State Recovery Now

Policy Playbook

Increasing Affordability of High-Speed Broadband

A guide to helping communities advance digital inclusion

Executive Summary

High-speed broadband is an essential utility for Americans to learn, work, and engage with their communities. Yet a range of between 14.5 to 42 million Americans still lack access to broadband internet.[1]

While the pandemic did not cause this 'digital divide' between those who can access reliable, affordable broadband internet and those who cannot, it has highlighted the access shortfalls and raised the stakes for unconnected households. During the pandemic, the nation saw an 18% growth rate in in-home data use.[2] Households without access to fast and reliable broadband connections face challenges in student learning, employment, social connections and wellbeing, and the communication of vital public health information and health services. Rural and low-income Americans, in addition to communities of color, are most impacted by these shortfalls in accessibility.

Cost of service remains the chief reason while households do not have broadband internet.[3] While resourcing for this need has increased recently, impact will depend on implementation. During the pandemic, the federal government launched the Emergency Broadband Benefit program to reduce costs for broadband service. The American Rescue Plan, and more recent Infrastructure Investment and Jobs Act, will also significantly expand availability of funds for states and local governments to use for broadband services for unconnected households. As state and local governments consider their options for spending federal investments, they should consider expanding the affordability of broadband services by expanding knowledge of and access to federal subsidy programs, and providing complementary locally administered subsidy programs, to reach unconnected households.

Addressing these gaps is possible with the right approach that mixes subsidies with digital outreach and persistence to reach the targeted, underserved populations. Because these initiatives will rely on direct engagement with underserved communities, cross-sectoral partnerships with local organizations will be key, and state and local government capacity to implement will be the determining factor in if progress is made to close this access gap.

Background

It is unclear exactly how many households across America are living without broadband access, or with insufficient speeds of broadband to support their needs. In 2021, the FCC reported that the number of Americans living in areas without access to broadband (due to lack of service)

[1] Broadband Now estimates availability for all 50 states. Broadband Now. Oct 2021. https://broadbandnow.com/research/fcc-broadband-overreporting-by-state
[2] How much broadband speed do Americans need? Pew. Nov 2020.
https://www.pewtrusts.org/en/research-and-analysis/articles/2020/11/30/how-much-broadband-speed-do-americans-need
[3] Horrigan, John. Measuring the Gap. National Digital Inclusion Alliance. Feb 2020.
https://www.digitalinclusion.org/wp-content/uploads/2020/02/Horrigan_Measuring-the-Gap-v1.1.pdf

dropped by approximately 20% to 14.5 million Americans.[4] Alternative analyses using FCC data, however, suggest that Americans living without access could be even higher – up to 42 million.[5]

What is clear is that cost of service is a constraint for these households to secure access to broadband. While past reporting by the National Telecommunications and Information Administration suggested that lack of interest in broadband was a primary driver in these unconnected households, studies by Pew Research Center instead point to cost as a key factor. Interviews with unconnected households find that they are aware of the importance and need for broadband, but concerned about the cost of service.[6] Similarly, during the pandemic, 90% of Americans reported that the internet was essential, but 26% also reported they were concerned about managing the cost of service in the next several months.[7] As households continue to grapple with the economic legacy of the pandemic and rising inflation, high service costs are unlikely to self-resolve.

To overcome the cost barrier, government actors need to provide direct relief to low-income households. The FCC rolled out the Emergency Broadband Benefit in 2021 to provide a discount of $50/month for eligible households to use towards the cost of home broadband service. In just 4 months, more than 6 million households signed up to use the benefit.[8] The rapid sign-up of participants speaks to the demand, but as this is likely less than 30% of overall households who lack service, it also speaks to the need for outreach efforts to ensure unconnected households are aware of subsidy opportunities.

