline deployment of 5G technology on publicly owned land.⁶³

With 41 Electric Membership Cooperatives (EMCs) in the state, the impact of the ACE Act in rural areas holds massive potential. These organizations, represented by the statewide trade organization [Georgia EMC](#), already provides electricity and related services to 4.4 million people across 73 percent of the state’s land area.

Beyond empowering cooperatives, the ACE Act has led to the GBDI kickstarting new broadband mapping efforts, the first phase of which consisted of analysis of the available FCC maps through a partnership between the GBDI and the University of Georgia. This analysis demonstrated that 45,920 census blocks within the state were completely unserved. Phase II of the mapping update will focus on each of the 165,310 census blocks in the state to develop more detailed data in order to identify where grant funding for broadband infrastructure development will have the largest impact. GBDI is currently designing a grant program to target these areas in

⁶⁰ *Georgia Broadband Deployment Initiative: State Broadband Plan*, online at https://broadband.georgia.gov/sites/default/files/georgia_statewide_broadband_plan_rev_5.29.19.pdf

⁶¹ Ga. Code Ann. § 46-5-61 (Lexis/Nexis 2018)

⁶² Ga. Code Ann. § 46-3-171 (Lexis/Nexis 2018)

⁶³ Ga. Code Ann. § 36-66C-2 (Lexis/Nexis 2018)

a manner that provides “appropriate incentives to leverage private investment” while also fostering community partnerships as a central component of the initiative.

GBDI is also using the state rulemaking process to require local governments to include a broadband element in each community’s comprehensive plan. These plans have been statutorily required of every local government since 1989, and GBDI is working to ensure that communities “consider broadband service and community needs,” and that they “adopt strategies to promote broadband in their communities.” GBDI has produced [model ordinances](#) designed to demonstrate that local governments have “taken steps to reduce obstacles to broadband deployment.” Should a local government demonstrate the presence of a broadband component within their community’s comprehensive plan, and adopt either a model ordinance or ordinances approved by the GBDI as substantially similar, the community will become eligible to apply for a [“Broadband Ready Community”](#) designation.

Finally, the GBDI will assist state entities in conducting an analysis of state assets that might be used to expand broadband availability in unserved areas, and it has rolled out a permitting process to allow for the installation of fiber or other telecommunications infrastructure on state rights-of-way.



Mississippi

Population: 2,984,000

Rural population with fixed 25/3 access: 62.60%

As in many states, the Mississippi Broadband Task Force was created in 2009 as a result of the American Recovery and Reinvestment Act (ARRA). The Mississippi Task force was charged with overseeing the state’s strategy for ARRA funding, and worked to standardize mapping information via the Mississippi Broadband Mapping

Initiative.⁶⁴ In 2010, the Office of the Governor received over \$7 million in ARRA funding to help develop the Mississippi Broadband Connect Coalition, a “non-profit public-private partnership focused on producing a comprehensive statewide strategic plan for . . . increasing access to broadband, and enabling greater adoption of broadband in the state.”⁶⁵

Unlike many other states, Mississippi did not take any significant additional action despite having received over \$100 million in federal infrastructure grants since 2010.⁶⁶ The state’s actions between 2010 and 2018 do not demonstrate the leadership seen in states like Minnesota, Indiana, or Georgia, as evidenced by the fact that the state mentions only some vague tax incentives designed to encourage deployment as one of the most significant legislative actions in the years between 2011 and 2019.⁶⁷

This lack of progress shows. Mississippi is currently ranked 46th on the list of connected states, with only 78% of the state having access to 25/3 connections.⁶⁸ In the 2019, however, Governor Phil Bryant signed the [Mississippi Broadband Enabling Act](#), joining the growing number of states to statutorily allow rural electric cooperatives to establish, acquire, own, and operate broadband networks. This has had an immediate impact, as cooperatives are already moving forward with network development.⁶⁹ The state has also avoided imposing any restrictions

⁶⁴ *Mississippi’s State Broadband Plan, 2019 Update*, online at

https://www.governorbryant.ms.gov/Documents/State_Broadband_Plan_Update_FINAL.pdf.

⁶⁵ U.S. Dep’t of Commerce, Nat’l Telecomm. & Info. Admin., *BroadbandNow: Internet Service in Mississippi*, <https://www2.ntia.doc.gov/mississippi>, (last visited Oct. 18, 2019).

⁶⁶ BroadbandNow, *Internet Service in Mississippi*, <https://broadbandnow.com/Mississippi> (last visited Oct. 18, 2019).

⁶⁷ *Mississippi’s State Broadband Plan, 2019 Update*, online at

https://www.governorbryant.ms.gov/Documents/State_Broadband_Plan_Update_FINAL.pdf.

⁶⁸ BroadbandNow, *Internet Service in Mississippi*, <https://broadbandnow.com/Mississippi> (last visited Oct. 18, 2019).

⁶⁹ Institute for Local Self-Reliance, *Community Networks*, online at <https://muninetworks.org/tags/tags/mississippi> (last visited Oct. 18, 2019).

regarding municipal networks, and a number of municipalities have built networks across the state.⁷⁰



Maine

Population: 1,336,000

Rural population with fixed 25/3 access: 89.60%

Maine recognized the importance of broadband deployment in 2006, when the state legislature created the ConnectME Authority as “a public instrumentality of the state, to develop and implement broadband strategy for Maine.”⁷¹ In 2007, the legislature went on to define the state’s broadband strategy and describe how that strategy was to be implemented.⁷² Finally, in 2015, the legislature updated the Authority’s duties to include facilitating the universal availability of broadband in Maine and helping Maine households and businesses understand the importance of broadband in their lives.⁷³

Funded by a .25% surcharge on all communications, video and internet service bills for retail in-state service, the Authority provides grants to ISPs and communities via three statutory programs: the Infrastructure Grant Program, the Community Broadband Planning Grant Program, and the Municipal Gigabit Broadband Network Access Fund.⁷⁴ This surcharge funds a two- phase grant program that focuses first on community organization, ISP engagement, and inclusion planning, and second on specific network design. In addition to these planning grants, the Authority also awards infrastructure grants for last-mile infrastructure to connect to

⁷⁰ [Id.](#)

⁷¹ ConnectME, *Annual Report*, January 28, 2019, online at <https://www.maine.gov/connectme/sites/maine.gov.connectme/files/inline-files/ConnectME%20Authority%20Annual%20Report%202018%20.docx.pdf>.

⁷² [Id.](#)

⁷³ [Id.](#)

⁷⁴ [Id.](#)

customers in unserved areas of Maine. Since 2007, the Authority has awarded 146 grants totaling \$12.33 million to bids from public-private partnerships.⁷⁵

In addition to providing grants, [ConnectME](#) carries out projects to improve mapping accuracy, provides community resources and broadband/digital literacy programs, supports research, and issues annual reports providing updates and guidance for future years. Most recently, the Authority released the [ConnectME Authority 2019-2021 Detailed Strategic Plan](#), which reiterates the state's statutory goals and provides an action plan for the next two years.

This plan is a “community driven process” designed to help communities leverage the best available business model in order to achieve connectivity. The plan states that regional utilities, municipal networks, and public/private partnerships will all be necessary in order to achieve universal coverage. The action plan then analyzes state need and proposes that the state contribute 25% of the total cost of these projects, with the remainder coming from the private sector, the federal government, and local communities.

While state law and the ConnectME Strategic Plan both allow for municipality owned networks to play a role in broadband deployment, rural electric cooperatives have not yet been empowered to provide broadband. Despite this, several Maine communities have taken a unique step by creating the not-for-profit [Downeast Broadband Utility](#), a cooperative where members are required to be Maine municipalities. This utility's network is still being constructed, but will provide open-access dark fiber infrastructure to a number of Maine communities in the near future.⁷⁶

⁷⁵ ConnectME, *Infrastructure Grants*, online at <https://www.maine.gov/connectme/grants/infrastructure-grants>, accessed Oct. 18, 2018.

⁷⁶ <https://downeastbroadband.com/> (last visited Oct. 18, 2019).

Maine is also a participant in the Microsoft Airband Initiative. In Washington County, Maine, private ISPs are working to offer broadband via TV white spaces in areas where heavy forestation makes wireless technology ineffective, and low population density makes fixed deployment extremely expensive.⁷⁷



Vermont

Population: 624,000

Rural population with fixed 25/3 access: 83.40%

As a lightly populated, rural state with particularly rugged terrain, Vermont presents significant challenges to profitable ISP business models. The state's initial efforts began with the Vermont Telecommunications Authority (VTA), a statutorily created entity charged with ensuring that high-speed internet and cell phone service was universally available prior to 2010.⁷⁸ The VTA entered into a public-private partnership with a regional communications service provider to develop middle-mile infrastructure delivering internet services to more than 300 community anchor institutions, including libraries, hospitals, schools and colleges using \$33.4 million in federal grant funding.⁷⁹

The VTA was ultimately shuttered in 2015 when the state legislature created the Division of Telecommunications and Connectivity within the Department of Public Service (DTC). The mission of the DTC is to “promote and expand access to high-speed internet to underserved locations in Vermont,” while also managing and leasing roughly 340 miles of state-owned open

⁷⁷ *An Update on Connecting Rural America, The 2018 Microsoft Airband Initiative*, online at https://blogs.microsoft.com/uploads/prod/sites/5/2018/12/MSFT-Airband_InteractivePDF_Final_12.3.18.pdf.

⁷⁸ [Vt. Stat. Ann. tit. 30, § 8061 \(2019\)](#).

⁷⁹ NTIA, *Vermont Telecommunications Authority*, <https://www2.ntia.doc.gov/grantee/vermont-telecommunications-authority> (last visited Oct. 18. 2019).

access dark fiber optic cable.⁸⁰ The DTC also issues Connectivity Initiative Grants funded by proceeds from the Vermont Universal Service Fund (VUSF), a statutorily created fund designed to ensure that every Vermont household has access to basic telecommunications service at an affordable price.⁸¹ The VUSF is funded by a universal service surcharge on all retail telecommunications service provided to a Vermont address, and the DTC has awarded nearly \$2 million in grant awards since 2015.⁸² Vermont has also received federal grants for the state’s broadband initiatives.

Despite these efforts, Vermont remains in the middle of the pack, ranking as the 25th most connected state.⁸³ In the face of geographic- and population-based challenges, the state has remained aggressive, updating its goals to target universal 100mpbs connectivity by 2024.⁸⁴ This target was considered to be “simply too expensive to contemplate for last mile broadband coverage” by industry leaders,⁸⁵ but creative state policy has opened the door to a growing number of community-owned broadband and fiber networks. Perhaps the most impressive of these networks is ECIFiber, a 24-town telecommunications district that is building fiber-to-the-premises connections to every unserved or underserved location in its territory.⁸⁶

⁸⁰ Vt. Pub. Serv. Dep’t, *Internet and Mobile Wireless*, <https://publicservice.vermont.gov/connectivity> (last visited Oct. 18, 2019).

⁸¹ Vt. Pub. Serv. Dep’t, *Vermont Universal Service Fund*, <https://publicservice.vermont.gov/telecom/vusf> (last visited Oct. 18, 2018).

⁸² Vt. Pub. Serv. Dep’t, *2018 Connectivity Initiative Request for Proposals*, <https://publicservice.vermont.gov/content/2018-connectivity-initiative-request-proposals> (last visited Oct. 18, 2018).

⁸³ BroadbandNow, *Internet Access in Vermont*, <https://broadbandnow.com/Vermont> (last visited Oct. 18, 2019)

⁸⁴ [Vt. Stat. Ann. tit. 30, § 202c \(2019\)](#).

