



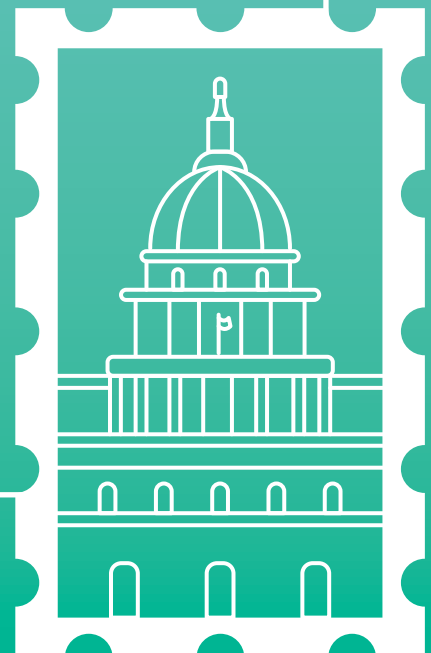
BROADBAND MAPPING ACROSS THE US: LOCAL, STATE, AND FEDERAL METHODS & CONTRADICTIONS

#SHOWMEYOURMAPS

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ABOUT NEXT CENTURY CITIES

Next Century Cities (“NCC”) is a nonprofit, non-partisan organization that advocates for fast, affordable, and reliable broadband Internet access across the U.S. We work alongside local officials in communities of all sizes and political stripes to eliminate the digital divide.

Communities that have widespread broadband access and adoption are better equipped to help reduce poverty, increase educational opportunities, improve public health, support aging in place, and boost civic engagement. Ensuring that every resident has access to digital opportunities starts with being able to measure the scope of the problem, which depends on accurate broadband data.

As NCC has documented in filings and publications, the Federal Communications Commission’s (“FCC” or “Commission”) maps have long told a different story of broadband access than what residents across the country actually experience. It is widely known that the FCC’s broadband availability data understates the seriousness of, and lacks granularity to adequately address, persistent gaps in connectivity.

IMPROVING FEDERAL BROADBAND DATA

The FCC’s data perpetually overstates broadband availability and could be improved in a variety of ways. For example, collecting information on latency and pricing, as well as adopting more nuanced methods to determine service availability and validate data submitted by providers, would improve the accuracy and efficacy of its broadband maps. Additionally, improving federal data would support state and local mapping initiatives, which largely rely on the Commission’s data as a baseline. While some states rely on providers to collect broadband availability data, too many lack the resources or legal authority to do so themselves.

Remarkably, FCC data provides a critical touchstone and uniform point of comparison, even among states that engage in their own data collection initiatives. It is critical that there is a process in place for local and state officials, as well as residents, to challenge and correct the agency’s conclusions on where broadband is or is not available.

Consulting with local governments, state officials, and Tribal leaders who have had to develop their own broadband data collection methods is also an integral part of the data collection process. At minimum, the FCC must decrease reliance on incomplete [Form 477](#) data which has caused limited universal service funds, and kept other federal resources, out of reach for too many communities in need. It has also become increasingly important to collect information on broadband adoption.

Our #ShowMeYourMaps campaign is intended to highlight who is and is not connected. This report includes a snapshot of federal broadband data in each state or territory, background on state data collection initiatives, and local insights that help illustrate why persistent data inaccuracies put unserved and underserved populations at a disadvantage and keeps them locked out of funding opportunities. While NCC has filed comments with the FCC in order to document community-level perspectives on ways to improve its data collection, it is clear that states and communities have had to take on the weight of this work on their own.

THE FCC'S CURRENT METHODOLOGY

The Commission relies primarily upon Form 477 deployment data to evaluate a consumer's options for broadband services. Twice a year, facilities-based broadband providers are required to identify where Internet service is offered at speeds exceeding 200 Kbps in at least one direction.

Internet service that meets or exceeds the FCC's 25 (downstream) and 3 (upstream) Mbps benchmark is classified as broadband ("25/3 Mbps"). The FCC reports that a census block is served if one location has the ability to be served. The FCC's analysis does not account for the fact that advertised speeds often differ from the speeds delivered to a household or that some locations have prohibitively high installations costs.

The FCC's broadband availability data included in this report was published on [January 19, 2021](#). Surprisingly, a few states — including but not limited to Delaware, New Jersey, Washington, and West Virginia — had decreases in connectivity from previous deployment reports. Community leaders nationwide see a need to correct the FCC's conclusions on broadband availability as it often vastly differs from local accounts.

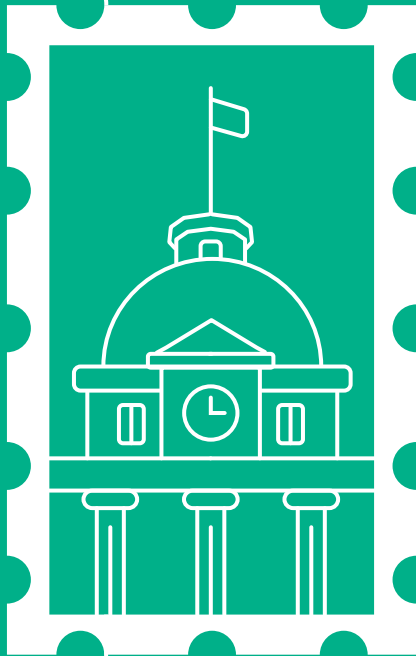
STATE AND LOCAL APPROACHES TO BROADBAND MAPPING

Many states that had their own maps used the FCC's data as a baseline, making the accuracy, verifiability, and robustness of federal data all the more crucial to state mapping efforts. [Utah](#) and [South Carolina](#), however, are both examples of states that collect data directly from providers rather than relying on information from Form 477. While other states, like [Wisconsin](#) for instance, use a combination of state and Form 477 data.

States also differed in terms of mapping technology and presentation software. Most rely on Geographic Information Systems ("GIS") mapping with some states partnering with organizations like [Connected Nation](#) or utilizing Esri's [ArcGIS software](#). In addition to partnerships made to produce the maps themselves, several states employed partnerships with organizations — such as [SpeedUp America](#) and [BroadbandNow](#) — to develop speed tests to verify data and offer an additional layer on their maps showing the actual speeds residents experience.

Data collection, speed testing, and mapping technology all require financial resources and technical expertise. Whether mapping broadband through partnerships with a private technology company, a nonprofit organization, or the state information technology department, state and local governments need both funding and legal authority to effectively develop maps. Local governments often lack adequate resources to pursue these types of exploratory data collection projects. This means that it is critical that the state legislatures make funding available for broadband mapping.

The U.S. Congress also plays a pivotal role in appropriating funds. Following the passage of the American Recovery and Reinvestment Act, funding distributed through the National Telecommunications and Information Administration became the starting point for many states to compile their first broadband maps. In 2020, [CARES Act](#) funding supported state broadband initiatives.



Approximately 55% Alabama of households do not have affordable or reliable broadband access. [State Senator Clay Scofield](#) described this issue as “the infrastructure challenge of our day.”

ALABAMA

POPULATION: 4.93 MILLION
COUNTIES: 67

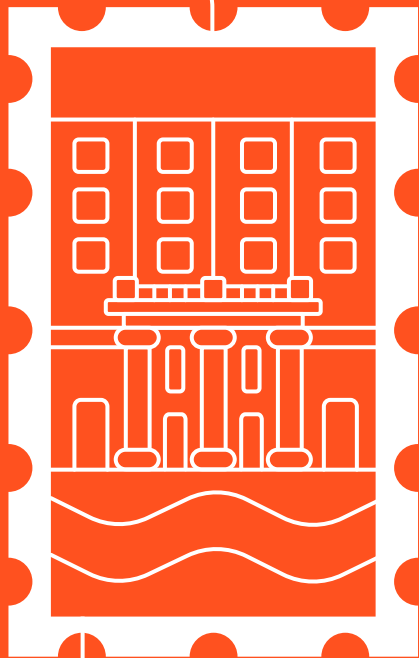
The FCC evaluated 4.9 million people in Alabama and found that 87.6% (4.3 million) of the population have access to a fixed connection at minimum broadband speeds. In rural Alabama, it evaluated two million people and found that 1.4 million (73%) had fixed broadband access. In urban areas, the agency concluded that 97.8% of 2.8 million residents had access to a fixed connection at minimum speeds.

The [State of Alabama's broadband map](#) uses FCC availability and allows users to review data in layers that highlight unserved and served areas overlaid with approved projects. Alabama also offers a [speed survey](#) for users to collect more granular information about broadband speeds. In terms of private mapping efforts, [geoISP](#) has also collected broadband availability data. The information is collected from a number of public and private sources which shows availability by provider and allows users to look at broadband availability in specific towns in Alabama.

It is also worth noting that Microsoft's November 2019 data show that around 3.3 million people in Alabama, over 65% of the population, did not use the Internet at broadband speeds.

Additional Resources:

- [Lawmakers: Broadband access most important issue facing Alabama](#)
- [Alabama Considers Potential Avenues of Broadband Expansion](#)
- [How States Use Broadband Surveys to Fight for Better Funding](#)
- [Students And Employees Go Online, Highlighting Need For Broadband Access](#)
- [Next Century Cities Case Study: Huntsville, Alabama](#)



Alaska has a lower population density than any other state at one person per square mile.

ALASKA

POPULATION: 724,357
9 ORGANIZED BOROUGHES AND 1 UNORGANIZED BOROUGH

Alaska is a sparsely populated state that has relatively low broadband access. The FCC evaluated 731,000 people and found that 623,000 (85.2%) had access to a fixed connection at minimum broadband speeds of 25/3 Mbps. In rural Alaska, the FCC evaluated 262,000 people and found that only 167,000 (63.7%) of them had access to fixed broadband service at minimum speeds. The Commission also found that, of the 469,000 people evaluated in urban areas, 456,000 (97.2%) of them had fixed broadband access.

Alaska's mapping [website page](#) includes links for borough maps, statewide maps, and an [interactive map](#). [Connect Alaska](#) works in partnership with the Alaska Department of Commerce and offers state input on broadband availability in Alaska. The map displays coverage through technology provided by Esri's ArcGIS. [Connect Alaska invites broadband providers](#) to voluntarily input coverage information into the software. The map is based on data collected for NTIA's National Broadband Availability Map initiative, [a partnership in which NTIA and over 22 states](#) collaborate to improve broadband mapping. Additionally, the state invites residents to submit recommendations and questions via email to maps@connectak.org in an ongoing effort to improve the map's accuracy.

Neither the FCC, nor Connect Alaska, collects address level broadband coverage information for the entire state. This means that some residents who remain disconnected are not accounted for on either map. Microsoft's data shows that approximately 459,000 Alaskans, well over half the state's population, do not use the Internet at broadband speeds.

Additional Resources:

- [In remote Alaska, broadband for all remains a dream. So a school district got creative](#)
- [Lawmakers Want Broadband Holes Fixed Fast Amid Pandemic](#)
- ["Broadband Internet in Alaska"](#)



Desert, mountains, and sparsely populated areas pose unique challenges to broadband deployment in Southwest regions of the state.

The FCC found that 94.8% of 7.2 million residents statewide had access to a fixed broadband connection at minimum 25/3 Mbps speeds. In rural Arizona, the agency evaluated 922,000 people and found that just 613,000 (66.5%) of them had access to a fixed broadband at minimum speeds. To the contrary, in urban areas, it found that 6.2 million of 6.3 million people surveyed (98.9%) had fixed broadband access.

In Next Century Cities member municipality, Coconino County, the Commission evaluated approximately 92,000 residents. Of these, the Commission found that 79.5% of the population had access to a fixed connection at minimum broadband speeds.

Microsoft estimates that around [3.2 million](#) Arizona residents, almost half of its population, did not use the Internet at broadband speeds. Private entities are helping to improve broadband mapping in Arizona. According to BroadbandNow, [73.8% of the state](#) is connected with terrestrial broadband coverage, but only 8.7% of the state offered access to a wired plan priced below \$60 per month.

As Senator Kyrsten Sinema has stated:

“High-speed Internet allows rural and tribal communities throughout Arizona increased access to health care, education and jobs. Simplifying the broadband application process helps Arizonans apply for critical broadband resources, ensuring all Arizona communities have the connectivity they need.”

Senator Sinema has worked to expand rural broadband access by introducing the [ACCESS Rural America Act](#) which is intended to increase the accuracy of the Commission’s broadband maps by refining the process by which data is collected.

Broadband access is an economic development and public safety issue, according to Ben Blink, the transportation and technology innovation policy advisor to Arizona’s Governor, Doug Ducey. He has highlighted unique broadband expansion challenges in Southwest regions of the state, areas with large expanses of desert, mountains and a lot of areas with sparse populations.

According to [school superintendents](#), *“equitable access to technology (both devices and technology) is already a major challenge.”* The COVID-19 pandemic further *“shed light on a major disparity that has long existed in Arizona.”*

Arizona Mirror captured stories from Navajo reservation residents:

Chenoa’s family has satellite Internet at home, but it’s too slow to download big files or stream videos simultaneously. “Sometimes our Internet will go down,” her father said, “and they’re stuck without going to school for a day or so.” So they spend about 20 hours a week parked by the school bus for a better connection.

[The Arizona Farm Bureau](#) reflects concerns expressed by farmers and ranchers nationwide. They depend on broadband, just as they do highways



and railways to ship food and fiber across the country. Residents in rural areas continue to struggle with poor broadband connectivity and lack of technological advancement. When describing the impact that COVID-19 has had on connectivity in rural areas, Yuma County Farm Bureau President David Sharp [stated](#):

We knew that our connection to the broadband, Internet as well as our cell service, was a bit challenging, but we got along well enough until COVID-19. When our country began the lock-down we needed to rely on our broadband and cell service even more. But with the added demands on these services by all that use them it became even slower, and more difficult.

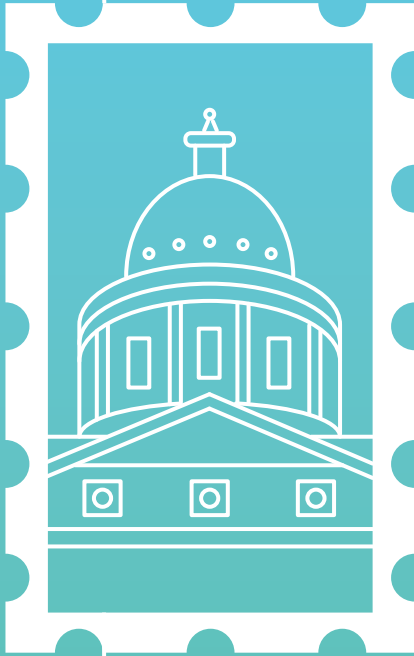
The State of Arizona provides a [basic community planning map](#) that does not require GIS skills to navigate. It is granular enough for users to conduct spatial searches based on zip code.

Additional Resources:

- [New WiFi map, free tech support to help Arizona students access Internet](#)
- [New interactive map helps Arizonans access the Internet statewide](#)
- [New law to increase Internet access for rural and tribal communities](#)
- [How schools ensure students' tech, Wi-Fi access to support online learning](#)
- [Next Century Cities Case Study: Mesa, Arizona](#)

ARKANSAS

POPULATION: 3.03 MILLION
COUNTIES: 75



Microsoft estimated that around 2.2 million people in Arkansas, over two thirds of the state's population, do not experience the Internet at minimum broadband speeds.

In Arkansas, the FCC evaluated three million residents statewide. Regarding fixed connections at minimum speeds of 25/3 Mbps, it found that 2.4 million people (81%) had baseline access. Those in rural Arkansas had fewer options. The Commission found that 850,000 of 1.3 million residents (63.3%) had fixed broadband access. In urban areas, it evaluated 1.7 million people and found that 1.6 million (95.2%) had access to a fixed connection at minimum speeds.

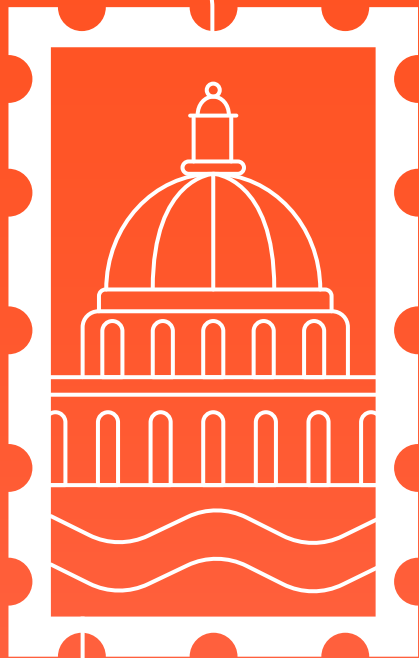
The [State of Arkansas' broadband map](#), housed within the state broadband office's website, uses Form 477 data from June 2019 and data submitted to the state directly by providers. AR Rural Connect's map shows areas where state funding is targeted. Additionally, Arkansas invites residents to [complete a speed test](#) in order to improve the accuracy of broadband data mapping.

In December 2020, the Arkansas Legislative Council [approved funding](#) for broadband studies in Sherwood, Tull, and Ward, as well as Little River County, Perry County, the Eagle Ridge Property Owners Association in Pulaski County, and Kick Start Sheridan in Sheridan/Grant County.

BroadbandNow estimates that in [Arkansas](#), 54.3% of the state has terrestrial broadband coverage and 52.7% of residents have access to a wired plan that costs \$60 a month or under. Based on Microsoft's estimates, around 2.2 million people in Arkansas (over two-thirds of the state's population) do not use the Internet at broadband speeds.

Additional Resources:

- [Arkansas Broadband Office](#)
- [University of Arkansas](#)
- [Arkansas State Broadband Manager's Report](#)
- [Coronavirus pandemic exposes Arkansas as worst in country when it comes to Internet connectivity](#)



With more than \$3 trillion in economic output, California has the largest state economy in the U.S.

CALIFORNIA

POPULATION: 39.98 MILLION
58 COUNTIES AND 1 CONSOLIDATED CITY-COUNTY GOVERNMENT

The FCC evaluated 39.5 million people in California. Overall, the FCC found that 38.9 million people (98.5%) had access to a fixed broadband connection at minimum 25/3 Mbps speeds. In rural California, the agency also evaluated 2.4 million people and found that 2 million people (84.2%) have fixed broadband access.

In Riverside County, an NCC member municipality, the Commission evaluated approximately 2.5 million people. The FCC found that 96.1% of those evaluated had access to a fixed connection at minimum speeds. Almost 400 miles away in Santa Cruz County, also a NCC member municipality, the Commission evaluated approximately 276,000 people and found that 100% had fixed broadband access. Another 200 miles north in NCC member Sonoma County, the Commission evaluated approximately 504,000 people and found that 95.6% of people had fixed broadband access. Finally, another 120 miles north in NCC member Mendocino County, the FCC concluded that 75.3% of 88,000 residents surveyed had access to a fixed connection at minimum speeds.

Congresswoman Anna Eshoo has [supported](#) the inclusion of anchor institutions on any new federal broadband maps. Similarly, Senator Klobuchar has been a [major proponent](#) of increasing both granularity and accuracy of new federal broadband maps.

The State of California Public Utility Code Sec 281 [provides \\$645 million for the California Public Utilities Commission \(CPUC\)](#) to provide

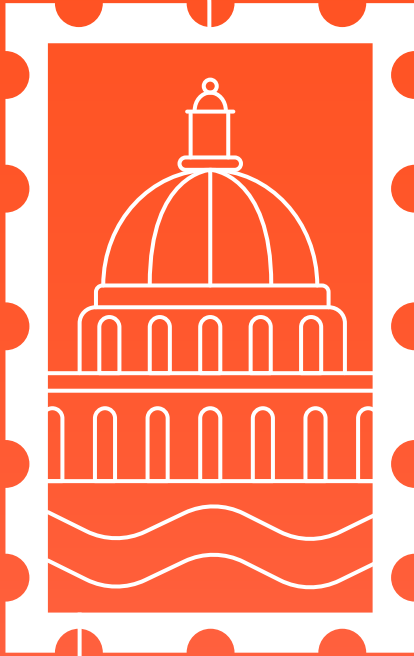
funding to 98% of residents in each county, a goal it admits it has not met. As of July 2020, the CPUC estimates that [383,609 Californians](#) statewide still lack access to the Internet with speeds of at least 6/1 Mbps. That number jumps to 490,413 residents with access to the Internet faster than the FCC's minimum 25/3 Mbps speeds, and to 673,730 for 100 Mbps download speeds with any upload speeds. In 2017, CPUC staff released a [whitepaper identifying high impact areas for broadband availability](#).

California offers a robust [interactive broadband map](#). Notably, the map includes layers for broadband adoption, which include the percentage of households with broadband subscriptions compared to the level of broadband deployment as well as income and poverty statistics for comparison. The map also incorporates public speed test results, community anchor institutions, and political boundaries. Providers can use the map to locate areas that are eligible for state broadband funding and residents can search for providers available at specific addresses. Residents who note discrepancies can provide feedback through [speed tests and surveys](#).

According to Governor Gavin Newsom's August 2020 [Executive Order N-73-20](#) on expanding broadband access, "over 2,000,000 Californians do not have access to high-speed broadband service at benchmark speeds of 100 megabits per second download, including 50 percent of rural housing units." It also states that, in 2018, 8.4 million residents in California housing units did not have

CALIFORNIA

POPULATION: 39.98 MILLION
58 COUNTIES AND 1 CONSOLIDATED CITY-COUNTY GOVERNMENT



broadband subscriptions. Despite the increasing importance of broadband for employment, health, public safety information and community connections, 34% of California's senior populations, including adults 60 and over, do not currently use the Internet.

The California Emerging Technology Fund (CETF) is a nonprofit foundation that studies Internet infrastructure expansion and connectivity in the state. In March 2021, CETF released a report summarizing the results of its 2021 Statewide Broadband Adoption Survey written in partnership with the University of Southern California. For the first time since beginning the survey in 2008, CETF found that over 90% of California households have Internet access through either a home computer or smartphone and 85% use the Internet through either a desktop, laptop, or tablet. Unfortunately, 9.6% remain entirely disconnected.

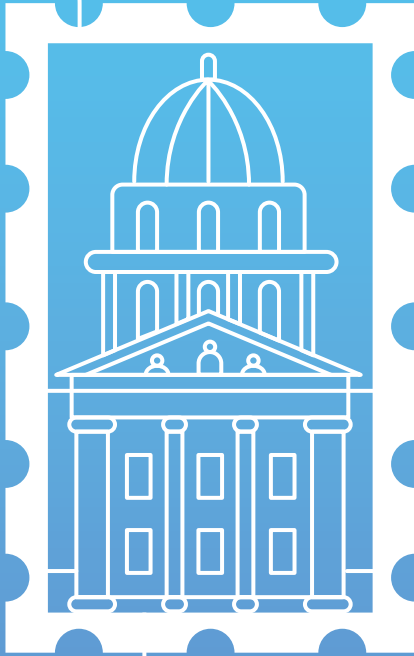
BroadbandNow estimates that in California, 94.1% of the state has terrestrial broadband access and 70% has access to a wired plan priced below \$60 a month. Microsoft estimates that around 15.2 million people do not use the Internet at broadband speeds.