States and local governments will soon have even more financing at their disposal. The recently passed 2021 Infrastructure Investment and Jobs Act will invest $65 billion for broadband access to improve internet service for rural and tribal communities and low-income households. This will include $14.2 billion for a subsidy program of approximately $30/month called the Affordable Connectivity Program, which will replace the Emergency Broadband Benefit. While the overall subsidy amount will drop, the Affordable Connectivity Program subsidy will be available to households with additional qualifying criteria, such as WIC recipients, which could increase the overall eligible residents nationwide. Households will have to requalify with the new program during a transition period in early 2022. The FCC will hold a public comments period to consider what rules to adopt for this new program.[9]

The majority of the bill's funding - $42.5 billion – will be available for a range of broadband projects through grants to states. As a result, the successful spending and implementation of this funding at a state and local government level will determine if it is ultimately successful in expanding access. State and local governments should leverage these funds to increase the

[4]Fourteenth Broadband Deployment Report. FCC. Feb 2021. https://www.fcc.gov/reports-research/reports/broadband-progress-reports/fourteenth-broadband-deployment-report
[5] Broadband Now, 2021.
[6] Horrigan, 2020.
[7] The Internet and the Pandemic. Pew. Nov 2021. https://www.pewresearch.org/internet/2021/09/01/the-internet-and-the-pandemic/
[8] More than 6 million households enroll in emergency broadband benefit. FCC. Sept 2021. https://docs.fcc.gov/public/attachments/DOC-376096A1.pdf
[9] Emergency Broadband Benefit. FCC. https://www.fcc.gov/broadbandbenefit

number of households subscribing to home broadband services that have sufficient speed and capacity (i.e., unlimited data caps) that enable people to use the internet in an unconstrained fashion. This will often mean a wireline broadband plan. For households that currently lack this service (i.e., lower- and lower-middle income homes) this will rarely mean cellular data plans. Ensuring that service is affordable for low-income Americans also furthers the goal of universal service, which has been a foundation of U.S. communications policy for decades.

Policy Overview

Policy interventions can include promotion of existing federal subsidies to expand awareness of and use of the subsidies; protecting service interruption to prevent loss of service due to inability to pay; and subsidizing service directly.

The existing federal subsidy program is the Emergency Broadband Benefit, soon to be replaced with the American Connectivity Program. The Emergency Broadband Benefit serves eligible households which qualify with one of the following: an income at or below 135% of the Federal Poverty Guidelines, existing participation in an income-level qualified program like Medicaid or SNAP; existing qualification for benefits under the free and reduced price lunch program; receipt of a Pell Grant; or a substantial loss of income or employment during the pandemic. However, the benefit is temporary and will end when funds are exhausted, or six months after the federal government declares the end of the public health emergency.[10] The Affordable Connectivity Program will replace the Emergency Broadband Benefit, funded through the recently approved Infrastructure bill, and is meant to serve as a long-term subsidy program. The total benefit under this new plan will drop from $50 to $30/month. However, households will have new ways to qualify, including WIC recipients or having an income at or below 200% of the Federal Poverty Guidelines. Households will need to requalify; not all rules and eligibility is available publicly, and the FCC will produce and update qualifications during a transition period in 2022.

Promotion of the federal subsidy programs can often be aligned with existing state programs. For example, Mass Internet Connect, which serves Massachusetts residents who are unemployed and receiving workforce services, previously provided them with internet subsidies, technology, and digital literacy resources.[11] Like many other states, MA is now referring residents who need internet access to the Emergency Broadband Benefit. States can also support local partners to spread knowledge and build awareness about federal subsidy programs by providing toolkits and materials for this outreach. North Carolina provides information on federal subsidies and materials for local organizations to distribute to their constituencies.[12]

[10] Consumer FAQ for Emergency Broadband Benefit. FCC. https://www.fcc.gov/consumer-faq-emergency-broadband-benefit
[11] Mass Internet Connect. Massachusetts Broadband Institute. https://broadband.masstech.org/recovery-plan-programs/mass-internet-connect

[12]Emergency Broadband Benefit Program. NC Division of Broadband and Digital Equity. https://www.ncbroadband.gov/assistance/emergency-broadband-benefit-program

In addition to expanding knowledge of and access to existing subsidies, states can protect service connections like any other utility. Both New Jersey and Maryland prohibited disconnection of internet services during periods of the pandemic public health emergency, particularly for households with school aged children.[13]

