Governor Strategies to Expand Affordable Broadband Access
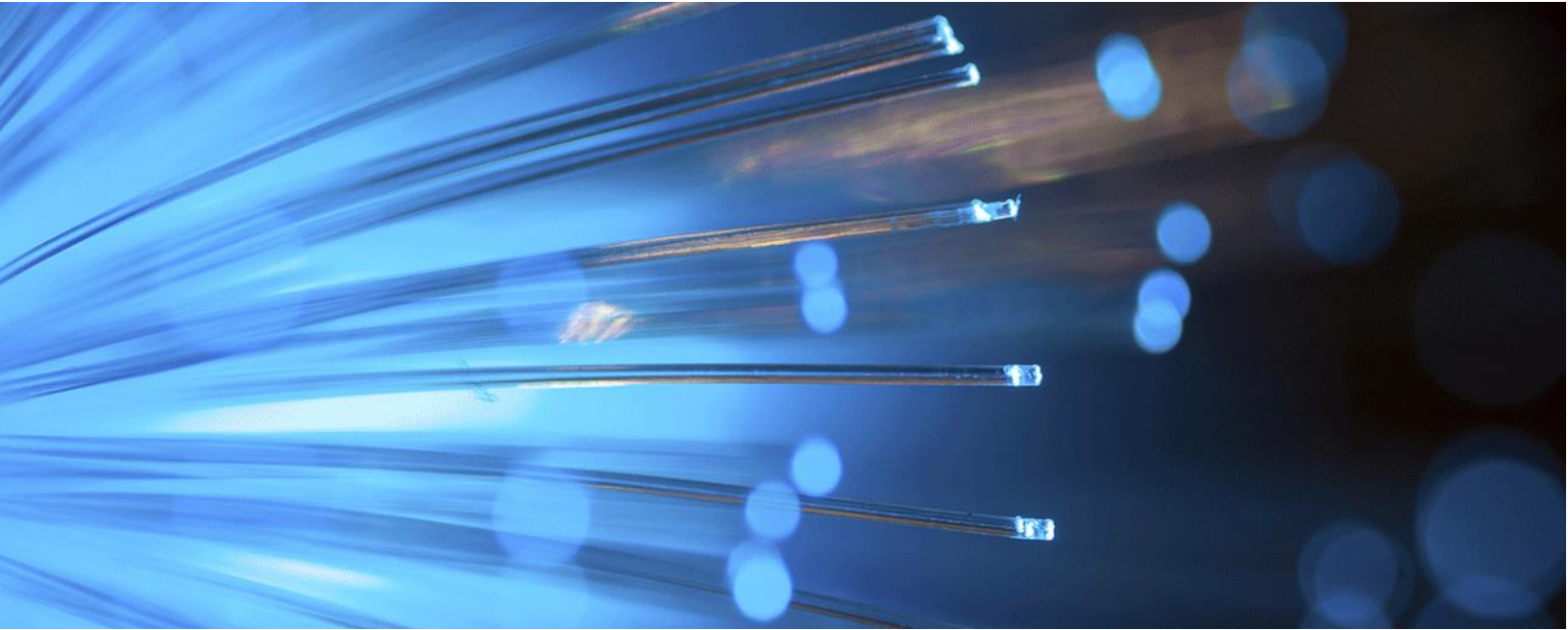
Key Points

- **Increasing access to the internet and improving the affordability of broadband services has been a long-standing priority for Governors**; more than twenty states now have dedicated broadband offices to address the digital divide while more have robust governance structures that include task forces, working groups, and committees.

- **Access to high quality, affordable broadband unlocks access to commerce, remote work opportunities, remote and improved education, telehealth, intelligent agriculture, and more.** However, 18.3 million Americans, many in rural geographies, still lack access to even basic levels of broadband service and even more are unable to afford the service available to them.

- While the need for accessible and affordable broadband extends far beyond the current crisis, **the COVID-19 pandemic has added a newfound urgency to broadband expansion**. Connectivity has become essential for people to follow public health guidelines, school closures, and remote work requirements.

- As Governors increase state efforts to expand affordable broadband access, particularly in response to the ongoing pandemic, **several key strategies and best practices have emerged that can facilitate those efforts**, including to:

    - Establish robust, cross-cutting governance structures
    - Initiate partnerships with other state agencies, local and county governments, and other entities to kickstart broadband investments
    - Leverage anchor institutions to provide rapid community internet service
    - Leverage existing infrastructure projects with dig-once coordination
    - Leverage electric utilities' infrastructure and services to facilitate deployments of broadband networks
    - Coordinate and expand broadband affordability programs
    - Deploy innovative procurement strategies
    - Improve broadband coverage maps
    - Identify funding and financing sources for broadband deployment

Background

According to the FCC, in 2018, at least 18.3 million people lacked access to fixed broadband in the United States that meets minimum internet speed of 25/3.[1] Of those 18.3 million people, representing 6 percent of the total population, 14 million live in rural areas and 1 million live on Tribal lands, which amounts to 22 percent and 28 percent of those respective geographic populations. In response to the pandemic, the U.S. Census Bureau conducted a series of household pulse surveys, which found that as of July 2020 an estimated 2.8 million people with children in school either never or only rarely or never have access to the internet for educational purposes.[2] Additionally, 4 million people with children in school are estimated to lack a computer or similarly suitable device. Further, studies have claimed that the FCC data is undercounting the number of people in the U.S. without fixed broadband access, and that the total may be as high as 42 million people.[3] As the minimum acceptable speed threshold is raised, access becomes more scarce—only 75 percent of Americans have access to broadband services that provides a faster 100 Mbps download and 25 Mbps upload.[4, i]

In addition to lack of access, the cost of broadband services remains a considerable barrier for many households. According to research from BroadbandNow, only 51 percent of Americans have access to broadband that costs $60 per month or less, however this may not reflect recent services and discounts providers have begun offering in response to the COVID-19 pandemic.[5] The international Broadband Commission for Sustainable Development sets a threshold for an entry-level affordable broadband service at 2 percent of a country's average monthly income.[6] Adjusting that metric for each bracket of U.S. household income, a $60 per month broadband service would be unaffordable for 28 percent of households. According to surveys from the Pew Research Center, 50 percent of those that lack access to broadband in the U.S. cite the monthly cost of the service as a factor.[7] Notably, survey data from the National Telecommunications and Information Administration (NTIA) estimates that in 2019, the number of people without internet access at home could be as high as 26.2 million, but that 60 percent of respondents cited a lack of "need or not interested" as the primary reason.[8]

Access to affordable broadband also has significant equity implications, as communities of color and low-income areas have seen lower rates of broadband adoption. As of 2019, NTIA surveys report 67 percent of Black and Hispanic adults had at home broadband

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[i] Notably, the FCC census block-level service data, which the FCC acknowledges is imperfect, provides a slightly different picture, estimating that 90 percent of the U.S. population have access to at least one fixed residential broadband provider offering service with a speed of 100 Mbps download and 10 Mbps upload within their census tract.

services, compared to 77 percent of white adults.[9] While broadband adoption has increased over time for all populations, there has been a persistent racial gap in adoption rates. Surveys from Pew Research Center also show that adults making less than $30,000 are half as likely to report having home internet access as adults making $75,000 or more, with only 56 percent reporting access in 2019.[10] The COVID-19 pandemic has shone a spotlight on these broadband gaps and the need for universal coverage.