Additional Resources:

- [New State Broadband Action Plan Seeks Community-Based Input](#)
- [Newsom's budget revision hints at broadband policy change, adds money for mapping](#)
- [Pressure is on to close the digital divide under California governor's executive order](#)
- [Closing California's Digital Divide: One Rural Teacher's Fight to Get Her Students Connected](#)
- [Next Century Cities Case Study: Long Beach, California](#)

COLORADO

POPULATION: 5.89 MILLION
64 COUNTIES AND 2 CONSOLIDATED CITY-COUNTY GOVERNMENTS



85.9% of the state is served by a terrestrial service provider, but only 3% have access to a wired plan that costs less than \$60 a month.

The Commission found that 5.6 of 5.7 million people (97.2%) across the State of Colorado had access to a fixed broadband connection at minimum 25/3 Mbps speeds. In rural Colorado, the Commission evaluated 924,000 people and found that 798,000 people (86.4%) have fixed broadband access. In urban areas, the Commission found that nearly all (99.3%) 4.8 million people had access to a fixed broadband connection at minimum speeds.

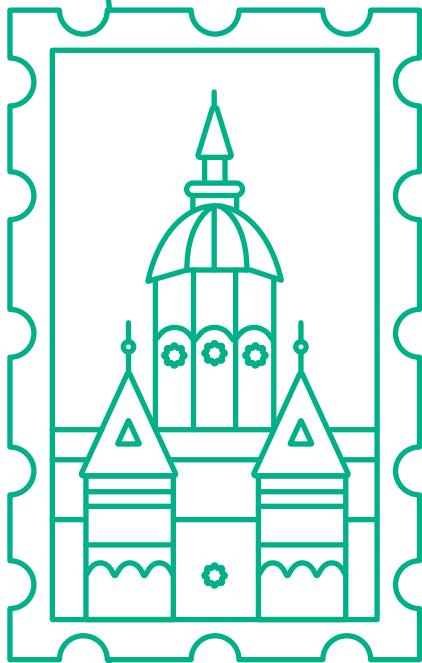
In Larimer County, an NCC member municipality, the Commission evaluated approximately 344,000 people and found that 87.9% had fixed access to broadband.

The State of Colorado offers an [interactive broadband map](#), as well as [static maps for common map requests](#) and the ability to request static maps. Colorado collects data biannually directly from providers via the State's GIS Coordination & Development Program (GCDP). Residents can use the map to search for broadband availability information at the address level. For data discrepancies, residents can submit feedback via email to oit_broadband@state.co.us.

According to BroadbandNow, 85.9% of [Coloradans](#) are served by a terrestrial service provider, but only 3% of residents have access to a wired plan that costs less than \$60 a month. The lack of affordability may be one reason that around 2 million Coloradans, nearly one-third of the state's population, do not use the Internet at broadband speeds, according to Microsoft's estimates.

Additional Resources:

- [Colorado Broadband Map](#)
- [Up to Speed? Time, money, maps and the push for 100% broadband in rural Colorado](#)
- [Colorado Gov. Establishes Broadband Board Via Executive Order](#)
- [Rural Colorado sees more broadband options coming online. But getting up to speed is taking longer than anticipated in some areas.](#)



According to Microsoft data, in 2019, almost half of the state did not access the Internet at minimum broadband speeds.

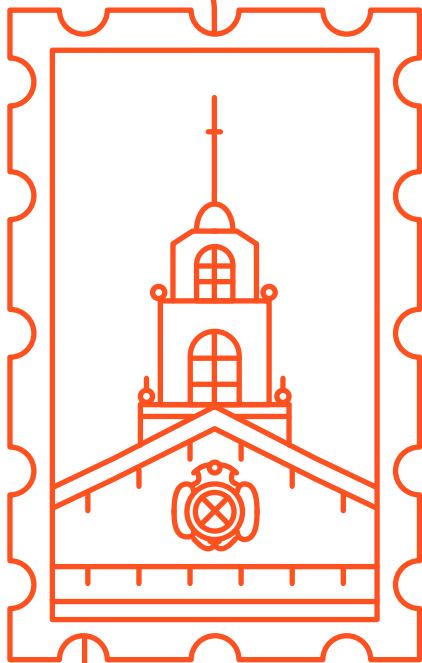
CONNECTICUT

POPULATION: 3.55 MILLION
COUNTIES: 8

The FCC evaluated 3.6 million people in Connecticut. It found that 3.6 million people (99.2%) had access to a fixed broadband connection at minimum 25/3 Mbps speeds. In rural areas, the Commission found that 99.3% of 430,000 residents have fixed broadband access, a 0.2% decrease in the number of connected individuals from the previous year. In urban areas, the it evaluated 3.1 million people and found that 99.2% had fixed access to broadband.

Connecticut [provides data](#) to the National Telecommunications & Information Administration as part of its National Broadband Map program. Connecticut [formerly had an interactive broadband map](#), but the links are now defunct. The Connecticut Education Network offers a [comprehensive map of CNET's fiber network](#).

In [Connecticut](#), BroadbandNow estimates that 98.3% of the state has terrestrial broadband access, but only 30.9% of residents have a plan available priced under \$60 per month. With nearly 70% of the state lacking access to an affordable plan, it makes sense that almost half the state (1.7 million Connecticut residents) do not use the Internet at broadband speeds based on data from Microsoft.



The State of Delaware uses maps to chart out its plan for expanding wired and wireless broadband into rural areas.

DELAWARE

POPULATION: 990,334
COUNTIES: 3

In a state that is less than 2,000 square miles, the FCC found that 952,000 people (97.8%) had access to a fixed broadband connection at 25/3 Mbps speeds. In rural Delaware, it evaluated 176,000 people and found that 169,000 people (96%) have access to a fixed connection at minimum speeds. Of 798,000 people in urban areas, 784,000 people (98.2%) had access to a fixed broadband connection at minimum speeds. It is important to note this is a 0.3% decrease in the number of connected individuals from the previous year.

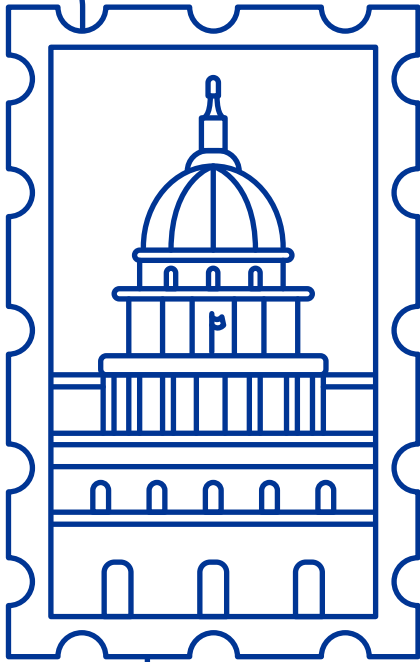
The State of Delaware's fiber backbone connects large swaths of the state, with its static map showing over [700 miles of fiber](#). Delaware is using [CARES Act funding](#) to gather strategic data about broadband availability. Through this initiative, residents can provide feedback [via a speed test](#) that also includes a short survey about device usage, connection type, and level of satisfaction with the service.

Additional Resources:

- [Delaware Speed Survey](#)
- [Delaware targets underserved families with \\$20 million broadband investment](#)

DISTRICT OF COLUMBIA

POPULATION: 714,153
8 WARDS



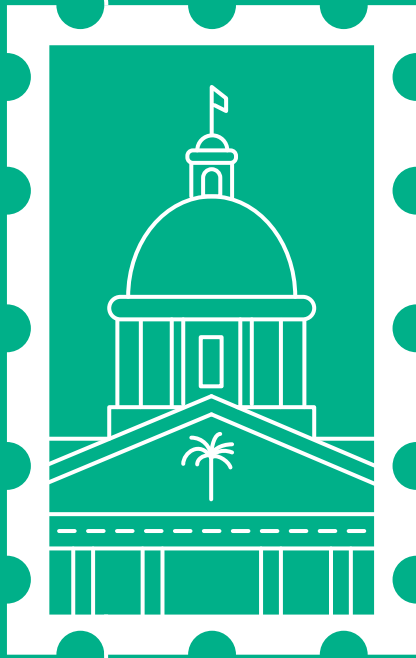
The District of Columbia maps broadband access and pole location data, which is an important step in decreasing deployment costs.

District of Columbia residents occupy only ten square miles. The FCC evaluated 706,000 residents and found that 691,000 people (98%) had access to a fixed broadband connection at minimum broadband speeds. The agency's data shows a 0.1% decrease in the number of connected individuals since its 2019 broadband deployment report.

In March 2011, the District government released [its first broadband availability map](#) using GIS technology and utilizing funding from the American Recovery and Reinvestment Act. Notably, the map included information about broadband adoption (the rate of subscribership compared to infrastructure availability) which revealed huge disparities in connectivity.

According to [Connect.DC](#), approximately 25% of District households do not have broadband subscriptions. In more affluent areas, over 85% of households have in-home broadband subscriptions. For the African-American and minority populations, largely in Wards 5, 7, and 8, the in-home broadband adoption rate drops to 65%.

Currently, [broadband availability information](#) is provided through the Office of the Chief Technology Officer's Open Data DC website. The website also maps [pole location data](#), which is an important step in decreasing installation costs.



10% of Florida residents still do not have reliable or affordable broadband access. In many areas, low population densities and the lack of competition pose significant barriers.

FLORIDA

POPULATION: 21.94 MILLION
COUNTIES: 67

The FCC evaluated connectivity among 21.4 million people in Florida and found that 20.6 million (96.3%) had access to a fixed broadband connection at minimum speeds. In rural Florida, it also found that 1.7 of 2.2 million residents (78.6%) have fixed broadband access. Of the 19 million people evaluated in urban areas, the Commission concluded that 18.9 million people (98.2%) had access to a fixed broadband connection.

In Martin County, a NCC member municipality, the Commission evaluated approximately 18,000 people and the FCC found that 100% of those evaluated had access to a fixed broadband connection at minimum speeds. Similarly, 200 miles away in Pasco County – an NCC member – approximately 526,000 people evaluated, the FCC found that 98.5% had fixed broadband access.

Polk County has a [GIS map](#) that includes broadband demand projections. Florida is part of the NTIA's National Broadband Mapping Program and over the past decade, the state's Department of Management Services has been awarded [\\$8,877,028](#) in funding for broadband capacity building including broadband mapping.

In 2011, the University of Florida's Public Utility Resource Center released its [Strategic Planning for Florida Governmental Broadband Capabilities](#), which was commissioned by the State's Department of Management Services utilizing funding available from the American Recovery and Reinvestment Act. The

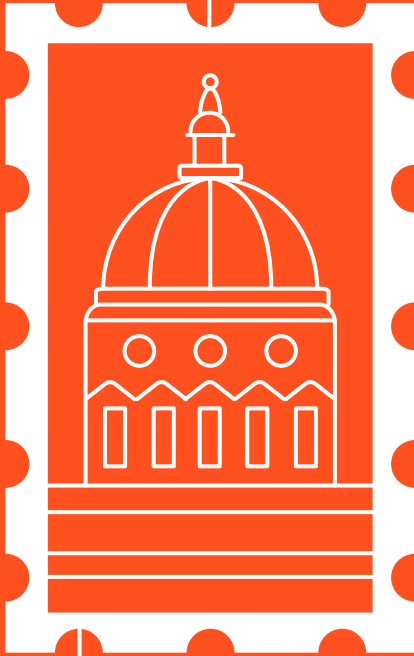
report focuses only on broadband Internet services used by public entities and institutions, rather than consumer or business uses.

Microsoft data from November 2019 showed that around [9 million people](#) in Florida do not use the Internet at broadband speeds.

Florida's GIS [broadband map](#) uses FCC data to show minimum download speeds by census block. Beginning in January 2021, the Florida Office of Broadband hosted a [series of ten workshops](#) convening industry sector and community leaders who discussed Internet accessibility. Then, in March 2021, the Division of Community Development [released the results](#) of its broadband availability and accessibility survey, which found that 86.5% of respondents were aware of broadband studies or plans in their community.

Additional Resources:

- [New Florida Law to Boost Broadband in Multi-Use Corridors](#)
- [Flagler mother works to get broadband Internet to rural areas for students learning online](#)
- [Florida Association of Counties](#)



The Georgia Broadband Deployment Initiative Map is one of the most granular state maps in the country.

The FCC evaluated 10.6 million people in Georgia and determined that 9.9 million people (93.8%) had access to a fixed broadband connection at minimum speeds. In rural Georgia, the agency concluded that 2.1 of 2.6 million residents surveyed (81%) have fixed broadband access. In urban Georgia, the FCC evaluated 7.9 million people and found that 7.8 million (98.1%) had access to a fixed connection at minimum speeds.

Georgia's broadband map is created through the Georgia Broadband Deployment Initiative and is recognized as one of the most granular in the country. In discussing the process for creating the map, the Initiative's Executive Director [Deanna Perry said](#) *"We took the approach of getting [data] more at an address- or a location-level approach to get a better understanding."*

The Georgia Broadband Map [was completed on June 30, 2020](#). Maps show the aggregate locations of served and unserved areas [statewide](#) and by [county](#). In densely populated areas, like those surrounding Atlanta, 99% of locations are considered served, while some rural counties, like Warren and Glascock, show that zero locations have service despite the fact that there are over 5,000 unserved locations across the two counties alone.

Data is provided by Internet service providers, but is location based, showing census blocks as served only if more than 80% of locations have service in contrast to the FCC's determination that an entire census block is served if a provider [could](#)

[serve a single location](#). One iteration of the map offers a [side by side comparison with FCC data](#). Georgia's data show that 507,341 (or 10%) of locations are unserved.

At the same time, neither state nor federal mapping shows the number of residents who do not have a home broadband subscription. Microsoft's data show that around [5.2 million people](#) in Georgia do not use the Internet at broadband speeds while the U.S. Census Bureau estimates that about [81% of Georgia households](#) have a home broadband Internet subscription.

Additional Resources:

- [New broadband map highlights underserved areas in Chatham, surrounding counties](#)
- [Georgia Releases New Broadband Maps: Georgia Municipal Association](#)
- [July 2 - State Launches Broadband Availability Map](#)
- [Connectivity on My Mind: Mapping the Digital Divide Across the State of Georgia](#)
- [States couldn't afford to wait for the FCC's broadband maps to improve. So they didn't](#)
- [Georgia Cyber Center looking to help close the broadband gap in Georgia](#)

GUAM

POPULATION: 170,179
NINETEEN MUNICIPALITIES, CALLED VILLAGES,
EACH GOVERNED BY AN ELECTED MAYOR

On an island 30 miles long, the FCC surveyed 11,000 residents and found that only 4,000 (34.2%) had access to a fixed broadband connection at minimum speeds.

In rural Guam, the FCC evaluated 11,166 residents and found that only 142 (1.3%) have fixed broadband access. Equally problematic, in urban areas, the FCC evaluated 156,192 people and found that 2,468 (1.6%) had access to a fixed broadband connection. Consequently, approximately 99% of residents rely on mobile connections at minimum advertised speeds of 5/1 Mbps for Internet access.

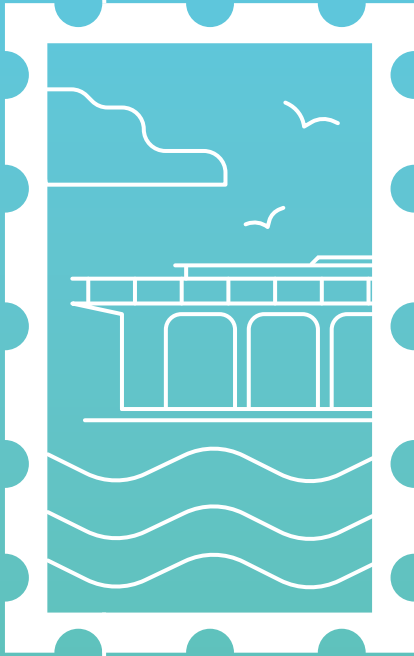
In 2010, [1.5 million dollars](#) was awarded by the National Telecommunications and Information Administration through a grant for broadband mapping in Guam, but the data reporting ended in 2011. The data, provided by five Internet service providers, is available in shapefiles, reported at the census block level for census blocks less than two square miles and at the street and address level for census blocks more than two square miles. One Economy Corporation, the grantee, also [called residents and conducted town hall meetings](#) to gather information about where broadband is available. The information was then provided to NTIA for the National Broadband Map.

BroadbandNow shows that Guam is [not covered](#) by any fiber optic service and is 98.8% covered with wireline services through either cable or DSL. Overall, it finds that broadband coverage extends to only 16.5% of Guam.

Additional Resource:

[From Tuna to Telecommunications in American Samoa](#)

BroadbandNow shows that Guam is not covered by any fiber optic service and only 16.5% of residents have access to broadband infrastructure.



Hawaii offers a map of public Wi-Fi locations, detailing which have limited versus unlimited access.

HAWAII

POPULATION: 1.41 MILLION
COUNTIES: 5

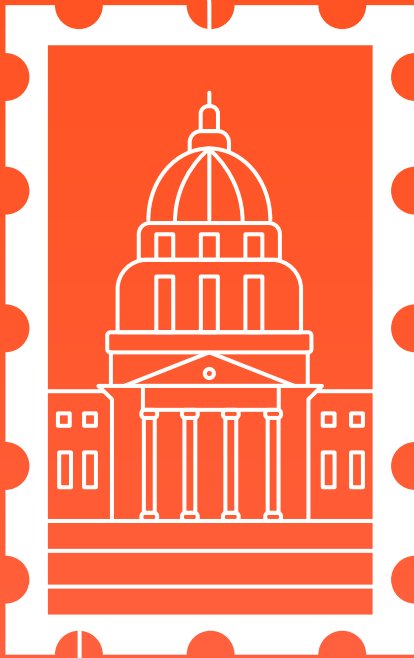
Hawaii is made up of eight major and 129 minor islands. The Commission evaluated 1.4 million residents and found that 1.3 million people (97.9%) had access to a fixed broadband connection at minimum speeds. In rural Hawaii, it determined that 113,000 of 134,000 residents (84.7%) have fixed broadband access. Among urban populations, the agency found that 99.3% of 1.3 million residents had access to a fixed connection at minimum speeds.

Senator Brian Schatz is currently one of many cosponsors to the Senate versions of the Accessible, Affordable, Internet for All Act. This legislation directs the FCC to collect data on prices charged throughout the country in addition to the data the FCC currently collects for its mapping program.

The State of Hawaii offers an [interactive broadband map](#) and residents can fill out a [survey](#) to collect crowdsourced information about broadband availability. Hawaii also offers [a map of locations](#) where there is a public Wi-Fi hotspot with one hour of free service; these locations are part of the Wi-Fi pilot program, which offers unlimited access to public Wi-Fi and Wi-Fi during business hours at public library locations. Both of these maps can be overlaid on the state broadband map. Hawaii's [2019 report](#) shows the results of speed tests across the state and compares it to data from 2018, 2017, and 2016.

Additional Resources:

- [Internet disconnect: Pandemic amplifies broadband access limits](#)
- [Hawaii Schools Under Pressure To Provide More Data About Remote Learning](#)
- [Access, Literacy, and Livelihood: Broadband Hui Leverages Public and Private Collaborations to Support Digital Equity for All Hawaii Residents](#)



While some counties in Idaho have as much as 97% broadband coverage, others have no broadband coverage at all.

Based on an evaluation of 1.8 million Idaho residents, the FCC concluded that 1.7 million people (95.3%) had access to a fixed broadband connection at 25/3 Mbps speeds. In rural Idaho, it evaluated 568,000 people and found that 491,000 (86.5%) have fixed broadband access. In urban areas, the FCC found that 99.4% of 1.2 million people had access to a fixed broadband connection.

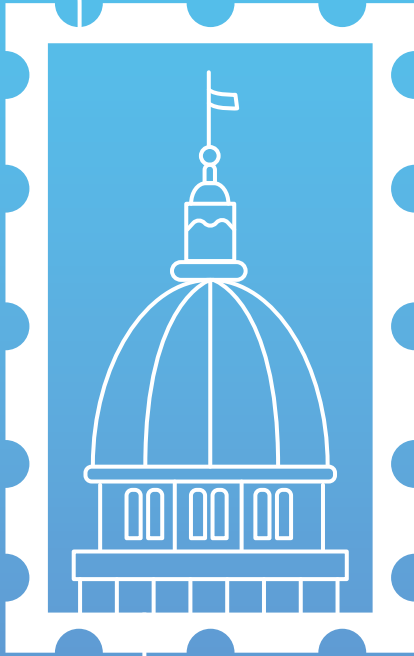
Idaho Broadband's website

includes links to the FCC's maps, BroadbandNow's maps, and a link to BroadbandNow's speed test. According to BroadbandNow, Idaho has 70.3% terrestrial broadband coverage and 62.3% of the state has access to a low-cost plan. BroadbandNow gives Idaho a ranking of 39th in the country for broadband. While some counties in Idaho have as much as 97% broadband coverage, others have no broadband coverage at all.

Speed Up America collects speed test data from people living in Idaho, which show that while the 18,986 residents who completed speed tests in Blaine County show median download speeds of around 100 Mbps, the 6,611 residents who completed speed tests in Custer County are experiencing median download speeds of only 5 Mbps. As of November 2019, Microsoft estimates that over half of the state's population, around 1 million people, does not use the Internet at broadband speeds.

Additional Resources:

- [Governor's Task Force Makes Recommendations to Improve Idaho's Broadband Access](#)
- [Almost 15 percent of Idaho Students Lack Access to Broadband, SDE Survey Says](#)



The State of Illinois has a 2,000 mile fiber network which serves schools and libraries across the state and provides backbone infrastructure for broadband providers.

The FCC evaluated 12.7 million people in Illinois and overall, it found that 12.4 million people (98%) had access to a fixed broadband connection at 25/3 speeds. In rural Illinois, the FCC concluded that 1.3 of 1.5 million people (88%) have fixed broadband access. Among urban residents, the agency found that 99.3% of 11.2 million people had access to a fixed broadband connection.

The [interactive map](#) through the State of Illinois includes layers that are served with speeds of 100/20 Mbps or greater, underserved with speeds between 25/3 Mbps and 100/20 Mbps, and unserved with speeds of at least 25/3 Mbps. The map uses figures from the FCC's Form 477 data from December 2018 as a baseline and at the same time, the State of Illinois invites Connect Illinois funding applicants to [challenge FCC data](#) to show that an area is unserved or underserved.

The state has a [2,000 mile fiber network](#) which serves schools and libraries across Illinois and provides backbone infrastructure for broadband providers. The Illinois Department of Commerce makes maps of the fiber assets available and offers grants for network upgrades.

