

PUTTING STATE BROADBAND FUNDS TO WORK: BEST PRACTICES IN STATE RURAL BROADBAND GRANT PROGRAMS

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Broadband Equity Partnership—CTC Technology & Energy and HR&A Advisors

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The Broadband Equity Partnership is a mission-driven consultancy founded by HR&A Advisors and CTC Technology & Energy following three years of collaboration and the development of New York City's Internet Master Plan. Our work builds capacity in federal, state, and local governments, institutions, community organizations, and internet service businesses to accelerate universal broadband and digital inclusion.

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Executive Summary

After a year of pandemic and crisis, the scale of our national digital divide¹ is at last recognized by policymakers at all levels, with federal, state, and local governments making unprecedented commitments to narrow the divide.

While most of the funds to address these challenges flow from the federal government, it is at the state and local levels where remarkable innovation has developed.

Particularly critical in this moment are state-level efforts to distribute federal funds and incubate local initiatives.

Those states that have long-established programs for addressing rural broadband gaps offer a valuable history of lessons learned, both of what works and what doesn't. Through more than a decade of significant efforts and experimentation in broadband funding strategies, new innovations and trends have emerged that offer insight to best practices for other states that are developing new rural broadband funding programs or retooling existing programs.

Given this rich set of data and experience, this paper describes the commonalities among many of the best state rural broadband funding programs and recommends best practices. In subsequent case studies to be published online later this year, we will illustrate these programs and practices in more depth.

Background: States organize to facilitate and fund local efforts

Indeed, over the past decade, a range of states have developed and executed strategies to methodically chip away at rural broadband challenges. These states have formed broadband task forces; they have brought stakeholders together to gauge needs; they have stood up state broadband offices to put sophisticated strategies into action; and they have provided information and resources to localities, community anchors, and the public.

Some states have gone one step further: They have invested substantial public dollars, through grant programs, to fund broadband deployments in areas that lack adequate service. By providing state funding to match private investment and federal grants, these states have enabled deployment in areas that cannot attract sufficient private investment. Through financial incentives and accurate data, states such as Minnesota, Maryland, and Alabama have incented the private sector to collaborate with local communities in addressing broadband deficits.

Elements: Successful state broadband programs have similar attributes

State funding programs have proved effective through multiple stages of the broadband deployment process. Broadband planning grants help towns and cities to evaluate local conditions and develop the

plans and partnerships to apply effectively for federal and broadband grants. Broadband infrastructure grants provide capital to deploy new facilities to fill service gaps, based on community and economic development goals.

While this document analyzes a wide range of best practices, three major trends in particular are worth emphasizing. First, state development funding programs have increasingly integrated digital equity and economic development considerations into each stage of the funding program development process. Grant programs that previously had focused solely on deployment costs have expanded to include consideration of digital inclusion and economic benefits—to low-income communities, farms, small businesses, and teleworkers—thus also enabling grantees to compete for federal programs that focus on such metrics, including that of the Economic Development Administration (EDA), which requires careful evaluation of economic impacts.