⁸⁵ Niles, Hillary, *In Vermont, High-Speed Internet for All Gets More Likely*, U.S. News & World Report, March, 11, 2019, online at <https://www.usnews.com/news/best-states/articles/2019-03-11/vermont-high-speed-internet-could-become-reality-thanks-to-startups-and-new-policies>.

⁸⁶ [Id.](#)

Vermont has facilitated efforts by groups like ECIFiber by not enacting any laws that block or hinder public or municipal networks. In addition, the state passed a broadband expansion bill, [H.B. 531](#), in June 2019.⁸⁷ This bill resulted in a number of amendments to existing statutes that create a connectivity fund for high-cost broadband, establish \$10.8 in state funded grants and loans, and implement a “one-touch” policy around utility poles that make it easier for local providers to build out infrastructure.⁸⁸

B. Active States with Mixed Regulatory Priorities



Minnesota

Population: 5,576,000

Rural population with fixed 25/3 access: 83.70%

Minnesota is a powerful example of the demand for broadband driving creativity in the face of laws that both promote broadband deployment and serve as roadblocks.

Minnesota law currently allows municipalities to offer broadband services, but imposes regulatory barriers that delay the process. Specifically, a 1915 law allows a municipality to own or operate a “telephone exchange,” but requires that 65% of relevant voters support a referendum to do so if a competing exchange already exists in the area.⁸⁹ While this is seemingly unrelated to broadband, the realities of fiber infrastructure buildout generally require that networks offer telephone services to help subsidize the cost of the fiber/broadband connection.

⁸⁷ Hulvos, Emma, *Governor Signs Broadband Expansion Bill*, VPIRG, June 20, 2019, online at <https://www.vpirg.org/news/governor-signs-broadband-expansion-bill/>.

⁸⁸ [Vt. Stat. Ann. tit. 30, § 7516 \(2019\)](#)

⁸⁹ [Minn. Stat. § 237.19 \(2019\)](#)

In addition to the referendum requirement, Minnesota law also dictates that a municipality may only “improve, construct, extend, and maintain facilities for internet access . . . if . . . the facilities are necessary to make available internet access . . . services . . . that are not and will not be available through other providers or the private market in the reasonably foreseeable future.”⁹⁰ In the rural setting, this type of anti-competition statute creates a serious barrier to infrastructure deployment.

Recognizing, however, that municipal broadband networks are not a panacea to the deployment issue, it is important to highlight the ways in which Minnesota has demonstrated leadership in the fight against the digital divide. Minnesota has legislated state goals for universal high-speed internet access, stating that by 2022, all Minnesota businesses and homes should have access to 25/3 broadband connections. The statutory goals also dictate that by 2026, this universal coverage should improve to the point that every Minnesota home or business has access to at least one provider of broadband that offers 100/20 speeds.⁹¹

In order to reach these goals, the state created the [Office of Broadband Development](#) in 2013. This office houses the Governor’s Task Force, manages the state’s Border-to-Border Broadband Development Grant Program, and conducts annual coverage mapping.

The [Border-to-Border Broadband Development Grant Program](#) is noteworthy primarily in that it has raised the bar for broadband services being deployed. The program offers up to \$5 million in matching funding to bring service to areas of Minnesota that are unserved or underserved, and critically, defines an *underserved* area as “an area . . . in which households or

⁹⁰ [Minn. Stat. § 429.021 \(2019\)](#)

⁹¹ Minn. Office of Broadband Dev., *Minnesota Broadband Goals*, <https://mn.gov/deed/programs-services/broadband/> (last visited Oct. 18, 2018).

businesses lack access to wire-line broadband service at speeds of at least 100 megabits per second download and at least 20 megabits per second upload.”⁹² An *unserved* area is defined as an area that lacks access to 25/3. This framing is crucial, in that the state has identified the need to build beyond the FCC’s already outdated definition of “broadband.”

Overall, Minnesota has had a significant level of success in deploying broadband infrastructure. In its 2018 report, the Governor’s Task Force claimed the state to be a “national leader and model for broadband infrastructure development” and argue that the state’s model is seen as a benchmark for other states seeking to develop infrastructure. Statewide, the combination of annual mapping, targeted grant funding, continual planning, and statutory goals are paying dividends. The Broadband Task Force estimates that 95.59 percent of Minnesotans had access to fixed, non-mobile 25/3 broadband in March 2018, compared to only 69.64% in 2011.⁹³ Like many states, however, rural Minnesota lags behind. The state estimates that only 79.26% of rural Minnesota has access to 25/3 wireline broadband service as of April 2018, although that number has increased from 68.08% in 2015.⁹⁴

One additional Minnesota trend worth singling out is the relationship that has developed between Minnesota municipalities or counties and the state’s rural electric cooperatives. In situations where a county or municipality cannot offer a public network due to state statutory barriers, a number of counties have taken action by offering grants or loans to rural electric cooperatives in an effort to supplement federal dollars or Minnesota Border-to-Border grants.

⁹² [Minn. Stat. §116J.394\(h\) \(2019\)](#).

⁹³ Minn. Governor’s Task Force on Broadband, *Annual Report October 2018*, online at https://mn.gov/deed/assets/2018-bbtf-report_tcm1045-354312.pdf.

⁹⁴ [Id.](#)

County governments have financed this type of loan or bond via a number of means, including entering into true partnerships with cooperatives, establishing revolving broadband deployment funds, issuing various types of bonds, leveraging access to low-interest financing available only to local governments, or voter passed tax measures.⁹⁵



Michigan

Population: 9,962,000

Rural population with fixed 25/3 access: 73.10%

Michigan law allows public entities to provide telecommunications services,⁹⁶ but there are legal obstacles. A public entity may provide

telecommunication services only if:

- it has issued a request for competitive sealed bids to provide telecommunication services;
- fewer than three qualified bids have been received from private providers;
- more than 60 days have elapsed since the request for bids was issued; and
- it provides telecommunication services under the same terms and conditions as required under the request for bids.⁹⁷

Michigan started efforts to expand broadband access through private carriers in the state in 2001. LinkMichigan, an initiative of the Michigan Economic Development Corporation (MEDC), issued a report detailing deficiencies in the state’s communications infrastructure. Two of the main issues addressed by the report were dissatisfaction with broadband or bandwidth

⁹⁵ Kienbaum, Katie, *Minnesota Counties Fund Cooperative Broadband Projects for Economic Development*, Community Networks, December 20, 2018, <https://muninetworks.org/content/minnesota-counties-help-fund-cooperative-broadband-projects-economic-development>.

⁹⁶ “Telecommunications services” are defined as “services offered to customers for the transmission of 2-way interactive communication and associated usage.” The law further states that a telecommunication service “is not a public utility service.” [Mich. Comp. Laws § 484.2102 \(2019\)](#). A “public entity” is defined as “a county, city, village, township, or any agency or subdivision of the public entity.” *Ibid.*

⁹⁷ [Mich. Comp. Laws § 484.2252 \(2019\)](#).

availability, and the lack of backbone infrastructure adequate to carry fast-speed broadband traffic in many regions.⁹⁸

In March of 2002, the legislature created the Michigan Broadband Development Authority. The Authority was a failure, however, and by 2006, it had largely ceased to exist. By 2005, the Agency had lost \$14.5 million.⁹⁹

Recently, Michigan has resumed efforts to expand broadband coverage. In August 2018, Governor Rick Snyder announced a plan to expand broadband access to all residents of Michigan by 2022.¹⁰⁰ By Executive Order,¹⁰¹ the Governor established the Michigan Consortium of Advanced Networks (MCAN). The purpose of MCAN was to “create a roadmap for high-speed, secure, reliable, and affordable broadband service for the State of Michigan.”¹⁰² The Roadmap developed by MCAN included specific recommendations for increasing access to broadband in rural areas. The roadmap noted that providing broadband service in sparsely populated areas was unattractive to the private sector “due to significantly higher deployment costs, lengthier middlemile networks, or challenging terrain.”¹⁰³ MCAN recommended using partnerships “between entities of all types, public, private, and non-profit” to “address economic challenges

⁹⁸ State Science & Tech. Inst., *LinkMichigan to Address State’s Telecom Needs*, May 25, 2001, online at <https://ssti.org/blog/linkmichigan-address-states-telecom-needs>.

⁹⁹ Michigan Auditor General, *Financial Audit of the Michigan Broadband Development Authority, October 1, 2004 through September 30, 2005*, April 2006, online at https://audgen.michigan.gov/finalpdfs/05_06/r6481006.pdf. The Telecommunications Association of Michigan has compiled a detailed collection of news stories relating to the financial difficulties of the Broadband Development Authority, online at https://static1.squarespace.com/static/57504d0c45bf2183563d8f21/t/5a6b210471c10b340c566f66/1516970245046/MBDAmaterials+ 2_.pdf, accessed September 30, 2019.

¹⁰⁰ Freed, Benjamin, *Michigan Announces Statewide Broadband Internet Access Plan*, Statescoop, August 17, 2018, online at <https://statescoop.com/michigan-announces-statewide-broadband-internet-access-plan/>.

¹⁰¹ [Mich. Exec. Order 2018-2 \(Jan. 29, 2018\)](#).

¹⁰² MCAN, *Michigan Broadband Roadmap*, August 2018, online at https://www.michigan.gov/documents/snyder/MCAN_final_report_629873_7.pdf.

¹⁰³ *Id.*

by sharing capital costs and enhancing revenue potential.” To facilitate the creation of successful partnerships for broadband expansion MCAN recommended that the state take several different actions:

- provide tools to communities to help aggregate demand for broadband service among residents, businesses, and community anchor institutions;
- develop templates and model language for partnerships to facilitate the repeatable, predictable, and expeditious implementation of innovative partnership models for broadband expansion;
- provide tools and models to communities to conduct inventories that aim to identify both public and private assets that could be leveraged to decrease capital costs for deployment as part of a partnership or municipal network deployment; and
- develop recommendations to mitigate tax policies that may discourage broadband partnerships (e.g. personal property taxes, etc.).¹⁰⁴

Governor Snyder’s successor, Governor Gretchen Whitmer, is continuing the expansion efforts. In July 2019, the Governor announced that the state would be awarding \$20 million in grants to internet service providers who are willing to expand access to unserved parts of Michigan. Priority is to be given to those applications that demonstrate “collaboration to achieve community investment and economic development goals in the areas impacted.”¹⁰⁵

Michigan is another state that has joined in [Microsoft’s Airband Initiative](#). Montmorency and Alpena counties have partnered with private ISPs under the Umbrella of the Airband Initiative to use an experimental license from the FCC to demonstrate that TV white spaces can be used to provide wi-fi access for rural students and state employees.¹⁰⁶

¹⁰⁴ [Id.](#)

¹⁰⁵ *Michigan Offering \$20M to Carriers to Expand Rural Broadband*, Detroit News, July 7, 2019, online at <https://www.detroitnews.com/story/news/local/michigan/2019/07/07/broadband-expand-michigan/39661403/>.

¹⁰⁶ *An Update on Connecting Rural America*, The 2018 Microsoft Airband Initiative, online at <https://news.microsoft.com/rural-broadband/>.