Data collected by Microsoft show that around 6.3 million people in Illinois do not use the Internet at broadband speeds. Researchers are seeking to change that. A [December 2020 report](#) outlined the total state costs under four different approaches

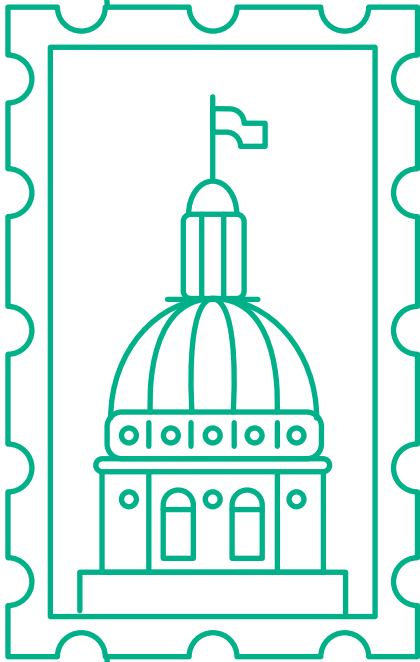
to providing free and affordable broadband services to all residents in Illinois. The report, which provided recommendations for a state broadband policy, was then presented to the Illinois Broadband Council.

The report uses U.S. Census data as a baseline, showing that:

- 70.4% of Illinois households have a home wireline high-speed Internet subscription, including:
 - 57.9% of African American households
 - 63.4% of Latino households
 - 71.2% of White households
- 1,441,161 Illinois households do not subscribe to home wireline broadband service.

Additional Resources:

- [Illinois Addresses the Digital Divide](#)
- [IL Office of Broadband Announces New Connectivity Map](#)



According to Microsoft data, about 4.2 million people in Indiana do not use the Internet at minimum broadband speeds.

INDIANA

POPULATION: 6.81 MILLION
COUNTIES: 92

The FCC evaluated 6.7 million people in Indiana and found that nearly 6.5 million (96.1%) had access to a fixed broadband connection at minimum speeds of 25/3 Mbps. In rural Indiana, it found that 1.6 of 1.8 million people (87.4%) have fixed broadband access. Among urban residents, the FCC evaluated 4.9 million people and found that 4.8 million (99.4%) had access to a fixed broadband connection.

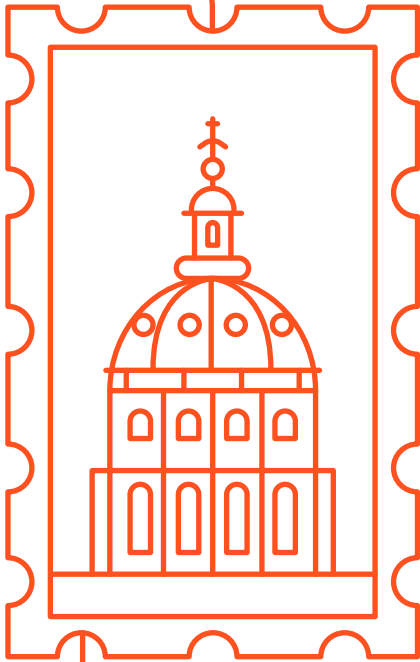
The State of Indiana offers an [interactive broadband map](#) that offers filters showing wired, wireless, and satellite connections. The map also allows users to filter for download and upload speeds in increments of 0.2, 0.7, 1.0, 1.5, 3.0, 6.0, 10, 25, 50, 100, and 1000 Mbps. Users can also filter based on provider and look up services offered based on proximity to an address. The map is created using the FCC's Form 477 data from June 2019.

BroadbandNow ranks Indiana [21st in broadband connectivity, with 79.8% terrestrial wireline coverage and 53.4% access to a low-price wired plan](#). According to BroadbandNow:

There are currently 666,000 people in Indiana without access to a wired connection capable of 25 Mbps download speeds. Another 718,000 people in Indiana have access to only one wired provider, with no other options to switch. Lastly, 265,000 people in Indiana don't have any wired Internet providers available where they live at all.

Additional Resources:

- [Internet access essential to all](#)
- [Interactive Map: Where Indiana Students Lack Home Internet, Computer](#)



The State of Iowa established a challenge process in which the public can dispute inaccurate broadband data.

IOWA

POPULATION: 3.19 MILLION
COUNTIES: 99

The Commission evaluated 3.1 million Iowa residents and found that 3 million people (96%) had fixed broadband access. In rural areas, it determined that 1 of 1.1 million people (91.2%) have access to a fixed broadband connection at minimum speeds. Among urban residents, the FCC evaluated 2 million people and found that nearly all (98.7%) had fixed broadband access.

The [State of Iowa uses Form 477 data](#) as the basis for the [state broadband map](#), using data published by the FCC in September 2019. The state [opened a challenge process](#) inviting the public to dispute the data from September 4 to September 28, 2020. A final version of the map was released on October 28, 2020, then another [challenge process](#) opened, which is currently under review.

[Iowa's estimates](#) show that 1,166,701 households are served with fixed broadband of at least 25/3 Mbps across wired and wireless technologies, and that 54,875 remain unserved. Additionally, it shows that 98.1% of households are served with at least 10/1 Mbps speeds and 21,035 households remain unserved by even those services that do not constitute broadband. Finally, it shows that 85.69% of households have access to broadband at 100/10 Mbps speeds and 85.7% of households can access at least 50/5 Mbps broadband.

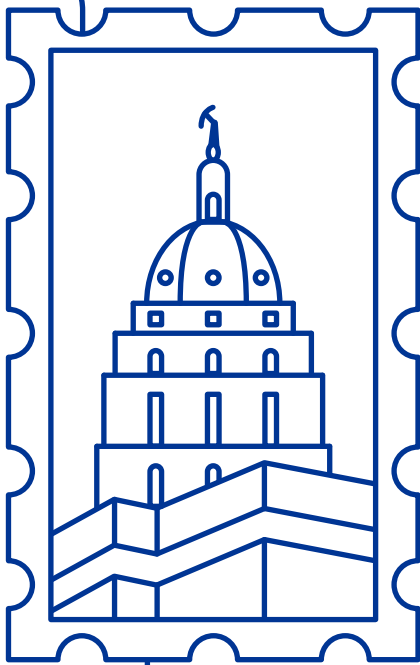
While broadband is available at high rates in counties like [Buena Vista \(99.2%\)](#) and [Chickasaw \(99.2%\)](#), the percentage of households with broadband access is much lower in counties like Adams (61.7%) and Ringgold (66.4%). Among different

technologies, [69.5% of households have access to cable at current broadband speeds](#), with 69.1% of households having access to cable at speeds of 100/10 Mbps; 35.8% of households with access to fiber, and 34.4% having access to fiber at speeds of at 100/10 Mbps; 35.1% of households have access to DSL at 25/3 Mbps speeds, with only 18.9% having access to DSL at speeds of 100/10 Mbps. 52.2% of households have access to fixed wireless at 25/3 Mbps speeds, while only 1.57% of households have 100/10 Mbps wireless speeds.

BroadbandNow reports that in Iowa, [81.3% of residents have terrestrial broadband access](#) while only 18.5% have access to a wired plan priced below \$60 per month. According to data collected by Microsoft in November 2019, approximately [two million people in Iowa](#) do not use the Internet at broadband speeds.

Additional Resources:

- [Broadband Blues](#)
- [FCC has money for rural broadband but isn't sure where to spend it](#)
- [Virus exposes Iowa's broadband weaknesses](#)
- [Iowa and the nation need real rural broadband solutions](#)



The Kansas broadband map is especially granular with wireline coverage layers portrayed as street-based service visualizations.

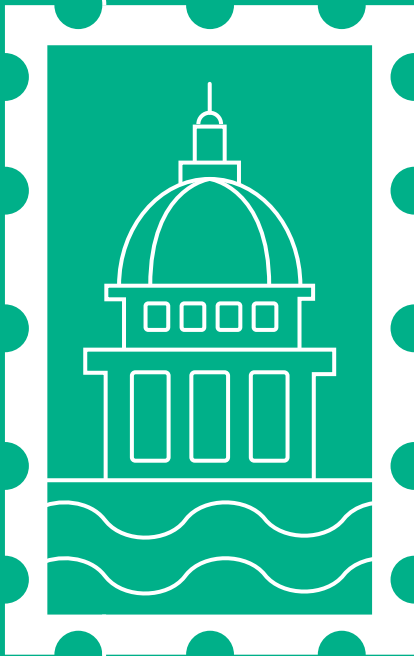
Kansas is at the center of the U.S., bordered by Nebraska, Missouri, Oklahoma, and Colorado. The FCC found that 2.8 of 2.9 million Kansas residents (95.7%) had access to a fixed broadband connection at 25/3 Mbps speeds. It evaluated 755,000 rural residents and found that 659,000 people (87.3%) have fixed broadband access. In urban areas, the FCC evaluated 2.2 million people and found that 98.7% had access to fixed broadband service.

The State of Kansas offers an [interactive broadband map](#) last updated in June 2019. The map was created in a partnership between Connected Nation and the Information Network of Kansas (INK). The data are prepared to inform the Statewide Broadband Expansion Planning Task Force, which identifies broadband gaps in the state and helps to develop solutions. Some providers submitted street based coverage, but others chose instead to represent information in service area polygons. In April 2019, [the Kansas Governor's Office requested public feedback](#) about broadband availability in the state as part of a mapping effort that began with Kansas [receiving a broadband mapping grant from the Information Network of Kansas](#) in August 2018.

BroadbandNow estimates that [82.1% of Kansas residents](#) have access to fixed terrestrial service and 51.3% access to a plan priced below \$60 a month. Microsoft estimates that around [1.7 million people in Kansas](#) do not use the Internet at broadband speeds based on November 2019 data.

Additional Resources:

- [New Kansas Statistical Abstract Offers Key Data as Kansas Weathers the Pandemic](#)
- [Over 70,000 Kansas families may finally get broadband through \\$50M in COVID grants](#)
- [State grants 'once-in-a-lifetime' chance to boost broadband — if applicants win race against time](#)



KentuckyWired is a public-private partnership that operates a statewide open access fiber network. It also maintains a public broadband availability map showing the backbone, lateral, anchor institutions, and nodes.

The Commission found that 4.2 of 4.5 million Kentucky residents (94.3%) had access to a fixed broadband connection at 25/3 Mbps speeds. In rural areas, it evaluated 1.8 million people and found that 1.6 million (86.7%) have fixed broadband access. The FCC found that 99.6% of 2.6 million urban residents had access to fixed broadband connections.

In NCC member Letcher County, the Commission evaluated approximately 22,000 residents and found that 89.7% of the population had access to a fixed broadband connection at minimum speeds. Notably, it found that 86.3% of the population had access to a mobile connection at minimum speeds of 5/1 Mbps, one of few instances where the FCC found a community had greater access to a fixed connection than to a wireless one.

The State of Kentucky offers [broadband maps from April 2020](#) that show infrastructure partnerships, construction progress, wired huts, and fiber locations. In 2012, the Commonwealth Office of Broadband Outreach and Development and the Kentucky Council of Area Development [conducted a community survey of broadband availability](#) that closed in April 2012. Once again, Kentucky is surveying residents, and Lieutenant Governor Jacqueline Coleman encouraged Kentucky residents to take a speed test and report unserved households from public WiFi locations. [Governor Andy Beshear said:](#)

We need as many Kentuckians as possible to take this Internet speed test to get an accurate picture of who has adequate Internet access across the state. The more speed tests taken, the better understanding we will have of our state's Internet capabilities, and the better prepared we will be to repair and expand it.

KentuckyWired is a public-private partnership that seeks to connect Kentucky with a statewide open access fiber network and offers a [public map](#) showing the backbone, lateral, anchor institutions, and nodes. An open access network is one that provides fiber backhaul that providers can pay to use, but while the state owns the fiber, it does not directly provide service to consumers. Instead, open access networks offer a connection point for Internet service providers and install connections between the open access fiber network and the customer's home. The providers then contract with customers for billing and set terms and conditions of service. Open access networks are an alternative to the traditional structure, where the Internet service provider builds their own fiber backhaul, and this different structure enables competition among last-mile service providers, who all pay comparable rates to connect to the open access network.

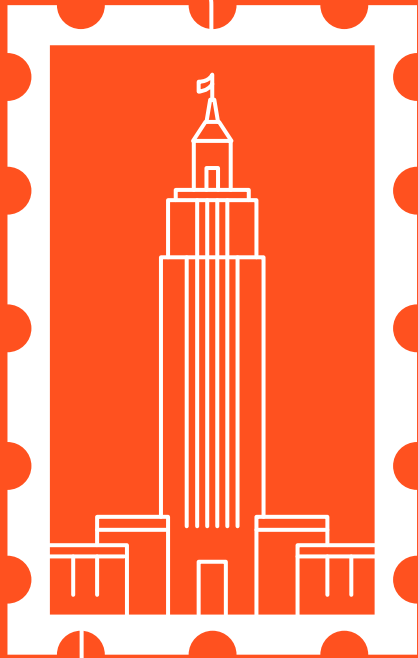
BroadbandNow shows that [81.8% of the state](#) has terrestrial broadband coverage while only 39.9% of residents have access to a \$60 per month or cheaper plan. Microsoft data from September 2019 show that around 3.1 million people in Kentucky do not use the Internet at broadband speeds.

Additional Resources:

- [Kentucky Farm Bureau Offers Nearly 200 Free Wi-Fi Locations Across the State](#)
- [County pushes Internet speed tests to expand service](#)
- [Kentucky's digital divide is a challenge for kids trying to learn in cities, rural towns](#)
- [Kentucky launches free Statewide speed test to give Kentuckians better internet access](#)

LOUISIANA

POPULATION: 4.63 MILLION
64 PARISHES



Louisiana is currently in the process of implementing its Broadband for Everyone Plan to improve both the adoption and availability of broadband service for Louisiana residents with up to 100 Mbps symmetrical speeds.

The FCC evaluated 4.6 million Louisiana residents and found that 4.1 million (88.4%) had access to a fixed broadband connection at minimum speeds. In rural areas, of 1.3 million evaluated, 812,000 (65%) have access to a fixed connection at minimum speeds. The agency concluded that 3.3 of 3.4 million urban residents (97.1%) have fixed broadband access.

Louisiana is currently in the process of implementing its [Broadband for Everyone](#) plan. The ultimate goal of the plan is to:

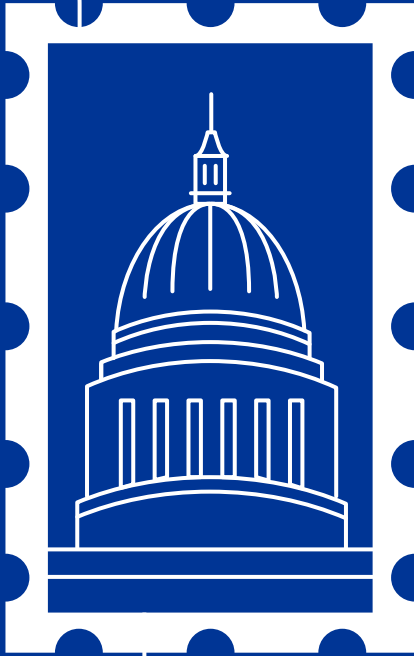
Improve both the adoption and availability of broadband service for Louisiana residents by providing universal access to broadband service with minimum committed speed of 25 Megabits per second (Mbps) download and 3 Mbps upload, scalable to up to 100 Mbps download and 100 Mbps upload, for all Louisianans by 2029.

One part of that plan includes collecting more comprehensive data about broadband availability, particularly whether low cost plans are available and barriers to adoption.

[BroadbandNow](#) estimates that 73% of Louisiana is served by a terrestrial broadband plan and that 56.4% of the state has access to a plan priced below \$60 monthly. According to [Microsoft's November 2019 data](#), around 3.1 million people in Louisiana do not use the Internet at broadband speeds.

Additional Resource:

[Under social distancing, rural regions push for more broadband](#)



“

Mapping
broadband
service helps
customers know
where broadband
is available, and
it helps grant
applicants identify
potentially
unserved areas.”

—ConnectMaine

The Communication evaluated 1.3 million people in Maine, the northeasternmost U.S. state. It found that 1.3 million residents (96.5%) statewide had access to a fixed broadband connection at 25/3 Mbps speeds.

In urban areas, the FCC evaluated 509,000 people and found that 507,000 people (99.6%) had fixed broadband access. In rural Maine, it concluded that 791,000 of 835,000 people (94.7%) had fixed access to broadband.

[ConnectMaine](#) accepts availability information from providers and also offers a speed test to verify residents' actual broadband experiences. [Maine's GIS map](#) includes FCC data from December 2018 and some provider information submitted to Connect Maine before March 2019.

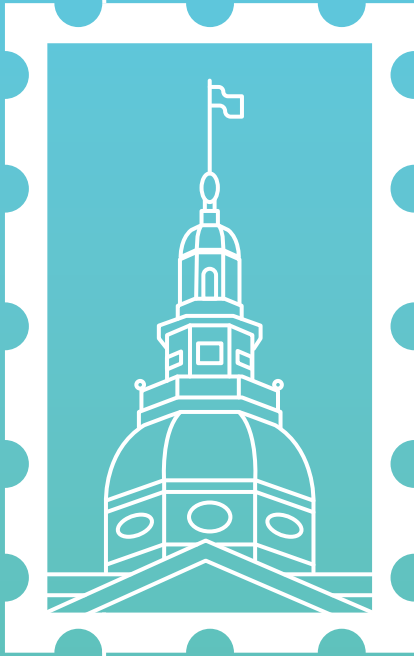
BroadbandNow estimates that [86.6% of Maine residents](#) have access to terrestrial broadband coverage, though only 4.5% have access to a plan priced below \$60 per month. In Maine, Microsoft's November 2019 data show that about 830,000 people do not use the Internet at broadband speeds.

Additional Resources:

- [Maine Broadband Coalition rolls out speed test and map to get a clearer picture of digital divide](#)
- [Broadband project needs speed testers](#)
- [Mainers seeking Internet upgrade tell stories of poor service to highlight feds' mistakes](#)
- [States couldn't afford to wait for the FCC's broadband maps to improve. So they didn't](#)

MARYLAND

6.07 MILLION
23 COUNTIES AND 1 INDEPENDENT CITY



Abell Foundation [research](#) found that 520,000 Maryland households, including 108,000 households with children below the age of 18, do not subscribe to wireline service. Two-thirds of its disconnected residents live in Baltimore or other metropolitan counties.

Maryland is a Mid-Atlantic state that's defined by waterways and coastlines. The FCC evaluated six million people statewide and found that 5.9 million (97.5%) had access to a fixed broadband connection. It concluded that 763,000 of 814,000 rural residents (93.8%) have fixed broadband access. In urban Maryland, the agency evaluated 5.2 million people and found that 98.1% had access to a fixed connection at minimum speeds. Overall, there was a 0.1% decrease in rural and urban connectivity compared to the 2019 broadband deployment report.

In NCC member Montgomery County, the FCC evaluated approximately one million people and found that 98.4% had fixed broadband access.

The State of Maryland offers an [interactive map](#) and also makes [raw data available](#). The map includes a search feature for availability at specific addresses. Maryland Broadband Cooperative also offers a [map of its fiber network](#). Residents can provide feedback on the map via email to mapinfo@mdbc.us.

A January 2021 [report](#) released by the Abell Foundation found that affordability and digital literacy are both barriers to ubiquitous home broadband subscriptions in Maryland. The report found that two-thirds of residents who do not have a home broadband subscription live in Baltimore City or other metropolitan counties. Notably, nearly a quarter of Maryland residents do not subscribe to broadband and those who remain disconnected are disproportionately low-income, Black, Latinx, and elderly.

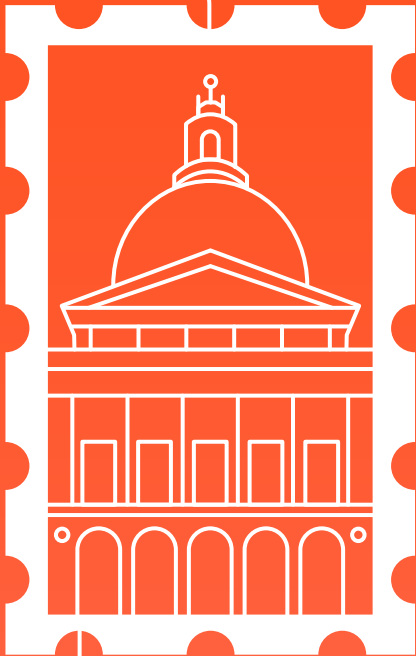
BroadbandNow estimates that [95.2% of residents](#) have access to terrestrial broadband coverage and 65.4% have access to a monthly plan priced at or below \$60. Still, only 5.3% of Maryland is covered with gigabit speed service. Around [2.1 million people in Maryland](#) do not use the Internet at broadband speeds according to Microsoft's November 2019 data.

Additional Resources:

- [Ag groups reach legislators despite pandemic](#)
- [With Digital Divide Starker Than Ever, More Than 400K Marylanders Lack Broadband](#)
- [Digital Divide: Nearly 1 Million in Va., Md. Have No High-Speed Internet Access](#)

MASSACHUSETTS

POPULATION: 6.91 MILLION
14 COUNTIES AND 1 CONSOLIDATED CITY-COUNTY GOVERNMENT



An Essex County Community Foundation study found that the lack of Internet access is most prevalent among low-income and Latino families. Latino residents are twice as likely to lack broadband access compared to their non-Latino neighbors.

Massachusetts, the most populous state in the New England region of the U.S., is named after the Massachuset tribe. The FCC concluded that 98% of the 6.9 million residents surveyed statewide had fixed access to broadband at minimum 25/3 Mbps speeds.

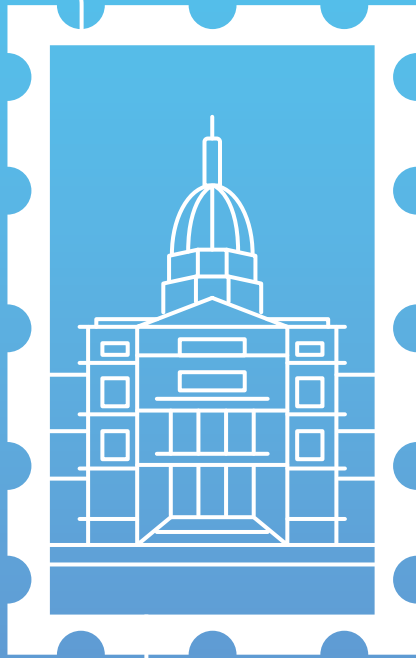
In rural areas, the agency evaluated 554,000 people and found that 517,000 people (93.3%) had access to a fixed connection at minimum speeds. It also found that 6.2 of 6.3 million people (98.4%) in urban areas had fixed broadband access.

The interactive Massachusetts broadband map [is no longer in service](#), and the [last reported data](#) available are from 2014.