Governments can also directly subsidize broadband service. Wisconsin provided internet utility payment support during the pandemic, coupled with emergency rent assistance, and has now set a goal for low-income households to be able to access internet at a cost of no more than $25/month.[14] Vermont has created a temporary subsidy program that is meant to support residents as an add-on on top of the existing federal subsidy (specifically to be coupled with the Emergency Broadband Benefit) providing up to an additional $40/month to eligible households experiencing a job loss, change in childcare or schooling, loss of income, or other impacts of the pandemic. However, because the Vermont program uses a simplified set of criteria, such as impacted schooling opportunities, it is also accessible to a wider range of the state population than the Emergency Broadband Benefit.[15] Maryland launched a similar initiative this year to provide top-up support to residents already receiving the Emergency Broadband Benefit, providing an additional $15/month, for a total of up to $65/month when combined with the federal subsidy, and using the existing federal qualifications as qualifying criteria for the state benefit.[16] Multiple states have developed similar programs and made related commitments this year for households with school aged children, including Alabama, Colorado, and Delaware. In Delaware, this funding was channeled through schools to provide hotspots to students in need.[17]

States can successfully target programming to residents in need by identifying households and areas without broadband coverage. For example, in North Carolina, the state is running a broadband survey capturing broadband service, speeds, and cost for all to identify gaps in state coverage.[18] Maryland has a similar initiative to capture broadband speed data state-wide to inform policymaking.[19]

While the above cases are at the state level, cities and counties will also have access to unprecedented funding under the infrastructure act that will enable similar interventions.

Outcomes

A successful broadband subsidy program will drive up overall broadband use and connect households currently without service. This will require the programs to reach population groups of interest, with a focus on low-income households and historically underserved low-income

[13] Broadband Affordability Resources. National Governors Association. Oct 2021. https://www.nga.org/center/publications/broadband-affordability-resources/
[14] Broadband Affordability Resources, 2021
[15] Vermont Temporary Broadband Subsidy Program. Department of Public Service. Nov 2021. https://publicservice.vermont.gov/content/vermont-temporary-broadband-subsidy-program
[16] Office of Statewide Broadband. Department of Housing and Community Development. https://dhcd.maryland.gov/Broadband/Pages/default.aspx
[17] Connect Delaware/CARES Act. Delaware Broadband Initiative. https://broadband.delaware.gov/pages/index.shtml?dc=caresAct
[18] Broadband Survey Dashboards. NC Division of Broadband and Digital Equity. https://www.ncbroadband.gov/broadband-nc/broadband-survey/broadband-survey-dashboards
[19] Office of Statewide Broadband.

communities, including tribal communities and communities of color. A 2019 study found that 30% of households with school aged children earning less than $30,000 a year lacked broadband service, compared to 10% of those earning $75,000 or more.[20] 20% of Black and Hispanic households lacked internet in 2019, compared to 14% of white households. Programs will need to track and show progress not only on overall service access, but in reaching these underpenetrated populations.

Success will also mean that the service is adequate to meet the needs of residents to work, learn, and engage with their communities. Households have had multiplying needs for broadband during the pandemic, ranging from telehealth appointments to online learning, to video meetings. Both speed and reliability of the broadband service will determine if it can meet these household needs. The current definition set by the FCC is speeds of 25 megabits per second for downloads and 3 megabits per second for uploads, but this should be perceived as a minimum standard, rather than a ceiling for service needs.

Associated Costs

Policymakers should factor in the following components when estimating total costs:

- Direct spending on subsidies, will likely be the primary driver of the cost of the intervention. Broadband price varies significantly by service area and provider; policymakers should keep in mind that local research and engagement with providers will be to appropriately allocate subsidies. Nationally, the average cost is about $64/month for service[21], yet the recommended cost of broadband per month for low-income households is $10/month, suggesting states will have an approximately $24/person gap to meet for residents served under the new federal Affordable Connectivity Program subsidy.[22]

- Development of an initial asset map, showing which residents lack access to home broadband connectivity. This can be completed by a city or state employee trained to navigate American Census Bureau data. In Philadelphia, for example, estimates for asset mapping ranged between $120,000 to $350,000, depending on the number of survey respondents, length of survey, expertise of researchers, and languages included.