North Carolina

Population: 10,273,000

Rural population with fixed 25/3 access: 84.80%

North Carolina began looking at the issue of statewide broadband access in 2011, when the NC Broadband Division, now known as the [Broadband Infrastructure Office \(BroadbandIO\)](#), was established.¹⁰⁷ The Office “provides the opportunity to work across agencies and identify infrastructure development needs across North Carolina.”¹⁰⁸ In addition, the Office administers the Growing Rural Economies with Access to Technology (GREAT) grant program. GREAT grants are awarded to private providers of broadband services to facilitate the deployment of broadband service to unserved areas of North Carolina.¹⁰⁹ The program funds eligible projects in economically distressed Tier One counties. The GREAT program has made available \$10 million in grants, and eleven counties have signed contracts with companies to expand high-speed broadband.¹¹⁰ Governor Roy Cooper has proposed providing \$30 million to expand the program;¹¹¹ however, the funding has been delayed by budget controversies between the governor and the legislature.¹¹²

¹⁰⁷ National Conference of State Legislatures, *State Broadband Task Forces, Commissions or Authorities and Other Broadband Resources*, July 2019, online at <http://www.ncsl.org/research/telecommunications-and-information-technology/state-broadband-task-forces-commissions.aspx#N>.

¹⁰⁸ See <https://www.ncbroadband.gov/>.

¹⁰⁹ N.C. Broadband Infrastructure Office, *GREAT Grant Program*, <https://www.ncbroadband.gov/greatgrant/> (last visited Oct. 2, 2019).

¹¹⁰ Groves, Patrick, *Inside North Carolina’s Push to Close Rural Broadband Gaps*, Government Technology, August 6, 2019, online at <https://www.govtech.com/network/Inside-North-Carolinas-Push-to-Close-Rural-Broadband-Gaps.html>.

¹¹¹ N.C. Office of State Budget & Mgmt., *Governor Roy Cooper’s Recommended Budget 2019 – 21*, March 2019, online at https://files.nc.gov/ncosbm/documents/files/BudgetBook_web_2019_rev.pdf.

¹¹² Vaughan, Dawn Baumgartner, *‘Be Here and Vote or Not.’ North Carolina’s Budget Could Become Law with One More Vote*, News & Observer, October 1, 2019, online at <https://www.newsobserver.com/news/politics-government/article235666257.html>.

BroadbandIO has also developed the state’s broadband plan, Connecting North Carolina.¹¹³ The plan focuses on four specific issues:

- the K-12 “homework gap,” defined as the proportion of students without access to broadband and broadband-related devices outside of school;
- economic development, including support for broadband adoption by small business, and workforce training;
- telehealth, the online delivery of healthcare services, health information, and health education; and
- public safety, with a focus on the interoperability and reliability of communications systems.

The goal of the plan is for every resident of North Carolina to have affordable access to broadband service by 2021. The plan aims to accomplish this goal “by encouraging competition and empowering communities to act . . . [b]y updating laws and policies and designing policies to incentivize adoption in sectors the government heavily influences. . . .”¹¹⁴ Specific recommendations, which present attempts to “offer ways for state and local leaders to foster an ecosystem that supports the expansion of access and increased adoption at the community and state level,” include incentives for infrastructure investment, advocacy, and education regarding broadband.¹¹⁵

The North Carolina General Assembly has also helped to advance connectivity. Senate Bill 310, signed into law on May 30, 2019,¹¹⁶ allows electric co-ops in North Carolina to seek USDA funding for broadband projects. The new law, which was effective immediately upon approval,

¹¹³ North Carolina Broadband Infrastructure Office, *Connecting North Carolina – State Broadband Plan*, online at https://www.ncbroadband.gov/wp-content/uploads/2017/02/NC-Broadband-Plan_2017_Online_FINAL_PNGs3www.pdf (last visited Oct. 2, 2019).

¹¹⁴ *Id.*

¹¹⁵ *Id.*

¹¹⁶ [Ch. SL 2019-17](#).

also permits cooperatives to use existing infrastructure at lower costs, and specifies that easements that cooperatives already hold for electric infrastructure may also be used for broadband. Another bill that was considered, [H.B. 431](#), the FIBER NC Act, would have eliminated existing state restrictions on local government investments in broadband infrastructure with a system that would allow certain counties and municipalities to build out the infrastructure and then lease it to a private provider. While this bill had bipartisan support, it met with strong opposition from internet service providers, who claimed that the bill sets up an uneven playing field, and would harm broadband deployment throughout the state.¹¹⁷ The bill did not pass in the 2019 session.

South Carolina

Population: 5,024,000



Rural population with fixed 25/access: 77.30%

Unlike its neighbor to the immediate north, South Carolina has taken relatively little action on expanding broadband connectivity. The South Carolina Broadband Advisory Committee was created in 2009 to monitor the use of the state Rural Broadband Fund. The Committee has not been active for several years.¹¹⁸ Connect South Carolina, a project of the national non-profit Connected Nation,¹¹⁹ is also inactive.¹²⁰ State law,¹²¹ passed in 2012, limits and provides procedural requirements for the adoption of municipal

¹¹⁷ Ross, Kirk, *Broadband Expansion Bill Clears North Carolina House Panel*, The Charlotte Post, August 16, 2019, online at <http://www.thecharlottepost.com/news/2019/08/16/local-state/broadband-expansion-bill-clears-north-carolina-house-panel/>.

¹¹⁸ See, <https://www.connectsc.org/grant-details>.

¹¹⁹ Connected Nation “is a nonprofit, 501(c)3 [sic], working to develop and provide tools, resources, and methods to help to help local communities, states, and federal agencies create and implement solutions to their broadband (high-speed internet) and digital technology gaps.” Connected Nation FAQs, <https://connectednation.org/faq/>, accessed October 2, 2019.

¹²⁰ See, <https://www.connectsc.org/>.

¹²¹ [S.C. Code Ann. § 58-9-2600, et seq. \(2019\)](#).

broadband. The law also limits municipalities' ability to offer retail broadband services to residents. In 2019, legislation was introduced to facilitate the deployment of broadband to unserved areas of South Carolina. [House Bill 3780](#) would establish the Growing Rural Economies with Access to Technology fund. The bill would also allow collocation, installation, and operation of certain equipment by a broadband provider on any existing structures. House Bill 3780 passed the House on April 4, 2019. The bill may be taken up again in the Senate when the legislature reconvenes in 2020. As the bill reads now, the goal is to provide speeds of 25/3 by 2030.

Tennessee



Population: 6,716,000

Rural population with fixed 25/3 access: 77.0%

Tennessee most recently took a step towards broadband expansion in 2017, with the approval of the Tennessee Broadband Accessibility Act.¹²² The law authorizes the Commissioner of Economic and Community Development to establish and administer the broadband accessibility grant program. The program will provide financial assistance of \$45 million over three years, with \$30 million in grants available to broadband providers to encourage deployment to unserved homes and businesses, and \$15 million in tax credits to private ISPs based on the purchase of broadband equipment. The Act also permits the state's private, nonprofit electric cooperatives to provide broadband services. Funding is provided to local libraries to encourage broadband adoption and general digital literacy. The first grants to internet service providers were announced in January of 2018.¹²³

¹²² Tenn. Code Ann. § 4-3-708, *et seq.* (LexisNexis 2019).

¹²³ Tenn. Dep't Econ. & and Cmty. Dev., *Haslam, Rolfe Announce Nearly \$10 Million in Grants Through the Tennessee Broadband Accessibility Act*, <https://tnced.com/news/haslam-rolfe-announce-nearly-10-million-in-grants-through-the-tennessee-broadband-accessibility-act/#targetText=The%20Tennessee%20Broadband%20Accessibility%20Act,to%20unserved%20homes%20and%20businesses>, (last visited Oct. 2, 2019).

Tennessee is another state with legal limitations on municipalities interested in providing internet services. State law¹²⁴ allows a municipality that operates an electric plant to provide internet services through the board or supervisory body having responsibility for the municipality's electric plant. This limitation has not proven to be an insurmountable bar to municipal internet. Beginning in 2010, EPB, the electric company owned by the City of Chattanooga, began offering 1 Gbit/s high-speed internet that is 200 times faster than the average broadband speed in America. Chattanooga was the first city in the United States to offer such fast internet.¹²⁵ In 2015, EPB implemented the world's first community-wide 10-gig Internet service.¹²⁶ Chattanooga is now known as the city with the “best internet in the entire United States,” and that internet service has directly led to the creation of between 2,800 and 5,200 new jobs, earning Chattanooga around \$1 billion.¹²⁷

Tennessee communities not served by municipal electric plants may still offer internet services. A county or municipal government is authorized to participate in a telecommunications joint venture to provide broadband services to historically unserved areas within the jurisdiction of the municipality or county. A “historically unserved area” is one that does not have access to broadband internet services, has been an area developed for residential use for more than five years, and is outside the service area of a video or cable service local franchise holder or the franchise area of a holder of a state-issued certificate of franchise authority.¹²⁸ A unit of

¹²⁴ Tenn. Code Ann. § 7-52-601 (LexisNexis 2019).

¹²⁵ Lohr, Steve, *Fastest Net Service in U.S. Coming to Chattanooga*, New York Times, September 12, 2010, online at https://www.nytimes.com/2010/09/13/technology/13broadband.html?pagewanted=1&_r=1&src=busln.

¹²⁶ <https://epb.com/home-store/internet>.

¹²⁷ Fogden, Tom, *Why Chattanooga Has the Fastest Internet in the US*, Tech.co, August 21, 2018, online at <https://tech.co/news/chattanooga-fastest-internet-usa-2018-08>.

¹²⁸ Tenn. Code Ann. § 7-59-316 (LexisNexis 2019).

government seeking to establish a joint venture must apply to the Tennessee Public Service Commission for a finding that the area is historically unserved and that no private provider intends to serve that area.

Virginia



Population: 8,475,000

Rural population with fixed 25/3 access: 90.80%

In 2009, Virginia established the [Broadband Advisory Council](#). The purpose of the Council is to advise the Governor on “policy and funding priorities to expedite deployment and reduce the cost of broadband access in the Commonwealth.”¹²⁹ The Council’s authority includes encouraging public-private partnerships to increase the deployment and adoption of broadband services, and making an [annual report](#) to the Governor and the Joint Commission on Technology and Science on the progress towards universal.¹³⁰

To implement policies, in 2018, the Commonwealth enacted legislation that establishes the position of Commonwealth Broadband Chief Advisor.¹³¹ The Advisor is to serve as the single point of contact and integration for broadband issues, efforts, and initiatives and to increase the availability and affordability of broadband throughout all regions of Virginia.¹³² The Advisor has joined other Virginia agencies in [Commonwealth Connect](#), Virginia’s comprehensive effort to achieve universal broadband access through four main tracks:

- increased state grants to public/private partnerships to “make the math work” and build broadband to unserved communities;

¹²⁹ [Va. Code Ann. § 2.2-2699.3 \(2019\)](#).

¹³⁰ [Va. Code Ann. § 2.2-2699.4 \(2019\)](#).

¹³¹ [Va. Code Ann. § 2.2-205.2 \(2019\)](#).

¹³² *Id.*

- policy changes to accelerate universal broadband;
- better support and resources for local broadband planning; and
- convening broadband stakeholders in the Commonwealth Connect Coalition.¹³³

The Coalition is made up of over 100 businesses, non-profits, and trade and professional associations, including Virginia Realtors.¹³⁴

Commonwealth Connect issued its first report in 2019.¹³⁵ The report made several recommendations for legislative and non-legislative policy changes that focus on reducing the cost of private-sector broadband infrastructure. The report also called for significantly increasing financial support for the Virginia Telecommunications Initiative program and support for local governments in the creation of strategic local planning around a shared goal of functionally universal access.¹³⁶

Virginia allows municipalities to build broadband networks and to offer retail services, but the law imposes significant regulatory and administrative requirements.¹³⁷ A municipality that seeks to offer broadband service must show that broadband service is not readily and generally available from each of three or more nonaffiliated companies and is not functionally equivalent for consumers in one or more services offered by each of the three or more competitors.¹³⁸ A

¹³³ *What is Commonwealth Connect?*, <https://www.commonwealthconnect.virginia.gov/what-is-CC>, (last visited Oct. 9, 2019).