BroadbandNow estimates that [95.9% of the state is covered](#) with terrestrial broadband and only 43.3% of the state connected with a wired plan priced at \$60 or less a month. Around [2.5 million people](#) in Massachusetts do not use the Internet at broadband speeds according to Microsoft's November 2019 data.

Additional Resource:

[Gateway Cities at the center of the digital divide in Massachusetts](#)



Low population density in rural Michigan raises the cost of broadband deployment. According to the Michigan Moonshot Initiative, some rural areas house as few as 2 to 20 people per square mile.

Over the past few years, community leaders in Michigan have transformed the digital landscape of their community by more accurately documenting broadband availability. The [Michigan Moonshot Initiative](#) “*aims to act as a catalyst in the broadband ecosystem by informing policy makers, fostering public-private partnerships and convening collaboration between citizens and organizations in our state.*”

According to Michigan Moonshot, “*at least 380,000 homes in Michigan lack access to broadband. This equates to 27% of households in the state with school-age children.*” Low population density in rural Michigan raises the costs of deployment with as few as [2 to 20 people per square mile](#).

FCC data differs from local accounts. The agency evaluated nearly 10 million Michigan residents and found that 9.6 million people (95.8%) had access to a fixed broadband connection at 25/3 Mbps speeds. In rural Michigan, the FCC concluded that 2.2 of 2.6 million people (86.3%) had fixed broadband access. FCC data reports that 7.3 of 7.4 million (99.1%) of urban residents had access to a fixed connection at minimum speeds.

In NCC member municipality Washtenaw County, the Commission evaluated approximately 368,000 people and found that, of those evaluated, 92.2% had access to a fixed connection at minimum FCC speeds. In May 2020, the Washtenaw County Broadband Task Force released its Data Collections Executive Findings Report. The report found that:

64% of households in participating townships do not have access to fixed broadband at the FCC threshold of 25

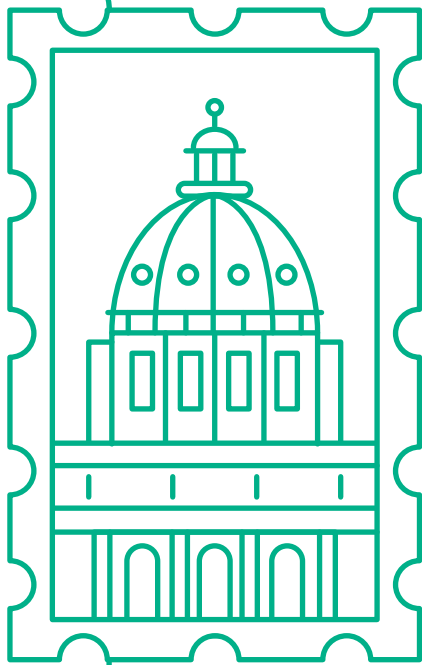
Mbps download and 3 Mbps upload. Areas lacking broadband access are concentrated in the southwest corner of the County, but all participating townships have at least some areas that lack access.

Michigan’s state broadband map is [available through Connected Nation](#) includes a GIS map showing the locations of [Wi-Fi hotspots](#), static [Alcona county maps](#), and both interactive and static [state maps](#) last updated in September 2020. Connected Nation invites Michigan residents who would like to [provide feedback](#) to improve the maps.

Local officials in [Ottawa County](#) have been working to [identify the barriers to broadband access](#) and adoption. In December 2020, Ottawa County announced that it was [seeking proposals](#) for a vendor who will strategize the County’s data collection plan in furtherance of Phase I of its Comprehensive Digital Inclusion Strategy. The County plans to design surveys to send to homes and businesses in local townships to determine if high-speed Internet access is available, the current level of Internet services utilized, and whether additional Internet services are needed. One of its municipalities, the City of Holland, [launched a Broadband Taskforce](#) that recently completed a listening tour, and is now developing a city-wide broadband survey.

Additional Resources:

- [The Michigan Moonshot](#)
- [Connected Nation Mapping Initiative](#)
- [Midland organizations look to improve county broadband coverage](#)
- [Next Century Cities Case Study: Detroit, Michigan](#)



In February 2021, U.S. Rep. Angie Craig of Minnesota introduced federal legislation targeted at improving broadband data in rural and underserved areas.

MINNESOTA

POPULATION: 5.71 MILLION
COUNTIES: 87

The FCC evaluated 5.6 million Minnesota residents and found that 5.5 million (97.5%) had access to a fixed broadband connection at 25/3 Mbps speeds. In rural areas, it found that 1.4 of 1.5 million residents (91.4%) had fixed broadband access. Of the 4.1 million urban residents evaluated, the FCC concluded that 99.8% had access to a fixed broadband connection at minimum speeds.

The State of Minnesota offers an interactive broadband map, county broadband maps, Tribal broadband maps, and makes the data available. The data in the interactive map are current as of October 2020 and the website includes a speed test that allows residents to share their actual speeds with the state.

Minnesota's data show that there are 163,000 unserved households in the state and that 1,924,000 households served with wireline service with at least 25/3 Mbps speeds. At 100/20 Mbps, 1,829,000 households are served. That number drops to 334,000 served households at 1/1 Gbps speeds. In the most connected counties, like Beltrami, Big Stone, Clearwater, Hennepin, and Lac qui Parle, broadband is available to over 99% of households.

In February 2021, Congresswoman Angie Craig of Minnesota introduced federal legislation targeted at improving broadband access data in rural and underserved areas, called the Broadband Measuring Availability and Aligning Policies Task Force Act (Broadband MAPS Act), which would establish an FCC task force to improve broadband availability maps. In a press release announcing the legislation, Representative Craig said:

To achieve universal broadband access in the United States, it is crucial we have a precise

understanding of where fixed and wireless broadband already exists and where it does not. Unfortunately, for far too long, the FCC's data collection and mapping process has yielded inaccurate and incomplete results – leaving Congress, the public, and the FCC without a clear picture of the country's broadband needs. This crucial legislation will help to identify the communities most desperately in need of support – and guide the federal government's investment decisions for years to come.

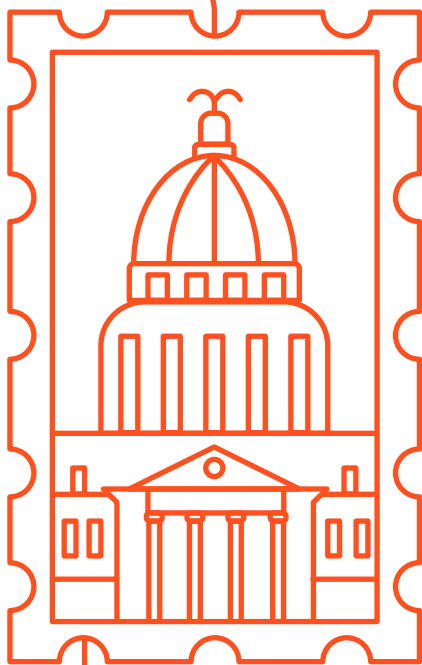
Representative Craig also helped introduce the Accessible, Affordable Internet For All Act, which invests \$100 billion in Internet infrastructure in rural and underserved areas, and cosponsored the Accelerating Broadband Development by Empowering Local Communities Act, which would have reverted authority of 5G technologies to local governments.

BroadbandNow reports that Minnesota has 89.6% terrestrial broadband coverage and 15.1% access to a low price plan. Around 2.8 million people in Minnesota do not use the Internet at broadband speeds, according to Microsoft's data.

In Abby Olson's, Minnesota's Digital Divide: How Minnesota Can Replicate the Rural Electrification Act to Deliver Rural Broadband, she explains why expanding broadband is still a high priority in rural Minnesota. She reported that of the 185,000 Minnesota households that lack access to 25/3 Mbps broadband, 179,000 are located in rural areas.

Additional Resources:

- [Minnesota's Office of Broadband Deployment](#)
- [New Map & Analysis on Broadband Need for Minnesota Students](#)



In 2018, the Mississippi Farm Bureau Federation and Mississippi Public Service Commission challenged the accuracy of the FCC's map, including 8,400 speed test results. None of those challenges were successful.

MISSISSIPPI

POPULATION: 2.97 MILLION
COUNTIES: 82

The name Mississippi comes from a Chippewa Indian word that means "Big River" or "Father of Waters." By low estimates, [about 20%](#) of residents statewide live in areas where there is no broadband available.

The FCC evaluated nearly 3 million residents and found that 2.4 million people (80.3%) had access to a fixed broadband connection at minimum speeds of 25/3 Mbps, a speed that Northern District Public Service Commissioner Brandon Presley called "[fictitiously low](#)" as it does not meet the current needs of Mississippi residents.

In rural Mississippi, the Commission evaluated 1.5 million people and found that 958,000 people (63.4%) had access to a fixed broadband. It also found that 1.4 of 1.5 million (97%) of urban residents had access to a fixed broadband connection at minimum speeds.

The State of Mississippi disputes the FCC's claim that fixed broadband is available at the rates Form 477 data show. In 2018, the Mississippi Farm Bureau Federation and Mississippi Public Service Commission [challenged the accuracy of the FCC's map](#), including 8,400 speed test results, but none of the challenges were successful.

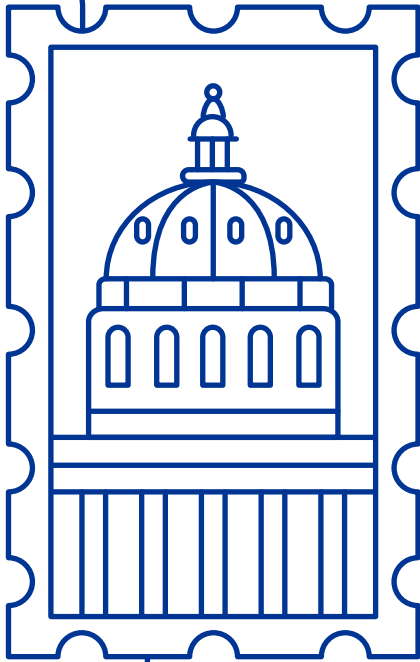
BroadbandNow estimates that [58.7% of Mississippi residents](#) have broadband access and 56.8% access to a low-price plan. This amounts to 368,000 people in Mississippi who do not have access to a wired Internet connection that satisfies the FCC's definition for broadband, with 236,000 people from that group not having access to any wired Internet plans. Microsoft's November 2019 data

show that around [2.4 million people](#) in Mississippi do not use the Internet at broadband speeds.

State officials used [CARES Act funds to rollout high-speed broadband](#) to the most underserved areas of the state. They partnered with rural electric co-ops Gigabit speed broadband to hard to reach areas.

Additional Resources:

- [Broadband access: Swift action needed to address problem in Mississippi, elsewhere](#)
- [Mississippi Legislature Could Establish a Rural Broadband Grant Program](#)
- [Mississippi Farm Bureau: Accurate Broadband Maps are Crucial](#)



The State of Missouri's Resource Rail offers an interactive map that allows users to view FCC broadband availability data from Microsoft, American Community Survey (ACS), and Purdue University.

MISSOURI

POPULATION: 6.17 MILLION
114 COUNTIES AND 1 INDEPENDENT CITY

Over [300,000 Missouri residents](#) still do not have access to broadband internet. The FCC evaluated 6.1 million people and found that 5.7 million people (93.1%) had access to fixed broadband at 25/3 Mbps speeds. In rural Missouri, it found that 1.5 of 1.8 million people (79%) have access to fixed broadband connections at minimum speeds, whereas, in urban areas, 4.3 million residents (98.2%) had fixed broadband access.

The State of Missouri's Resource Rail offers an [interactive map](#) that allows users to view FCC broadband availability data from 2016-2019, Microsoft's Internet usage data, ACS data, and Purdue's 2018 Digital Divide Index. [Missouri's Digital Divide index score](#) was referenced in the state's 2019 Broadband Plan and ranked the state 40th in the nation. The same data sets are the basis for [Missouri's broadband availability map](#).

In August 2019, USTelecom released the results of a fabric mapping pilot including Missouri and one other state and found [as many as 38% of rural locations are unserved](#) in census blocks otherwise considered "served." Microsoft estimates from November 2019 that around [3.7 million people](#) in Missouri do not use the Internet at broadband speeds.

Additional Resources:

- [UM Broadband Initiative seeks to aid rural broadband efforts across state](#)
- [Kansas Doubles Down on Broadband Investment with CARES Funds](#)
- [Over 70,000 Kansas families may finally get broadband through \\$50M in COVID grants](#)

MONTANA

POPULATION: 1.09 MILLION
COUNTIES: 56



Known for its diverse terrain, ranging from the Rocky Mountains to the Great Plains, Montana is the fourth largest state and one of the least populated.

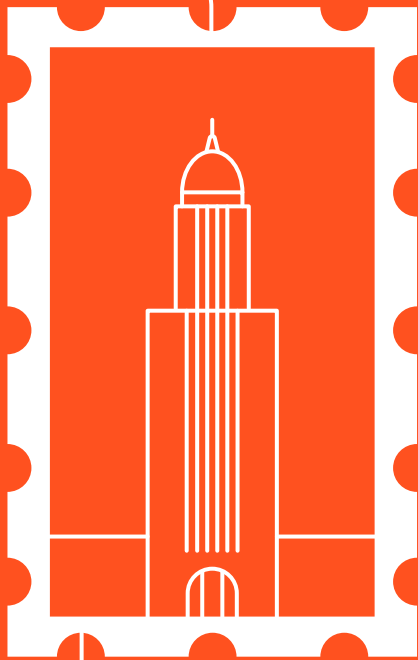
The Commission evaluated 1.1 million residents and found that 927,000 (86.7%) had access to a fixed broadband connection at minimum 25/3 Mbps speeds. In rural Montana, it found that 364,000 of 495,000 residents surveyed (73.6%) had fixed broadband access. The FCC evaluated 574,000 people in urban areas and found that 563,000 (98%) had access to a fixed broadband connection.

The State of Montana provided data for the National Telecommunications and Information Administration's (NTIA) National Broadband Map. While the data are no longer available through NTIA, some data are still available through [Montana's state website](#), though the program concluded in 2014. As of November 2020, [Montana State Library is once again partnering with NTIA](#) to improve broadband mapping through its National Broadband Availability Map.

Microsoft data from November 2019 show that around [622,000 people](#) in Montana do not use the Internet at broadband speeds.

Additional Resources:

- [From Picturesque Landscapes to Precision Agriculture; Mapping the Digital Divide in Montana](#)
- [City Leaders in Bozeman, Montana, Declare Broadband Essential Infrastructure](#)
- [FCC awards \\$126M for Internet in rural Montana – Now what?](#)



In February 2021, the Nebraska Regional Officials Council launched a statewide broadband mapping initiative, encouraging every resident to take the one-minute speed test from any internet-enabled device. Results will be used to inform broadband infrastructure plans.

From sanctuaries where visitors can observe sandhill crane migrations to traditional homesteads that immerse guests into 1887, Nebraska invites “enlightened truth-seekers” to find out what makes it unique. Seeking truth is at the core of its broadband data collection efforts. A state tuned in for self-reflection can provide valuable insights on effective broadband strategies, particularly in the rural parts of the state that are the most expensive to serve.

The FCC evaluated 1.9 million people in Nebraska and found that 1.8 million (96.3%) had fixed broadband access at the 25/3 Mbps benchmark. In rural Nebraska, it found that 454,000 of 522,000 people (87%) had access to a fixed connection at minimum speeds. The Commission also evaluated 1.4 million people in urban areas and found that 97.1% had fixed broadband access.

Nebraska Broadband makes an interactive broadband map available, which uses data collected from service providers, anchor institutions, and Nebraska residents. The map also shows locations of projects targeted for the Nebraska Universal Service Fund.

Like many states with low population density, broadband prices are high, bringing connectivity out of reach for many people. BroadbandNow shows that just over 10% of residents have access to a wired plan priced at \$60 a month or lower. This may be one reason that Microsoft found that around 1.1 million people in Nebraska, over half the state’s population, do not use the Internet at broadband speeds.

In addition to a broadband map, in 2018 the state Legislature passed and

Governor Pete Ricketts signed into law a bill that established the Rural Broadband Task Force. The Task Force studies broadband access in Nebraska and neighboring states and makes policy recommendations to the Governor and Legislature on effective and efficient strategies for broadband deployment.

In October, Governor Ricketts announced that Nebraska was awarding \$29.5 in broadband grants through the Remote Access Rural Broadband Grant program to Nebraska companies. Governor Ricketts said

These grants will lead to better broadband service in many areas of the state that are currently underserved. The enhanced service will equip more of our rural communities with the technology needed to conduct business online, make virtual health visits, and engage in distance learning opportunities.

Department of Economic Development director Anthony L. Goins said

COVID-19 has underscored the need for a more concentrated, collaborative effort to improve our state’s broadband infrastructure. This grant is an important first step toward ensuring all citizens of Nebraska have the opportunity to participate in the digital economy.

Additional Resources:

- Nebraska Broadband Mapping Project
- How a new broadband map could finally bring fast Internet to everyone in America
- Panhandle Area Development District



Fifteen Nevada counties are working to improve broadband access in their communities with support from the Nevada Governor's Office of Science Innovation and Technology and Nevada State E-rate Team.

Nevada features iconic national parks, treasured historical sites, and wide open spaces. The state's low population density and large amount of rural area contribute to its beauty, but increase broadband deployment costs. Even before the Coronavirus (COVID-19) pandemic struck the nation in 2020, [Nevadans recognized](#) that broadband access was essential for distance learning, telemedicine, and employment, releasing [a state broadband plan](#) in 2014. Nevada not only has a large portion of rural areas, but also has [the second highest](#) number of rural communities with median household incomes that border on poverty in the nation.

Of the three million residents that the FCC evaluated statewide, 2.9 million people (97.1%) had fixed broadband access at minimum 25/3 Mbps speeds. The agency evaluated 225,000 rural residents and found that 149,000 (66.1%) have access to a fixed broadband connection. In urban areas, it evaluated 2.8 million people and concluded that 99.6% had access to a fixed connection at minimum speeds.

The State of Nevada offers an interactive map through [Connect Nevada](#). As well as making data available, Connect Nevada collects resident feedback to verify the map's accuracy.

Fifteen Nevada counties are seeking to improve broadband access in their communities and The Nevada Governor's Office of Science Innovation and Technology and Nevada State E-rate Team are [giving them the tools](#) to do so. The State E-Rate Team uses a six step process that includes:

1. Recruiting elected officials and community and business leaders to serve on Broadband Action Team;
2. Surveying residential and business users;
3. Analyzing planned road and other public works construction projects;
4. Inventorying community broadband assets including fiber, conduit, buildings, and land;
5. Surveying Community Anchor Institutions' services and needs; and
6. Searching Connect America Fund allocations.

The Team uses this process to provide strategic guidance and implementation strategies that ultimately helps improve broadband access for residents.

In Nevada, Microsoft estimates that [1.2 million people](#) do not use the Internet at broadband speeds. This means that while residents may have a home Internet connection, it does not reach the minimum speed threshold set by the FCC. That number may also account for people who cannot afford to purchase a home broadband subscription. In fact, BroadbandNow estimates that [less than 14% of Nevada residents](#) have access to a wired plan that costs \$60 a month or less. That shortcoming has created huge challenges for education, employment, and healthcare in the state.

Brian Mitchell, director of the Nevada Governor's Office of Science, Innovation and Technology [said](#):

In Clark and Washoe Counties, there are huge communities that

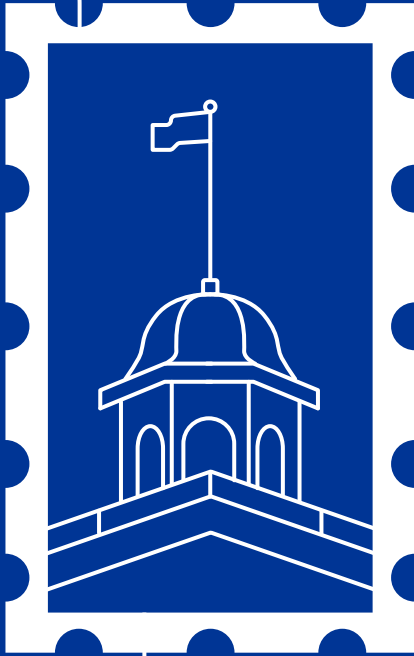
NEVADA

POPULATION: 3.19 MILLION
16 COUNTIES AND 1 INDEPENDENT CITY

do not have access to the Internet — and I should say high-speed Internet — because they can't afford it or they don't know that they could afford it ... In the rural areas, it could be both or it could just be access. There are people who are well off — they worked for the mines, they've worked for local government or other businesses — and they still may not have access to high-speed Internet.

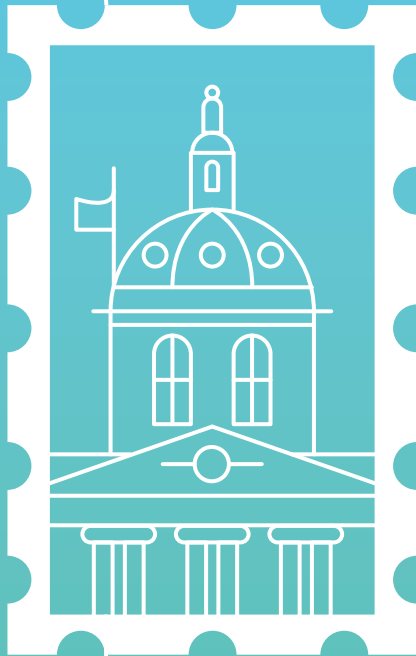
Additional Resource:

[Connect Nevada](#) relies on citizen feedback to verify the accuracy of the maps. Questions or recommendations for coverage area changes can be submitted on the interactive map or e-mail maps@connectnv.org.



NEW HAMPSHIRE

POPULATION: 1.37 MILLION
COUNTIES: 10



Although New Hampshire is working to improve broadband availability, R Street's 2020 [Broadband Scorecard Report](#) gave the state a "C" grade for the third year in a row for its laws governing broadband deployment.

New Hampshire is an adventurous state that draws to mind rolling hills, lush forests, and a scenic seacoast. Its venturesome spirit does not end at its beautiful landscape. At the start of the Coronavirus (COVID-19) pandemic, the State of New Hampshire [received national recognition](#) for its transition online. That shift necessitated increased funding for broadband access, leading the state to [devote \\$50 million](#) and issue [a request for proposals](#) in June 2020 for the Connecting NH Broadband Expansion Program.

Discussing the initiative, Education Commissioner Frank Edelblut [said](#)

While New Hampshire schools have gained nationwide recognition for their switch to remote learning this spring, connectivity remains a challenge, particularly for students in rural New Hampshire communities.