Fortunately, Governors across the country have made expanding affordable broadband access a core policy goal.[11] All 50 states and most territories have staff devoted to broadband activities, with more than 20 establishing dedicated broadband offices and 22 Governors specifically highlighted the need for broadband expansion in their 2020 State of the State addresses. At a recent NGA roundtable, several state, federal and policy experts discussed challenges and highlighted policy solutions for Governors to address coverage gaps, cost inequities and expand access to high quality, low cost broadband across their states. This paper will present the use cases for expanded broadband access and highlight best practices Governors can consider as they implement solutions to the most pressing connectivity challenges states face.

Challenges addressed by this paper include:

- An accelerated need for new affordable connectivity across sectors and end-uses for increased teleworking, telemedicine, online learning and e-commerce as a large share of the population in both urban and rural areas are isolated during the COVID-19 pandemic

- Data challenges and opportunities for states to identify and map coverage gaps

- Solutions to improve the affordability of broadband service and equity of broadband access

- The traditional economic business model challenges for middle mile and last mile connection in rural communities

- Federal funding, while critical, can be narrowly scoped and challenging to navigate

- The need to enhance digital literacy for newly connected individuals

Use Cases

The COVID-19 pandemic has underscored the reality that many aspects of modern-day life, including commerce, health care, education and social activity, are dependent on connectivity. Layered across these uses are social, economic and geographic factors that limit equitable access. The pandemic exacerbates disparities caused by the absence of reliable broadband, but the need for accessible and affordable broadband extends far beyond the current situation. The list below outlines the many use cases that are motivating governors to seek expanded access to broadband.

<u>Telework</u>: One of the most immediate changes caused by COVID-19 was a massive workplace shift to teleworking for those who are able and not deemed essential workers. Nearly half of Americans are now working from home and many organizations may shift to increased remote work as a new paradigm.[12] While remote work is not possible across all industries or job functions, where it is, household connectivity is vital to maintaining a stable and engaged workforce. Expansive broadband will ensure that workers can remain connected and productive from home.

<u>Remote learning</u>: Students increasingly rely on connectivity for remote learning, yet as many as 12 million K-12 students lack internet access at home.[13] Further, broadband access also plays a critical role in higher education, workforce training and continuing education as students increasingly turn to online courses for certifications and university degrees. This gap is accentuated by the COVID-19 pandemic as many schools remain closed to reduce virus transmission and students are increasingly required to attend classes via remote learning platforms.

<u>Telehealth</u>: Telehealth and other virtual care services are an important component of health care delivery, especially where health care services – particularly specialists – are less available, such as in rural communities. Telehealth access has enabled care delivery during the COVID-19 pandemic to allow individuals to remain at home while maintaining continued access to health care services. Through increased remote access to health care providers and improved digital literacy skills, residents can continue to receive critical care virtually while coronavirus transmission remains a concern. An analysis by FAIR Health found that remote services insurance claims in April 2020 rose more than 8,000 percent from prior year, demonstrating a significant increase in the uptake of telehealth.[14] Telehealth has helped many providers remain financially solvent during the emergency, due to relatively steady provider services and patient volume. One study found that in May, telehealth services made up 14 percent of all visits, up from 1 percent in mid-March.[15]

<u>Commerce</u>: Commerce is reliant on connectivity, whether for digital commerce, freight logistics, fleet management, automated manufacturing, or asset tracking. With many jurisdictions requiring business closures and issuing stay-at-home orders, the COVID-19 pandemic has heightened this need. Purchasing groceries, medicine and other essentials online reduces crowds and promotes both public health and productivity.

Agriculture: Expanded broadband service to rural communities is enabling increased automation and efficiencies in agriculture. Nearly 50 percent of row crops are farmed using guiding technology and broadband services contributes between $18 and $23 billion in added productivity in agriculture.[16] Farming with connected technologies can enable better crop yields, efficient business management and sustainable planting.[17]

Infrastructure Modernization: As connected infrastructure technologies continue to advance, broadband access is a necessity for digital infrastructure deployment. Broadband allows utilities to remotely monitor and automate electricity, fuel and water distribution systems. Broadband also enables advanced metering that can more accurately track usage, adjust demand and identify water and natural gas pipe leaks. Broadband also allows for asset to asset communications, such as vehicle-to roadway, enabling automation.[18]

Emergency Response and Public Safety: The United States has suffered 273 distinct, billion-dollar weather and climate disasters since 1980 with aggregate costs of $1.79 trillion, increasing in rate and severity in recent years.[19] Broadband can play a critical role to facilitate states' recovery efforts by allowing emergency responders to remain connected and facilitating timely emergency communications and directives to vulnerable populations. As new technologies such as unmanned aerial vehicles are deployed, broadband can assist in search and rescue and remote observation capabilities to improve response while keeping first responders safe.

Options for Technology Deployment: How is Broadband Accessed?

Governors looking to increase access to affordable, reliable broadband in the near term have a range of technology solutions to consider; each with its own trade-offs on cost, speed, reliability, immediacy of deployment and application. Governors may wish to target a mix of technologies that expedite deployment alongside longer-term efforts to expand fixed broadband infrastructure.

Wired Technologies

Wired or "Wireline" broadband technology is transmission technology that sends data through physical connections. Examples of wireline include fiber optic cables, digital subscriber line (DSL) or a cable modem. Wired broadband deployment is generally the preferred long-term strategy to reach state connectivity goals. NGA Vice Chair **Arkansas** Governor Asa Hutchinson, for example, released a state broadband connectivity plan building on previous legislation that enabled government entities and public-private partnerships to provide broadband services. The accompanying state connectivity needs assessment from the Governor's office emphasized wired connections.[20]

- **Phone and Cable Connections**: Broadband is often offered through copper telephone wires already connected to the home (known as a "digital subscriber line" or DSL) or through coaxial cable connections to a home's TV through the cable wall outlet and computer modem, two technologies that are relatively widely accessible.[21] DSL coverage availability nationally is high, but speeds and costs vary for residential and business users. DSL download speeds range from 5-35 megabits per second (Mpbs) whereas cable speeds can be as high as 500 Mbps or, in some cases, even a gigabit per second.[22, 23, 24] Telecommunications industry data point to high cable broadband availability and decreasing per-megabit costs, indicating states may have opportunities to leverage available cable broadband networks to expand broadband use through increased subscriptions.[25]

- **Fiberoptics**: Fiberoptic technology converts information from electric signals into light and transmits that information through cables containing hair-thin glass fibers.[26] This enables transmission speeds that can be quicker than DSL or cable and large data-carrying capacities with reduced interference. Fiber technology is thus the focus of many public and private broadband expansion projects and is generally regarded as the long-term technological connectivity solution. As an infrastructure investment, deploying fiberoptic technology can carry significant capital costs and regulatory hurdles.[27] The FCC, in its 2020 Broadband Deployment Report, pointed to high year-over-year growth in fiber broadband network availability, becoming available to 6.5 million new homes in 2019.[28] The United States Department of Agriculture has invested heavily in broadband projects focused on fiber deployment through the Rural Development Broadband ReConnect Program.[29]

Wireless Technologies

Wireless broadband connects users to service providers through a mobile or fixed device in a home or business that communicates wirelessly between the customer and provider locations.[30] Wireless options include fixed terrestrial and fixed satellite, mobile and wireless local area networking.[31] These technologies are considered "last mile" (as are cable and DSL wireline technologies) because they connect the user's location to a fiberoptic internet access point.[32] While wireless capabilities bring lower transmission speeds than fiberoptics, deployment may be cheaper and faster, particularly in areas with lower population density, as physical connections to homes do not need to be made.