¹³⁴ *Commonwealth Connect Coalition*, <https://www.commonwealthconnect.virginia.gov/CCBC>, (last visited Oct. 9, 2019).

¹³⁵ Virginia Broadband Chief Advisor, Report on Commonwealth Connect: Governor Northam’s Plan to Connect Virginia, *online at* <https://www.commonwealthconnect.virginia.gov/sites/default/files/CIT%20Documents/Commonwealth%20Connect%20Report.pdf>

¹³⁶ *Id.*

¹³⁷ [Va. Code Ann. § 56-484.7:1 \(2019\)](#).

¹³⁸ [Va. Code Ann. § 56-484.7:2 \(2019\)](#).

municipality that provides broadband services must provide nondiscriminatory access to for-profit providers of communications services on a first-come, first-served basis to rights-of-way, poles, conduits or other permanent distribution facilities owned, leased or operated by the municipality unless the facilities have insufficient capacity for such access and additional capacity cannot reasonably be added to the facilities. Municipalities may not subsidize services or charge rates lower than private competitors, and a municipality may not use eminent domain to acquire the facilities or other property of any communications service provider of broadband services.¹³⁹

Areas that are unserved by broadband are given the option of creating a “special district” for broadband access. Such a special district would have the authority to contract with a nongovernmental broadband service provider who will construct, maintain, and own communications facilities and equipment required for the delivery of last-mile broadband services to unserved areas of the service district. An “unserved area” is defined as a designated area in which less than 10 percent of residential and commercial units are capable of receiving broadband service. “Broadband” is defined as internet access at speeds greater than 10 Mbps download speed and one Mbps upload speed.¹⁴⁰

Private providers in unserved areas are permitted to acquire access to state-owned communications towers in order to provide wireless broadband service.¹⁴¹ The new service may

¹³⁹ [Va. Code Ann. § 56-484.7:1 \(2019\)](#).

¹⁴⁰ [Va. Code Ann. § 15.2-2403 \(2019\)](#).

¹⁴¹ [Va. Code Ann. § 2.2-1150.2 \(2019\)](#). Note that the definition of “wireless broadband” in this section is “an Internet connection service capable of transmitting information at a rate that is not less than 256 kilobits per second in at least one direction using a wireless link between a fixed location and the Internet service provider’s facility.”

not interfere with current equipment, and the fee for access is not required to be commensurate with the fee for use of comparable space on similar towers.¹⁴²

While municipal governments face obstacles in offering broadband services, Virginia is testing the offering of broadband by electric utilities. Legislation enacted in 2019¹⁴³ requires the Corporation Commission to establish pilot programs under which Dominion Energy and Appalachian Power may submit a petition to provide or make available broadband capacity to nongovernmental internet service providers in unserved areas. The costs of Dominion Power and Appalachian Power's proposals are each capped at \$60 million annually. The costs of pilot program can be recovered by consumers via reduced rates.

Virginia has also joined in the [Microsoft Airband Initiative](#). In Charlotte and Halifax counties, several ISPs have partnered with Microsoft and state actors to take advantage of existing fiber connectivity at public schools to extend broadband connectivity using TV white spaces.¹⁴⁴



Montana

Population: 1,050,000

Rural population with fixed 25/3 access: 73.0%

Montana established the state's Broadband Technology Opportunity Program (BTOP) in 2010, with funding from the U.S. American Reinvestment and Recovery Act (ARRA). The BTOP operated from 2011 to 2013 in partnership with the state's public libraries. The objectives of BTOP did not include increasing broadband access for homes or businesses.

¹⁴² *Id.*

¹⁴³ [Va. Code Ann. § 56-585.1:9 \(2019\)](#) (effective July 1, 2019).

¹⁴⁴ *An Update on Connecting Rural America, The 2018 Microsoft Airband Initiative, online at https://blogs.microsoft.com/uploads/prod/sites/5/2018/12/MSFT-Airband_InteractivePDF_Final_12.3.18.pdf*

Instead, the Program used grants from the U.S. Department of Commerce and the Bill and Melinda Gates Foundation to provide funding for 42 public libraries across Montana to improve public computing centers.

Since the end of the BTOP, Montana has done little to expand broadband access. A bill¹⁴⁵ that would have provided a five-year property tax exemption for new fiber optic or coaxial cable installations was vetoed by Governor Steve Bullock. Governor Bullock said that the bill would create a tax break for corporations “to do things they’re already doing in Montana.” He also said that the “limited budget does not have room for additional tax breaks like these, that only benefit the largest companies.”¹⁴⁶

Montana law does not contain an absolute prohibition on government ownership of internet providers, but the circumstances in which public ownership would be allowed are carefully limited. It is the policy of the state to “recognize that private sector enterprises engaged in the delivery of internet access and related services should have an opportunity to provide those services without undue interference or competition from the state or its political subdivisions.”¹⁴⁷ State agencies and political subdivisions are “encouraged to publish [their] requirements for internet services and to use, to the maximum extent possible, private internet services providers to deliver internet services to the public.”¹⁴⁸

An agency or political subdivision may not be an internet services provider unless there is no private provider available within the jurisdiction served by the agency or political subdivision,

¹⁴⁵ [S.B. 239](#).

¹⁴⁶ MTN News, *Gov. Bullock Vetoes Bill Creating Tax Abatement for New High-Speed Broadband*, May 8, 2019, online at <https://www.kpax.com/news/montana-news/2019/05/08/gov-bullock-vetoes-bill-creating-tax-abatement-for-new-high-speed-broadband/>.

¹⁴⁷ [Mont. Code Ann. § 2-17-601 \(2019\)](#).

¹⁴⁸ [Mont. Code Ann. § 2-17-604 \(2019\)](#).

or the agency or political subdivision provided services prior to July 1, 2001.¹⁴⁹ An agency or political subdivision may also act as an internet services provider when providing advanced services that are not otherwise available from a private provider within the jurisdiction. If a private internet services provider elects to provide services in a jurisdiction with a publicly-owned provider, the private provider must inform the agency or the political subdivision in writing at least 30 days before offering internet services. Upon receiving the notice, the agency or political subdivision must notify its subscribers of the intent of the private internet services provider to begin providing internet services. The agency or subdivision may choose to discontinue providing internet services within 180 days of the notice.¹⁵⁰



Colorado

Population: 5,606,000

Rural population with fixed 25/3 access: 63.20%

Colorado established the state's Broadband Data and Development Program in 2010. The Program was funded by a grant from the National Telecommunications and Information Administration. The purpose of the Program was broadband mapping and planning.¹⁵¹ The Program provided approximately \$1.6 million over two years to allow the state to assess broadband deployment and availability.¹⁵²

In 2014, Colorado took another step forward on broadband connectivity. That year, the state passed legislation¹⁵³ creating the state Broadband Deployment Board. The Board provides

¹⁴⁹ [Mont. Code Ann. § 2-17-603 \(2019\)](#).

¹⁵⁰ *Id.*

¹⁵¹ Fiber Broadband Ass'n, *State Resources – Colorado*, <https://www.fiberbroadband.org/page/colorado-102> (last visited Oct. 8, 2019).

¹⁵² *Id.*

¹⁵³ Colo. Rev. Stat. § 40-15-509.5 (LexisNexis 2019). As a division of the Colorado Department of Regulatory Agencies, the Board is scheduled to be repealed in 2023, unless the General Assembly votes to continue or reestablish the Board.

grants through the Broadband Fund to deploy broadband service in unserved areas of the state. Since 2016, the Board has awarded \$19.6 million in grants to 29 projects. Grants are awarded for infrastructure deployment only, and not for on-going operating costs. Projects must be new projects rather than projects already in progress, and must be located either outside of municipal boundaries, or in a city with a population of fewer than 7,500 inhabitants.¹⁵⁴ Grants from the Fund can provide up to 75 percent of infrastructure project costs and may only be awarded to for-profit entities, or to nonprofit telephone cooperatives or a nonprofit rural electric associations that existed on May 10, 2014.¹⁵⁵ As a result of the Board's work, over 17,000 rural households across Colorado now have broadband internet access.¹⁵⁶

Municipal ownership of broadband services in Colorado is restricted. As a general rule, local governments may not provide broadband service, directly or indirectly (including through a joint venture, partnership, or sale and leaseback).¹⁵⁷ A local government may, however, provide services if the provision of services is approved by a majority of voters in an election on the subject.¹⁵⁸ The ballot at such an election must pose the question as a single subject and include a description of the nature of the proposed service, the role that the local government will have in provision of the service, and the intended subscribers of such service.¹⁵⁹

No election is required if:

¹⁵⁴ The Broadband Fund, *Who Qualifies for a Broadband Fund Grant?*, online at <https://www.colorado.gov/pacific/dora-broadband-fund/who-qualifies> (last visited Oct. 8, 2019).

¹⁵⁵ The Broadband Fund, *How the Fund Works*, online at <https://www.colorado.gov/pacific/dora-broadband-fund/how-fund-works> (last visited Oct 8, 2019).

¹⁵⁶ *Id.*

¹⁵⁷ Colo. Rev. Stat. Ann. § 29-27-103 (LexisNexis 2019).

¹⁵⁸ Colo. Rev. Stat. Ann. § 29-27-201 (LexisNexis 2019).

¹⁵⁹ *Id.*

- no private provider of broadband provides the service anywhere within the boundaries of the local government;
- the local government has submitted a written request to provide the service to any provider within the boundaries of the local government; and
- the provider has not agreed within 60 days of the receipt of the request to provide the service or, if the provider has agreed, it has not commenced providing the service within fourteen months of the receipt of the request.¹⁶⁰

Despite the state law discouraging the practice, municipally provided broadband is proving popular among Colorado voters. Over 120 municipalities and counties have opted out of state rules preventing municipal networks.¹⁶¹

In addition to local governments, five of Colorado's 22 rural electric co-ops have already gotten into the broadband business or are getting into it.¹⁶² The provision of services by cooperatives will be made easier by legislation passed in 2019 that allows electric utility providers to utilize existing easements for broadband deployment.¹⁶³ The owners of property subject to the easements must be given notice of this new use, but their approval is not required.¹⁶⁴

¹⁶⁰ Colo. Rev. Stat. Ann. § 29-27-202 (LexisNexis 2019).

¹⁶¹ Chuang, Tamara, *Centennial Just Became Colorado's Largest City to Launch an Alternative Broadband Service*, Colorado Sun, September 13, 2018, online at <https://coloradosun.com/2018/09/13/municipal-broadband-cities-colorado/>.

¹⁶² Chuang, Tamara, *As Colorado Nears 100% Broadband Access, Funds for Rural Support Shrink*, Colorado Sun, July 23, 2019, online at <https://coloradosun.com/2019/07/23/as-colorado-nears-100-broadband-access-funds-for-rural-support-shrink/>.

¹⁶³ Colo. Rev. Stat. Ann. § 40-15-602 (LexisNexis 2019) (effective August 2, 2019).