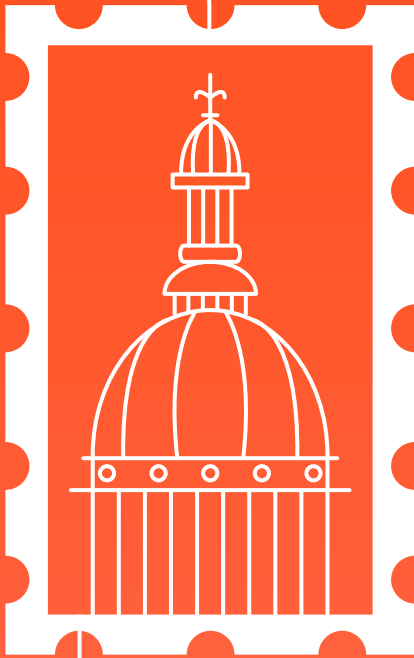
The FCC evaluated 1.3 million people in New Hampshire and found that 1.3 million people (96.8%) had fixed broadband access at the 25/3 Mbps benchmark. It concluded that 509,000 of 542,000 rural residents (94%) have access to a fixed broadband connection at minimum speeds. In urban New Hampshire, the agency found that 807,000 of 818,000 people (98.6%) had fixed broadband access.

In 2017 and 2018, the University of New Hampshire Survey Center [collected broadband data for businesses through a survey](#). 83% of respondents were small businesses with fewer than 50 employees, and the survey found that only about 55% of respondents said that their broadband speeds were sufficient to meet their business needs. The full

results are no longer available because the website has been [decommissioned due to lack of funding](#). In June 2020, [New Hampshire was added](#) to the National Telecommunications and Information Administration's National Broadband Availability Map Program.

Additional Resources:

- [New Hampshire added to National Broadband Availability Map](#)
- [NH Delegation Applauds National Broadband Availability Map Program's Expansion to Include New Hampshire](#)



Early in the COVID-19 pandemic, Governor Phil Murphy addressed the disparity for students who did not have devices and Internet connections in their homes, unveiling a \$115 million plan to get them connected.

Compared to other states, New Jersey has a high level of wireline connectivity, with nearly all residents having access to a fixed broadband connection at minimum speeds of 25/3 Mbps. At the same time, many residents still do not have a home broadband connection, which has only become more vital to life and prosperity in the last year.

The Commission evaluated 8.9 million people in New Jersey. Overall, it found that 8.7 million people (98.5%) had access to a fixed broadband connection at minimum speeds of 25/3 Mbps. When compared to the 2019 broadband deployment report, the FCC's most recent analysis shows a 0.6% decrease in overall connectivity among New Jersey residents.

In rural areas, the FCC evaluated 454,000 people and concluded that 464,000 (97.8%) had access to a fixed broadband at minimum speeds. This is a 0.1% decrease in connectivity since 2019. In urban areas, the agency found that 8.3 of 8.4 million people (98.6%) had fixed broadband access. Again, this reflects a decrease from the 2019 broadband deployment report, a 0.6% drop in urban connectivity.

In September 2020, New Jersey Future released its [Broadband For All Report](#), which recommends that New Jersey develop a state broadband office and implement a broadband mapping initiative. As part of the National Telecommunications and Information Administration's State Broadband Initiative, [New Jersey collected data about broadband availability](#) and

proposed taking the map a step further, though the program's funding lapsed in 2015.

In 2018, NJ Spotlight published an [interactive map](#) that shows Internet use and computer access from American Community Survey data. The map shows that:

On average, 89% of New Jersey households had at least one computer — including desktops and laptops, tablets and smartphones — at home during the period. Many had more than one: 82% had a desktop or laptop, 74% had a smartphone and 57% had a tablet. About 355,000 households had none of those.

BroadbandNow's data show that [New Jersey](#) is one of the most connected states, with 98.1% terrestrial broadband access and 78.4% access to a wired plan that costs \$60 or less a month. At the same time, Microsoft data for New Jersey from November 2019 show that around [2.6 million people](#), nearly 30% of the state's population, still do not use the Internet at broadband speeds. The 21.6% of residents cannot purchase a plan priced below \$60 a month may be one reason for the disparity between access and adoption.

Early in the Coronavirus (COVID-19) pandemic, Governor Phil Murphy addressed the disparity for students who did not have devices and Internet connections in their homes, unveiling a \$115 million plan to get students connected, [saying](#), "The Department of Education estimates roughly

NEW JERSEY

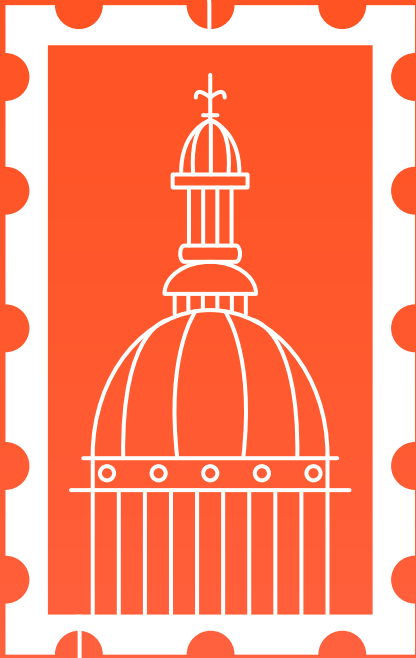
POPULATION: 8.87 MILLION
COUNTIES: 21

230,000 of our students were put at a disadvantage in comparison to their peers because of a lack of technology or a reliable Internet connectivity.”

Governor Murphy also took action to ensure that affordability was not the reason that people who were connected became disconnected, issuing [an executive order](#) that prohibited providers from disconnecting customers due to nonpayment until 30 days after the end of the public health emergency. That [order was extended](#) to November 15, 2020, after which time providers will be required to enroll customers with an existing account into a payment plan prior to disconnecting service.

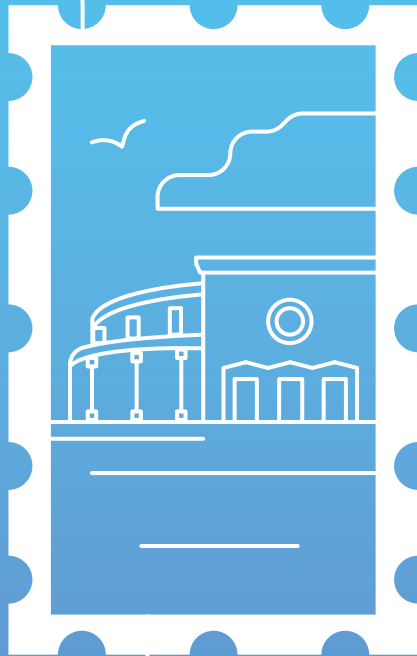
Additional Resource:

[Broadband for All: The Geography of Digital Equity in New Jersey](#)



NEW MEXICO

POPULATION: 2.11 MILLION
33 COUNTIES AND 1 CONSOLIDATED CITY-COUNTY GOVERNMENT



25% of households in New Mexico do not have broadband of any kind. In 2021, the Office of Broadband Access and Expansion was established to help centralize deployment strategies and funding opportunities.

New Mexico is a beautiful and culturally diverse state, but like many other states with largely rural areas, broadband access is not available to all residents equitably. In particular, rural areas lag far behind urban areas in terms of both fixed broadband and mobile Internet connectivity.

The Commission evaluated 2.1 million residents and found that 1.8 million (87.1%) had access to a fixed broadband connection at minimum 25/3 Mbps speeds. In rural New Mexico, it evaluated 509,000 people and found that 295,000 (58%) have access to a fixed connection at minimum speeds. Among urban residents, 1.5 of 1.6 million (96.5%) had access to fixed broadband at minimum speeds.

New Mexico Broadband Program's (NMBB) [broadband map](#) includes locations of WiFi hotspots across the state as well as charting broadband coverage, areas eligible for funding and those with ongoing state-funded projects, and public facilities. Residents can research providers through an address search feature. The data are provided by providers and verified through public feedback and field verification. The NMBB recommends that residents complete its [speed test](#) several times a week at different times of day to capture the differences in speeds during peak hours.

At the local level, University of New Mexico researchers are working to expand broadband in an initiative called [Albuquerque GigaPoP](#), which works to connect city and school services, educators, and parents to data and information.

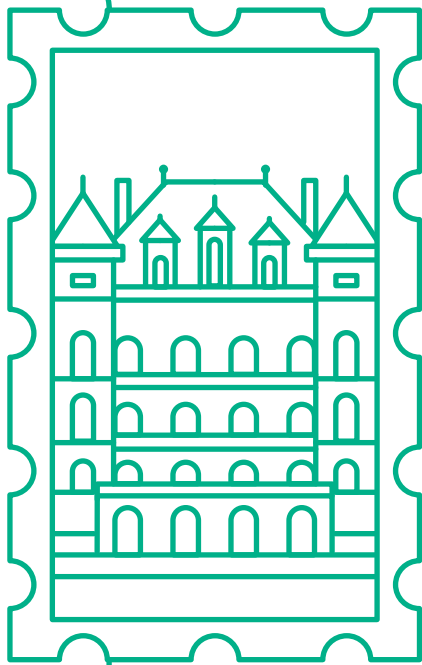
Microsoft data show that approximately [1.5 million people](#) (just under 75% of the state's population) in New Mexico do not use the Internet at broadband speeds. While this is partially due to a lack of network access, affordability may also be a reason that so many New Mexicans do not use the Internet at broadband speeds. [BroadbandNow estimates](#) that terrestrial broadband is available to even fewer residents than the FCC, showing 66.5% coverage, and that only 12.5% of the state has access to a wired plan priced at or below \$60 a month.

Upon introducing a broadband bill in the state legislature in 2019, Governor Lujan Grisham [said](#):

Investments in broadband will be an incredible boon to rural New Mexico. Public-private broadband partnerships will expand this essential element of a modern, efficient and effective infrastructure system. I'm thrilled we can take action here and, as a result, see improvements in education and public safety while also boosting productivity and incomes across the state.

Additional Resources:

- [Legislators Ready For 2021 Session Despite Difficult And Challenging Year](#)
- [‘These maps are bogus’: U.S. lawmakers tear into telecom execs over spotty rural coverage](#)
- [Next Century Cities Case Study: Albuquerque, New Mexico](#)



The State of New York recognizes broadband as vital a resource as running water and electricity to New York's communities, citing that it is critical to the future of the state's economy, education, and safety.

NEW YORK

POPULATION: 19.30 MILLION
COUNTIES: 62

At first glance, it might not seem that New York has the same connectivity struggles as less densely populated states. In 2016, New York ranked number one in the nation for broadband activity and investment. While higher population density reduces deployment costs and New York is very densely populated, Microsoft's data show that around 9 million people living in New York, almost half of all residents, do not use the Internet at broadband speeds and the Citizens' Committee for Children in New York estimates that 471,839 households do not have any Internet access at all.

The FCC evaluated 19.5 million people statewide and found that 19.2 million (98.7%) had access to a fixed broadband connection at minimum 25/3 Mbps speeds. It concluded that 2.2 of 2.4 million people (94.3%) have fixed access to broadband. The agency also evaluated 17.1 million urban residents and concluded that 17 million (99.3%) had access to a fixed connection at minimum speeds. Notably, in urban areas, connectivity has dropped by 0.6% since the 2019 broadband deployment report was released.

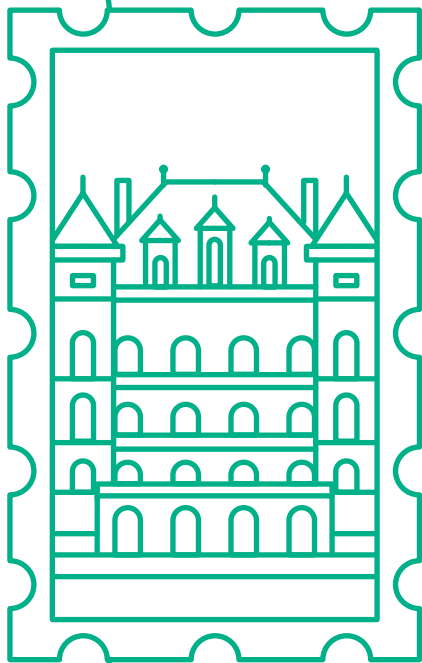
It is widely known that the FCC's data overstates broadband access and does not account for how many residents cannot afford or are not equipped to adopt. Additionally, residents in New York have explained that even when the FCC's data show that they have access, providers are charging thousands of dollars to hire a consultant to chart out pole locations. The cost is \$10,000 for 40 miles (or about \$250 a mile) and consultants generally require a minimum of 40 miles to do the work. Charting pole locations is the first of

many steps to connectivity for people living in rural New York since providers then determine whether it is feasible to connect to the locations.

This means that rural residents who the FCC says have access may actually need to pay thousands of dollars only to either be told that they cannot be connected or to pay full price for the service they ultimately receive. If states or the federal government collected location information from pole owners, they could make that information available and drastically reduce introductory costs for consumers and providers to connect rural areas.

At the local level, leaders are seeking information from residents about broadband access in the state. The Lewis County Legislature and Development Authority of North County are partnering to conduct an Internet use survey. Lewis County's Economic Development Office reaches out to local businesses to talk to them about the survey and help people fill out their surveys via phone or send hard copies of surveys to the people who need them.

At the state level, New York makes maps available to supplement the information available through the FCC. New York participates in the National Telecommunications and Information Administration's National Broadband Map program. New York's Broadband Availability Map uses Form 477 data from December 2016 as a basis. Columbia County Broadband Project makes broadband maps public that show availability in each municipality in the County. The maps rely in part on New York's state data and note that



NEW YORK

POPULATION: 19.30 MILLION
COUNTIES: 62

availability may have changed since 2016. Armstrong partners with the New NY Broadband Project and Governor Cuomo's Office to expand broadband, and their planning includes [a map of areas pending and under construction](#).

The New York legislature [passed a bill](#) that would expand state broadband information through a study conducted through the New York State Public Service Commission, but the bill [remained unsigned](#) by Governor Cuomo at the end of 2020. Senators from across political lines agreed that improving broadband mapping is imperative to connecting all residents with broadband. Republican Senator George Borrello [said](#):

Broadband is a critically important issue right now, particularly in rural upstate New York. I'm glad that there is finally something being done to address what has only been considered a fiasco when it comes to the broadband access projects that are being delayed and cancelled across the state.

Democrats agreed, with bill co-sponsor Senator Tim Kennedy saying:

With more New Yorkers working from home, and more students learning remotely than ever before, the COVID-19 pandemic has underscored what we've known for years: Internet access isn't a luxury - it's a necessity. Unfortunately, broadband equity still doesn't exist. This legislation seeks to remedy that by requiring the PSC to thoroughly examine the gaps in affordability and accessibility that persist, and work alongside the public and services

providers to prioritize access and identify sustainable, long-term solutions. It's imperative that this legislation, which has passed both the Senate and Assembly, is signed into law immediately.

Additional Resources:

- [Broadband Survey Maps Upstate New York Broadband Future](#)
- [New York State Broadband Office will not answer WGRZ questions](#)
- [EXCLUSIVE: FCC Commissioner discusses broadband issues in New York State](#)
- [Rural areas in NYS are in need of broadband amid the COVID-19 pandemic](#)
- [The Affordable Broadband Portal helps New Yorkers find the affordable programs in their area](#)



In December 2020, Governor Roy Cooper made \$30 million available for broadband expansion through the Growing Rural Economies with Access to Technology (GREAT) grant program.

NORTH CAROLINA

POPULATION: 10.70 MILLION
COUNTIES: 100

North Carolina residents have the best of both worlds, with the eastern part of the state coasting on the Atlantic Ocean and some of the highest elevations of the Appalachian mountains spread across the state's westernmost regions.

Residents also enjoy [a lower cost of living](#) compared to the rest of the country, with housing, health care, utilities, groceries, and transportation priced below the national average. Unfortunately, the same is not true for broadband prices. In North Carolina, [BroadbandNow](#) found that less than half the state has access to a wired Internet plan that costs less than \$60 a month. The lack of affordable pricing options may be one reason that Microsoft's data show that around [5.4 million people](#) in North Carolina do not use the Internet at broadband speeds.

Despite the lack of affordable options, North Carolina's broadband infrastructure is well on its way to reaching all parts of the state, rural and urban. The FCC evaluated 10.5 million residents and found that 10 million (95.5%) had access to a fixed broadband connection at minimum speeds of 25/3 Mbps. In rural North Carolina, it found that 3.0 of 3.5 million residents (87%) have fixed broadband access. In urban areas, the agency concluded that 99.7% of the 7 million people evaluated had fixed access broadband at minimum speeds.

The [NC Broadband Infrastructure Office](#) makes a map available that shows both the data and a map version of the data set that includes

layers for Form 477 data and ACS broadband availability data, as well as a layer showing grant eligible locations and locations that have been awarded federal or state funding. Additionally, the [NC Broadband Survey Dashboards](#) present information on broadband availability and adoption that has been gathered from households and businesses across the state through the North Carolina Broadband Survey.

In 2019, Governor Roy Cooper issued Executive Order 91, which [established a task force on broadband expansion](#). When announcing the task force, Governor Cooper said,

In today's schools and workplaces, high-speed Internet is not optional. Too many North Carolinians lack Internet access they need to apply for jobs, do homework or run a small business. We must address this digital divide to give every community in North Carolina an equal opportunity to thrive using today's technology.

The task force is currently [soliciting feedback](#) from residents and businesses on broadband availability in partnership with the Friday Institute.

Governor Cooper originally sought to use CARES Act funding to improve broadband in the state, announcing that \$30 million would be made available. In November 2020, North Carolina's [providers received](#) an email from the governor's office that the funding would be reallocated

NORTH CAROLINA

POPULATION: 10.70 MILLION
COUNTIES: 100



to other purposes since the CARES Act originally required that funding be spent by December 30, 2020. Then, in December 2020, Governor Cooper [made \\$30 million available](#) for broadband expansion through the Growing Rural Economies with Access to Technology grant program. In a press release announcing the funding, Governor Cooper said:

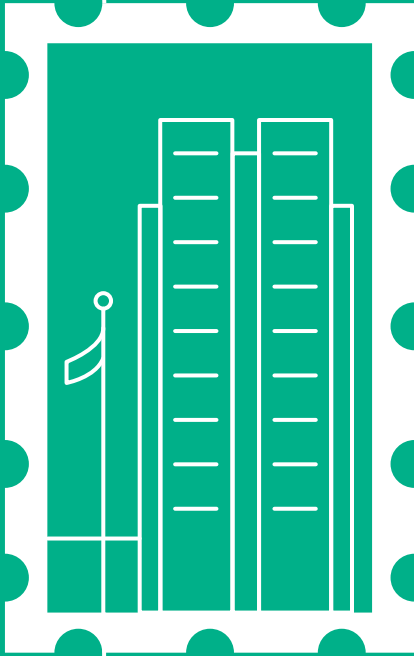
“This pandemic is shining a light on the need for better high speed Internet access in rural communities. These projects will make sure the Internet can connect people to the education, health care and jobs they need.”

Additional Resources:

- [How States Use Broadband Surveys to Fight for Better Funding](#)
- [Working from home? North Carolina’s new site maps Wi-Fi, ISP deals](#)
- [Rural North Carolinians are sicker with worse access to broadband](#)

NORTH DAKOTA

POPULATION: 777,026
COUNTIES: 53



Unlike most states, North Dakota's rural residents are more likely to have fiber connectivity and Gigabit access than urban residents.

Even though North Dakota is [one of the most rural states in the country](#), [the state has become a leader](#) in connecting residents and improving speed and affordability. Connectivity in both urban and rural parts of the state are relatively high, though connectivity in communities of all sizes needs to be improved before every resident is able to get online. In fact, unlike most states, a case study by the Institute for Local Self-Reliance found that North Dakota's rural residents [are more likely](#) to have fiber connectivity and Gigabit access than urban residents.

According to Governor Doug Burgum, this success is attributed to the collaborative effort that has gone into improving broadband access in the state. Governor Burgum describes the path to success by [saying](#):

We just put out a challenge to everybody, to the private sector, to the government, federal state and whatever and we said, 'Let's be the first state that gets a gigabit to everybody.' We've had great participation from our rural telephone co-ops.

In the same way we needed to bring electricity and telephone connection to rural areas, we've got to do that with broadband.

The Commission evaluated 762,000 North Dakota residents and found that 738,000 (96.8%) had access to a fixed broadband connection at minimum speeds of 25/3 Mbps. Of the 345,000 people surveyed in rural areas, 325,000 (94.2%) have access to a fixed connection at minimum speeds. The agency found that 99% of the 417,000

urban residents had access to a fixed connection at minimum speeds.

The North Dakota Information Technology Department makes a [speed test available](#) for residents alongside its [2019 broadband plan](#). Though North Dakota apparently [unveiled its map in 2011](#), the map is no longer available.

Governments are not the only sources of data on broadband access in North Dakota. BroadbandNow [estimates that 86.8%](#) of the state has terrestrial broadband access and that 77.7% of residents have access to a wired plan that costs \$60 or less a month. Microsoft's data for North Dakota show that around [374,000 people](#), or just over half the state, do not use the Internet at broadband speeds. INDATEL [offers a map](#) of its fiber network, though not at a granular level.

Additional Resources:

- [Why North Dakota Has the Best Internet in the United States](#)
- [Broadband ND: an ITD Program to Improve North Dakota's Broadband Landscape](#)



In 2020, Ohio doubled down on broadband efforts by appointing a state broadband officer and establishing BroadbandOhio, an office dedicated to improving high-speed Internet access statewide.

Innovation has always been at the heart of Ohio, housing research and development that led to the Wright brothers iconic takeoff being a prime example. Local leaders in Ohio are no exception to this innovative spirit and play a central role in expanding and improving broadband access in the state. [Medina County Fiber Network's](#) open access model serves as a key backbone to the local economy. Fairlawn's municipal network FairlawnGig [keeps residents connected](#) with work, school, and friends and family throughout the Coronavirus (COVID-19) pandemic.

The FCC evaluated 11.7 million residents and found that 11.4 million (97.2%) had access to a fixed broadband connection at 25/3 Mbps speeds. While nearly all urban residents had fixed broadband access (99.% of the 11 million residents evaluated), connectivity continues to lag behind in rural areas. In rural Ohio, the FCC found that 2.2 of 2.6 million residents (88.4%) have fixed broadband access.

In NCC member Medina County, the Commission evaluated approximately 178,000 people. The FCC found that, of those evaluated, 98.2% had access to a fixed connection at FCC minimum speeds.

In its [Connecting Cuyahoga 2019 Insights](#) report, Cuyahoga County took an in depth look at American Community Statistics data and found that *"Unsurprisingly, low-income, unconnected households are concentrated in various neighborhoods located in Cleveland, East Cleveland, Euclid, and a limited number of census tracts in other suburbs"* and that *"Unconnected senior citizens can be found in significant numbers throughout Cuyahoga County, including many economically advantaged suburban areas."* The report goes on to explain that while most Cuyahoga residents have access to infrastructure, there are still gaps in subscription rates, particularly for low-

income and aging residents.