- Outreach and communications to communities of interest, to ensure they are aware of and sign-up for subsidy programs. Community specific marketing and messaging (which does not rely on the internet) will be key, such as radio, television, and direct mail, as well as outreach to partners who are already in contact with these communities. Program

[20] Frost, Riordan. Pandemic Highlights Disparities in High-Speed Internet Service. Joint Center for Housing Studies. Sep 2021. https://www.jchs.harvard.edu/blog/pandemic-highlights-disparities-high-speed-internet-service
[21] Anders, David. What is the average internet bill? All Connect. Sep 2021. https://www.allconnect.com/blog/cost-of-high-speed-internet
[22] Chao, Becky and Claire Park. The Cost of Connectivity. New America. Jul 2020. https://www.newamerica.org/oti/reports/cost-connectivity-2020/executive-summary

logistics should also consider the potential increased cost for in-person outreach and phone or in-person support to help residents sign-up for services.

Assessing the Return on Investment

Closing the digital divide has wide-ranging benefits to American society and the economy, including in education, health, business, and government. Broadband improves matching between workers and employers and results in improved earnings for businesses. At a macro level, this leads to economic growth, higher incomes, and lower unemployment. Broadband can also impact social inclusion and wellbeing, reduce social isolation, improve engagement with marginalized populations, and build trust in local government.

Because of this range of benefits, calculating the value of increased availability of and access to broadband is complex, but there is a well-established link between broadband and economic growth. The World Bank estimates that a 10 percentage point increase in broadband penetration can lead to a 1.2% jump in real per capita GDP growth in developed economies.[23] Within the US, a Deloitte analysis showed that a 10-percentage-point increase of broadband access in 2014 would have resulted in more than 875,000 additional US jobs and $186B more in economic output in 2019.[24] At a state level, a cost-benefit analysis of rural broadband installation in Indiana observed three to four-fold returns on investment, exclusive of state and local governments' cost savings and tax revenues from increased incomes.[25]

States may wish to track particular variables of interest if a local return on investment calculation is desired, including:

- Residents with broadband service
- Residents working fully or partly online as 'remote' workers (measured through surveys)
- Residents learning fully or partly online (measured through surveys)
- Increased access to public services provided online, particularly workforce services (measured by percent of the population accessing services).
- Increased access to social safety net benefits (measured by benefits coverage, portion of funds being used).

[23] Campbell, Sophia, et al. The benefits and costs of broadband expansion. Brookings. Aug 2021. https://www.brookings.edu/blog/up-front/2021/08/18/the-benefits-and-costs-of-broadband-expansion/
[24] Fritz, Jack and Dan Littman. Broadband for all: Charting a path to economic growth. Deloitte. Apr 2021. https://www2.deloitte.com/content/dam/Deloitte/us/Documents/process-and-operations/us-broadband-for-all-economic-growth.pdf
[25] Campbell, et al, 2021.

- Resident satisfaction with local government services (measured through surveys).
- Local unemployment
- Local tax revenues

Evidence of Action

Proof of impact of subsidies has been limited, largely because of weak subsidization of broadband historically. Until 2021, funding has been scarce for broadband subsidies for most of the past decade. Economic relief funds to combat the Great Recession expired in 2011 and 2012. Prior subsidy programs were limited to the federal Lifeline program, which covered just $9.25/month for internet service for low-income households, too low to significantly reduce the cost of monthly broadband. Lifeline had multiple restrictions and prior to the pandemic, faced declining participation rates, in part due to complex sign-up and qualification processes that raised barriers to access.[26]

The recent success of sign-ups for the EBB program, and the demand for temporary state subsidy programs, suggests that subsidy programs are in-demand by residents and can rapidly reach and serve disconnected households and spur broadband adoption. Because most state programs are so new, data is limited, but Wisconsin served over 18,000 residents as of Aug 2021 with its internet subsidy program.[27] Alabama supported over 200,000 students in the 2020/21 school year (and has discontinued support and is referring families to the federal Emergency Broadband Benefit subsidy).[28]