¹⁶⁴ *Id.*



Wisconsin

Population: 5,795

Rural population with fixed 25/3 access: 72.10%

Wisconsin law allows municipal governments to establish and operate networks, but there are some restrictions. A municipality may “enact an ordinance or adopt a resolution authorizing the local government to construct, own, or operate any facility for providing video service, telecommunications service, or broadband service” either directly or indirectly, only if:

- the municipality holds a public hearing on the proposed ordinance or resolution;
- notice of the hearing is given by newspaper publication; and
- no less than 30 days before the public hearing, the local government prepares and makes available for public inspection a report estimating the total costs of, and revenues derived from, constructing, owning, or operating the facility and including a cost-benefit analysis of the facility for a period of at least 3 years.¹⁶⁵

The hearing requirement does not apply if there is no other provider of broadband service in the area.¹⁶⁶ A municipality is also not required to hold a hearing if it establishes a broadband service facility that is not used to provide service directly to end users, but that is offered “on a nondiscriminatory basis” to those who provide service to end users. Such a facility may not compete with more than one provider of broadband services.¹⁶⁷

Wisconsin has been working on expanding access to broadband in rural areas for several years. A Broadband Expansion Grant program was created within the Public Service Commission

¹⁶⁵ [Wis. Stat. § 66.0422 \(2019\)](#).

¹⁶⁶ [Id.](#)

¹⁶⁷ [Id.](#)

in 2013. The program's stated goal is to "help meet the demand for improved broadband and encourage its development in Wisconsin's unserved and underserved areas."¹⁶⁸ "Unserved areas" are defined as those areas that are not served by fixed wired or wireless internet service that is provided at a speed that is at least 20% of the upload and download speeds for advanced telecommunications capability as defined by the F.C.C.¹⁶⁹ an "underserved area" is one that is served by "fewer than 2" broadband providers.¹⁷⁰ Grants may be awarded to organizations operated for profit or not for profit, telecommunications utilities, or public entities that have entered into a partnership with an eligible organization or telecommunications utility.¹⁷¹ Since its inception, the program has awarded over \$20 million in grants to a total of 138 projects.¹⁷²

In 2016, the state enacted the [Broadband Forward! Certification program](#).¹⁷³ The program certifies municipalities that enact ordinances that streamline the permitting process for broadband networks projects. A certified municipality must, among other things, respond to applications promptly, allow multiple submissions of applications, and provide a written justification for the denial of an application. The benefits of becoming a certified municipality are limited to using the certification as a promotional tool. There is no funding or other incentive in the Broadband Forward! law.

¹⁶⁸ Wis. Broadband Office, *Broadband Expansion Grants*, <https://psc.wi.gov/Pages/Programs/WBO.aspx>, (last visited Sept. 26, 2019).

¹⁶⁹ [Wis. Stat. § 196.504 \(2019\)](#).

¹⁷⁰ *Id.*

¹⁷¹ Wis. Broadband Office, *Broadband Expansion Grant Program Frequently Asked Questions*, <https://psc.wi.gov/Documents/broadband/Frequently%20Asked%20Questions%20regarding%20the%20Broadband%20Expansion%20Grant%20Program%20FY20.pdf>.

¹⁷² *Id.* A detailed listing of the grants can be found at <https://psc.wi.gov/Pages/Programs/BroadbandGrants.aspx>.

¹⁷³ [Wis. Stat. § 196.504 \(2019\)](#).

More recently, Wisconsin has put a new emphasis on broadband expansion. The state has set a goal of providing high-speed¹⁷⁴ internet access to all homes and businesses in the state by 2025. The Wisconsin Broadband Plan, released in 2019, builds on existing programs and relies on public-private partnerships. The amount of grants that will be awarded will be increased, with \$24 million to be awarded during the 2020 fiscal year.¹⁷⁵ Moreover, some of the additional requirements that make it difficult for municipalities to directly invest in broadband infrastructure have been reduced in communities where it does not make business sense for private companies to provide broadband service.¹⁷⁶



Arkansas

Population: 3,004,000

Rural population with fixed 25/3 access: 55.90%

Arkansas enacted a prohibition against municipal broadband in 2011, but that ban has been reversed.¹⁷⁷ Beginning in 2019, Arkansas allows units of local government to own and operate broadband networks. As in most states, there are restrictions on this authority, but the restrictions are comparatively minor. Services may be provided by a government entity that owns an electric utility or television signal distribution system after reasonable notice to the public and a public hearing. A government entity may apply for funding under a program for grants or loans to be used for the construction, acquisition, or leasing of

¹⁷⁴ Defined as 25 megabits per second download and 3 megabits per second upload. *Wisconsin Broadband Plan*, 2019, online at <https://psc.wi.gov/Documents/broadband/Wisconsin%20Broadband%20Plan%202019.pdf>.

¹⁷⁵ Wis. Pub. Serv. Comm'n, *Broadband Expansion Grants for Fiscal Year 2020*, <https://psc.wi.gov/Pages/Programs/BroadbandGrants.aspx> (last visited Sept, 26, 2019).

¹⁷⁶ *Wisconsin Broadband Plan*, 2019, online at <https://psc.wi.gov/Documents/broadband/Wisconsin%20Broadband%20Plan%202019.pdf>.

¹⁷⁷ Keppler, Nick, *Why Did Arkansas Change Its Mind on Municipal Broadband?*, CityLab, April 17, 2019, online at <https://www.citylab.com/life/2019/04/arkansas-internet-municipal-broadband-preemption-laws/587263/>.

facilities used to deploy broadband service in unserved areas, and if the funding is awarded, provide, directly or indirectly, broadband services to the public in the unserved areas.¹⁷⁸

Arkansas Governor Hutchinson has formulated a plan for expanding broadband access, and has referred to the new law on municipal ownership as affecting the “policy environment for broadband deployment going forward.” The Governor’s plan sets a goal of expanding access to high-speed broadband to all communities in the state with more than 500 people by 2022.¹⁷⁹ The plan does not call for new legislation, but instead focuses on developing strategies within existing legal and regulatory frameworks to address barriers to broadband expansion.¹⁸⁰ Implementing the plan will cost an estimated \$25 million.¹⁸¹

Efforts to expand and improve broadband capacity and availability in Arkansas are coordinated by the State Broadband Manager. The Manager serves as the single point of contact for the state’s broadband expansion efforts, and is also responsible for formulating the state’s broadband plan. The Manager is directed to file a report on his or her activities and operations every six months.¹⁸²



Nebraska

Population: 1,920,000

Rural population with fixed 25/3 access: 58.00%

Nebraska law provides a nearly absolute prohibition on public ownership of broadband service providers. The law prohibits an agency or political subdivision

¹⁷⁸ Ark. Code Ann. § 23-17-409 (LexisNexis 2019).

¹⁷⁹ *Arkansas State Broadband Plan*, May 15, 2019, https://governor.arkansas.gov/images/uploads/Arkansas_State_Broadband_Plan_Final_5.15_.19_.pdf.

¹⁸⁰ *Id.*

¹⁸¹ Jones, Mike & Sissom, Tom, *Arkansas Broadband Plan's Cost \$25M, Governor Says*, Arkansas Democrat Gazette, August 7, 2019, online at <https://www.arkansasonline.com/news/2019/aug/07/broadband-plan-s-cost-25m-governor-says/>.

¹⁸² Ark. Code Ann. § 25-4-125 (LexisNexis 2019).

that is not a public power supplier from providing “on a retail or wholesale basis any broadband services, Internet services, telecommunications services, or video services.”¹⁸³ A 2019 legislative bill, [L.B. 208](#), would have allowed agencies or political subdivisions to provide broadband services or internet services through public-private partnerships, but it did not pass out of committee. It will carry-over and may be considered in the 2020 legislative session.

The existing prohibition against public ownership is not an absolute one. Any agency or political subdivision may own, sell, or lease dark fiber.¹⁸⁴ “Dark fiber” is defined as “any unused fiber optic cable through which no light is transmitted or any installed fiber optic cable not carrying a signal.”¹⁸⁵ An agency or political subdivision which sells or leases its dark fiber is not regarded as providing telecommunications services.¹⁸⁶ A lease of dark fiber must provide that the agency or political subdivision is solely responsible for the maintenance of its dark fiber, with the lessee responsible for any such maintenance costs. The lease price must be approved by the Public Service Commission, and may not be less than the market rate for leasing fiber.¹⁸⁷

Nebraska has begun to undertake efforts to expand broadband coverage in rural areas of the state. In 2018, the legislature created the [Rural Broadband Task Force](#). The mission of the Task Force is to review issues relating to availability, adoption, and affordability of broadband services in rural areas. In particular, the Task Force will compare internet speeds and subscription rates in rural areas with neighboring states and the rest of the nation, review the feasibility of alternative technologies and providers, and examine alternatives for deployment of broadband

¹⁸³ [Neb. Rev. Stat. § 86-594 \(2019\)](#).

¹⁸⁴ [Neb. Rev. Stat. § 86-575 \(2019\)](#).

¹⁸⁵ [Neb. Rev. Stat. § 86-574 \(2019\)](#).

¹⁸⁶ [Neb. Rev. Stat. § 86-575 \(2019\)](#).

¹⁸⁷ [Neb. Rev. Stat. § 86-577 \(2019\)](#).

services to areas that remain unserved or underserved.¹⁸⁸ The Task Force has issued a draft of its first report.¹⁸⁹ The Report’s recommendations focus on broadband mapping, modernizing the Nebraska Universal Service Fund, public-private partnerships and broadband planning, and internet access for schools and public libraries.



Missouri

Population: 6,113,000

Rural population with fixed 25/3 access: 65.10%

Missouri law¹⁹⁰ contains an absolute prohibition on any political subdivision “provid[ing] or offer[ing] for sale, either to the public or to a telecommunications provider, a telecommunications service or telecommunications facility used to provide a telecommunications service for which a certificate of service authority is required . . .” Unlike the laws in other states, Missouri has no exceptions for unserved or underserved areas. The law was challenged in court by the Missouri Municipal League. The League’s challenge was based on the theory that the Federal Telecommunications Act provision that preempts state laws that prohibit any “entity” from providing telecommunications services¹⁹¹ preempted the Missouri law. The League’s challenge was ultimately unsuccessful, with the U.S. Supreme Court holding that the term “entity” in the federal law does not include state political subdivisions.¹⁹²

The Missouri prohibition appears to be entrenched firmly in the law. A bill introduced in 2017¹⁹³ would have modified the prohibition by allowing a local unit of government to offer

¹⁸⁸ [Neb. Rev. Stat. § 86-1102 \(2019\).](#)

¹⁸⁹ Rural Broadband Task Force, *Findings and Recommendations – Draft*, September 24, 2019, online at <https://ruralbroadband.nebraska.gov/reports/2019/RBTF2019draftreport.pdf>.

¹⁹⁰ [Mo. Rev. Stat. § 392.410\(7\) \(2019\).](#)

¹⁹¹ [47 U.S.C. § 253 \(2019\).](#)

¹⁹² [Nixon v. Missouri Municipal League, 541 U.S. 125 \(2004\).](#)

¹⁹³ [2017 S.B. 186](#)

broadband service if the local government made a request for a communications service of a specific speed, and all existing communication service providers within the local government boundaries were unable to provide such service. That bill would also have allowed a local government to use financial resources to provide a communications service that competed with a private operation if that use of such resources was approved by voters. The bill received a favorable recommendation from the Senate Local Government and Elections Committee, but died on adjournment of the Legislature.

Although local governments in Missouri may not offer broadband services, rural electric co-operatives have the authority to provide that service. Rural electric cooperatives and their affiliates, are encouraged “to continue to enter into and establish voluntary contracts or other forms of joint or cooperative agreements for the use of rural electric cooperative infrastructure in providing access to broadband services.”¹⁹⁴ The law does not contain any specific provisions, beyond the encouragement.