Mobile Wireless: This category includes wireless broadband delivery through portable modems or mobile devices that provide internet like smartphones.

- **Wi-Fi Hotspots**: Wireless Fidelity (Wi-Fi) technology connects mobile devices and computers to the internet at short range. Device wireless adapters process and communicate data from and into radio signals that pass through antennae and a router.[33] Local wireless networks located in a public space or building, such as a parking lot or library, can provide a quick internet connection for mobile device

users lacking broadband service at home. While public hotspots are not a sustainable solution to households lacking reliable internet access, hotspot deployment has been a common strategy during the COVID-19 pandemic for state and local governments to deliver quick, temporary internet access to those without.

- **Cellular and 5G**: As mobile technology improves data transmission over time, an increasing number of Americans rely on their smartphones for internet access. The next phase, 5G or fifth generation cellular technology, offers reduced latency and support for a more connected environment (i.e., the "internet of things"). The FCC suggests 5G speeds could be up to 300 Mbps versus 4G at 12 to 36 Mbps.[34]

    Small cells, or small radio antennae technology that connect to main fiber lines and extend service to dense user clusters, are key to the 5G rollout.[35, 36] Internet Service Providers (ISPs) offer limited 5G coverage in select markets, but current barriers render the technology a medium to longer-term solution better suited for upgrading connectivity speeds in densely populated areas rather than expanding coverage to new geographies.

    Several states have enacted legislation addressing infrastructure regulations like co-location of small cells on other infrastructure (**North Carolina**[37]), local fee limits (**Georgia**[38]), authorizing state agencies to regulate on small rights-of-way related to wireless facilities on state highways (**West Virginia**[39]) and other legislation to facilitate "small wireless facility" deployment and address associated permitting and rights-of-way issues.

Fixed Wireless: Fixed Wireless uses radio airwaves to connect the end user to an internet access point like a fiber optic line through receivers located on the user's premises. Fixed Wireless requires a line of sight to the main access point, potentially limiting range. Because the technology uses radio waves, fixed wireless deployment also requires available spectrum, which is limited and increasingly scarce as the FCC seeks to support 5G networks and the increasing use of Wi-Fi devices.[40]

Satellite: Orbiting satellites can provide satellite wireless broadband. While satellite broadband is not bound by a wired tower and can thus offer expansive coverage and faster connection, cost to the provider and customer can be high.[41,42] Satellite technology is common for first responders as an alternative to cell communications. Increasingly, the private sector is deploying innovative new satellite networks with the potential to deliver broad and affordable service. In 2018, the FCC approved SpaceX's Starlink venture and the company has since launched the first of its 12,000 satellite array.[43] In July 2020, Amazon's Project Kuiper similarly received FCC approval to launch a global array of 3,236 low earth orbit satellites to connect unserved and underserved populations.[44]

Relevant Technological Concepts

<u>Middle Mile</u>: Connects local, "last mile" networks to core broadband networks.[45] Middle mile infrastructure links large scale broadband infrastructure to a provider network service area or local anchor institutions so last mile technologies can connect end users to those local nodes.

<u>Last Mile</u>: Connects residences, businesses and other users to the internet backbone – most likely a physical fiber line. As fiber is an expensive and construction-heavy infrastructure project, other technologies like wireless options can help economically bridge the last mile between the main broadband infrastructure and individual user locations.

<u>Spectrum</u>: A range of electromagnetic frequencies for wireless communication that the FCC specifically designates for federal or commercial uses like broadcast television, public safety radio systems and the Broadband Radio Service and Educational Broadband Service.[46] The FCC leaves some spectrum open (unlicensed); Wi-Fi routers use spectrum to transmit data and the average person on Wi-Fi is using unlicensed spectrum.

<u>White space</u>: An available communications spectrum that currently functions as unused space between television station channels. Television stations are often geographically distanced, and some channels are unused, so new technologies could access this spectrum for broadband connectivity and deliver service. The FCC has previously authorized radio devices to access this spectrum without a license and in February 2020 proposed to modify white space rules including antenna height and transmission power to increase flexibility for devices in rural areas to expand coverage by accessing white space.[47,48]

Governors' Solutions to Expand Broadband

Recognizing the multiple benefits of connectivity, Governors are implementing a range of policies and programmatic solutions to expand access and increase affordability. While many of these efforts historically focused on expanding wired infrastructure, the growing ubiquity of internet-enabled mobile devices, along with the persistent difficulty of expanding fiber in many rural regions, has made wireless technologies a viable alternative. However, for the highest speeds and most reliable connection, fiber remains the gold standard. The COVID-19 pandemic has created a new urgency for these expansion efforts and, as a result, Governors are increasingly implementing nearer-term solutions to bridge coverage gaps and provide affordable access to those who lack it. However, ubiquitous fiber infrastructure remains a core objective.

Governors have many policy and programmatic tools at their disposal to provide both immediate and long-term access to broadband. The below strategies are marked to symbolize either solutions for service that can be deployed quickly and at lower cost, but may not provide full connectivity or the highest speeds (referred to as "nearer-term solutions"), or longer-term, more permanent solutions for technologies such as fiber

(referred to as "longer-term solutions"), or marked with both symbols for strategies that can be applied towards both objectives.

⏱	Nearer-Term Solutions	📅	Longer-Term Solutions

## Establish Robust, Cross-Cutting Governance Structures
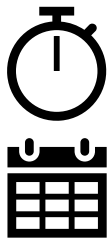
Every state governs, creates, or communicates broadband policy through either a dedicated broadband office or designated staff within other agencies. While the governance structures and organizations vary, at least 20 states and territories have established dedicated broadband offices through executive action or legislation.

In addition to dedicated broadband offices, cross-cutting governance bodies, such as state broadband task forces and working groups, have historically been critical to Governors' strategies to expand broadband. As of 2019, 27 states have organized or have previously utilized task forces, committees, or advisory councils that incorporate multiple sectors or cut across agencies and jurisdictions.[49] These governing or advisory bodies can create a vital platform to convene stakeholders and foster interagency collaboration. In **Maryland**, for example, the Rural Broadband Task Force includes internet service providers, state agency officials, state legislators, local representatives and broadband-related stakeholders.[50]

Similarly, one of the critical functions of the **Colorado** Broadband Office is to "provide a space and mechanism for all stakeholders, public and private, local, state and federal, to collaborate and address the challenges."[51] The office also actively coordinates with state agencies, local organizations and stakeholders in the development of the state's strategic plan. In 2019, **Minnesota** Governor Tim Walz issued an executive order to continue convening the Governor's Task Force on Broadband, which by order consists of a multi-stakeholder body that issues an annual report, advising the state executive and legislative branches on the needs and barriers to broadband availability and accessibility.[52] Governor leadership has been critical for creating and prioritizing these cross-cutting governance structures and advisory groups.