Research indicates that discount programs increase broadband adoption in low-income areas at rates higher than would otherwise be the case. Programs to promote adoption, coupled with digital skills training, also increase the likelihood that people use the internet for job search or education. At a household level, studies indicate that households who acquire connectivity are likely to be more optimistic about their futures because of the impact of a home connection on ease of completing regular tasks (such as accessing government services, financial services, performing schoolwork, etc). This optimistic forward outlook raises aspirations and life satisfaction and translates into further action to improve future opportunities, enabled by exploration of those opportunities through broadband access (e.g., seeking out education and job training opportunities, particularly when exploring training opportunities that are online).[29]

[26] Nasr, Amir and Claire Park. The government is serving a lifeline for low-income Americans. New America. Mar 2020. https://www.newamerica.org/weekly/lifeline-low-income-americans/
[27] Broadband Affordability Resources, 2021.
[28] Alabama Broadband Connectivity for Students. https://abcstudents.org/
[29] Horrigan, John. Access and Impacts: Exploring how internet access at home and online training shape people's online behavior and perspectives about their lives. May 2021. https://techpolicyinstitute.org/wp-content/uploads/2021/06/HorriganIE.pdf

This is true even for households which previously had a limited connection, such as a cell phone or non-broadband connection.

For low-income families specifically, access to a low-cost, affordable broadband connection, improved labor market outcomes by boosting their ability to job search online. Participants in one affordable broadband program were 14% more likely to be employed than non-participants, with a potential value to the subscriber of 4x the cost of the service (as a result of increased earnings).[30]

How is this a compelling use of one-time funding that can drive long term-impact and avoid unsustainable funding?

One-time funds can be used for:

1. Subsidies for consumers, expanding subsidies beyond residents reached through the Affordable Connectivity Program or deepening the affordability of broadband by increasing the total subsidy available to households
2. Development of an asset map showing a jurisdiction's current service gaps for where to target subsidies
3. Grants to nonprofit and community groups for outreach to residents to help them sign-up for and access federal, state and/or local broadband subsidy programs

ARP and/or Infrastructure bill funds are well-suited for a broadband subsidy program due to the far-reaching impacts of a one-time investment across employment, education, health, etc. Funds can alleviate the negative effects of the pandemic on residents and also prevent further negative impacts, such as loss of access to employment or workforce training, public service information, healthcare and public health messaging, and education, which could compound the effects of a loss of income and make it harder for residents to avoid or alleviate poverty. They can also reduce overall costs of government service delivery by enabling 'e-service' delivery, such as enabling more rapid sign-up and management of healthcare benefits for residents through online portals rather than costly in person engagement or call centers.

In addition, investing in a clear map of broadband needs and access across the state, and down to a more granular level (i.e. household) than is currently available with federal data will make it easier to identify residents in need, understand the scale of the problem, and track progress on this and other interventions in the future. Lastly, use of these funds in the short-term to expand access can buy time for the government to enact longer-term solutions that reduce costs that

[30] Zuo, George. Wired and Hired: Employment Effects of Subsidized Broadband Internet for Low-income Americans. http://econweb.umd.edu/~zuo/files/Broadband_Zuo_AEJ_Submit.pdf

require changes in local infrastructure, creation of new public-private partnerships, or launching of new service providers.

Some policymakers may be concerned that subsidies without long-term financing will reduce the incentives for service providers to create affordable alternatives by reducing competition. However, in urban areas, to date, the service subsidies for low-income residents have not infringed on progress to invest in high-quality broadband. In less dense regions, these subsidies will create a larger cohort of customers for service providers. In addition, service providers will be able to access capital expenditure financing from the Infrastructure bill, which requires them to offer a low-cost service plan option. As a result, the subsidy can serve to meet short-term needs for residents and expand the customer base to make the offerings by private service providers sustainable, affordable alternatives in the future.