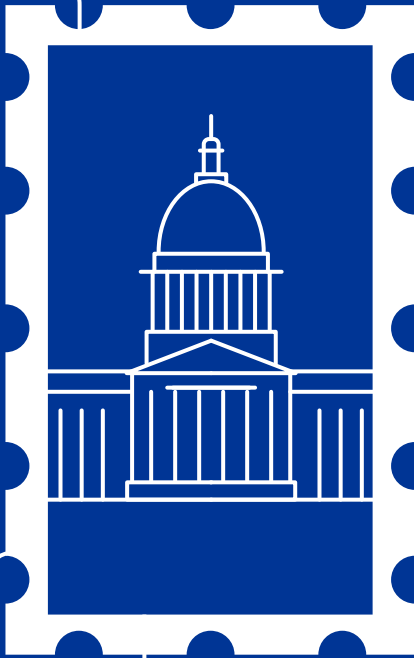
Still, despite what the FCC has found, InnovateOhio works with Connected Nation to improve broadband data collection in the state. InnovateOhio's broadband map is [available through Connected Nation](#) and shows availability at 10/1, 25/3, 50/5, and 100/10 Mbps speed tiers. The basis for the data is Form 477, but Connected Nation Ohio has partnered with broadband providers to improve the accuracy of the information. Residents [can submit feedback about broadband availability](#).

2020 was a transformative year for broadband in Ohio. It created a state broadband office, BroadbandOhio, and appointed a state broadband officer. When introducing BroadbandOhio in March 2020, [Governor Mike DeWine stated](#), *"You cannot have opportunities in the modern economy or access to the modern education system or healthcare system without having access to broadband Internet."* The introduction of the state's broadband office follows the release of a broadband access plan released by InnovateOhio in December 2019.

Ohio's state government is not the only source of broadband data in the state. BroadbandNow's data show that [less than half](#) of Ohio residents have access to a wired plan that costs \$60 or less a month. Microsoft's data show that over half the state, [around 6.7 million](#) Ohio residents do not use the Internet at broadband speeds.

Additional Resources:

- [Connected Nation: Ohio](#)
- ['Cautiously optimistic': Federal funding to expand rural broadband in Ohio](#)
- [Pandemic effects evident in Ohio Farm Bureau policy priorities](#)
- ['Every day, we're falling behind in Appalachian Ohio': Lack of broadband hurts rural areas](#)



The Oklahoma Broadband Mapping Project invites residents to provide information about broadband availability in their area. Its map shows broadband availability across the state, including speed test results.

Oklahoma has a richly diverse geographic landscape and a unique cultural history, with [among the most geographic diversity](#) in the country and [nearly half of the land](#) belonging to Native American communities. Both of these characteristics impact statewide broadband availability. Geographic diversity, while beautiful, can [increase broadband deployment costs](#). Statewide broadband inequities are only exacerbated for people living on Tribal lands, where, nationwide, [less than half of all households](#) have access to high-speed broadband.

The Commission evaluated 4 million residents and found that 3.5 million (87.8%) had access to a fixed broadband connection. In rural Oklahoma, wireline broadband access lags far behind urban areas. It found that 1.0 of 1.4 million rural residents (71.8%) have access to a fixed connection at minimum speeds. By contrast, in urban areas, wired broadband and slower-speed mobile Internet were available to nearly all residents. The FCC concluded that 96.3% of the 2.6 million urban residents evaluated had fixed broadband access.

According to Microsoft's data, around [2.6 million people](#), or over 65% of the population, in Oklahoma do not use the Internet at broadband speeds. With [one of the highest poverty rates](#) in the country, [particularly in rural areas](#), and [around 52% access](#) to a wired plan that costs \$60 or less a month, affordability is likely a challenge for many Oklahomans.

The Oklahoma Broadband Mapping Project provides one opportunity to

improve the FCC's data by offering a [public survey](#) that allows residents to provide information about broadband availability in their area alongside [a map](#) that shows broadband availability across the state and publicises the results of speed tests on its map. The map includes locations of anchor institutions and allows users to overlay demographic information including income, age, population density, and education level.

Since COVID-19 brought the importance of home broadband connections into the spotlight, researchers at Oklahoma State University investigated [broadband access among students](#). "A survey of Oklahoma school districts in the early stages of the pandemic found that 167,000 out of 700,000 students (24%) lacked an Internet connection at home." The same researchers overlaid maps of areas where the FCC considers broadband available with U.S. Census data about the percentage of broadband subscriptions in each school district.

In May, Governor Kevin Stitt vetoed a bill that would have created a Rural Broadband Expansion Council that would focus on improving broadband access in rural parts of the state, but the state legislature [overrode the veto](#). The Council has been [meeting since August 2020](#).

In response to federal funding for broadband access, [Governor Stitt stated](#):

COVID-19 has emphasized the important role a robust broadband infrastructure plays in the success of our state, especially

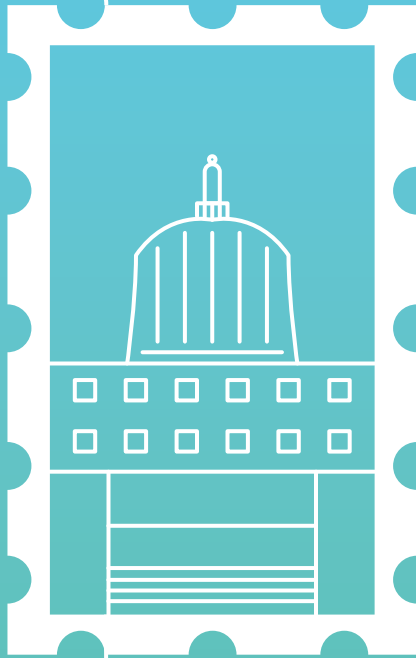
OKLAHOMA

POPULATION: 3.99 MILLION
COUNTIES: 77

for our rural communities. High speed Internet increases access to a quality education, affordable healthcare, enhanced agriculture and expanded economic opportunity. While we have made significant progress over the past year, moving from 47th to 26th in broadband access, there is still work to be done. I thank President Trump and Secretary Purdue for their investment in our rural broadband system and their commitment to help us in our vision to improve connectivity for all 4 million Oklahomans.

Additional Resources:

- [Federal Uncertainty Affecting Group Charged with Improving High-Speed Internet in Rural Oklahoma](#)
- [Sen. Lankford calls on FCC to to update broadband coverage maps](#)
- [Native American tribes aim to expand broadband Internet during pandemic](#)



Although 27.6% of Oregon's population has access to minimum broadband connections, 28% of households report that their Internet speeds are not fast enough. 38% report occasional or frequent problems.

OREGON

POPULATION: 4.29 MILLION
COUNTIES: 36

Oregon is one of the most aesthetically beautiful states in the country, but with that beauty comes challenges to deploying broadband infrastructure. Of its 4.2 million residents, the FCC found that 94.9% had access to a fixed broadband connection at 25/3 Mbps speeds. In rural Oregon, the FCC evaluated 872,000 residents and found that 693,000 (79.5%) have fixed broadband connections at minimum speeds. In urban areas, the FCC found that 98.9% of 3.3 million residents had fixed access to broadband.

Adequate broadband mapping is necessary for communities to receive the funding they need to provide their residents with high quality affordable broadband. [Business Oregon's state broadband map](#) relies on data reported through the Federal Communications Commission's Form 477, which overstates broadband access. To address the disparity between Form 477 reporting and the on the ground experience for people living in the state, Oregon's Broadband Office [sought input from Strategic Networks](#) Group, which began filling in some of the gaps in broadband mapping. The results of the study were documented in a [report](#) made available in January 2020. In addition to internal statewide work, Oregon is [participating with the National Telecommunications and Information Administration](#) on its National Broadband Availability Map initiative. Residents can inform the Office of discrepancies by emailing broadband.oregon@oregon.gov.

Christopher Tamarin, Broadband Outreach and Strategic Planning Project Coordinator for Broadband

Oregon shared the objective for the Oregon Broadband Map: "Our vision for the Oregon Broadband Map www.broadband.oregon.gov is to be a platform for data collected to track the availability of broadband services, measure progress, provide related information and provide public access to the data. The map is searchable by city, county, tribal lands, specific address, or point selection on the map."

Oregon is one of three states where [Speedup America](#) is currently available. Developed to build upon SpeedUp Louisville, a technology platform originally built to aid digital inclusion efforts in Louisville, Kentucky, Speedup America enables local leaders in Oregon to conduct speed tests and consolidates the results in an interactive map. This initiative is designed to start conversations between neighbors, support data based solutions, and help to identify funding and policies to expand broadband access.

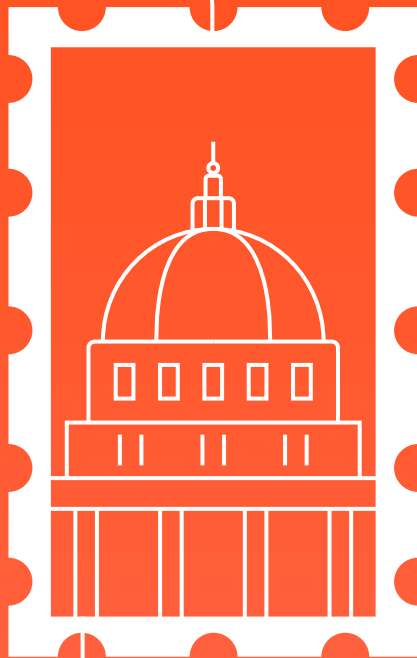
According to BroadbandNow, 84.5% of [Oregon](#) residents have access to terrestrial broadband, but only 24.5% access to a plan priced at or below \$60 a month. Microsoft's data show that around [1.6 million people](#) in Oregon do not use the Internet at broadband speeds.

Additional Resources:

- [Broadband Mapping Initiatives Transform Oregon's Digital Landscape to Reflect its Natural Beauty](#)
- [Wyden Statement on the Broadband Provisions in COVID Relief Package](#)

PENNSYLVANIA

POPULATION: 12.80 MILLION
67 COUNTIES AND 1 CONSOLIDATED CITY-COUNTY GOVERNMENT



A November 2020 study sponsored by The Center for Rural Pennsylvania concluded that “[u]rban and rural respondents are receiving systematically inequitable service – not only in terms of broadband speed, but also in the price for service.”

Local officials may be surprised to learn that the FCC found that 12.3 of 12.8 Pennsylvania residents statewide (95.9%) had access to a fixed broadband connection at 25/3 Mbps. They would agree that connectivity in rural Pennsylvania continues to lag behind urban access. Surprisingly, the FCC evaluated 2.7 million people in rural areas and found that 2.4 million people (86.7%) have access to fixed broadband connections. It also found that 9.9 of 10.1 urban residents (98.4%) had access to a fixed broadband connection at minimum speeds.

The Pennsylvania Department of Economic and Community Development makes a broadband map available that includes FCC data for fixed and mobile providers. Pennsylvania law sets the state’s minimum broadband speeds at 1.544 Mbps/128 Kbps, significantly lower than the national threshold of 25/3 Mbps. The Pennsylvania Public Utilities Commission imposes availability requirements on regulated carriers that they provide broadband service within 10 business days of a request.

Penn State Extension also makes a map of the FCC’s Form 477 data available and includes data census block group level data about service prices, and the locations of existing structure, including transmission lines, substation, and tower data. In 2019, Penn State researchers investigated the validity of broadband availability data and found that broadband speeds and availability are much lower than data suggest. Further supporting this research, Microsoft’s November 2019 data show that approximately 6.2 million people in Pennsylvania do not use the Internet at

broadband speeds.

In September 2020, the Joint State Government Commission released a detailed 200 page report outlining the background of broadband availability in the state and recommendations for improving broadband access and adoption rates in Pennsylvania. Four annual reports are expected to follow.

The County Commissioners Association of Pennsylvania placed broadband expansion as its number two priority for 2021. A Joint State Government Commission study on broadband pricing found that around \$60 a month is what rural residents are willing to pay for service.

In August 2020, the Philadelphia Federal Reserve released a report on broadband access, computer use, and labor market attachment in Philadelphia. The report found that around 47% of people living in low and moderate-income tracts have home broadband subscriptions, 47% of households in predominantly Latinx neighborhoods and 52% of households in predominantly Black neighborhoods had broadband subscriptions, compared to 76% of households in predominantly white neighborhoods. The report also found a stronger correlation between both labor force participation and unemployment, and home broadband computer access in Pennsylvania compared to the national average.

In June 2020, Pennsylvania Governor Tom Wolf called on the federal government to provide broadband funding, stating:

An investment in broadband Internet connectivity is an investment in our commonwealth’s

PENNSYLVANIA

POPULATION: 12.80 MILLION
67 COUNTIES AND 1 CONSOLIDATED CITY-COUNTY GOVERNMENT

future and prosperity. The critical need for high-speed Internet has become clear in light of our efforts to mitigate the spread of COVID-19, as more families work and learn from home, businesses operate online services and patients access medical care through telehealth.

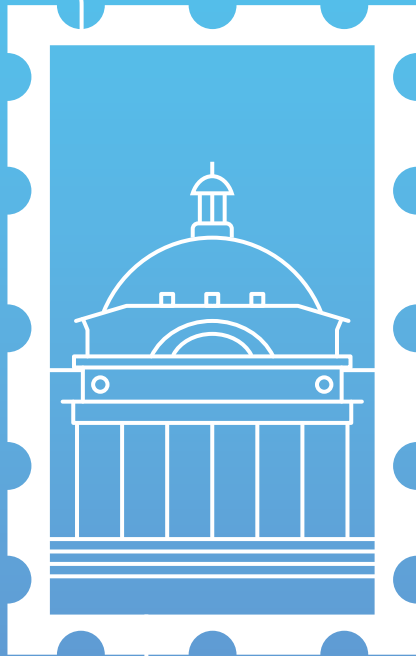
Now, as Pennsylvania focuses on our economic recovery, it's critical that broadband Internet access becomes a reality for every community, and especially our rural areas. It's clear that this is more than a Pennsylvania issue — the digital divide exists in communities across the country. It's in everyone's best interest, especially as technology continues to evolve and advance, that we make a significant infrastructural investment.

Additional Resources:

- [Pennsylvania launches broadband map to prepare ISPs for federal auction](#)
- [Pennsylvania Broadband Map](#)
- [FCC auction money part of PA broadband access solution](#)
- [States couldn't afford to wait for the FCC's broadband maps to improve. So they didn't](#)

PUERTO RICO

POPULATION: 3.19 MILLION
78 MUNICIPIOS LED BY ELECTED MAYORS



Puerto Rico's first broadband strategic plan set the ambitious goal of making Gigabit speed Internet available to 70% of Puerto Rico households by 2020.

The Commission evaluated 3.2 million Puerto Rico residents and found 99.9% had access to a fixed broadband at minimum 25/3 Mbps speeds. As with many other parts of the U.S., rural Puerto Ricans are less connected than urban residents. Of 207,000 rural residents, the agency concluded that 205,000 people (98.8%) have fixed access to broadband. In urban areas, the FCC evaluated 3 million people and found that all of them had access to a fixed connection at minimum speeds.

In 2015, the Puerto Rico Broadband Task Force, a public-private partnership of broadband stakeholders released its [Gigabit Island Plan](#). The plan was funded through National Telecommunications and Information Administration grants supported by the American Recovery and Reinvestment Act and builds on progress made by the Task Force since Puerto Rico's first [Broadband Strategic Plan](#) was published in 2012. The plan set the ambitious goal of making Gigabit speed Internet, generally provided by fiber-to-the-home, available to 70% of Puerto Rico households by 2020.

Continuing and improving broadband mapping in Puerto Rico was among the recommendations included in the plan. [Connect Puerto Rico](#), in conjunction with the Puerto Rico Telecommunications Regulatory Board and Puerto Rico Broadband Taskforce, have been working together to expand broadband access and adoption. Connected Nation was contracted by the Puerto Rico Institute of Statistics to work through [Connect PR and provided granular broadband availability maps](#) until 2019, but those maps are no longer available. The last available data are from 2014 and [the latest updates on the progress](#) toward the goals outlined in

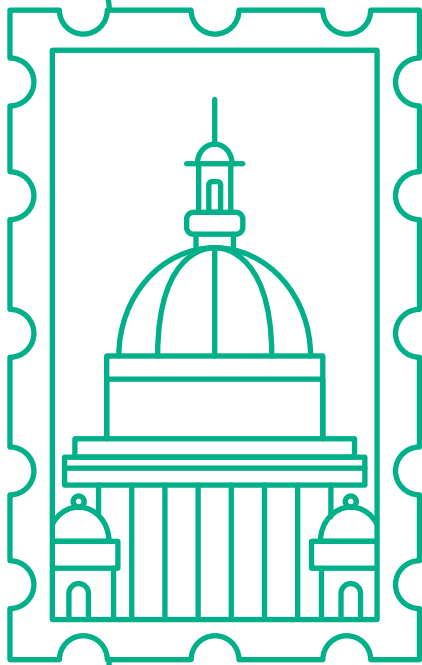
the Gigabit Island Plan were made in 2018. The U.S. Census Bureau estimates that [68.6% of residents have access](#) to a home computer and that 60.4% have a home broadband subscription.

The lack of available data is only one part of the problem in Puerto Rico. Following Hurricanes Irma and Maria, critical broadband infrastructure was destroyed which [has not been rebuilt](#), leaving many residents without access to the Internet. In one class of 22 students, only just over half have access to home Internet during the Coronavirus (COVID-19) pandemic.

The FCC's [Uniendo a Puerto Rico Fund](#) provides one opportunity to improve infrastructure on the island. For Stage 2 of the program, the FCC *"allocated more than \$504.7 million over ten years in fixed broadband support."*

On January 2, 2021, Pedro Pierluisi took office as Governor of Puerto Rico. Among several other goals for his administration, Governor Pierluisi [has discussed the importance of science and technology education and expanding broadband infrastructure](#).

In August, 2020, Tony Delgado, entrepreneur and Disrupt Magazine's Founder, [announced a plan](#) for island-wide free public WiFi inspired by New York's LinkNYC program during a Tedx talk. In Delgado's words, *"WiFi should be a human right."* He spoke from personal experience about the importance of broadband access in helping Puerto Rican residents seek education, investment, and employment opportunities without leaving home. The challenges that come with not having Internet access are only exacerbated by the pandemic, and Delgado emphasized that *"If you are not able to make money online during this pandemic, you are in serious trouble."*



Rhode Island is one of the least populated states and has some of the fastest Internet speeds in the nation.

RHODE ISLAND

POPULATION: 1.06 MILLION
COUNTIES: 5

Compared to other states, Rhode Island has a relatively high level of broadband access, even in rural areas. But broadband adoption remains a persistent problem. The Commission evaluated just over one million Rhode Island residents, finding that 98.6% had access to a fixed broadband connection at minimum speeds of 25/3 Mbps.

In most states, broadband access in rural areas tends to lag behind urban areas, often by a large margin. As [one of the most densely populated](#) states, Rhode Islanders do not experience the same rural-urban disparity that states with lower population density experience. Out of the 98,000 people living in rural Rhode Island who were evaluated by the FCC, 96,000 people (97.6%) had access to a fixed connection at minimum speeds compared to 98.7% of the 961,000 urban Rhode Islanders evaluated.

Rhode Island is frequently listed among states with the fastest Internet speeds in the country. In 2015, the Washington Post found that Rhode Island was in the [top 5 states for Internet speeds](#). By 2017, Fierce Wireless found that Rhode Island's Internet speeds were the [fastest in the nation](#).

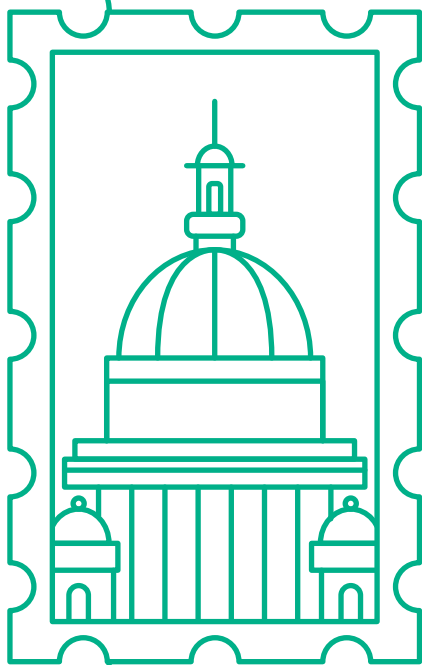
The fast speeds and high levels of access that Rhode Island boast now are part of an ongoing statewide effort to improve broadband access. In 2009, the NTIA awarded the Rhode Island Economic Development Corporation an [American Recovery and Reinvestment Act grant](#) of \$1 million for broadband mapping and data collection and \$500,000 for broadband planning. The data were included in the NTIA's National Broadband Map.

By 2010, Rhode Island was awarded [a total of \\$4.5 million in stimulus funding](#) and [the state matched that amount with \\$1.1 million](#) in state resources. The funding sponsored the [Broadband Rhode Island Initiative through 2014](#), which published a white paper in 2014 calling for the creation of a Governor's Broadband Policy Advisory Board.

As a candidate for governor 2010, [Lincoln Chafee included expanded broadband access](#) in his "Plan for Jobs." As Governor, Chafee's administration worked in coordination with Ocean State Higher Education and Administration Network on a \$21.7 million fiber project which connected state schools and libraries along with other anchor institutions.

Still, the FCC only evaluates levels of broadband offerings advertised by providers, but does not account for actual speeds experienced by users, the number of households that actually subscribe to broadband service, plan pricing information, or address-level service availability. These gaps in information are particularly unhelpful for states like Rhode Island, where the FCC shows that most residents have broadband access.

In July 2020, New Shoreham's (Block Island) First Town Warden [sent a letter](#) to the FCC requesting that it review erroneous data which hindered the Town's plans for connecting schools and libraries that lack service. The letter stated that: "*the loss of possible annual support associated with these locations may jeopardize our community's ability to move forward with this critical project.*"



RHODE ISLAND

POPULATION: 1.06 MILLION
COUNTIES: 5

Despite the high percentage of residents the FCC considers served, BroadbandNow reports that only 88.5% of residents have access to a wired broadband plan that costs less than \$60 a month. Additionally, Microsoft's data show that [430,000 people](#) in Rhode Island do not use the Internet at broadband speeds, accounting for over 40% of the state's population. With broadband infrastructure widely available in the state, policies are shifting from focusing on increasing access to improving adoption rates, seeking solutions to help connect every resident with home broadband service.