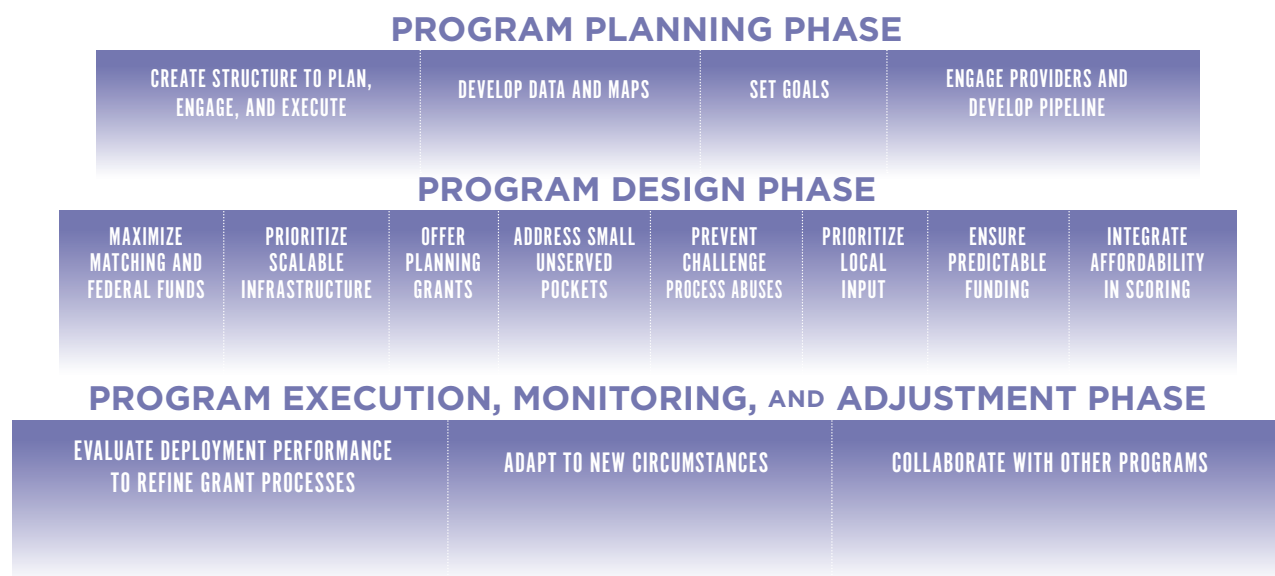
Second, early restrictions on the types of organizations that could apply for deployment grants have been replaced by broad, inclusive eligibility criteria that recognize the value of innovative collaborations among a range of entities, including electric cooperatives, local governments, and private companies. For example, California once required that funding applicants possess a Certificate of Public Convenience and Necessity (CPCN) or a Wireless Identification Registration (WIR), effectively restricting the program to companies offering wireline telephone or cellular telephone services.² That restriction excluded newer broadband competitors and municipalities, thus reducing the number of applications far below available funding and resulting in far more investment by grantees in middle-mile infrastructure than in critically needed last-mile connections to unserved homes and businesses.³ Now, California welcomes a much broader set of applicants, and its program performance has improved significantly.⁴

Third, the best state funding programs include a critical role for local governments and communities, working in collaboration with private partners, to ensure local input, benefit from local insights, and bring to bear local assets and resources. Indeed, the past decade of experimentation has given rise to a range of cooperative agreements between localities and private entities. Many of the best state grant programs provide flexibility for business structures that include public-private partnerships and other infrastructure access and management agreements. These new organizational forms allow adaptation to reflect the needs and resources of each party involved, while leveraging benefits in financing and permitting available to such hybrid forms. Many states welcome these flexible collaborations; Virginia and Maryland actually require cooperation between a public and a private entity.⁵

Process: Successful state broadband programs follow established paths

Effective state broadband funding programs are not formed overnight. They are the result of research, conversations, and coordination with myriad stakeholders, along with development of state-level organizations capable of working with communities and internet service providers (ISP).

Generally, successful broadband funding programs have progressed through three key stages: first, planning and research to understand challenges and build strategy; second, program design; and third, execution, monitoring, and adjustment.



Stages of Successful State Broadband Funding Programs

In the first stage, states must develop an overall broadband plan that identifies where improved connectivity is most needed and how those needs should be met. To understand these needs and possible connectivity solutions, the state’s multistakeholder broadband planning group and administrative broadband office must coordinate with a variety of stakeholders, including the state’s business community, anchor institutions, local leadership, and the ISPs themselves. A formal broadband mapping and digital equity assessment program then enable the state’s broadband policymakers to develop more specific goals and priorities necessary to evaluate more technical deployment issues and the state’s broadband funding needs.

In the second stage, states design the structure and rules of their broadband funding programs to meet these goals. To ensure that the state’s resources can be utilized to their fullest, the deployment grant evaluation process should reward funding competitively to the proposals that offer the best combination of broadband capabilities to the areas most in need at the lowest cost to the state. Most reviewed state programs established strong incentives for deployments to seek additional federal support and reduce deployment costs by working closely with municipalities to leverage their local knowledge and resources. State planning grants are frequently offered to improve deployment strategies and cost estimates and facilitate federal grant awards. Other well-chosen eligibility characteristics establish location preferences, ensure that only scalable broadband technologies capable of meeting future needs are deployed, and enable a variety of more flexible deployment strategies and partnerships to be used.