Missouri is taking additional steps towards improving broadband access. The Missouri Broadband Development Office, a division of the state’s Department of Economic Development, has set itself the goal of achieving “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.”¹⁹⁵ The plan developed by the Office includes five objectives towards reaching that goal:

- increasing broadband data collection and utilization;
- accelerating broadband infrastructure and access;

¹⁹⁴ [Mo. Rev. Stat. § 394.085 \(2019\)](#).

¹⁹⁵ Mo. Broadband Dev. Office, *Missouri’s Broadband Plan*, May 2019, online at [https://ded.mo.gov/sites/default/files/Missouri%20Broadband%20Plan%20\(2\).pdf](https://ded.mo.gov/sites/default/files/Missouri%20Broadband%20Plan%20(2).pdf).

- leveraging partnerships with communities to accelerate broadband efforts;
- increasing broadband adoption and awareness; and
- promoting efficiencies and opportunities in broadband development.¹⁹⁶

The Broadband Development Office also administers a grant program for rural broadband authorized by a law passed in 2018.¹⁹⁷ That law authorizes grants to fund the acquisition and installation of retail broadband internet service. Grants may be awarded to for-profit business entities, non-profit organizations, political subdivisions, and rural electric cooperatives. The state budget approved in June of 2019 included \$5 million to be used for such grants.¹⁹⁸

¹⁹⁶ *Id.*

¹⁹⁷ [2018 H.B. 1872](#).

¹⁹⁸ Nelson, Alisa, *Missouri Enters a New Budget Year*, MissouriNet, July 1, 2019, online at <https://www.missourinet.com/2019/07/01/missouri-enters-a-new-budget-year/>.

V. CONCLUSION

REALTORS® are in an excellent position to advocate for rural broadband expansion to the communities in which they live and work. Examples of successful strategies to deploy broadband to rural areas abound across the country. The federal government has made universal broadband availability a top priority and is backing up that priority with robust funding efforts and a relatively open regulatory landscape. States and private entities, using both state and federal dollars, are carrying out deployment efforts. Non-profits such as rural cooperatives are then filling in the gaps where private entities cannot or will not provide coverage, or where that coverage is unaffordable.

In order to advocate for their own communities, and state at large, REALTORS® should work to ensure state legislatures leave all possible expansion tools in play and that local governmental entities take advantage of those tools. Municipalities and rural communities must be free to use the best available and most affordable means to attain broadband connectivity. Reaching every rural American will take ingenuity, creativity, and flexibility, with solutions tailored to each community.

APPENDIX A – GLOSSARY OF BROADBAND TERMINOLOGY

Backhaul/The “Middle Mile”

- A dedicated line that transmits a signal to and from an internet backbone, which is typically located in or near an urban area.
- Can be a hindrance for rural access, as middle mile may need to traverse long distances or difficult terrain.

Broadband

- A high-capacity transmission technique using a wide range of frequencies, which enables a large number of messages to be communicated simultaneously.
- Connection with 25 megabits download speed and 3 megabit upload speed. Fixed and mobile broadband are defined differently.

Collocation

- The mounting or installation of an antenna on an existing tower, building, or structure for the purpose of transmitting and/or receiving radio frequency signals for communications purposes, whether or not there is an existing antenna on the structure.

Dark Fiber

- Unused optical fiber that has been laid but is not in current use. Generally caused by intentionally overestimating infrastructure and cabling required for a network to future proof the network. Creates extra bandwidth.
- Commonly used to discuss the procedure or leasing out fiber optic cables from network providers and operators. A client can lease dark fiber to create privately operated networks rather than leasing bandwidth.

Digital Divide

- Term used to characterize a gap between those Americans who use or have access to telecommunications and information technologies and those who do not. One important subset concerns high-speed internet access and advanced telecommunications services, aka, broadband.

Fiber to the Home (FTTH) Networks

- Recent developments have allowed for connecting the fiber directly to the user. Previously, the connection to the user used copper phone lines or coaxial cable lines, creating a bottleneck. See “the Last Mile.”

“Last Mile” Service

- The physical connection of an internet network to the user.

Next Generation & Current Generation Technology

- *Current Generation*: Typically refers to initially deployed cable, DSL, and many wireless systems.
- *Next Generation*: Refers to dramatically faster download and upload speeds offered by fiber technologies and by successive generations of cable, DSL and wireless technologies.

Open Access

- Publicly owned fiber networks. Municipalities/other entities build the physical infrastructure, then allow access to multiple Internet Service Providers (ISPs), creating competition and fostering innovation.

Rural Community

- Any incorporated or unincorporated place with fewer than 20,000 inhabitants, and which is outside any standard metropolitan statistical area.

Rural Electric Cooperatives

- Non-profit, member-owned cooperatives created in the 1930s. Able to borrow money from the federal government in order to bring electricity to rural America.
- Rural Cooperatives later expanded into telecommunications.
- Currently viewed as a potential foundation for bringing high-speed internet to rural America.

Universal Service Concept

- Upon its creation in 1934, the FCC was mandated to make available, so far as possible, a rapid, efficient, nation-wide, and world-wide wire and radio communications service with adequate facilities at reasonable charges. This mandate was later expanded to telecommunications services as well.
- Universal Service Mandate expanded to broadband by 2009 American Recovery and Reinvestment Act (ARRA).

APPENDIX B – 50-STATE SNAPSHOT

Alabama

- Ala. Code § 11-50B-1.
 - Allows municipal governments to provide broadband services to residents, but imposes restrictions and conditions making such action difficult.
 - Municipalities cannot use local funds or taxes.
 - Any municipal system must be self-sustaining.
- May 2019 – Governor Ivey signs [Rural Broadband Initiative](#) amending 2018 law.
 - Expands [grant](#) program promoting the deployment and adoption of broadband services.
 - \$30 million initiative.
 - Allows broadband carriers to work directly with electricity providers to use their easements and infrastructure.
 - Provides some consumer protections. Providers cannot require electricity customers to purchase broadband as a condition of service.
 - [Ala. Code § 37-16-1 to -10.](#)
 - Allows electric utility companies to leverage existing electric easements to deploy broadband infrastructure.

Alaska

- [Alaska Broadband Task Force.](#)
 - Established in 2011 to partner with the Department of Commerce, Community and Economic Development.
 - Goal: Provide every citizen with 100mbps connectivity by 2020.
 - Supported by [Connect Alaska](#).
 - Faces unique issues due to low population and rugged terrain. The “Middle Mile” is the main concern.

Arizona

- Arizona State [Broadband Strategic Plan](#) issued in February 2018.
- Does not currently have any law prohibiting municipal networks.

Arkansas

- Arkansas Code §§ 23-17-403, 409.
 - Amended effective July 1, 2019. The law now allows municipal broadband networks. Previously, Arkansas law had banned any municipal networks.
 - Limitations and bureaucratic burdens still exist.
- No statutory limitation to rural cooperatives providing broadband services.

California

- [California Broadband Council](#).
 - Created in 2010 ([Cal. Gov't Code §8885](#)) to “to promote broadband deployment in unserved and underserved areas of the state as defined by the Public Utilities Commission, and broadband adoption throughout the state.”
 - Created three task forces in 2018 to support long-term objectives:
 - Long Term Goals: “created to leverage the knowledge and expertise of key stakeholders to review and assess the 7 key objectives established by the original California Broadband Taskforce in 2008. This assessment will guide the California Broadband Council’s focus and recommendations to establish the right structure for providing world class high speed Internet access throughout the state of California.”
 - Surplus Equipment: “created to leverage established programs that will yield immediate success within the state’s underprivileged communities.”
 - Tribal Task Force: “create a baseline of information regarding broadband access, providers and technical expertise for all 109 tribes ensuring continued focus on tribal areas.”
- Limited regulatory roadblocks for municipal networks.
- [California Broadband Cooperative](#) exists as a middle-mile provider of broadband service.
 - Last-mile provider to government, educational, medical and service providers.

Colorado

- [Colorado Broadband Deployment Board](#).
 - Formed in 2014, *see* Colo. Rev. Stat. § 40-15-509.5.
 - Provides grants through the Broadband Fund to deploy broadband service in [unserved areas](#) of the state. The Board has awarded \$19,600,000 to select applicants since 2016. Future grant cycles will be announced as funding becomes available.
 - The Board seeks public comment on applications before reviewing and selecting which projects to fund. Grants from the Fund can provide up to 75 percent of

infrastructure project costs and may only be awarded to for-profit entities, with a few exceptions. The Board awards money from the Broadband Fund according to statutory requirements and Board policy.

- Colo. Rev. Stat. Ann. § 29-27-201.
 - Requires referendums before any locality may provide broadband services.
 - If there are no private ISPs, no referendum is required.
 - Nearly 100 municipalities have opted out of state rules preventing municipal networks.
- Colo. Rev. Stat. Ann. § 40-15-602.
 - Allows electric utility providers to utilize existing easements for broadband deployment.

Connecticut

- In 2018, the [Connecticut Public Utility Regulatory Authority](#) issued a ruling that Conn. Gen. Stat. § 16-233 (providing municipal entities one free “gain” on utility poles or in underground duct systems) does not extend to municipal activities that compete with telecommunications services.

Delaware

- [Delaware Broadband Data & Development](#) – Initiated in 2010 by the Department of Technology and Information. Provides NTIA with data sets including broadband providers and community anchor institutions.
- Also created an interactive map for citizen use to identify broadband coverage based on citizen-entered parameters.

Florida

- Broadband Florida Initiative.
 - Formed in 2009 ([Fla. Stat. § 364.0135](#) – authorizes Florida Department of Management Services to apply for grants and lead broadband planning and development efforts. Funded by federal grants.
 - Florida Broadband Mapping Project – Supported broadband development objectives identified in Fla. Stat. § 364.0135.
- Current Law.
 - Multiple state statutes (Fla. Stat, §§ 125.421, 166.047, 196.012, 199.183, 212.08, 350.81) impose significant taxes on municipal broadband networks, which are not imposed on other public utilities or services sold to the public.

Georgia

- 2018 Act 43 (Ga. Code § 50-40-1) – Achieving Connectivity Everywhere Act (ACE) created the [Georgia Broadband Deployment Initiative](#).
- [Georgia Broadband Plan](#): Designed to “facilitate deployment of essential broadband services,” specifically in currently unserved areas.
- Current Law.
 - Ga. Code Ann. § 46-5-61.
 - Allows cooperative nonprofit corporations that furnish telephone service to also furnish broadband services directly or indirectly.
 - Ga. Code Ann. § 36-66C-2.
 - Streamlines deployment of 5G technology infrastructure on publicly owned land.
 - Ga. Code Ann. § 46-3-171.
 - Allows electric membership corporations to provide broadband services.

Hawaii

- [Hawaii Broadband Assistance Advisory Council](#) – Created to “advise the director of the Department of Commerce and Consumer Affairs on policy and funding priorities to promote and encourage use of telework alternatives . . . and to expedite deployment of affordable and accessible broadband services in Hawaii.”

Idaho

- [2019 Executive Order 7](#) — Established the [Idaho Broadband Task Force](#).
 - The Task Force is charged with developing recommendations on ways the state can assist in furthering Idaho’s connectivity and speeds. The group focuses its efforts on mapping Idaho’s existing services and identifying gaps in Idaho’s broadband infrastructure.
 - The Idaho Broadband Task Force is comprised of government officials, internet providers, satellite providers, cellular providers, industry representatives, universities and representatives from Idaho’s tribes, counties and cities.
- Current Law.
 - No laws in place blocking municipal networks (many such networks are in place).