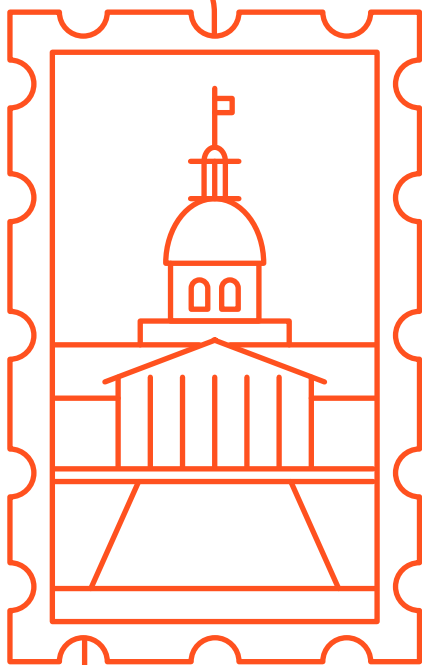
The [Rhode Island Public Utilities Commission](#) is tasked with approving Lifeline providers and makes information about the program available on its website. For people who do not have a home broadband subscription because they cannot afford it, Lifeline has lived up to its name, operating as an essential connection to work, school, and healthcare.

At the state level, [ConnectRI](#), an initiative spearheaded by the Department of Innovation and operated in partnership with nonprofits EveryoneOn and ConnectHome, focuses on improving digital equity in the state by offering home Internet plans, computers, and free digital literacy training. One way ConnectRI accomplishes its mission is by partnering with affordable housing communities to offer disconnected residents lower cost devices and subsidized plans. In Governor Gina Raimondo's [letter of support](#) for the program, she stated:

The digital divide is stifling our students' progress and holding back a significant portion of the workforce. Closing the gap is critical to ensuring that Rhode Islanders can compete in the new skills economy and are prepared for the jobs we're creating. To answer this challenge, and others like it, we need to build on our existing momentum and employ bold solutions that address issues head-on, like ConnectRI.

Additional Resource:

[State of Rhode Island, Office of Innovation](#)



In Aiken County, thousands of rural residents have no connection whatsoever, and even more lack access to the Internet at broadband speeds. As a result, Aiken Electric Cooperative is working to expand infrastructure in rural areas.

SOUTH CAROLINA

POPULATION: 5.28 MILLION
COUNTIES: 46

South Carolina experiences stark disparities between rural and urban broadband access which led state and federal senators to speak out on mapping issues. Connectivity challenges in the state have garnered the attention of [House Majority Whip James Clyburn](#), who partnered with Ookla, an online speed test service, in 2019 and tasked the company with improving broadband maps in South Carolina within 18 months. The first set of maps was released in July 2019 and now Whip Clyburn says that “*South Carolina has the best broadband maps in the United States.*”

Whip Clyburn’s efforts are not the only examples of the movement to improve broadband mapping in South Carolina. In 2019, Palmetto Care Connections (PCC) partnered with the South Carolina Office of Rural Health and South Carolina Hospital Association. [PCC’s broadband map](#) uses GIS technology to produce maps that layered FCC data with Speedtest Intelligence data and U.S. Census data. One map shows areas that need broadband while the other shows areas that have the best broadband.

The Coronavirus (COVID-19) pandemic only exacerbated the need for reliable and complete broadband maps. In August 2020, [Governor Henry McMaster](#) and state [General Assembly](#) both wrote separate letters to South Carolina Internet service providers. Governor McMaster wrote:

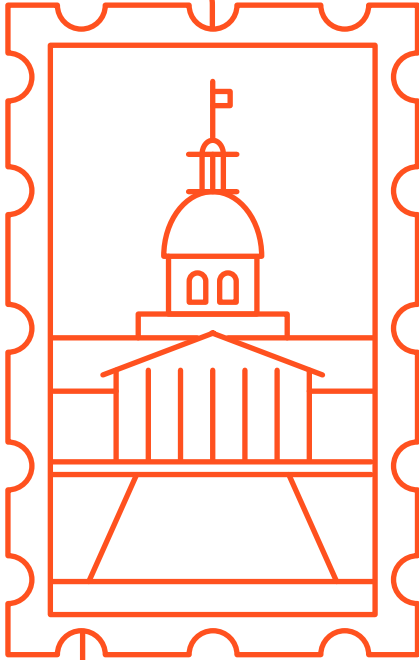
Broadband connectivity is a powerful catalyst for economic and social advancement. It is no longer a luxury—it is a necessity, critical to ensuring a level playing

field for all South Carolinians. Unfortunately, the COVID-19 pandemic has laid bare the inadequacies of some of our rural infrastructure. Children in South Carolina cannot learn remotely, workers cannot reliably work from home and telemedicine cannot be provided where broadband is not available.

The Office of Regulatory Staff (ORS) for the State of South Carolina was charged with finding a vendor to contract with using the portion of the Coronavirus Relief Fund targeted at broadband mapping and planning. CostQuest Associates Inc. was engaged by the ORS to investigate broadband attributes and [produce a map](#) that allows residents to search for broadband providers at their address.

The FCC evaluated five million South Carolina residents and found that 4.7 million (91.3%) had fixed broadband access at minimum speeds. It concluded that 1.4 of 1.8 million people in rural areas (78.7%) have fixed broadband access. According to the agency’s evaluation of 3.3 million people, 97.7% of South Carolina’s urban residents had access to a fixed connection at minimum speeds. In contrast, BroadbandNow shows that in [South Carolina](#) there is 79.7% terrestrial broadband coverage and 52.4% access to a wired plan that costs at or less than \$60 a month. Microsoft’s data show that approximately [2.9 million people](#) do not use the Internet at broadband speeds.

One rural area that remains largely disconnected is Aiken County, where thousands of residents have no connection whatsoever, and even



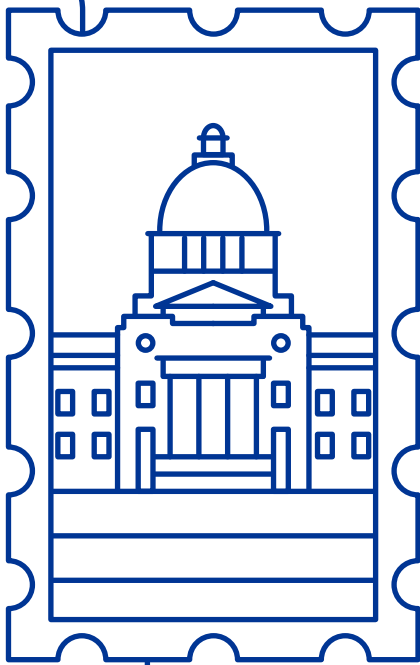
SOUTH CAROLINA

POPULATION: 5.28 MILLION
COUNTIES: 46

more lack access to the Internet at broadband speeds. At the start of COVID-19 lockdown in March 2020, state Rep. Bill Taylor said “We’re so far behind the curve, the Internet curve, in [Aiken County](#). Kids can’t do their schoolwork. Parents can’t communicate.” [Palmetto Care Connections](#) found that the best connected parts of Aiken County are concentrated in the western half, while Windsor, Wagener, and Salley, as well as areas along Interstate 20 remain disconnected. As a result, Aiken Electric Cooperative is taking the lead to address the digital divide in the county and plans on using grant funding to expand infrastructure in rural areas, anticipating a summer 2021 service start date.

Additional Resources:

- [Palmetto Care Connections](#)
- [Where to locate high-speed Internet in South Carolina](#)
- [COVID bill includes \\$7B for broadband access; Clyburn aims for more](#)



While broadband access is widespread in urban areas, residents reported that their rural networks have insufficient coverage, capacity, and speed for basic health and safety, let alone quality of life.

The urban-rural digital divide in South Dakota has real economic, educational, and quality of life consequences for residents. Governor Kristi Noem recognizes this problem and has requested that the legislature make [\\$5 million dollars available](#) for rural broadband expansion in 2019 and then again in 2020, which was approved both years and led to a partnership called [Connect South Dakota](#).

Explaining the emphasis for Connect South Dakota, Governor Noem said:

I've heard it said that 65 percent of children in elementary school today will work in jobs that don't even exist yet. These jobs will undoubtedly require access to technology, particularly the Internet. But today, widespread broadband access in South Dakota isn't as widespread as we may think. In fact, about 88,000 South Dakotans lack high-speed Internet access. These people cannot launch an online business or take advanced classes that require extensive uploading or downloading. Producers in these areas may not be able to use cutting-edge technology that requires online components.

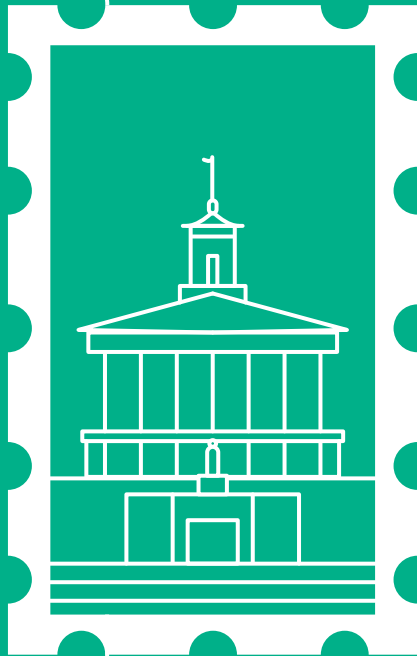
The FCC surveyed 885,000 residents and found that 840,000 (95%) had access to fixed broadband connections at minimum 25/3 Mbps speeds. Rural areas continue to lag behind urban parts of the state. The FCC concluded that nearly all urban residents (99.7%) have access to a fixed connection at minimum speeds,

while just under nine out of every ten residents (89.3%) in rural areas have access to a fixed connection at minimum speeds.

At the state level, the South Dakota Public Utilities Commission's [broadband maps](#) rely on the FCC's data. At the same time, better maps may be on the way as South Dakota's [2019 State Broadband Plan](#) discusses work between the state and the National Telecommunications and Information Administration on an updated National Broadband Availability Map.

Additional Resource:

[Why the fastest Internet in South Dakota is in a town of 294 people](#)



In November 2019, Microsoft estimated that over half of Tennessee residents do not use the Internet at broadband speeds. In 2021, Chattanooga residents have some of the fastest broadband in the U.S.

In December 2020, Tennessee was awarded almost [\\$149 million in Rural Digital Opportunity Funding](#) to expand the state's rural access to over 155,000 homes and businesses across the state. That is because nearly fifteen percent of rural Tennessee residents lack access to wireline broadband.

The FCC evaluated 6.8 million residents and found that 6.4 million (93.7%) had access to a fixed connection at minimum 25/3 Mbps speeds. In rural Tennessee, the FCC found that 1.9 of 2.3 million residents (84%) have fixed broadband access. Urban residents are more likely to have wireline broadband. The FCC evaluated 4.5 million of them and found that 4.4 million (98.6%) had access to a fixed broadband connection.

The disparity between rural and urban broadband infrastructure access prompted a response from the state government. On April 3, 2020, Governor Bill Lee and Department of Economic and Community Development Commissioner Bob Rolfe announced [\\$19.7 million in funding](#) to 17 grantees intended to serve over 31,000 residents across 21 counties. Governor Lee said:

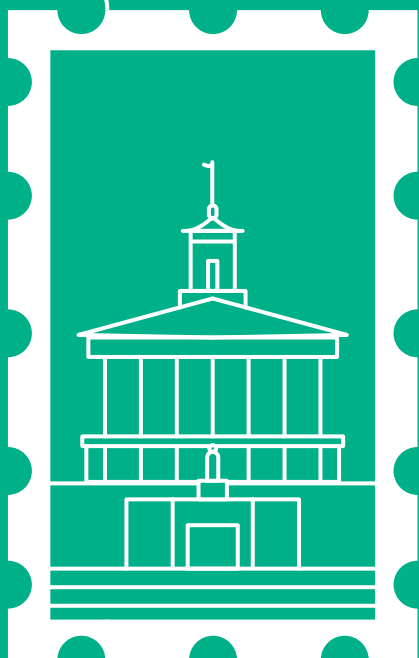
One of my top priorities is ensuring the success of rural Tennessee. With the assistance of these grants, communities across 21 counties will now have access to broadband that will aid in that success. I applaud the efforts of these 17 broadband providers as they play a fundamental role in our efforts to boost rural communities throughout Tennessee.

On August 21, Governor Lee announced another [\\$62 million](#) to fund broadband for Coronavirus (COVID-19) impacted areas. Lt. Governor Randy McNally [said](#):

The emergence of COVID-19 greatly accelerated the need for widespread access to broadband. As all of us adjust to the new normal of social distance, technology becomes even more critical to study, work and socialize. These dollars will allow for implementation of greatly needed projects crucial to bringing us together virtually as we strive to stay apart physically.

The FCC's definition of broadband excludes mobile Internet, but publicizes availability data alongside wireline broadband. While mobile Internet is more widely available, particularly in rural areas, it does not serve as an actual substitute for wireline broadband access. Overall, the FCC found that 6.7 million people (99.7%) had access to a mobile connection at minimum advertised speeds of 5/1 Mbps. The FCC evaluated another 5.8 million people and found that 5.5 million people (95.7%) had access to a mobile network at median speeds of 10/3 Mbps.

Connectivity in rural Tennessee pulls those averages down, with the FCC finding that 2.2 people (99.2%) have access to a mobile connection at minimum advertised speeds of 5/1 Mbps. The FCC also evaluated 1.5 million people in rural Tennessee and found that 1.3 million people (90%) had access to a mobile network with median speeds of 10/3 Mbps. In urban



TENNESSEE

POPULATION: 6.94 MILLION

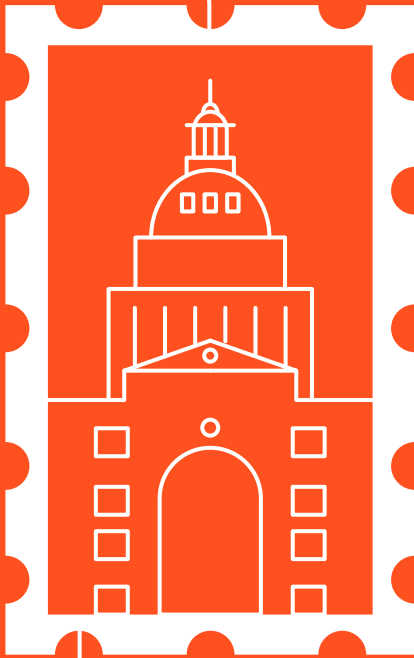
COUNTIES: 95

Tennessee, by contrast, the FCC reports that mobile Internet at speeds of 5/1 Mbps is nearly ubiquitous, while of 4.3 million people in urban Tennessee, 4.2 million people (97.7%) had access to a mobile network with median speeds of 10/3 Mbps.

Because the FCC's maps contain overstatements of broadband availability, many states are engaged in their own mapping efforts. [Tennessee previously partnered](#) with Connected Nation, but [the last available maps are CAF II Funding from 2015](#). While current information to supplement the FCC's data is not available from the state, Microsoft has its own estimations, with data from November 2019 showing that around [3.9 million people](#) in Tennessee do not use the Internet at broadband speeds, [over half of the state's population](#).

Additional Resource:

[Next Century Cities Case Study: Memphis, Tennessee](#)



More than two million Texas households do not have high-speed internet access. Brownsville and Laredo residents are among the least connected communities.

Texas has several geographical challenges to deploying broadband including [low population density and challenging terrain](#). At the same time, the people who live in rural areas need broadband access for telehealth and distance learning just like people in urban areas and Internet access has become increasingly important for farmers in recent years. In 2019, a USDA report showed that [25 percent of Texas's nearly 247,000 farms](#) lack any Internet access at all.

The FCC evaluated 30 million Texans statewide. Overall, the agency found that 27.7 million residents (95.8%) had access to a fixed connection at minimum 25/3 Mbps speeds. Of 4.9 million residents in rural areas, it found that 4.1 million (83.9%) have fixed broadband access. The agency also concluded that 23.6 of 24 million urban residents (98.2%) had access to a fixed broadband connection at minimum speeds.

Connected Nation ("CN") Texas uses a [confidence methodology](#) to identify areas that may be understated by Form 477, but collecting the data is time and resource intensive because it involves a variety of data collection techniques including provider outreach and independent research. CN Texas's most recent map was published on [July 31st, 2020](#) and shows that 88.5% of households have 100/10 Mbps broadband, finding that 1,026,071 households do not have access to 100/10 Mbps broadband. CN Texas will provide an updated map in December 2020. [CN Texas's 2020 report](#) showed that Texas lags behind the national average in broadband adoption, with American Community Survey statistics showing that only 65.6% of households have a fixed home broadband subscription.

The MOTRAN Alliance, [an organization](#) of community members in Odessa and Midland to improve infrastructure in the Permian Basin area, conducted [a survey](#) of 3,000-5,000 participants, which found that while broadband was available in 99.3% of Ector County and 97.9% of households in West and South Odessa, 33% of homes in Ector County do not have broadband connections because they either do not know about the service or because it is too expensive. Summarizing the survey, Dustin Fawcett, MOTRAN's Vice President said *"What we found was over 65% of respondents were paying \$45-55 more for a level of service than what they could be getting for a smaller price."*

BroadbandNow reports 85.3% terrestrial broadband coverage in Texas and shows that 67.3% of the state has access to a plan that costs less than \$60 a month. As of November 2019, Microsoft data show that around [13.7 million people](#) in Texas do not use the Internet at broadband speeds.

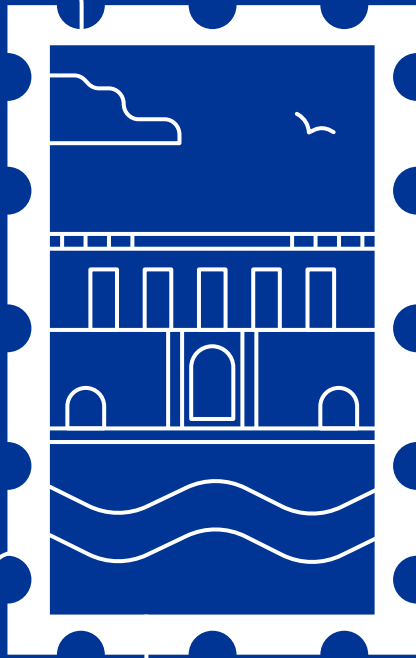
In September 2020, [88 Texas lawmakers](#) submitted a letter to Governor Greg Abbott, urging him to develop a state broadband plan. The [Governor's Broadband Deployment Council](#) did release a 2020 report which set developing a state broadband plan and establishing a state broadband office as its two main recommendations. The report relies on CN Texas maps and shows that over [300,000 locations in Texas](#) do not have broadband access and 927,000 Texans lack a home broadband subscription.

Additional Resources:

- [Connected Nation: Texas](#)
- [How Connected is Texas? Broadband Coverage Maps Give New Insights](#)
- [Broadband initiative maps statewide Internet connectivity](#)

U.S. VIRGIN ISLANDS

POPULATION: 104,317
ST. THOMAS AND ST. JOHN MAKE UP ONE DISTRICT.
ST. CROIX IS THE OTHER.



The FCC has allocated more than \$180 million over ten years in support for fixed broadband networks, and \$4 million over three years for mobile networks.

In 2020, the Commission evaluated 107,268 residents throughout the U.S. Virgin Islands. It concluded that 106,000 residents had fixed broadband access at minimum speeds and almost 100% of people in both rural and urban areas had access to a fixed connection.

BroadbandNow's information about the [Virgin Islands](#) was last updated in April 2017. It estimated that 62% of Virgin Islanders had access to wireline service, with 41.1% access to cable, 58.2% access to DSL, and no access to fiber optic service. As a result, no Virgin Islanders had access to gigabit or 100 Mbps service at the time the data were collected. The speed test results show that the average speed is 23.5 Mbps, which does not meet the FCC's definition of broadband, contradicting the FCC's assertion that 100% of residents have access to a fixed connection at minimum speeds. This is probably due to the fact that the speeds reported by the FCC are maximum advertised speeds, but do not necessarily reflect daily performance.

BroadbandNow updated its page on [St Thomas](#) in November 2020, which shows that approximately 100% of residents have access to more than one wired provider. There are 6 providers in St Thomas and services include fiber optic connections and some advertise speeds of up to 50, 100, and 1,000 Mbps.

The FCC [announced in November 2020](#) that it would award funding to bring Gigabit service to all 46,039 locations on the islands. The winners of a competitive bidding process

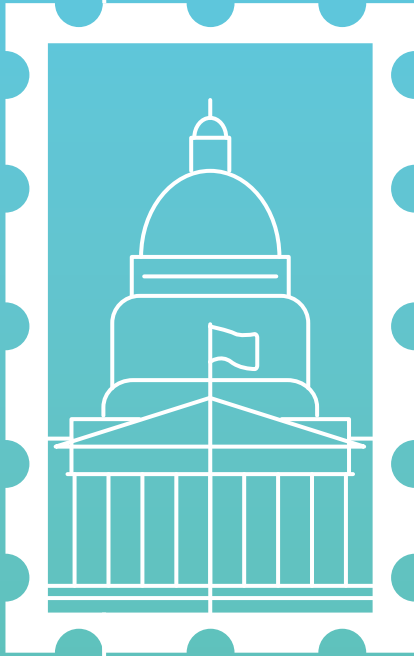
will be eligible for \$84.5 million over the next ten years to provide gigabit service in the U.S. Virgin Islands once it completes its authorization for high-cost support.

Governor Albert Bryan Jr. has big plans for expanding broadband access during his tenure, which he discussed [during a conversation about workforce development](#), saying:

We're still operating like we're in 1965. It's 2020. Everything that's in government must be powered by technology. We must lead the way in technology. By the time I leave this office, you should be able to do every single government service from your smartphone. That's where we need to be.

In service of that goal, Governor Bryan convened the [Telehealth Workgroup](#), which will focus in part "on mapping out technical infrastructure, including assessing broadband capacity and access to broadband services, as well as planning disaster resiliency and redundancy."

Additional Resource:
[New Connectivity Projects in the Wake of Resilience Woes in the U.S. Virgin Islands](#)



In addition to making the broadband map available online, the Utah Broadband Project has [hosted booths at the state capitol](#) to raise awareness about broadband mapping. Mapping broadband is required by [state law](#).

UTAH

POPULATION: 3.31 MILLION
COUNTIES: 29

Utah was among the first states to get involved in broadband mapping and has maintained that map [for the past decade](#). In the words of [Governor Gary Herbert](#), “Our successful efforts to develop broadband throughout the state are setting the foundation for opportunities we can’t yet even imagine.”

The Utah Governor’s Office of Economic Development hosts a [Utah Residential Broadband Availability Map](#). The map offers filters that show download speeds in intervals of .7 to 1,000 Mbps and upload speeds in intervals between .2 and 1,000 Mbps. Filters also include transmission type wireline (cable, fiber, or DSL), as well as fixed and mobile wireless. Utah’s map is [designed with users in mind](#), with updates to the map including color coding and smartphone access.