In the third stage, states execute their grant strategies and then revise and adjust them for further rounds of funding to incorporate lessons learned in earlier rounds. For example, states have learned from experience with cost-saving deployment technologies such as micro-trenching, enabling existing funding programs to make a greater impact. Some states have updated their definitions of “unserved” and “underserved” to reflect best practices and to meet rapidly increasing household broadband needs.⁶ Others have increased the technical requirements for new deployments to ensure that state-assisted deployments can scale to meet bandwidth needs over the next decade and beyond.⁷

States do not progress through these stages uniformly. For example, whereas Minnesota’s grant program was initially developed from nearly a decade of prior state-level strategy development, Illinois moved from planning to grant program execution quickly and efficiently, in part because it benefited from Minnesota’s lessons learned and best practices. Multiple iterations of the Minnesota broadband task force met from 2008 until the state created an administrative entity to execute broadband strategy in 2013, with initial infrastructure grant funding in 2015.⁸ The grant program has evolved by using feedback from prior grant cycles to fine-tune its approach and cultivate a pipeline of potential projects. In contrast, states such as Illinois and Virginia learned from Minnesota’s example⁹ and demonstrate how the time between planning and program execution can be dramatically reduced. Illinois’s \$420 million grants program was launched in 2019, following simultaneous development of the program and availability information-gathering, stakeholder outreach, and strategy development.¹⁰

The range of state funding program structures is broad, as each state solution is customized to its unique mix of needs, resources, and policy environment. To sort through this complexity, this paper describes a range of successful funding programs and suggests replicable elements in each stage. This analysis is intended to serve as a resource for policymakers at state, local, and federal levels regarding lessons learned and best practices in broadband grant-making.

I. Program Planning Phase

To address their broadband connectivity needs, states devote significant resources to creating comprehensive broadband strategies. During the planning stage, they focus on developing the information they need to adapt funding program conventions to their circumstances. Best practices suggest that this planning stage should focus on two primary yet interrelated elements: (1) evaluating broadband needs, and (2) understanding and coordinating resources across a large range of stakeholders.

To properly address these elements, states place special emphasis on processes that will harness information from industry, other state and federal agencies, potential broadband deployers, and the local underserved communities themselves. State officials reach out to this variety of public and private stakeholders, then analyze availability, affordability, and digital equity issues, ultimately factoring them into a single formulation of goals and solutions.

These best practices have been demonstrated to improve coordination and understanding of the state's broadband deployment needs:

Create a structure to plan, engage stakeholders, and execute strategy

Most states have some combination of a broadband task force, broadband council, and state broadband office to develop deployment and adoption strategies and administer their broadband programs.

These organizations serve as the focal point to bring together the diverse needs and views of the state's essential broadband stakeholders, but a list of essential stakeholders is not necessarily obvious. Broadband accessibility has become essential in so many facets of Americans' lives that nearly every industry and government agency has a stake in broadband policy. From online shopping, social networking, and news to distance learning, telework, and access to government services, broadband connectivity has become a required resource in our working and personal lives. Manufacturers and local businesses depend upon broadband to connect to their customers and, increasingly, their own employees. Farms depend upon it as a vital part of their supply chains, a way to sell their produce and, increasingly, a method to control their automated machinery.¹¹ Schools, colleges, and job training programs use it to connect to students, and state and federal education programs have developed their own programs and policies to facilitate connectivity. Every major industry and governmental department relies on broadband availability in some way, and nearly all of them have something to say about broadband.

To bring these disparate interests together to develop a unified approach, many states use multistakeholder task forces to evaluate initial broadband needs, perform outreach, and develop strategies to satisfy those needs. Later, a dedicated state broadband office typically is created to administer grant programs, mapping efforts, and digital equity initiatives.¹²

Minnesota's first task force in 2008 illustrates this multistakeholder approach. It was composed of members representing schools, libraries, health care facilities, the rural and metropolitan business

communities, wireline and wireless telephone and cable companies, and leadership from the state's commerce, employment, and economic development departments.¹³ This task force met with a variety of the state's stakeholders and analyzed the broadband deployment strategies and policies of other states and countries to understand the range of issues they faced and identify best practices.¹⁴ From this process, Minnesota's resulting first major broadband strategy report emphasized that "[b]alanced collaboration needs to be 'baked in' right from the beginning" of the strategy development process.¹⁵ As it explained:

Minnesota cannot undertake alone all the actions required to achieve broadband ubiquity. What is required is a broad, and perhaps unique, collaboration between many stakeholders. The state has a variety of important roles to play, but so do the rest of the stakeholders.¹⁶