Initiate Strategic Partnerships To Kickstart Broadband Investments
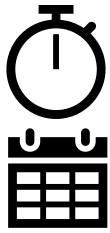
As Governors seek to expand broadband coverage many are acting as convenors to forge creative partnerships beyond the formal broadband governance body to advance their connectivity agendas. Governors and state broadband leads can use grant programs and partnerships with state agencies, anchor institutions, the private sector, local government, educators and community organizations to connect their states and leverage relationships, resources and expertise to overcome obstacles.

In **North Carolina** Governor Roy Cooper created a Task Force on Connecting North Carolina with the Governor's Office, state agencies and industry partners, availing the state's broadband expansion campaign to outside expertise, funding streams, relationship networks and technical assistance capacity.[53] Through this multi-pronged approach, North Carolina has increased short-term internet access (Wi-Fi hotspots, Wi-Fi-enabled buses),[54] identified long-term coverage priorities (speed tests),[55,56] engaged a wider set of stakeholders to understand diverse needs (farmer listening sessions,[57] telehealth feasibility studies,[58] equity nonprofit partnerships, homework gap assessments and digital literacy workshops[59]), and built local capacity (community broadband strategy development).[60] This engagement improved the state's broadband coverage as connectivity increased 44 percent between 2014 and 2019.[61]

Other states have invested in local community capacity to drive broadband expansion through grants, technical assistance and locally-led governance structures. The **Indiana** Office of Community & Rural Affairs administers a Broadband Readiness Planning Grant to help communities assess their connectivity status and assets and execute a clear broadband deployment vision.[62,63] In **Vermont**, Governor Phil Scott signed legislation creating a Department of Public Service (DPS) Rural Broadband Technical Assistance Specialist role to provide technical assistance to Communications Union Districts (CUDs) – a conglomeration of towns building communications infrastructure as a joint municipality – and other groups like local units of government and cooperatives by updating broadband maps, assisting with state applications and connecting localities with ISPs.[64,65,66,67] In **Maine,** local communities may partner to create a regional municipal utility district for broadband,[68] and **New Hampshire** Governor Chris Sununu signed legislation authorizing municipalities and counties to issue bonds for publicly-owned broadband infrastructure after soliciting providers for coverage data and proposals to create public-private partnerships to reach unserved areas.[69]

States are also leveraging private partnerships to deliver rapid broadband connectivity during the coronavirus public health emergency. In April 2020, **Vermont** Gov. Scott and the DPS announced a partnership with Microsoft and a local provider and IT service to provide public Wi-Fi hotspots to towns identified by the state's mapping tool as part of the Microsoft Airband Initiative.[70] The **New Mexico** Department of Information Technology released a *State of New Mexico Broadband Strategic Plan and Rural Broadband Assessment* identifying critical broadband coverage needs and highlighting a gap in service for tribal and rural areas. The report identified a need for additional support

for tribal and local governments to apply for funding.[71] To fill the identified coverage gaps, New Mexico is leveraging millions in state-funded projects for fiber-to-the-home including $2.1 million for unserved rural Sierra County residents, businesses and critical community facilities in conjunction with a $6.1 million award from the USDA ReConnect program for a partnership between Sacred Winds Communications Telesolutions and Sierra Electric Cooperative,[72] $2.9 million in an Inter-Governmental Agreement to the Pueblo of Cochiti with funds released through executive order by Governor Lujan Grisham,[73] and $3 million for a broadband capital outlay to the Navajo Nation.[74,75,76]

Leverage Anchor Institutions To Provide Rapid Community Internet Service

Historically, community anchor institutions (such as schools, libraries, medical facilities and government buildings) have served as critical connection points for last mile fiber development to communities. During COVID-19, these anchor institutions have also taken on the role of providing wireless connections through a combination of innovative services. Public libraries across the country have expanded Wi-Fi signals to reach outside of the building to cover surrounding parking lots and established mobile hotspot lending programs.[77] School districts have also played a critical role in connecting students for remote learning by distributing mobile hotspots to homes, as well as equipping school buses with mobile hotspots and deploying buses in underserved communities.

In **South Carolina**, the state Department of Education has procured additional mobile hotspots, deployed hundreds of internet-equipped school buses to communities, and directed school districts to identify students that lack internet access, including providing internet access for 100,000 households under the federal poverty line.[78] In **Maine,** Governor Janet Mills acquired nearly 15,000 hotspot devices for all students who lacked connectivity at home, as identified through school surveys. For this procurement, Maine utilized a combination of philanthropic contributions and federal funds, including $9.3 million allocated through the CARES Act.[79]

Missouri Governor Mike Parson announced in July 2020 that $10 million of the state's CARES Act allocated funds would be dedicated to reimbursing school districts for expanded internet connectivity efforts, which is estimated to allow for internet connections for 250,000 students.[80] Similarly, a portion of the **Tennessee** coronavirus relief fund has been dedicated to the Tennessee Emergency Broadband Fund, which offers grants for a variety of projects including public Wi-Fi access at community locations and on public buses.[81] Through the program, $61 million in grants has been awarded across 61 projects, including $40 million to electric co-ops to provide rural broadband services.[82]

Importantly, anchor institutions can also support longer-term broadband deployment. In 2019, **Illinois** Governor JB Pritzker launched a $400 million grant program, Connect Illinois, to support broadband infrastructure projects, including a $20 million capital program to repair and expand the state's Illinois Century Network, which connects schools, libraries and government facilities, and the Connected Communities grants for strategic broadband planning.[83,84] In 2020, the first cohort of Connected Communities grant recipients included four school districts, two community-based organizations, two local governments, two county-level organizations and two economic development groups.[85]

The **New Mexico** Public Education Department has issued a request for quotes from local ISPs for cost savings through volume pricing of broadband solutions for approximately 12,000 unserved student residential addresses. The resulting quotes will be displayed in a custom online portal for participating public schools and school districts to access when procuring future services.[86]

Leverage Existing Infrastructure Projects With Dig-Once Coordination

Over the past decades, states have increasingly explored the potential for broadband infrastructure deployment cost reductions by enhancing agency coordination and coordination with stakeholders in the planning, construction and maintenance of infrastructure assets. Broadly, this coordination is referred to as a dig-once policy, with the central premise that during the construction or repair of a road or a water pipe, agencies can leverage rights-of-way to simultaneously install conduit or run fiber at a lower cost.[87] As of 2019, 11 states have adopted dig-once policy frameworks or similar policies.[88]

Public rights-of-way, particularly along highways and other transportation infrastructure, are commonly used to accommodate public utilities, and can be a useful tool for states and local governments to expand broadband infrastructure. In **Utah**, the state Department of Transportation has played a key role in expanding broadband infrastructure across the state by coordinating the lease of rights-of-way along state highways in public private partnerships with internet service providers.[89] Between 2000 and 2018, Utah DOT has deployed or facilitated the deployment of nearly 2,800 miles of fiber infrastructure.