Because of the wide-ranging benefits of broadband service, states and local governments can expect to recoup their investment through indirect savings, such as reduced cost to reach residents with social services, and through direct increases in tax revenues, such as through increased local employment rates and business profits.

Authority for ARP Spending: *States and Local Governments may implement this policy using funds under Services to Disproportionately Impacted Communities (EC3) and under Water, Sewer, and Broadband Infrastructure (EC5).*

Implementation

One of the first tasks state and local governments will need to undertake is determining who will be eligible to receive the benefit. The federal program lays out clear income-based guidelines, offering several pathways to qualify for the program (including participation in existing income based programs like Medicaid, and/or loss of income). State and local governments have the option to maintain the same level of qualifications, means test further, or offer benefits to a wider range of residents. Maryland, for example, has kept the federal guidelines for residents to qualify for a top-up state benefit. Vermont, in contrast, offers more flexible guidelines so that more residents can qualify. Other states, like Alabama, have targeted the benefit specifically to families with school-aged children. If governments can first identify what households are in need of broadband, and what the cost gap and duration of the need is, they will be better able to target subsidies and spend the money effectively.

Assessing Readiness

Policymakers at all levels are encouraged to use the guiding questions below to reflect on their capacity to implement this program successfully:

- What is the current average cost of broadband service for our lower-income residents?
- What is the quality (speed and reliability) of this service?
- Which providers serve our lower-income residents, and what are their offerings?
- How many people can we estimate are in need of support?
- How many of our residents are receiving the federal subsidy? What needs gap exists after receiving this subsidy?
- How long do most residents need support to pay for broadband service?
- How can these residents in need of support best be reached by stakeholders? Which local community-based organizations already serve these residents?
- How will we deploy the financing for subsidies (if providing an additional subsidy on top of federal subsidies)?

Essential partners for successful implementation

The primary actors driving implementation should be a state, city, or county agency focused on technology, such as an Office of Digital Inclusion, an Office of Broadband, or an Office of Innovation and Technology.

At the state level, the lead agency has varied by jurisdiction. In California, the state public utilities commission has taken the lead. In Minnesota, a task force out of the Governor's office has taken the lead. The choice could hinge on staff capacity. In California, the state for years has had the California Advanced Services Fund (CASF) that the PUC administers; as such staff has experience in administering broadband programs. Other states may have less capacity in regulatory commissions and more in either the Governor's office or an executive agency (e.g., economic development).

In addition to core leadership commitment, jurisdictions should partner with relevant agencies, organizations, community partners, and state or local government counterparts for successful program implementation. To successfully implement the policy, policymakers should ensure that community organizations, the residents these organizations serve, internet service providers,

and philanthropic leaders all agree that addressing the digital divide is a priority worthy of emphasis. They should also ask whether these parties have engaged prior collaborations and/or cooperative efforts to address the digital divide.

Partnerships may include the following critical stakeholders:

- State legislature: The state legislature is responsible for approving and allocating funds.
- State agency: The convening power of state government can be leveraged to gather community organizations, local government, philanthropy, ISPs, and other business leaders to promote cross-sector education on the nature of the problem and approaches to solving it.
- Telecommunications utilities: A successful program should engage local telecommunications utilities, which are responsible for deploying high-speed broadband services.
- Local government: Local county and city governments may want to deploy locally specific subsidy programs; more likely, they will want to expand knowledge of and access to federal and state deployed programs. Local government agencies can form a linchpin between intended federal and state grants and actual penetration to residents in need.
- Community-based organizations and social service providers: State and local governments will want to partner with government agencies, such as local digital inclusion, senior service, and education offices, as well as local nonprofits and community organizations to identify and engage with residents in need of broadband services. Partnerships should be exhaustive in their coverage of potential benefitting residents and must ensure that they do not rely on online outreach to engage with constituents.

Engaging Stakeholders and Beneficiaries

Affected stakeholders should have an opportunity to provide input to inform program design and ensure services are targeted to reach residents most in need. Government officials can conduct surveys, convene town hall meetings with residents, and respond to the input of community members, neighborhood organizations, churches, non-profits, and business leaders. This outreach can provide real-time feedback or support to pilot initiatives to identify the most effective way to reach residents with knowledge about programs and to spur sign-up. It can also provide input into the real-life experiences and costs associated with broadband and acquiring subsidies that residents are experiencing to attune subsidy amounts, and the process of applying for and accessing subsidies, to the exact needs of residents.