This insight has been shared and adopted by most other state broadband programs, but its implementation has generally occurred more swiftly. Whereas there was a five-year separation between the formation of Minnesota's task force and its Office of Broadband Development (OBD), Illinois formed both its Broadband Advisory Council and the Illinois Office of Broadband nearly simultaneously as a means to evaluate its needs quickly and begin distributing a portion of its \$420 million broadband deployment and connectivity fund. This 2019 Connect Illinois initiative is the best-funded of the state programs that employ a deployment grant application process and is an excellent example of more recent coordination practices.¹⁷ The strategy-development-focused Broadband Advisory Council's 25 members include representatives from state agencies, various types of ISPs, and anchor institutions, which have enabled it to analyze the state's connectivity challenges alongside its possible solutions.¹⁸

While several states have established separate roles for a broadband task force and administrative broadband office, others have taken a different approach to broadband policy coordination. Maine's long-standing ConnectMaine Authority demonstrates that a multistakeholder strategy development council does not need to be separated from the broadband office that administers its state's programs. Since 2006, this organization has evaluated Maine's broadband deployment needs, facilitated overall state support for broadband development, and administered the state's funding programs.¹⁹ Its board consists of Maine's CIO as well as representatives from Maine's university and health systems, its Department of Economic and Community Development and Public Utilities Commission, the National Digital Equity Center, and the Maine Broadband Coalition, the latter being a large group of the state's businesses, nonprofits, and broadband advocates.²⁰

Proper funding program administration requires coordination with the state's other economic development strategies. Some of the most successful broadband offices have been placed within their states' economic and community development departments. When the Minnesota legislature established the Office of Broadband Development (OBD) in 2013, it was placed within the Department of Employment and Economic Development (DEED), which has helped foster buy-in from service providers.²¹ Building the program within an agency that has experience and expertise giving and overseeing competitive grants has contributed to the success of Minnesota's Border-to-Border Broadband Development Grant Program.²² Similarly, the Illinois Office of Broadband is housed within the Illinois Department of Commerce and Economic Opportunity, the state's largest grant-making authority. Alabama, Missouri, Maryland, Tennessee, and Virginia's broadband programs are also administered by their states' economic and community development departments.²³

Develop the best possible data and mapping resources

While federal grant programs have generally relied on service providers' self-reported coverage maps to identify areas of need, these maps are based on FCC Form 477 data, which features a number of systematic inaccuracies that have led to unserved areas being classified as served and thus ineligible for grant programs. Working with Missouri and Virginia, USTelecom in 2019 found that as many as 38 percent of rural locations in census blocks reported to have broadband service actually did not.²⁴ These broadband blind spots have been challenging for policymakers, because they often lie on the outskirts of served areas and are scattered, making them hard to identify or connect using traditional area-wide deployments.

To find these blind spots, several states have developed their own mapping programs, gathered supplemental data, or taken steps to ensure that existing data is more accurate and useful to broadband grant processes. For example, Alabama is currently engaged in one of the most ambitious mapping programs in the country, developing service data at the address level. Georgia completed a similar undertaking in 2019 and maintains a map at the address level that allows for surgical analysis of which areas require funding.²⁵ Minnesota has maintained its own mapping for at least a decade, with considerable data reporting obligations for private service providers in the state.²⁶ The California Public Utilities Commission maintains maps of the state's remaining unserved areas and monitors the deployment processes and adoption rates where state funds are deployed.²⁷ Maine supplements its maps with additional mapping information developed by organizations receiving the state's planning grants and provides a process to identify additional unserved areas.²⁸ Virginia's broadband maps were developed by Virginia Tech and the Virginia Geographic Information Network, using information from a broadband mapping initiative with U.S. Department of Commerce's National Telecommunications and Information Administration (NTIA) and other sources.²⁹

These maps often offer enhanced features that allow state and local broadband planners to improve the coverage and accuracy of their grant programs. California, Minnesota, and other states' interactive map programs actively provide information about areas eligible for their grant programs and a number of other useful metrics to understand availability.³⁰ Some states also make their more detailed data sets available for download.³¹ Many states without their own significant mapping programs are in the process of developing them. As of February 2021, 30 states are working with NTIA to improve their mapping programs and data availability.³²

Although not robust enough to develop comprehensive maps, state speed test sites allow users to verify whether they are able to use claimed service speeds and enable states to gather information useful for funding prioritization and other broadband policymaking. Maine, Maryland, Minnesota, New York, North Carolina, Washington, and several other states provide speed test links to enable state residents to contribute availability information.³³ Pennsylvania used its speed test data more systematically to highlight areas where Form 477 data significantly overreported availability.³⁴ California provides the public with an opportunity for feedback to its custom measurement platform and a speed test process for mobile broadband services.³⁵

Set clear, measurable goals

After stakeholder outreach and data gathering, states generally publish a significant strategy document. These strategy reports often declare connectivity goals for the state, including clear definitions of what is sufficient to meet the broadband needs in future decades. Once these broad goals are established,

the legislature and broadband funding program designers can better estimate the size and scope of appropriations necessary to fund such major undertakings.