Illinois

- 2018 Public Act 100-833 (Ill. Rev. Stat. Ch. 220, § 80/1) – Created the Broadband Advisory Council.
- [Illinois Broadband Deployment Council](#).
 - Established by Executive Order No. 9 in 2005.
 - Assists in policy formation and serves as an information clearinghouse on broadband funding and projects in the state.
 - Powers and duties include:
 - Exploring all ways to expand broadband availability to end-user customers;
 - Exploring ways to encourage state and municipal expansion of broadband services;
 - Identifying service barriers to residents and small businesses;
 - Researching ways to eliminate adoption barriers; and
 - Monitoring other states broadband programs.
- Current Law.
 - No laws in place blocking municipal networks.

Indiana

- Indiana [Broadband Mapping](#) Program created in 2009 by the state Office of Technology using NTIA grants.
 - Multi-year, multi-agency effort to map underserved areas.
 - Results will be integrated with the Indiana Broadband Map and a national map.
- Current Law.
 - Ind. Code §§ 4-4-38, -38.5.
 - Establishes a rural broadband fund for the purpose of awarding grants to broadband service providers.
 - Funds cannot be awarded to projects already receiving federal funds.
 - Ind. Code § 8-23-5.
 - Allows Indiana DOT to create a broadband corridor program to manage the installation and maintenance of communications infrastructure for broadband services.
 - Ind. Code § 32-30-16.
 - Facilitating Internet Broadband Rural Expansion (FIBRE) Act – Allows electric cooperatives with easements for electric lines to use those same easements for fiber infrastructure.

Iowa

- [Iowa Communications and Technology Commission](#) – Established by statute (Iowa Code § 8D.1). Acts as the sole authority to supervise the management, development, and operation of the Iowa Communications Network.
- [Iowa Communications Network \(ICN\)](#) – Distance learning and state government broadband carrier network. Provides broadband solutions for the education, government and healthcare sectors of Iowa.
- Current Law.
 - Iowa Code § 338.10.
 - Does not bar municipal or public networks, but provides restrictions such as:
 - preventing the use of general fund money to support or subsidize the network; and
 - using city facilities or equipment to provide services at the cost to that facility or service.
 - Requires other administrative action not required of private companies.
 - Requires 51% referendum response to authorize all new public utilities.
 - Iowa Code § 8B.11– Empower Rural Iowa Act takes effect July 1 2019.
 - \$1.3 million infrastructure investment.
 - Passed in response to Governor’s Task Force recommendations.
 - Provides broadband access grants.
 - May leverage federal funds and public private partnerships where possible.
 - Authorizes grants to ISPs that reduce or eliminate unserved areas.

Kansas

- 2018 Chapter 65 – Established [Statewide Broadband Expansion Planning Taskforce \(Kan. Stat. Ann. § 66-1286\)](#). Housed in the Office of Broadband Development in the State Department of Commerce.
- No laws specifically prohibiting municipal networks.

Kentucky

- [ConnectKentucky](#): Alliance of businesses, government entities, and universities working together to accelerate tech development, and to support state broadband infrastructure expansion, tech planning, and public policy.

Louisiana

- Current Law.
 - [La. Rev. Stat. Ann. § 45.844.50](#)
 - Requires a referendum prior to a local government being authorized to provide broadband services.
 - Additional bureaucratic and financial hurdles are imposed should a referendum pass.

Maine

- [ConnectME Authority](#) (Me. Rev. Stat. Ann. tit. 35-A, § 9201).
 - Formed to identify underserved areas in the state and develop proposals for expansion projects and other initiatives.
 - Funded by a .25 percent surcharge on in-state retail communications services, as well as grants, direct investments, and loans.
 - Released the [State of Maine Broadband Action Plan](#).
 - Has provided approximately \$12 million in grants to 144 projects.
 - Has leveraged \$7 million in federal high-speed internet grants in the past 6 years.
 - Developed 2019-21 [Detailed Strategic Action Plan](#):
 - Excerpt: “The Statewide Action Plan is a community driven process. There are a number of business model options for the communities to leverage. Regional Utilities are being established in a few areas in the state while municipally owned is less common. Additionally, Public/Private partnerships is an option to optimize the private sector investment while driving the expansion needed to grow the Maine economy.”
 - Multiple [municipal networks](#) are in place or are in some stage of development.

Maryland

- Md. Code Ann., Econ. Dev. § 13-501 – Established [Maryland Rural Broadband Coordination Board](#).
- Current Law.
 - Md. Code Ann., Corps. & Ass’ns, § 5-607.
 - Authorizes electric cooperatives to construct, maintain or operate telecommunications and broadband internet services along, on, under, or across property for which they have electric easements.
- No statutes specifically barring municipal networks. Some cooperatives are currently [active](#).

Massachusetts

- [Mass. Gen. Laws ch. 40J, § 6B](#) – Established the [Massachusetts Broadband Institute](#). (MBI) Grants authority to invest \$40 million in state funds in necessary infrastructure assets. Also acts as the state entity for mapping and availability, leading to the Massachusetts Broadband Map.
- Ongoing Initiatives.
 - [Last Mile Program](#) for Unserved Towns – Designed to support 44 unserved Western Massachusetts communities with residential broadband access projects.
 - Flexible framework allows for a range of project models, including multi-town collaborations, locally owned networks, and industry partnerships.
 - [Broadband Extension Program](#) for Partially Served Towns – Partnership with eligible municipalities and interested providers aimed at developing strategies to extend high speed access for residents/businesses in communities with existing cable structures.
 - Commonwealth has appropriated state bond funding to MBI to extend broadband service in these communities.
 - Eligibility: Communities with lower than 96% cable penetration rates.
 - [Middle Mile Program](#) – MBI created an open-access, middle-mile fiber-optic network in early 2014. Extends to more than 120 western/central Massachusetts communities, and will be used as a building block to design and build last-mile connections.
- Municipal networks are [prevalent](#), and the state regularly provides funding to support these networks.

Michigan

- [Michigan Collaborative Broadband Committee](#).
 - Statewide taskforce formed under the Connect Michigan partnership to provide strategic planning & leadership. Includes members from education, broadband service providers, non-profits, tourism, business, agriculture, government, and other organizations that have a stake in improving Michigan's broadband availability and meaningful adoption.
- Current Legislation.
 - [Mich. Com. Laws Ann. § 484.2252](#).
 - Creates bureaucratic barriers to public broadband projects by requiring that any public entity meet the following requirements before providing telecommunication services:
 - Public entity must issue a request for competitive bids from private telecommunication service providers;

- Public entity must receive less than three qualified bids;
- Request for bids must remain open at least 60 days;
- Any public services must be provided under the same terms and conditions as the request for bids.

Minnesota

- [Governor’s Task Force on Broadband.](#)
 - March 29, 2019 – Executive Order 19-10 continued the existence of the Governor’s Task Force on Broadband. Per the executive order: “A multi-stakeholder body should continue to advise the executive and legislative branches on broadband policy, including strategies for successfully achieving the state broadband goals, comprehensive assessment of digital inclusion issues and gaps, and strategies for unlocking the benefits of universal access to broadband for all communities in Minnesota.”
 - Charged with creating an annual report to address the needs, barriers, issues and goals for broadband access.
- [Minnesota Office of Broadband Development.](#)
 - Established by Minn. Stat. § 116. Designed to encourage, foster, develop and improve broadband within the state. Initiatives include:
 - The Border-to-Border Broadband Infrastructure Grant Program funds, through legislative appropriation, the expansion of broadband service to areas of Minnesota that are unserved or underserved. The focus of this grant program is to provide state resources that help make the financial case for new and existing providers to invest in building broadband infrastructure. More information on the grant program can be found under the [Broadband Grant Program page](#).
 - Broadband Mapping.
 - Governor’s Task Force on Broadband.
- Current Law.
 - [Minn. Stat. Ann. § 429.021.](#)
 - Allows municipalities to offer broadband services provided 65% of voters support the measure in a referendum.
 - Municipalities may only construct, extend, improve and maintain facilities if the proposed network and service will not compete with existing services, or if such services are not and will not be available.

Mississippi

- January 30, 2019 –Governor Bryant signs the “[Mississippi Broadband Enabling Act](#)” into law.
 - Allows the state’s 25 rural electric cooperatives to offer broadband to their customers. Can also allow separate ISPs to use their systems to provide service.
 - [Developed 2019 State Broadband Plan](#).

Missouri

- Current Law.
 - [Mo. Rev. Stat. § 392.410\(7\)](#)
 - Bars municipalities from selling or leasing broadband services to residents.
 - 2019 Budget included \$5 million allotted to the Rural Broadband Development Fund.

Montana

- Current Law.
 - [Mont. Code Ann. § 2-17-603](#).
 - Prohibits municipalities from competing with private ISPs unless following exceptions are met:
 - no ISP is available within the jurisdiction of the public entity; or
 - the public entity’s network is grandfathered in.
 - Governor Bullock vetoed a 2019 bill that would have eliminated property taxes for five years for any ISP that expanded infrastructure in the state.

Nebraska

- [Neb. Rev. Stat. § 86-1101](#)– Creates the [Rural Broadband Task Force](#) to review issues relating to availability, adoption, and affordability of broadband in the state.
- Currently gathering information on:
 - Broadband mapping;
 - Availability/adoption data;
 - Available technologies;
 - What other states are doing;
 - Public-private partnerships; and
 - Middle-mile costs.
- Past Efforts.

- Nebraska Broadband Initiative.
 - Funded through NTIA grant under ARRA.
 - Major focus is the Nebraska State Broadband Map.
- Current Law.
 - [Neb. Rev. Stat. § 86-575.](#)
 - Allows agencies or political subdivisions to own, sell, or lease dark fiber.
 - [Neb. Rev. Stat. § 86-594.](#)
 - Prohibits political subdivisions or agencies from providing retail or wholesale broadband, internet, video or telecommunication services.

Nevada

- [Nevada Broadband Taskforce.](#)
 - Created in 2009 by executive order.
 - Mission is to identify and remove barriers to broadband access and identify opportunities for increased broadband applications and adoption in unserved and underserved areas.
 - Expired in 2015.
- Current Law.
 - [Nev. Rev. Stat. §§ 268.086](#) and [710.147.](#)
 - Prohibit municipalities and counties from providing telecommunications services if the municipality has a population of 25,000 or more, or
 - if the county has a population of 50,000 or more.
 - Smaller [municipalities and cooperatives](#) are building out public networks across the state.

New Hampshire

- [New Hampshire Broadband Mapping and Planning Program.](#)
 - Funded by NTIA ARRA grants, the NHBMPP seeks to understand how broadband can be made more widely available in the future.

New Jersey

- New Jersey Broadband Mapping Program.
 - Established using NTIA ARRA funds. State Office of Information Technology works with facilities-based providers of broadband services and local governments to collect information that was made available via the New Jersey Broadband Map.

New Mexico

- New Mexico Broadband Executive Committee.
 - Statewide collaborative committee formed under the Department of Information Technology's [New Mexico Broadband Program](#).
 - Incorporated all efforts into the New Mexico Broadband Strategic Master Plan.

New York

- [NY Broadband Program](#) - \$500 million program providing state grant funding to support projects that deliver high-speed internet access to unserved and underserved areas of state.
 - Secured a \$1 billion public/private investment to provide access to more than 2.4 million statewide.
 - Connected over 2 million locations at no state cost.
- No laws in place barring municipal networks.
- NY Broadband Program funds are available to cooperatives.