California couples state infrastructure investments with wired broadband deployment by requiring state-led highway construction projects to communicate with broadband deployment companies when projects present opportunities for accompanying broadband conduit installation. The state's Governor-appointed broadband council convenes stakeholders from multiple agencies, including the California State Transportation Authority, to identify and collaborate on deployment opportunities.[90]

The **Indiana** Department of Transportation's broadband corridors program seeks to advance broadband infrastructure deployment by allowing private broadband providers to pay a fee or

enter a resource sharing agreement to occupy a public right-of-way and install fiber along an interstate or highway.[91]

In May 2019, **North Carolina** Governor Roy Cooper signed an executive order requiring the North Carolina Department of Transportation to work with the Department of Information Technology's Broadband Infrastructure Office to developed a new policy focused on open trench excavations along state-maintained, non-National Highway System roads.[92]

Leverage Electric Utilities' Infrastructure And Services To Facilitate Broadband Network Deployments

Governors can work with broadband service providers and utilities, including investor-owned utilities and rural electric cooperatives, through public-private partnerships and grant programs to extend broadband coverage by using existing infrastructure backbones and rights-of-way, leasing capacity to other providers and reaching unserved rural cooperative customer bases. The high cost of connecting individual customers in areas with geographic challenges or low population density can impede universal broadband goals, but some states deliver broadband to challenging areas by diversifying their partnerships and broadening broadband service provider eligibilities.

Several states are looking to these partners to boost broadband availability. Borne out of Governor calls for broadband investment and coverage expansion, **Alabama**,[93] **Arizona**,[94,95] **North Carolina**,[96] **Tennessee**,[97] **Virginia**[98] and **West Virginia**[99] passed legislation including various provisions allowing electric utilities and cooperatives to deploy broadband through their services or existing fiber networks and easements or work with an affiliate or local providers in their service areas, and to operate and maintain their own broadband infrastructure.

The states also targeted expanding delivery through co-location requirements and designating state grant funds to subsidize commercial telecommunications provider broadband efforts. States including **Vermont**,[100] **Virginia** (see case study below), and **West Virginia**[101] have used legislation and state grant programs to conduct feasibility studies to consider the capacity for electric utilities and cooperatives in their state to provide broadband service.

In July 2020, **Mississippi** Governor Tate Reeves signed the Mississippi Electric Cooperatives Broadband COVID-19 Act creating a grant program and designating $65 million of the state's CARES Act relief funds for grants to electric cooperatives (and $10 million for other broadband providers) for broadband access expansion as a necessary response to the COVID-19 public health emergency.[102,103] Estimates expected this investment to make broadband service available to more than 35,000 rural homes.[104]

While states are incorporating electric utilities into their broadband deployment strategies, a policy study by R Street notably found several potential challenges to broadband delivery through electric cooperatives, including impacts to market competition and future investment from cost-advantaged utilities using their own infrastructure to deliver broadband and impacts to electric ratepayers as cooperatives price services to cover broadband infrastructure investments. Potential best practices to avoid these impacts could include instituting governance and accounting measures to limit local electric service monopolies from cross-subsidizing broadband services and ensuring the charging of fair market price affiliate asset use fees.[105]

Case Study: Virginia Engages Utility and Cooperative Providers

In Virginia, Governor Ralph Northam announced a goal to achieve universal broadband coverage in the state by 2028. The Virginia Commonwealth Connect broadband report encouraged substantive engagement and cooperation among the Commonwealth's broadband team, the Commonwealth and local governments and both private and public regional authority, cooperative and investor-owned utility broadband providers.[106] The 2019 report highlights the role cooperatives and other private sector partners can play in last mile broadband deployment, laying fiber networks, leasing fiber capacity to local governments and multiplying state grant program funds through their own investments.[107]

Commonwealth legislation helped increase broadband partnerships with cooperatives and utilities:

• The Grid Transformation and Security Act of 2018 codified tax credits for the Commonwealth of Virginia's investor-owned utilities (IOU), Dominion Energy and Appalachian Power, to make investments in smart metering and grid modernization technologies, and directed the utilities to examine possible avenues to extend broadband coverage to the unserved using their infrastructure. Investor-owned electric utilities would work with the State Communications Commission (SCC) to evaluate options to provide broadband or lease capacity to a commercial provider, identify any necessary infrastructure improvements and report findings to the SCC, the Governor, the Broadband Advisory Council and relevant House and Senate committee chairs.[108]

• The 2019 HB 2691 declared broadband access to be in the public interest and required the State Communications Commission to create pilot programs for Dominion and Appalachian Power to either provide or make broadband capacity available to non-governmental ISPs to offer to unserved areas, and authorizing the utilities to own or lease broadband capacity equipment (the ISP must offer the actual broadband service; the IOU may not). The utilities were authorized to recover pilot program costs (proposals capped at $60 million) through customer rate adjustments.[109]

• In 2020, Gov. Northam signed legislation allowing easements for electric and communications facilities to be accessed for broadband delivery.[110] Electric cooperative representative groups supported the adjustment as it would make electric cooperatives' participation in broadband expansion efforts easier by reducing costs and allowing cooperatives to access electric easements to deploy broadband instead of having to obtain their own easements.[111]

Virginia's executive and legislative branches and broadband program administrators worked together to involve electric utilities in broadband expansion. The Governor set a Commonwealth-wide broadband coverage goal, the legislature authorized practical steps and the Commonwealth broadband program planned partnerships accordingly. As a result, in 2020 Dominion Energy and Appalachian Power each announced initiatives to deliver fiber broadband to unserved areas by providing the middle mile fiber network and partnering with an ISP (Dominion partnered with a rural electric cooperative) to target customers in a specific county.[112,113]

Coordinate and Expand Affordability Programs

The cost of broadband services can be a significant barrier to increasing statewide adoption. Beyond monthly service rates, factors contributing to affordability can also include contract length, activation or installation fees and equipment costs. In response to the COVID-19 pandemic, 16 states ordered the suspension of utility shutoffs as a result of nonpayment to include telecom services.[114] Further, many internet service providers have enacted new or improved low-cost service options for low-income households, those recently unemployed, or discounted services for essential workers.[115]

Several state broadband offices have compiled and maintained lists of the affordable service plans that are relevant for their residents, as well as the federal resources, including the FCC's Lifeline program, which provides a monthly discount for low-income households.[116] For example, **Wisconsin's** Public Service Commission has published a list of provider plans with their associated service maps, locations of public Wi-Fi spots, and the information for a dedicated helpline.[117] Similarly, the **Colorado** Broadband Office maintains lists of affordable or discounted broadband resources for the general public, schools and libraries, health care providers and first responders.[118] In **North Carolina**, the Department of Information Technology's Broadband Infrastructure Office convenes a group of digital equity leaders and inclusion-focused organizations to share best practices and coordinate on strategies to close the state's digital divide, including promoting existing low-cost programs.[119] Several states have also incorporated affordability components into their broadband grant scoring and award process.