Indeed, some states have forward-looking performance requirements that surpass the FCC’s increasingly outmoded definition of minimum broadband performance set in 2015.³⁶ Vermont has established a future-looking goal of 100/100 for all Vermonters.³⁷ Minnesota has established the goal of ubiquitous access to broadband at speeds of at least 100/20 Mbps across the state by 2026, with a goal of ranking in the top five in the nation for speed and access.³⁸

Some states also established additional goals for improving broadband in “underserved” areas—that is, areas that may have access to 25/3 broadband, but not service that meets state goals. For example, Minnesota and Illinois consider as “underserved” areas that do not have access to 100/20 Mbps service, making grant funding available to these areas as well.^{39,40}

Engage small- and medium-sized broadband providers early and develop a pipeline of diverse applicants

State experience demonstrates that inclusion of potential applicants is vital. Broadband grant applications are often the result of years of effort to reach and engage these various groups, from early efforts to solicit stakeholder input to the specific deployment choices resulting from long-term coordination.

Not all potential broadband providers have the same resources to monitor deployment opportunities and funding programs. The best state programs proactively engage with small- and medium-sized providers early on to ensure that providers of all sizes are aware of funding and deployment opportunities. For example, the state of Alabama conducts ongoing outreach to small, local providers and has provided funding to many small entities.

State broadband offices often provide technical assistance, guidance regarding federal funding, and deployment planning best practices to smaller providers. This assistance helps to develop a pipeline of projects across all stages of the deployment process. The state of New Mexico, for example, provides technical assistance to local governments and smaller companies for planning and development of grant strategies.

State broadband offices generally also are a vital source of information and assistance to help with applications for federal grants. In some instances, such as in Maine, the state broadband office’s responsibility to help projects to utilize federal funds is written into state law.⁴¹ In others, the office itself has formalized the assistance process. Illinois, for example, offers assistance and guidance to maximize federal funding through its “Fedcelerator Framework.”⁴² Projects that seek federal assistance are given favorable consideration.⁴³

Planning grants are generally used as a means to assist applicants in a variety of ways, including the completion of federal grant-filing requirements. Maryland offers 100 percent grants to localities or their partner entity to cover the cost associated with federal grant-funding applications.⁴⁴

II. Program Design Phase

One need only glance at one of several states' broadband deployment grant applications to get a sense of the sheer number of details that must be considered in the funding program design stage. Eligibility characteristics determine which areas, types of organizations, and types of broadband technologies can participate in the program, and these determinations can dramatically shift the funding program's overall size and scope. Funding requirements, along with support for federal matching programs, impact both the range of potential broadband deployers and the types of projects that can be developed. Overall, these design details will significantly shape the market for new broadband services across the state for decades to come.

Among all the factors that must be considered, a handful of best practices have proved pivotal to the general success and efficacy of funding programs. Successful state funding programs are ones designed to:

1. Maximize matching investments and federal synergies
2. Prioritize scalable infrastructure
3. Offer planning grants
4. Create means to identify and fund overlooked locations, including unserved pockets within otherwise served areas
5. Prevent challenge process abuses
6. Prioritize local input and incent collaboration
7. Ensure a predictable flow of funding
8. Integrate affordability, digital equity, and economic development into scoring criteria

1. Maximize matching investments and federal synergies

Successful state funding programs incent broadband investment by private industry, with the state's contribution used to catalyze deployments that would not have been feasible otherwise. Nearly all programs require that applicants contribute a portion of the cost, with the matching amount and categories differing significantly among programs and designed to reflect requirements particular to the economics of broadband deployment in that state.