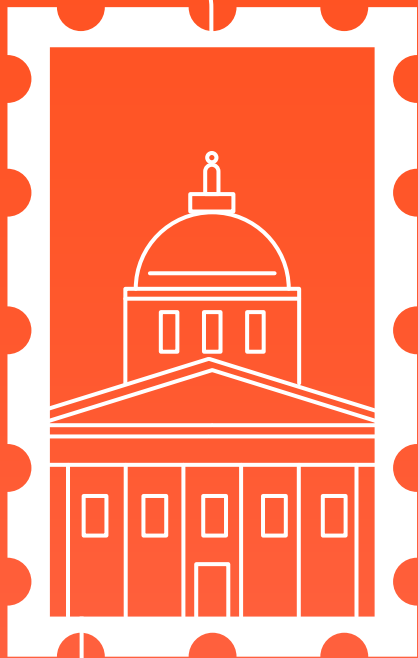
In addition to making the broadband map available online, the Utah Broadband Project has [hosted booths at the state capitol](#) to raise awareness for broadband mapping. Broadband mapping in Utah is not only prioritized, it’s become [part of the state Code](#). The data are sourced [directly from providers](#).

After surveying 3.2 million people in Utah, the FCC found that 3 million (95.7%) had access to a fixed broadband connection at minimum 25/3 Mbps speeds. It found that 308,000 of 427,000 people (72.3%) in rural areas have fixed access to broadband. Of 2.8 million urban residents, the agency found that 99.3% had access to a fixed broadband connection at minimum speeds.

To the contrary, private mapping efforts show that access continues to lag behind what the FCC’s data show. BroadbandNow found that [88.4%](#) of Utah has broadband coverage and only 26.3% access to a wired broadband plan priced at or below \$60 a month, which may contribute to the approximately [991,000 people](#) in Utah who do not use the Internet at broadband speeds according to Microsoft’s data.

Additional Resources:

- [Utah Residential Broadband Map](#)
- [Here’s why the nation’s fastest Internet is coming to a small city in Utah](#)



BroadbandNow found that wired plans priced below \$60 a month are only available in 1.1% of the state. The lack of affordable service may be one reason that approximately 358,000 people out of 623,989 residents do not use the Internet at broadband speeds.

VERMONT

POPULATION: 623,251
COUNTIES: 14

The Commission evaluated 624,000 Vermont residents and found that 581,000 people (93.1%) had fixed broadband access. In rural areas, the agency concluded that 344,000 of 384,000 people (89.6%) have access to a fixed broadband connection at minimum speeds. Of 240,000 urban residents surveyed, it found that 237,000 people (98.8%) had fixed broadband access.

In the wake of the Coronavirus (COVID-19) pandemic, Governor Phil Scott was particularly concerned with making the locations of public WiFi available to residents, [saying](#):

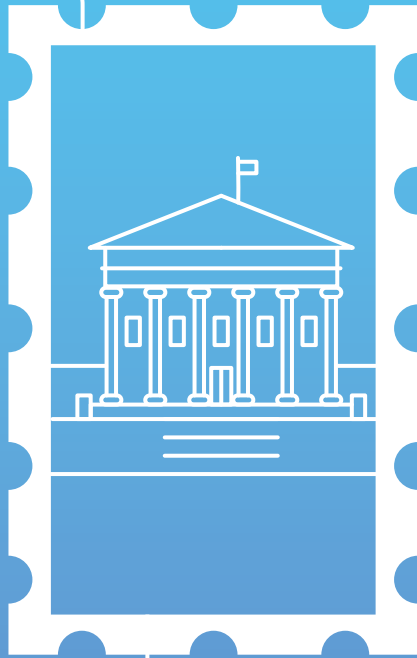
Internet connectivity is an important resource for Vermonters during this crisis, which is keeping us physically distanced from one another. As we're asking many to work and learn remotely, these public WiFi points are especially critical to keeping workers and students connected if they do not have access at home.

The Department of Public Service in the State of Vermont makes an [interactive broadband map](#) available that also includes [a survey for residents](#) to expand on information about broadband access in the state. The map is based on information offered by providers and is also available in [a table](#) that shows information by town. The data show that 93.2% of the state has access to 4/1 Mbps Internet, 77.3% of the state has access to 25/3 Mbps broadband, and 17.5% of the state has access to 100/100 Mbps broadband.

BroadbandNow's finding that [79% of the state](#) has terrestrial broadband access is in line with the results of the state's survey. Even more troubling, BroadbandNow found that wired plans priced below \$60 a month are only available 1.1% of the state. The lack of affordable service may be one reason that approximately [358,000](#) out of [623,989 residents](#) do not use the Internet at broadband speeds according to Microsoft's data.

VIRGINIA

POPULATION: 8.60 MILLION
95 COUNTIES AND 38 INDEPENDENT CITIES



Statewide, 1 in 5 students lack either broadband or a computer at home. Nearly 40% of all students without broadband access live in or around Virginia's cities. Half of all students without devices live in urban areas.

Virginia's state broadband map relies on FCC data. Of 8.5 million residents surveyed, the FCC concluded that 8 million (94.2%) had access to a fixed broadband at minimum speeds.

According to [Governor Ralph Northam](#), rural connectivity is of particular concern in the state. *"The Virginia State Council of Higher Education estimates that 200,000 K-12 students and 60,000 college students in Virginia lack access to broadband at home. Many of those students are in rural areas of our Commonwealth,"* Governor Northam says. The FCC's data provide further evidence of that point, showing that in rural Virginia, service coverage lagged behind urban areas. The FCC found that 1.7 million of 2.1 million rural residents (82.2%) have fixed broadband access.

FCC data on urban Virginia showed that faster mobile Internet and fixed broadband connections were available to a higher percentage of residents. It found that 6.3 of 6.4 million urban residents (98.1%) had access to fixed connections at minimum speeds.

In the NCC member County of Arlington, the FCC evaluated approximately 235,000 people and found that 98.1% had access to a fixed connection at FCC minimum speeds. However, 130 miles away in Goochland County, the FCC found that of the approximately 23,000 people evaluated, only 65.7% had access to a fixed connection at minimum FCC speeds.

Virginia's state broadband map tells a different story than the FCC's data. The [Commonwealth of Virginia](#) has been developing its broadband map since 2008 and is sponsored by the Center for Geospatial Information Technology at Virginia Tech, Commonwealth Connect, the Virginia Department of Housing and Community Development, and Virginia Tech. The map includes an integrated Broadband Planning and Analysis Toolbox.

Three Virginia counties are now [working with Appalachian Power](#) by sharing the results of a survey of residents' experiences. One Pulaski County resident, Adam Fariss, who took the survey said that it asked, *"Who our Internet provider is, what our service speeds that we experience are, if we experience any outages, how long those outages may have lasted."* The survey had over 1,300 responses and leaders in each of the three counties hope that the results will help articulate the need for improved broadband access in their communities.

In 2021, Special Session I, the House and Senate passed a budget line item in [legislative proposal HB1800](#) which provides \$424,000 for the Virginia's Department of Housing and Community Development to create a statewide broadband map. Notably, the proposal would prohibit broadband providers from having to submit any broadband availability data, in either substantive content or form, beyond that which the provider

VIRGINIA

POPULATION: 8.60 MILLION
95 COUNTIES AND 38 INDEPENDENT CITIES

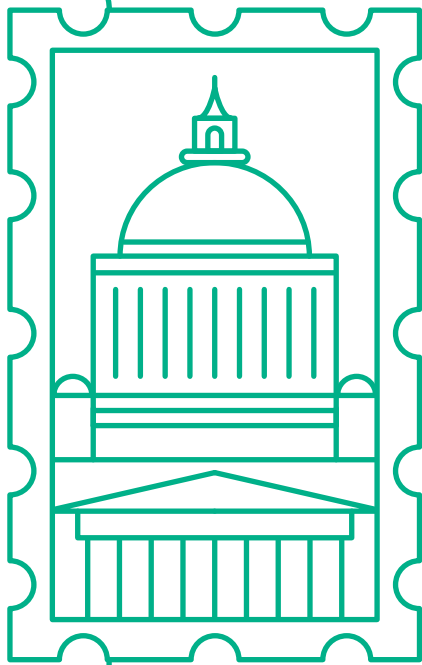
is required to submit to the FCC.

The public would not be allowed to obtain information submitted by a broadband provider via Freedom of Information Act. Additionally, if HB1800 is enacted into law, Virginia's Housing and Community Development would be allowed to "publish only anonymized versions of the map, showing locations served and unserved by broadband without reference to any specific provider." Provisions like these highlight the need for federal leadership and reevaluating minimum standards for broadband data collection.

Private research also indicates that the FCC's numbers overstate broadband access in Virginia. In August 2019, USTelecom released the results of a fabric mapping pilot including Virginia and one other state and found that [as many as 38% of rural locations are unserved](#) in census blocks otherwise considered "served." BroadbandNow offers another point of comparison, showing that [Virginia has 83.4%](#) terrestrial broadband coverage and 51.3% to a wired broadband plan that costs less than \$60 a month. Microsoft's numbers show even lower rates of adoption, estimating that [3.4 million people](#) out of 8.5 million Virginians do not use the Internet at broadband speeds.

Additional Resources:

- [Digital Divide: Nearly 1 Million in Va., Md. Have No High-Speed Internet Access](#)
- [Virginia Broadband Availability Map](#)



Between 2010 and 2014, the Washington State Broadband Office made broadband availability data public and produced static maps charting broadband access.

WASHINGTON

POPULATION: 7.97 MILLION
COUNTIES: 39

Washington's goal is ambitious: achieve [Universal Broadband access](#) for all residents by 2024. In service of this goal, the Washington State Broadband Office and state Public Works board [invite residents](#) into the conversation to share their experiences in a speed test in a statewide effort to better understand broadband access in the state.

Discussing the effort, [Governor Jay Inslee says](#):

Our State Broadband Office is leading the nation with this first-of-its-kind survey to collect broadband access and speed data at this level of detail. We encourage everyone to take the test and share the link. The data will provide the foundation for achieving our long-term goal to provide quality, high-speed broadband access to every Washingtonian.

Washington's data collection effort is premised on a recognition that the data available from the FCC are not enough for state and local policymakers to understand where to focus the scarce resources they have for broadband availability.

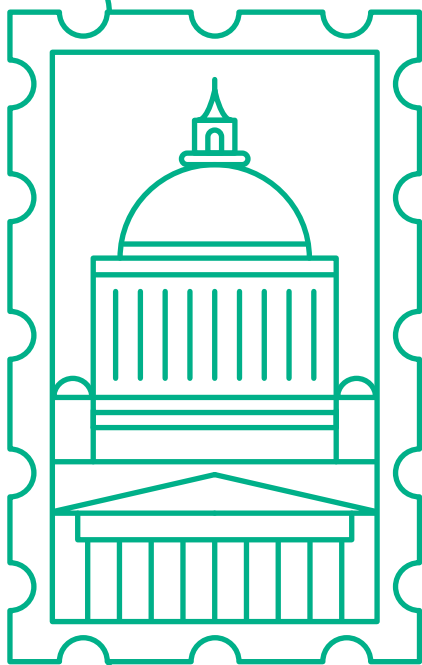
In 2020, the FCC evaluated 7.6 million Washington residents and found that 7.3 million (96.3%) had fixed broadband access at minimum speeds, a 1% decrease since its 2019 Broadband Deployment Report. Notably, the FCC's conclusions are far higher than other sources suggest. For example, BroadbandNow shows that while fast service is widely available in [Washington](#), with around 94.6% of

the state having terrestrial broadband available, affordability remains a challenge as only around 15.4% of the state has access to service that costs less than \$60 a month. High prices may contribute to the estimated [2.3 million people](#) in Washington who Microsoft found do not use the Internet at broadband speeds.

Though these connections are vital, the listed speeds are not nearly enough to sustain an entire household, particularly into the next decade as applications like video conferencing become more data intensive.

Rural areas in Washington continue to lag behind urban areas in terms of broadband availability. The FCC evaluated 1.3 million rural Washingtonians and found that 1.1 million (83.6%) have fixed broadband access, a 5.3% decrease from its 2019 Broadband Deployment Report. In urban areas, the FCC found that 99% of 6.2 million residents evaluated had access to a fixed broadband connection at minimum speeds.

Washington's [speed test](#) initiative is part of a history of the state's work to better understand broadband availability. Between [2010 and 2014](#), the Washington State Broadband Office made broadband availability data public and produced static maps charting broadband access. The state makes [the location of drive-in Wi-Fi hotspots](#) available on a map and allows the public to add hotspot locations. [Speed test results](#) allow the state to better understand where broadband resources should



WASHINGTON

POPULATION: 7.97 MILLION

COUNTIES: 39

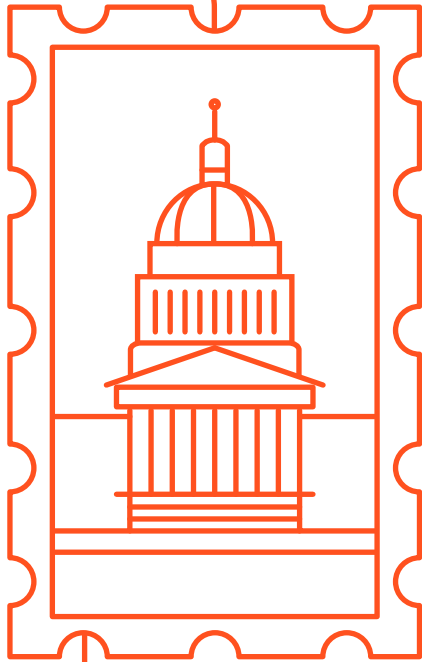
be targeted and enable local leaders to bolster applications for funding, which are essential to expanding local connectivity.

In the words of State Broadband Office Director, [Russ Elliott](#):

Solving broadband issues at the macro level is not an option—it requires micro-surgery. We are in a time where we need the most precise data in order to make intelligent decisions with the limited state funds available. We need everyone to participate in these surveys so we have the highest quality data to make the best decisions for providing future-proof infrastructure to solve these issues not just for today, but for the next generation.

Additional Resources:

- [How States Use Broadband Surveys to Fight for Better Funding](#)
- [Rural Washington residents working from home adapt to dearth of high-speed Internet connectivity](#)



In 2020, the West Virginia Broadband Enhancement Council (WVBEC) introduced a new West Virginia Broadband Availability Map with granular information about broadband availability and speeds.

WEST VIRGINIA

POPULATION: 1.77 MILLION
COUNTIES: 55

The FCC evaluated 1.8 million West Virginia residents statewide and found that 1.5 million (82.2%) had fixed broadband access. In rural areas, it determined that 651,000 of 914,000 residents (71.3%) have access to a fixed connection at minimum speeds. Of 879,000 residents surveyed in urban areas, 822,000 (93.5%) had access to fixed broadband connections.

The Commission's most recent broadband deployment documented a 2.4% drop in overall access among West Virginia residents, down from 84.6% in 2019. Rural access dropped 1.2%, down from 72.5% in 2019. Broadband access for residents in urban areas was most disparately impacted, down 3.7% from 97.2% in 2019.

On November 30, 2020, the West Virginia Broadband Enhancement Council (WVBEC) [announced](#) that it will introduce a new West Virginia Broadband Availability Map. The map will include more granular information about broadband availability. WVBEC's website also includes a [speed test](#) and Internet use survey component for residents to collect more accurate information for the map.

Delegate [Daniel Linville said](#):

What we've all known is that there are areas of the state that do not have Internet service but that the existing national maps consider as being served. This allows us to, all the way down to the address level, be able to determine where Internet is and where it is not in the State of West Virginia and it

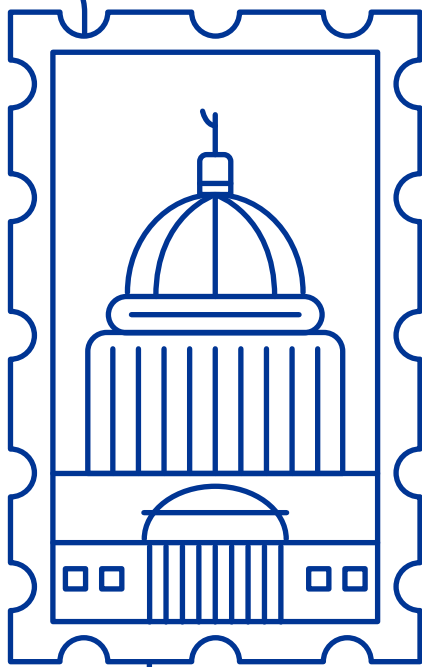
could be used by other states and the federal government all across the country.

West Virginia has a Broadband Mapping Program, which uses a [regional planning team](#) approach to tackling broadband mapping. West Virginia's state broadband map uses [Form 477 data](#) collected for June 2019. The map allows users to view layers based on funding made available to different areas. West Virginia's website similarly offers [a map of Wi-Fi locations](#).

[BroadbandNow estimates](#) that 69.2% of the state is covered with terrestrial broadband and 39.3% access to a plan that costs at or less than \$60 per month. Microsoft estimates that around [1.3 million people in West Virginia](#) do not use the Internet at broadband speeds as of November 2019. These numbers suggest that both access and adoption are a challenge for West Virginians, with high prices being a dominant concern.

Additional Resources:

- [Interactive map shows areas receiving rural broadband expansion](#)
- [West Virginia leaders announce new broadband map](#)
- [WV says \\$766 million in broadband investment available in upcoming FCC auction](#)
- [Sen. Manchin collects more than 1,000 speed tests](#)
- [In the Quiet Zone: What To Do When Wireless is Unavailable](#)



Noting how the lack of access to high-speed Internet continues to be a setback for kids, families, and businesses in Wisconsin, Governor Tony Evers declared 2021 as the “Year of Broadband Access.”

While broadband access in the state continues to lag behind many other states, the Public Service Commission (PSC) of Wisconsin is seeking to improve that through a [public call for broadband coverage data](#). During his 2021 state of the state speech, Governor Evers set broadband as a top priority, [saying](#):

This pandemic has underscored—and in some ways, exacerbated—the digital divide that exists across our state. This pandemic has shown us firsthand that lack of access to high-speed Internet continues to be a setback for kids, families, and businesses across our state. So, tonight, I’m excited to declare 2021 the Year of Broadband Access.

The PSC seeks to improve on the current national information available, which is provided by the Commission and collected through Form 477. Form 477 is well known to overstate broadband availability, showing areas where broadband could be provided and only measuring at the census block level, rather than charting the exact locations that actually subscribe to the service. The PSC requests data from providers, and also designates a member of its broadband mapping team to work with providers and ensure the coverage information is accurate, improving on the data provided by the FCC. The FCC evaluated 5.8 million Wisconsin residents statewide and found that 5.4 million (93.2%) had fixed broadband access at minimum 25/3 Mbps speeds.

Even before the Coronavirus (COVID-19) pandemic, the PSC was receiving [more](#)

[grant requests](#) than they had dollars to award, and connectivity remains an acute problem for rural Wisconsin, where the FCC concluded that 1.4 of 1.8 million residents (78.2%) had access to a fixed connection at minimum speeds. In urban areas, the agency found that 99.8% of 4.1 million residents had fixed broadband access.

In November 2020, Forward Analytics [released a report](#) discussing the many challenges that rural parts of Wisconsin continue to face and shining light on some successful strategies for improving deployment. In particular, the report found that “Local governments can play a leadership role in solving the problem of adequate universal broadband.”

In April 2020, shortly after the onset of the pandemic, the [Wisconsin PSC](#) launched [a map of public Wi-Fi locations](#), network name and credentials, signal strength, and the best place for users to connect. The State Superintendent of Public Education, [Caroline Stanford Taylor](#), [said](#): “The digital divide is even more apparent during this health emergency.” While public Wi-Fi is by no means a substitute for reliable, affordable home broadband access, completing work and school assignments from parking lots has become the norm for many people who do not have a home broadband subscription.

Additional Resources:

- [Brown County: Launches broadband speed test initiative](#)
- [Wisconsin launches ‘emergency Internet’ Wi-Fi finder](#)
- [A big idea to improve Internet access in Wisconsin](#)

WYOMING

POPULATION: 581,075 MILLION
COUNTIES: 23



20% of Wyoming residents only have access to one fixed broadband provider.

Like many states with low population density, many people living in Wyoming persistently lack access to broadband at affordable prices with high speeds, a challenge that the State is addressing by improving its understanding of where broadband is available and at which speeds.

Wyoming offers a [speed test](#) to collect information from residents about broadband access in the state. While just over 2,700 people have taken the speed test, the results are staggering. 737 people who participated in the survey indicated that they do not have a home broadband subscription. Of those respondents, 430 indicated that there was no broadband availability at their location, while 307 indicated that there was broadband available.

These responses tell two stories, one about the number of people who do not have the option to purchase broadband service at their home and another of people who do not have a broadband subscription for some other reason. Affordability is the predominant reason that people may not subscribe to broadband when they could technically access it, with BroadbandNow finding that only [19.6% of residents](#) have access to a wired Internet plan at or below \$60 per month.

The speed test results also tell a story about disproportionate speeds. While the lowest survey participants had no speed capacity, the highest responses were over 900 Mbps, bringing the average download speed to 30 Mbps and the average upload speed to 13 Mbps, suggesting huge disparities between the most connected

households having access to near Gigabit speeds, while many people still lack access to Internet service at any speeds.

FCC data sheds some light on this disparity. Wyoming's [state broadband map](#) is based on Form 477 data from 2017 and includes Counties, Community Anchor Institutions, Microwave Service Towers, and Cellular Coverage Networks. Still, more recent data are available from the FCC. Unlike Wyoming's speed test data, FCC data only shows broadband availability in terms of advertised speeds, which often differ from the actual speeds people experience when they access the service.

In 2020, the FCC evaluated 579,000 Wyoming residents and found that 537,000 (92.7%) had access to a fixed broadband connection at minimum 25/3 Mbps speeds. Rural Wyoming is particularly disconnected. The agency found that only 179,000 of 221,000 residents (81%) had fixed broadband access. In urban areas, the FCC found that 100% of 358,000 residents had access to a fixed broadband connection at minimum speeds.

Because the FCC's data overstates access and Wyoming's speed test only represents a small portion of the state's population, the actual number of people who do not have broadband access remains uncertain. This creates a significant problem as state and federal funding programs base their determinations largely on FCC data, while Microsoft data show that an estimated [356,000](#) people in Wyoming do not use the Internet at broadband speeds.



WYOMING

POPULATION: 581,075 MILLION
COUNTIES: 23

The consequences of inaccurate data include ineligibility from grant programs. For example, in October, the United States Department of Agriculture [awarded Union Telephone company](#) \$252,000 in ReConnect grant money to deploy a fixed wireless network, but that funding is intended only for use in areas the FCC deems unserved, lacking any fixed broadband access above 10 Mbps download speed and 1 Mbps upload, or underserved, areas that have access to Internet at speeds between 10 and 25 Mbps download and between 1 and 3 Mbps upload.

Additional Resources:

- [New Map Hopes To Provide More Minute Data On Broadband Coverage](#)
- [Wyoming Internet providers see huge surge in Internet use, interest in broadband](#)
- [Wyoming State Broadband Program Administered by the Wyoming Business Council](#)
- [Wyoming Legislative Service Office's Broadband Access in Wyoming Report](#)