North Carolina

- Executive Order 19-91 – Established the [Broadband Task Force](#).
 - Includes \$35 million for efforts to expand internet service.
 - Allocates \$30 million to encourage private providers to bring broadband service to underserved areas.
 - \$5 million in grants to provide mobile hotspots for students.
 - Establishes a “dig once” policy. DOT will install broadband cable or conduit during all road construction projects.
- NC Broadband Division created by the Department of Commerce in 2011. Now called the [Broadband Infrastructure Office](#). Dedicated to encouraging the adoption and use of broadband internet.
 - Also created the [State Broadband Plan](#).
- Recent Law.
 - [North Carolina Session Law 2019-17](#).
 - Bipartisan bill signed into law in May of 2019.
 - Allows the state’s electric co-ops to seek USDA funding for broadband projects.
 - Allows cooperatives to use existing infrastructure at lower costs.
 - Specifies that easements that cooperatives already hold for electric service may be used for broadband.

- [N.C. Gen. Stat. ch. 160A, art. 16A](#) (effective 2011).
 - Created moderate bureaucratic barriers for public networks.

North Dakota

- [North Dakota Broadband Mapping Program](#).
 - Established using a \$1.3 million grant. Serves as a state broadband program office to oversee the data collection for the North Dakota Broadband Map.

Ohio

- No laws prohibiting public networks. Municipal networks are [taking root](#) in the state.
- Cooperatives are [actively providing](#) broadband service.

Oklahoma

- [Oklahoma Broadband Initiative](#) established using grant funding in 2010.
 - Phase 1: Oklahoma Broadband Mapping Project – created the Oklahoma Broadband Map.
 - Phase 2: Oklahoma Broadband Technology Opportunities Program grant application to build the [Oklahoma Community Anchor Network](#), a 1,005 mile middle-mile infrastructure that will connect 32 anchor institutions in underserved or unserved areas.

Oregon

- [Oregon Broadband Advisory Council](#).
 - Mission is to encourage coordination and collaboration between organizations and economic sectors to leverage the development and utilization of broadband for education, workforce development, and telehealth.
- [Oregon Broadband Office](#).
 - The Oregon Broadband Office was established in December 2018, by Governor Brown's Executive Order, to promote access to broadband services for all Oregonians in order to improve the economy and quality of life. The office will:
 - support and coordinate efforts with the Oregon Broadband Advisory Council;
 - develop and maintain a broadband map as a platform for data collection to track the availability of broadband services and measure progress as well as other related information and provide public access to the data;
 - develop broadband investment and deployment strategies; manage and award funds allocated to the office for broadband projects; and

- advocate for public policies that remove barriers, promote and coordinate solutions, support and promote broadband planning.
- [Rural Broadband Capacity Pilot Program](#).
 - \$500,000 funding provided for pilot program grants targeting rural and underserved populations.
- Current Laws.
 - [Or. Rev. Stat. §§ 276A.406, .412](#).
 - Allows for public broadband, with bureaucratic hurdles.
 - Community networks are [expanding](#) throughout the state.

Pennsylvania

- [Pennsylvania Broadband Initiative](#).
 - Launched in 2018, Initiative is a dedicated effort to provide high-speed internet access to every household.
 - Governor’s Office of Broadband Initiative:
 - Manages the Governor’s initiative to provide high-speed internet access to all Pennsylvanians.
 - Serves as the Governor’s public advocate for broadband access and utilization.
 - Recommends broadband programs and policies for Pennsylvania.
 - Serves as the point of contact for state broadband issues.
 - Encourages and advocates for policies that improve Pennsylvania’s broadband infrastructure.
 - Broadband Investment Incentive Program:
 - Made available \$35 million in financial assistance to private providers bidding on service areas within Pennsylvania in the Federal Communications Commission (FCC) upcoming Connect America Fund II (CAF-II) Auction.
 - Any provider participating in Pennsylvania’s incentive program was required to exceed the FCC’s requirements and to meet the Governor’s goal of providing 100 Mbps or more service by June 30, 2022.
- Current Law.
 - 66 Pa. Cons. Stat. § 3014.
 - Prohibits municipalities from providing broadband service to residents for a fee, unless no such services are provided by the private sector and no private entity is willing to provide the services within 14 months of being requested to do so.

Rhode Island

- [ConnectRI Initiative](#).

South Carolina

- Current Law.
 - [S.C. Code Ann. § 58-9-2600](#).
 - Limits and/or provides procedural requirements on municipal broadband.
 - Limits municipality's ability to offer retail broadband services to residents.
- Pending Law.
 - [H 3780](#) – Creates funding for rural broadband projects.
 - Passed house overwhelmingly.
 - Scheduled to be taken up by the Senate when lawmakers return in January 2020.
 - Creates collocation regulations.
 - Weak effort. Seeks 25/3 speeds by 2030. Already outdated.

South Dakota

- South Dakota Broadband Advisory Team.
 - Composed of leaders in education, medical, and technology fields, the team assists the state government in coordinating projects.

Tennessee

- Current Law.
 - Tenn. Code. Ann. § 7-52-601.
 - Authorizes municipalities to offer cable/internet services but imposes restrictions and roadblocks.
 - Tenn. Code. Ann. § 7-59-316.
 - Authorizes public/private joint ventures, but only in “historically underserved areas.” Other restrictions apply.
 - [Tenn. Code. Ann. § 4-3-708](#) – [Tennessee Broadband Accessibility Act](#).
 - Effective 2017. Authorizes the Commissioner of Economic and Community Development to establish and administer the broadband accessibility grant program.
 - Provides \$45 million over three years.

- \$30 million made available to broadband providers to encourage deployment to unserved homes and businesses.
- \$15 million in tax credits to private ISPs based on the purchase of broadband equipment.
- TBAA permits the state’s private, nonprofit electric cooperatives to provide broadband services.
 - Also strengthens some limitations on electric cooperatives in order to “ensure that cooperative participation . . . will not limit consumer’s choices.”
- Provides funding to local libraries to encourage adoption/digital literacy.

Texas

- [2019 H.B. 1960](#) created the Governor’s Broadband Development Council.
- Current Law.
 - Tex. Util. Code § 54.201 Prohibits municipalities from offering specific types of telecommunication services to the public directly or through a private telecom company.
 - 2016: Texas city won a lawsuit allowing the city to offer broadband, because broadband was not included under the state’s definition of telecommunication service.
 - [S.B. 14](#): Added § 181.048 to the Utilities Code to allow electric cooperatives that hold easements obtained for electric service infrastructure to extend these easements to broadband infrastructure. Effective June 2019.

Utah

- [Utah Broadband Advisory Council](#) was formed in June 2011 to examine the condition of broadband adoption and deployment in the state.
 - Tasked to coordinate and collaborate on broadband adoption and deployment efforts in Utah. The Council also strives to provide the Governor and Legislature with recommendations and policy guidance. Members of the Council represent a diverse group of interests including legislators, economic development, state and local government, healthcare, education, libraries, public safety and tribal entities.
- Current Law.
 - Utah Code Ann. §§ 11-14-103(4); 10-18-201.
 - Allows municipalities to offer retail broadband but imposes rigorous regulatory/administrative requirements.
 - Wholesale municipal networks are exempt from many of these requirements.

Vermont

- [Division for Telecommunications and Connectivity within the Vermont Department of Public Service](#) (Vt. Stat. Ann. tit. 30, § 201).
 - Mission is to promote and expand access to high-speed internet to underserved areas in Vermont.
 - Awards broadband development grants and manages leases on roughly 350 miles of state-owned open access fiber optic cable.
- [Telecommunications and Connectivity Advisory Board](#) – Charged with making recommendations to the Commissioner of Public Service regarding his or her telecommunications responsibilities and duties.
- Connectivity Initiative.
 - Funded by proceeds from the Vermont Universal Service Fund (USF). Awards grants to ISPs that agree to extend service to designated areas least likely to be served through the private sector or federal programs.
 - USF: created in 1994 for the purpose of creating a financial structure that will allow every state household to obtain basic telecommunications services.
 - Funded by a surcharge on all retail telecommunications service provided to a Vermont address.
 - Towns are encouraged to work with ISPs to identify projects that meet public and private needs.
- Current Law.
 - No law in place to block public/municipal networks.
 - Passed [Act 79](#) in June of 2019. Resulted in the following:
 - Created connectivity fund for high-cost broadband program.
 - Created \$10.8 million in state-funded grants and loans.
 - Aims to support community-led broadband expansion efforts.
 - Implemented a “one-touch” policy around utility poles that makes it easier for local providers to build out infrastructure.

Virginia

- [Virginia Office of Telework Promotion and Broadband Assistance](#).
 - Provides resources for citizens and local leaders, including [planning](#) assistance to bring broadband to underserved communities.
- [Virginia Broadband Advisory Council](#).
 - Established to help identify the Commonwealth’s goals for broadband and how to achieve them.

- Current Law.
 - Va. Code Ann. §§ 56-265.3:4; 56-484.7:1; 15.2-2108.6.
 - Allows municipalities to build networks and offer retail services.
 - Imposes significant regulatory/administrative requirements.
 - Bars municipalities from subsidizing services or charging rates lower than private competitors.
 - Va. Code Ann. § 2.2-1150.2.
 - Requires that state entities owning infrastructure lease or convey a collocation right to ISPs. Collocation rates limited by the FCC.
 - Va. Code Ann. § 56-585.1:9 (Effective 7/1/19).
 - Requires the State Corporation Commission to establish pilot programs under which Dominion Energy and Appalachian Power may submit a petition to provide or make available broadband capacity to nongovernmental internet service providers in areas of the Commonwealth that are unserved by broadband. The costs of Dominion Power and Appalachian Power's proposals are each capped at \$60 million annually.
 - Costs of pilot program can be recovered by consumers via reduced rates.
 - Limited analysis of program available.

Washington

- [2019 Chapter 365](#) creates [Governor's Statewide Broadband Office](#).
- [State Department of Commerce, Community Economic Redevelopment Board](#) provides low-interest loan/grant packages to local governments and federally recognized tribes to finance the cost of building high-speed, open-access infrastructure to rural communities.
- Current Law.
 - Wash. Rev. Code § 54.16.330.
 - Bars public utilities from providing broadband services directly to customers.
 - Public utilities are allowed only to sell or lease infrastructure on a wholesale basis only.
 - H.B. 2664 – Signed into law March 22, 2018.
 - Relaxes requirements allowing state entities to enter into public-private partnerships with private telecom companies.
 - Restricts partnerships to one telecom provider.

West Virginia

- W. Va. Code § 31G-1-1 creates the [West Virginia Broadband Enhancement Deployment Council](#).
 - Manages USDA ReConnect Pilot Program in the state.
 - Made \$4.2 million in grant funding available for broadband development in rural West Virginia.
 - Recently announced Community Development Block Grants available to fund projects throughout the state.

Wisconsin

- [Wisconsin Broadband Office](#), housed within the Public Service Commission.
 - Rolled out [2019 Wisconsin Broadband Plan](#).
- Current Law.
 - [2019 Wis. Act 14](#).
 - Provides a regulatory framework for ISPs to bring 5G into Wisconsin.
 - [Wis. Stat. Ann. § 66.0422](#).
 - Allows municipalities to own and operate networks, but these networks may not be paid for by the general population; they must be paid for by subscribers of the service.
 - Many other bureaucratic restrictions are in place.
- LinkWisconsin
 - Statewide initiative to promote the availability and sustainable adoption of broadband access.
 - Funded by 2009 ARRA grant issued by NTIA.

Wyoming

- Act 36 of 2018 ([Wyo. Stat. § 9-12-1501](#)) provided \$10 million to establish a broadband infrastructure grant and \$350,000 to establish a broadband coordinator position and a [Broadband Advisory Council](#).
 - Council, in partnership with other government entities, will develop and adopt a broadband funding program.
 - Also developed a [Broadband Enhancement Plan](#).