For example, Maryland offers up to 50 percent of the capital construction cost, with its contributions between \$1 million and \$3 million.⁴⁵ The Illinois program's first round of funding required 50 percent matches, with grants of up to \$5 million per project.⁴⁶ Alabama's program changed significantly from 2019 to 2020, with its contribution offer increasing from 20 percent to 35 percent and its maximum

contribution increasing from \$1 million to \$1.5 million.⁴⁷ The Virginia Telecommunication Initiative (VATI) program offers up to 80 percent of project costs, a substantially larger contribution percentage relative to the other states.⁴⁸

Well-designed funding programs choose their matching percentages and other program requirements in such a way as to work synergistically with federal funding opportunities, asking applicants to seek federal grants to fulfill a portion of that matching requirement. These are structured to match to federal funding policies, such as those addressing educational needs, economic development, and agricultural efficiency. To this end, successful state funding programs establish incentives to utilize federal funding, design fund-matching requirements with federal grant funding in mind, and align application submission requirements with federal information requirements to minimize additional application efforts.

For example, Minnesota has coordinated its program design with consideration to federal programs’ speed criteria and information requests with respect to federal reverse-auction bidding processes.⁴⁹ The state pays up to 50 percent of the deployment costs (up to \$5 million) for qualifying project costs, including project planning, the cost of obtaining permits, and facilities and network construction.⁵⁰ Matching funds can come from private and federal sources. The state coordinates with multiple federal grant-making agencies to optimize the state’s grant program, given the known and potential federal funding available.⁵¹

2. Prioritize scalable infrastructure

Successful programs take into account not only current uses but also future needs. Most of the programs studied for this paper include consideration that funded infrastructure should be capable of upgrades to higher speeds at reasonable cost, rather than requiring full redeployment. Programs have used a range of technology-neutral selection mechanisms to either favor the fastest broadband technologies or eliminate technologies that cannot meet minimum criteria. The most common way is to use an application process that awards more priority to faster, scalable technologies.

Minnesota’s broadband improvements scoring system is illustrative:

ANTICIPATED BROADBAND IMPROVEMENTS SCORING TABLE

# OF PASSINGS	SPEED NOW:	0/0	≤10/1	0/0	≤10/1	25/3	0/0	≤25/3	<100/20
	SPEED AFTER BUILD:	25/3	25/3	100/20	100/20	100/20	1G/1G	1G/1G	1G/1G
0-50	POINTS AWARDED:	14	10	16	14	12	18	15	13
51-499		15	11	17	15	13	19	16	14
500+		16	12	18	16	14	20	17	15

Source: Minnesota Office of Broadband Development⁵²

The scoring considers both the current speed available in the area and the resulting speed after the infrastructure is deployed, awarding a higher score to more significant performance increases.

Minnesota and Illinois have established scalability as part of their minimum technology requirements, allowing slower initial speeds only if they can be affordably upgraded. All projects funded by Illinois and Minnesota must be scalable to speeds of 100/100.⁵³

With an eye toward scalability and the future, many successful programs fund areas that are purportedly “served” but where speeds still do not meet state criteria for the future. For example, the state of Washington encourages applications for both unserved (less than 25/3 Mbps) and underserved (less than 100/20 Mbps) communities, with award priorities considering readiness, impact on community, and grant cost balanced against the level of prior service.⁵⁴

Although the grant programs of Alabama, Michigan, Missouri, and North Carolina all began with lower speed thresholds, they have all recently upgraded standards to connect those communities with less than 25/3 Mbps but more than 10/1 Mbps.⁵⁵

The focus on funding only areas that are entirely unserved is often a consequence of having fewer funds available. As funding increases, broader consideration is possible as to which areas require support. For example, when the Alabama legislature increased grant funding from \$7.4 million per year to \$20 million per year in 2020, the state program began to accept applications to serve locations higher than 10/1 but lower than 25/3.⁵⁶ Virginia’s funding program considers applications from all areas but still prioritizes locations with less than 10/1 Mbps service,⁵⁷ a strategy that other states often use in their grant evaluation processes.

3. Offer planning grants

Not all unserved and underserved areas are ready for the same type of support and assistance. In some instances, local incumbent ISPs may have long ago decided not to expand to unserved areas or upgrade underserved areas, leaving locals to look for other solutions to meet their ever-increasing needs for high-speed broadband. To solicit interest from a wider range of potential broadband providers and work with them to develop detailed plans eligible for deployment grants, these localities must first identify their needs and resources and then develop strategy for public-private collaboration.