Deploy Innovative Procurement Strategies

In a time where state budgets are increasingly strained, it is critical to take advantage of innovative procurement solutions to reduce barriers for new project deployments and to identify cost effective providers. States are interested in shortening the purchasing process, building partnerships with suppliers, and perhaps most importantly, keeping costs down. Strategies to streamline the procurement processes can include cooperative purchasing, umbrella contracts and bulk purchasing agreements, among others.

In **North Dakota,** Governor Doug Burgum has aggressively embraced the digital era and connected nearly the entire state to broadband. One program overcame privacy challenges to map students lacking internet access in their households. A network of state agencies, utilities and the Governor's office identified 2,000 rural households lacking connectivity. The state acted as a procurement vehicle, having network service providers bid on these selected locations to increase competition and affordability. This cooperative agreement, along with a strong commitment to connecting rural areas, has ensured that 99.8 percent of North Dakota's rural students have internet access in their households.[120]

Michigan operates the MiDEAL program to allow localities, schools and hospitals to purchase goods and services at reduced rates while cutting time soliciting bids.[121] Existing contracts include commercial broadband services for local governments. Many states include broadband in bulk purchasing agreements to leverage economies of scale. Alternatively, states may enter umbrella contracts with retailers to set a general negotiating framework for future procurement. Generally, these agreements are more flexible and responsive to current conditions, while reducing the need for immediate contracts. **New York** has an umbrella contract for certain hardware and software devices, expediting procurement on competitively priced information technology.[122]

Improve Broadband Coverage Maps

The collection of data on current broadband availability and provided service speeds is critical in prioritizing expansion efforts. This data is currently collected and mapped by the FCC, but as the FCC acknowledges, the data collected twice per year from broadband providers via Form 477 is imperfect, only capturing service provided at a census-block level and only establishing where minimum speeds are being met. To create a more accurate representation of the level of broadband service being provided, states have developed alternative mapping strategies that provide more data at higher granularity. In 2018, **Georgia** launched the Georgia Broadband Deployment Initiative to provide residential level broadband availability data. The Georgia initiative's 2020 map showed significantly more areas of the state lacked broadband coverage than had been identified by the 2019 FCC Form 477 map, by setting the threshold for labeling each census-block as served or underserved at 80 percent of the locations (residences or businesses) having speeds of 25 Mbps down and 3 Mbps up.[123]

**Figure 1. Georgia Broadband Availability, Comparing FCC Data to State Map**
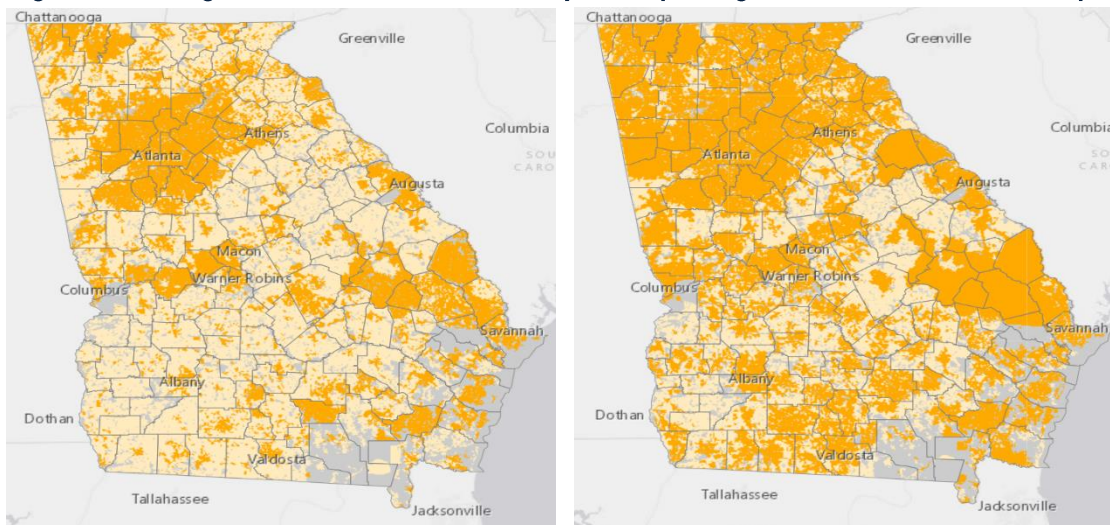
Georgia map on the left, FCC map on the right, "served" locations in the darker color and "unserved" locations in the lighter color.

Importantly, the success of mapping efforts can hinge on the level of engagement of the internet provider companies that operate in each state. Insufficient engagement or participation can directly result in incomplete maps. In **Minnesota**, the Office of Broadband Development maintains a state-wide service map by collecting data from service providers, which are reviewed and verified by a third party.[124] Alternatively, several states have also created surveys to bolster their availability data and better target expansion efforts. The state of **Washington** recently released a speed test survey tool and has received more than 18,000 responses, showing 92.3 percent of respondents have broadband access.[125] In a partnership between the **North Carolina** Department of Information Technology's Broadband Infrastructure Office and the Friday Institute for Educational Innovation at North Carolina State University, the state conducts an internet access and speed test survey, which has to date received more than 36,000 responses.[126]

These data mapping efforts have been repeatedly used to challenge the FCC Form 477 in applications for additional federal support (*see Appendix*). Acknowledging the need to update the FCC broadband data collection process, in 2018 Congress directed NTIA, in coordination with the FCC, to incorporate mapping data that is being collected by states, other federal agencies and third-party organizations to create a new National Broadband Availability Map. As of July 2020, 22 states are participating with NTIA's updated mapping process.[127]

More accurate maps of the availability, quality and cost of broadband services in each state and territory provide Governors with an important tool to better inform residents and measure the progress of state programs. In response to the COVID-19 pandemic, many of these mapping efforts have also incorporated interactive layers displaying publicly available Wi-Fi hotspot locations.

Identify Funding and Financing Sources for Broadband Deployment
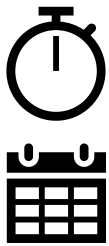
Broadband expansion is expensive and inadequate funds or the lack of economic payback for broadband expansion in some situations remains a barrier. Many states have dedicated state funding mechanisms to address middle mile and last mile broadband expansion. These are often supplemented by federal programs that offer grants to states, municipalities and other entities to accelerate broadband deployment, including FCC programs such as the Universal Service Fund or Rural Digital Opportunity Fund, which are targeted toward specific regions like underserved census blocks or rural areas.

The FCC is not the only major federal funder for broadband expansion and further delineation of funding can be seen in the *Appendix*. Many federal agencies understandably focus on specific policy priorities, therefore segmenting resource allocations. This can create gaps in broadband coverage, especially if funds have

restricted uses. Governors may consider how to use multiple funding sources to leverage economies of scale in deployments, for example coordinating funding for broadband to anchor institutions such as schools with funding for extending last mile connectivity to nearby homes and businesses. To maximize federal funds, state participants at NGA's roundtable highlighted the need for flexible, unrestricted state funding through programs such as federal block grants.