Other implementation partners may include:

- K-12 schools and education affiliates (such as PTAs)
- Local community colleges and technical colleges
- Workforce development organizations or business associations
- Religious groups
- Adult digital literacy organizations
- Local agencies, including parks and recreation and the housing authority
- Immigrant and refugee services
- Local community foundations

Risk Mitigation

What could go wrong?

- **Engagement:** The "build it and they will come" phenomenon puts these initiatives at greatest risk. That is, stakeholders may announce or develop subsidies that are underutilized because of weak follow through on outreach to target populations.
- **Inadequate services**: Programs could also fail if the subsidy is not adequate to meet the actual cost needs for residents.

How can we mitigate the biggest risks?

- Experience and practice show that persistence and patience in outreach is necessary. Such persistence is usually manifest in partnerships across organizations that may not typically collaborate (e.g., ISPs and community groups), but such partnerships are necessary -- and take work.
- The best way to spread awareness of the program is to get out in the community and speak with residents in person. This could include door-to-door canvassing, attending community events, and partnering with community-based organizations that conduct outreach.

- Subsidies should take into account the entire package of costs associated with broadband services, including start-up costs, modems, etc. Residents may also need connections to complementary low-cost technology solutions or digital skills programs to fully benefit from and value add of broadband services or buy-in to the service if they are covering a portion of the cost.

Data and Learning Strategy

Baseline Systems: Necessary inputs to implement the policy effectively

Existing federal data can provide direction for states in the short-term, but states should consider commissioning statewide surveys on broadband adoption and use. These will have the added benefit of serving local government data needs. Normally, states could rely on the American Community Survey for such data, but the pandemic means that 2020 ACS data is not likely to be reliable for state-level analysis. Surveys that states might develop would measure households' computer ownership and at-home internet subscriptions, awareness of connectivity programs, and perspectives on the benefits of at-home access.

Surveys may include metrics such as:

- Number and location of residents not currently reached by existing broadband infrastructure
- Number and location of residents reached by existing broadband infrastructure, but without home connectivity
- Number of residents without necessary devices to connect to high-speed internet
- Number of residents without necessary skills to use high-speed internet
- Number of residents who can navigate essential online services (e.g., food, rent, education, employment, or childcare support, other government services)
- Use of these essential services, measured by dollars spent
- Average monthly cost of broadband service
- Average speed of broadband service
- Residents' perceived reliability of broadband service

For any metrics measuring resident reach, need or perceptions, it would be strongly beneficial to

gather adequate data to disaggregate by income, race, and language used at home to track reach towards disadvantaged communities.

When measuring broadband access and service specifically, states may also want to consider aiming to drill down to individual households or addresses, rather than census blocks. Census block data service data may undercount underserved households and make it more difficult to identify and track progress towards expanding broadband for all.[31]

Measuring Progress: How can progress toward the desired outcomes be measured — both to assess progress and inform improvement along the way?

For process data, programs to promote connectivity for populations in need should "design in" approaches to measuring progress (i.e., counting the number of households connected and computers distributed) as part of implementation, particularly for outreach and engagement through local governments and community organizations.

For outcome data, they should also measure impacts. This would entail developing an assessment design framework to determine whether and how beneficiaries' online connectivity has affected their lives (e.g., job prospects, educational opportunities). Governments can also track access to public services provided online (% of population accessing services), access to social safety net benefits (benefits coverage, funds being used and resident satisfaction with local government services (e.g., through surveys).

Additional Resources

Broadband Affordability Resources. National Governors Association. 19 Oct 2021. https://www.nga.org/center/publications/broadband-affordability-resources/

Emergency Broadband Benefit Program. FCC. https://www.fcc.gov/broadbandbenefit

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[31] BroadbandNow Estimates Availability for all 50 states, 2021.