Given these challenges, many states have designed planning grant programs that award small grants for planning. For example, Indiana’s Broadband Readiness Planning Grant, which offers support up to \$70,000, is designed to help communities evaluate their broadband needs.⁵⁸ Vermont offers up to \$60,000 for studies and business plans that seek to provide “innovative broadband solutions” for underserved locations, with half available for the initial study and the other half available for the business plan if the study demonstrates positive cash flows within three years.⁵⁹

The ConnectMaine Authority offers community broadband planning grants to municipalities and nonprofit local and regional economic development programs.⁶⁰ An initial planning grant helps community leaders understand the scope of the problem and build support for a solution. A second phase helps to fund a thorough feasibility study and engineering analysis.⁶¹ Completing the two phases of the planning grants improves communities’ ability to apply for both state and federal broadband infrastructure grants.⁶²

Virginia’s broadband planning grants are closely related to its overall community development grants program, which extends beyond broadband and into other types of infrastructure development.

Localities may contract with planning district commissions and nonprofit organizations to undertake project activities.⁶³ Maryland's planning grant is open to localities and their formal organizational partners.⁶⁴

4. Create means to identify and fund overlooked locations, including unserved pockets within otherwise served areas

The challenges of broadband mapping are well understood, and the FCC is engaged in efforts to improve map accuracy. Even the best map, however, will contain inaccuracies, and even an address-level map will fail to reflect small pockets of unserved homes or businesses within otherwise served areas. Indeed, in many cases, service providers themselves do not have maps that reflect such levels of detail.

As a result, successful programs allow grant applicants to demonstrate that there are areas with broadband needs that would otherwise be overlooked. Some states allow very small deployment projects to target these overlooked areas. For example, Minnesota has awarded a grant to a project that deployed broadband infrastructure to only eight locations.⁶⁵ Delaware funded millions of dollars' worth of small-scale line extensions, designed to pass unserved homes within otherwise served geographies.⁶⁶ California, Maryland, Indiana, Michigan, and Illinois permit multiple noncontiguous project areas in the same application, helping to reach these isolated areas.⁶⁷

5. Prevent challenge process abuses

Challenge processes are designed to prevent the use of state grant funding in areas already served by a broadband provider. They usually enable both grant applicants and service providers to demonstrate whether an area under dispute is actually being served. Successful programs include monitoring to ensure that processes designed for fairness are not used to preclude new deployment. For example, states with mapping programs that provide more detail than federal maps will have fewer problems with establishing initial eligibility, but some states also provide an opportunity for existing providers to demonstrate that they plan to expand or upgrade networks, thereby blocking funding to the grant applicant.

There are two types of coverage map challenges: (1) disputes about current service, and (2) disputes about claimed future service. While the former can generally be resolved through current documentation, the latter dispute can lead to significant problems that discourage would-be applicants from considering investing in the costly planning process necessary to file a grant application. Successful programs allow for challenges in the latter category but provide for penalties if frivolous challenges are filed.

Minnesota, for example, has addressed this issue by creating incentives for accuracy in the challenge process. Grant applicants must inquire in writing as to whether each existing provider plans to upgrade service,⁶⁸ and applications are rejected if any provider responds that it will deploy 25/3 Mbps service within 18 months.⁶⁹ However, any provider that claims it will upgrade in order to block a grant applicant's proposal and then fails to deliver will lose the opportunity to issue subsequent challenges in that area.⁷⁰

Maine found through experience that many challenges were accurate and valid, but a challenge was overturned in one case, when local citizens acted collectively to prove that the incumbent's services provided speeds below the "served" definition, contrary to the incumbent's claim. The challenge option was thereafter refined to remedy this problem.⁷¹

6. Prioritize local input and incent collaboration

Effective programs encourage private companies to seek local input, develop solutions that address local considerations, and collaborate with local public and nonprofit entities.