Apart from leveraging federal funds, states have their own funding programs, albeit of lesser scope than federal programs. State funding mechanisms include supplemental universal service fund spending, grants to individuals, businesses, or communities, loans or loan guarantee programs and more. As of 2018, 42 states operate their own versions of universal service funds to supplement federal programs.[128] These funds support a variety of needs including services for deaf and hard of hearing individuals, phone devices and equipment, discounts for high-cost installations, and additional funding for the Lifeline program. States spent nearly $82 million of USF funding in 2017 to support high cost corridors, low-income assistance, rural health care, schools and libraries.

Finally, states are taking different approaches to increase broadband services. The Commonwealth of **Kentucky** is building a 3,000-mile fiber optic middle mile network to connect every county. The program is state owned and expects to lease half of the fiber cables to private companies to offset costs. While the program does not directly improve end users' internet speeds, it will allow public and private ISPs to more easily connect communities to last mile infrastructure.[129] **Indiana** Governor Eric Holcomb announced $100 million in funding for last mile service as part of the Next Level Connections program. The program is making grant awards of up to $5 million and recently awarded $51 million to 50 projects, while also receiving $53 million in matching funds from ISP applicants.[130] **Illinois** and **New York** are respectively offering one-time commitments of $400 million and $500 million for broadband deployment.[131, 132] Notably, the size of these investments is not financially feasible for every state.

Other states spread out more limited state funding over several years. **Minnesota** has appropriated $110 million for broadband expansion through its Border to Border Grant Program in $20 million annual allocations.[133] **North Carolina** similarly offers $15 million annually over the next 10 years through state funds.[134] **Vermont** is offering $10.8 million in state grants and loans, targeting rural customers, providing funding for alternative providers and building technical assistance capacity.[135] Both upfront and long-term investments advance state efforts to expand affordable broadband coverage. However, additional funding will be required to fully connect each household, which has become an increasingly urgent objective during the COVID-19 pandemic.

CARES Act State Spending Uses

On March 27, 2020, the Coronavirus Aid, Relief, and Economic Security Act (CARES Act) was signed into law, bringing with it more than $2 trillion in economic stimulus. The CARES Act included funding provisions for individuals, the private sector and state

and local governments. States are rapidly determining how to spend funding allocations, working toward an end-of-year allocation deadline. Where allowable under U.S. Treasury guidelines, broadband investments have been a priority for multiple states, such as investments to upgrade distanced learning capacity. Many states are funding device purchases for students and teachers and Wi-Fi routers in school buses, prioritizing rural and low-income individuals. The below table describes selected examples of how Governors are deploying CARES Act funding on broadband. Since new allocations continue to be made, this table should be considered a snapshot in time.

Select State Investments in Broadband Leveraging CARES Act Funding

Alabama: Allocated up to $300 million for expenditures related to remote learning, $53 million for remote work, and established a broadband working group to guide CARES Act funding toward relevant broadband projects.[136]

Arkansas: Allocated $10 million to seven telecommunications companies to expand broadband access in rural communities.[137]

Delaware: $20 million for broadband infrastructure, with $13 million directed toward wireless vouchers and devices for underserved families with school-age children.[138]

Idaho: $50 million for broadband infrastructure – directing funding to private companies to make broadband investments.[139]

Iowa: $85 million for expanding telework, telehealth and remote learning through broadband expansion. Opened $50 million in CARES act funding to award grants for broadband infrastructure expansion. The program is run through the existing Empower Rural Iowa Broadband Grant Program.[140]

Kansas: Allocated more than $130 million toward coronavirus response. While broadband expansion is not the entirety of these relief funds, it is an eligible activity. One grant supports telework and telehealth needs, while a separate grant funds remote learning needs for low-income households.[141]

Michigan: $25 million to support connectivity for school children and their families. Fund to cover several device-purchasing options to support remote learning expansion in the next 3-6 months. More incentives are made towards communities with higher poverty rates.[142]

Mississippi: Allocating $275 million in federal funding toward broadband – $65 million to state's electric co-ops for rural broadband expansion. Program matches federal funding with broadband expansion costs borne by the utilities. Pandemic Response Broadband Availability Act set up a $50 million special fund in state treasury to grants for school districts in compliance with CARES Act. $150 million is allocated to school districts to purchase laptops for students and boost distanced learning capabilities.[143]

Missouri: $10 million for remote K-12 learning – reimburses school districts for increasing student connectivity and campus Wi-Fi networks. $10 million for higher ed distanced learning needs. $5.25 million for telehealth, with plans to install more than 12,500 hotspots. $20 million to reimburse broadband providers. $2.5 million for library resources that will support hotspots and Wi-Fi access for telehealth and higher ed resources. Additional funding available for broadband technical assistance requests.[144]

Nevada: $50 million for K-12 schools to create alternative intensive instruction. This program targets students "likely to develop the largest deficits in education attainment" from a lack of in-school learning. Students include English as Second Language students, low-income students, those with low test scores or at low performing schools, among others.[145]

New Hampshire: $50 million for broadband – seeking applications for enhancing remote learning, remote work and telehealth. Again, this application is on an accelerated time scale, with the application open for two weeks and notifications two weeks later. All projects must be completed by December 15.[146]

New Mexico: $1.5 million in CARES Act funds for broadband technical assistance for local and tribal governments and other groups to advance broadband deployment and help communities prepare for Federal funding opportunities.[147,148,149] Partnered with the N.M. Public Education Department and others to identify, promote and support broadband solutions for K-12 students that reside in unserved or underserved areas of the state. As of June 2020, this collaborative has used CARES Act funding to purchase and distribute 700 residential hotspots (Navajo Nation), thousands of Chromebooks and numerous other fixed and mobile hotspot devices for Tribal communities.[150]

North Carolina: $672,000 for telework capabilities. Gov. Cooper signed legislation to provide $56 million for distanced learning activities including installing Wi-Fi routers in school buses, providing home internet access points, purchases computers for K-12 students and teachers, as well as providing funding for cybersecurity infrastructure.[151]

North Dakota: $23.9 million for telework, $17 million for cybersecurity and $26.8 million for digital government services.[152]

Puerto Rico: $40 million for telework program, $40 million for telemedicine program.[153]

South Carolina: Allocating $50 million to broadband programs. One program targets all students to provide mobile hotspots in 100,000 qualifying households. Funding will also support identified areas of need and a mapping program.[154]

South Dakota: Governor Kristi Noem announced CARES Act funds would support the K-12 Connect program to provide internet service at no cost to eligible K-12 students in their homes for the remainder of the 2020-21 school year.[155]

Tennessee: Governor Bill Lee announced $61 million to be allocated for emergency broadband funds to support telehealth, remote learning and telework services. The state allocated $60 million of general funds towards broadband and this new funding will potentially support projects that were previously denied due to a lack of program funding.[156]

Vermont: $17.5 million to a new COVID-Response Accelerated Broadband Connectivity Program, supplements lifeline program, telehealth services, remote learning or telework needs, with $2.5 million segmented out to separately address telecommunications services, telehealth, connected Communications Union Districts.[157]

Virginia: $30 million in CARES Act funding for broadband projects. Localities are encouraged to apply with projects that "creatively address the digital divide, including projects that address infrastructure or the cost of broadband services."[158]

West Virginia: $50 million for general broadband development.[159]

Wyoming: Coordination between Governor Mark Gordon and the state Business Council identified several broadband expansion projects and deployed $55 million of CARES Act funding.[160]

Remaining Challenges

While this white paper offers many solutions to broadband expansion challenges, there are additional remaining hurdles Governors may need to address. First, many federal funding sources are program specific, constraining state or local spending to specific priorities, regions or end uses, such as rural health care or education. These funds designated for one end use can often have broader benefits (for example, Wi-Fi for educational purposes can be used for telehealth visits) so it can be important to consider the full range of benefits of individual investments. These single end-uses may also be limiting, as a small incremental cost to expand the scope of a program for greater community benefit may be unallowable. Ensuring cross-sector linkages are made can help to ensure the better utilization of limited funds.

State broadband expansion also faces financial challenges that may bar potential internet providers access to the market and reduce competition. In rural areas, low population densities may make new investment uneconomic for traditional providers. In low income urban areas, there may be a lack of incentive for new entrants to compete, resulting in monopolies or duopolies that keep prices high. Governors can consider how investments may reduce these barriers for new and alternative providers to enter those markets. Further, Governors may wish to explore any policy or regulatory barriers that prohibit new market entrants from competing.

Conclusion

Expanding broadband access and increasing affordability have been top policy priorities for Governors. As the necessity of internet access has rapidly grown over the past three decades, states have established and modified a variety of best practices to increase the deployment of broadband infrastructure. The COVID-19 pandemic has added an immediate urgency to provide internet access so that people can continue to work, attend school, and access critical services virtually while abiding by telework requirements, required distance learning, and stay at home orders necessitated by public health guidance. This rapid mobilization has taxed systems and agencies, creating a tension between the need to balance short-term fixes with longer-term investments and more permanent infrastructure projects. The strategies laid out in this paper demonstrate how Governors are tackling these challenges and the emerging best practices for expanding affordable broadband access.

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Appendix: Federal Broadband Programs and Funding Resources

Agency/Branch	Program Name	Program Description	Total Funding	Individual Funding Awards	Additional Funding through the CARES Act
U.S. Department of Agriculture (USDA) – Rural Utilities Service (RUS)	Reconnect Loan and Grant	Provides loans and grants to cover broadband construction costs in eligible rural areas	$550 million	Loan up to $50 million, with 2 percent interest. Combo loan/grant $25 million each. Grants available up to $25 million with a 25 percent match	$100 million
USDA – RUS	Rural Broadband Access Loan and Loan Guarantee	Offers loans to construct facilities and acquire equipment for providing broadband service in eligible rural areas.	NA – Not currently funded	Loans made and authorized through the Farm Bill	N/A
USDA – RUS	Community Connect	Funds broadband deployment in communities lacking economic viability with private providers	NA – Not currently funded	Grants were made up to $1.5 million with a 15 percent match requirement.	N/A
USDA – RUS	Telecommunications Infrastructure Loans and Loan Guarantees	Provides financing support to expand telephone and broadband access in rural areas with fewer than 5,000 people	$690 million	Cost-of-Money loans available directly, as well as loan guarantees to private lenders to connect local borrowers	N/A
USDA – RUS	Distance Learning and Telemedicine	Helps remote learning and telehealth telecommunications needs in rural areas	$50 million	Grants are awarded with a 15 percent match requirement. Awards range from $50,000 to $1 million	$25 million

Agency/Branch	Program Name	Program Description	Total Funding	Individual Funding Awards	Additional Funding through the CARES Act
Federal Communications Commission (FCC) – Universal Service Fund (USF)	Connect America Fund – High Cost	The program funds broadband service in unserved and underserved areas by funding ISP connection plans	The phase II auction funded nearly $1.5 billion over 10 years	103 bidders are splitting the awards to serve more than 700,000 locations in 45 states	N/A
FCC – USF	Lifeline – Low Income	Assists low income individuals to help pay phone and connections charges	$2.385 billion	Allocates $9.25 per household in broadband support per month	N/A
FCC – USF	Schools and Libraries – E-Rate	Eligible schools and libraries receive discounts on costs of telecommunications services	$4.15 billion in FY2019	Discounts range from 20 to 90 percent, based on the poverty level of the school, with rural schools and libraries potentially receiving higher discounts	N/A
FCC – USF	Rural Health Care	Reduces costs for rural health care providers to make telecommunication services more competitive to urban provider costs	Funding cap for FY2020 is $605 million	Eligible providers may receive a 65 percent flat discount on telecommunications services	$42.19 million as well as $200 million for telehealth in general
FCC	Rural Digital Opportunity Fund	Targets completely unserved areas to be followed by partially served areas by funding ISP broadband deployment in eligible census blocks	$20.4 billion over 10 years	The first auction to award up to $16 billion for unserved areas was held in October 2020	N/A
FCC	5G Fund for Rural America	Deploying 5G services to eligible rural communities	$9 billion	Currently seeking public comment on how to distribute project funds	N/A

Agency/Branch	Program Name	Program Description	Total Funding	Individual Funding Awards	Additional Funding through the CARES Act
U.S. Department of Commerce– National Telecommunications and Information Administration (NTIA)	BroadbandUSA	Not funding focused, provides technical assistance, resource guides and broadband maps. NTIA also hosts a state broadband working group	N/A	N/A	N/A
U.S. Department of Education	Elementary and Secondary Relief Fund	K-12 emergency funding to respond to COVID crisis growing need for remote learning	N/A	States are awarded funds in proportion to the Elementary and Secondary Education Act (ESEA)	$13.2 billion
U.S. Department of Education	Higher Education Emergency Relief Fund	Reimburses students and teachers for technology needs	N/A	The funds will be awarded to higher education institutions on a formula outlined by Congress	$14.25 billion
U.S. Department of Education	Governor's Emergency Relief Fund	Block grants for educational entities most impacted by COVID. The grants are largely flexible to cover current student and school needs.	NA	Funds are awarded to Governors' offices 60 percent based on relative school-aged population and 40 percent based on children counted under ESEA	$3 billion
U.S. Department of Education	Title I, Part A	Provides financial assistance to schools with high percentages of low-income students.	$16.31 billion	States are awarded funds on a formula basis	
U.S. Department of Education	Title IV, Part A	Improves technology accessibility and digital literacy for all students	$1.21 billion	States are awarded funds on a formula basis	

Agency/Branch	Program Name	Program Description	Total Funding	Individual Funding Awards	Additional Funding through the CARES Act
U.S. Department of Housing and Urban Development	Community Development Block Grants	Block grants are provided annually on a formula to states for primarily low- and moderate-income assistance projects. Funds may be used to install broadband infrastructure to benefit eligible communities.	$3.4 billion	While funds are not exclusively focused on broadband infrastructure, states may flexibly allocate funding toward broadband. West Virginia has utilized these funds toward broadband expansion.	$5 billion
U.S. Department of Transportation	INFRA Grants	Provides Federal financial assistance to highway and freight projects of national or regional significance, encourages applicants to include the deployment of innovative technology and expanded access to broadband.	$906 million	Large projects of at least $25 million, small project grant awards of $5 million for both construction and project development.	N/A

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