At a minimum, most successful programs require evidence of local input and buy-in. California's funding program favorably considers endorsements or letters of support from state and local government, community groups, and anchor institutions.⁷² Illinois prioritizes a verified financial commitment from a community partner.⁷³ Maryland requires that the applicant document the local jurisdictional involvement in planning and implementation of the project, including "evidence of local public involvement in such activities as community meetings, public forums, and surveys," along with letters of support from major community beneficiaries of the deployment.⁷⁴

As an even more robust form of securing local input, many successful state grant programs encourage applications to form partnerships with private broadband providers, nonprofits, cooperative associations, tribal governments, and local governments.⁷⁵ These states successfully encourage collaborations between local officials and the full range of potential providers (private companies, cooperatives, nonprofits, etc.) across an array of different project types, including public-private partnerships, infrastructure deployment and leasing arrangements, and other sophisticated forms of cooperation.⁷⁶

Illinois, for example, identifies that it encourages applications from colleges, universities, hospitals, and clinics.⁷⁷ Virginia Telecommunication Initiative (VATI) grant applications can be submitted only by a local government entity, but the deployment can have a private partner.⁷⁸ To involve a nongovernmental entity, Maryland requires that the local jurisdiction enter into a partnership with "[a]ny other legal entity, including a cooperative, private corporation, or limited liability company organized on a for-profit or not-for-profit basis" in order to apply.⁷⁹ Maine requires communities applying for grants to partner with one of the telecommunications providers already serving customers in Maine.⁸⁰

Seventeen states have restrictive laws in place that make these more flexible deployment arrangements prohibitively difficult.⁸¹ These laws restrict the options available to broadband deployment funding programs, particularly to promote sophisticated cooperation agreements that have recently become the focal strategies for programs seeking to stretch their resources further.

7. Ensure a predictable flow of funding

The best funding programs provide ample notice of their application processes and feature either a yearly application cycle or a clear forecast of the next opportunities to participate. This combination of early notice and predictable timing facilitates broader participation from providers who may be naturally positioned for affordable expansions but need more time for planning activities. Over time,

this method also develops a pipeline of potential applicants, each benefiting from their prior experiences to produce better, more competitive proposals.

The ConnectMaine authority has conducted at least 14 annual rounds of grant funding from 2007 to 2019, ultimately awarding 150 grants totaling \$12.97 million and generating an additional investment of \$12 million from private and local funding sources, consequently connecting more than 40,000 households across the state.⁸²

Predictability should extend to other aspects of the broadband funding program, such as the size and timing of funding allocations. States that allocate grant funding in an inconsistent manner or with unpredictable delays can create enormous challenges for a grantee. Smaller broadband providers do not have access to the same level of financing resources as major incumbents, so they are less able to manage unpredictability and may be less willing to consider program participation as a result. States should design their funding mechanisms to ensure reliability and reduce financing risks, thereby enabling a wider range of potential providers to participate.

8. Integrate affordability, digital equity, and economic development into scoring criteria

Innovative states have found ways to incorporate digital equity and economic development considerations into their grant programs. Many states' broadband grant programs explicitly request and reward some combination of economic development plans, likely community impact indicators, and additional broadband awareness, adoption, and digital training programs. Alabama, for example, invites applicants to provide:

A discussion of hospital, public school, public safety, or economic development projects that do not meet the definition of unserved area, but otherwise meets the requirements of the program (if applicable). The applicant must demonstrate by specific evidence, the need for greater broadband speeds, capacity, or service which is not being offered by an existing service provider.⁸³

This request for information about broadband needs extends beyond basic minimum service factors and considers the need for higher performance broadband for economic development.

Minnesota's grant process, which is scored on a 90-point scale, awards up to 15 points for economic development and community impact analysis and projections and another 10 points for broadband adoption assistance, in total comprising more than one-fourth of the available points.⁸⁴ Applicants are asked to explain "how improved broadband speeds and coverage will enable the project area to become and/or remain competitively viable" for "businesses, farms and agricultural use customers."⁸⁵ The application provides opportunities to elaborate on community programs, e-learning, and telemedicine, among other aspects.⁸⁶ An Opportunity Zone or economically distressed area designation can be used as an indicator for the project's likely significant economic impact.⁸⁷

States address these affordability, digital equity, and economic development criteria in diverse and innovative ways. Virginia awards additional points for applications that elaborate on the local need for broadband, digital equity considerations, and the number of connections to businesses and community

anchor institutions.⁸⁸ Maryland invites applicants to provide an analysis of service area demographics, including household income, commute times, and other relevant information.⁸⁹ Indiana's grant application assigns 45 of 250 possible points to explanations and support materials relating to community support and engagement, and to the review of community impact and economic development.⁹⁰ Michigan's grant process assigns up to 20 of 145 possible points to affordability considerations and up to 10 points to digital skills training and awareness promotions.⁹¹ Other states, including Missouri, Tennessee, and Wisconsin, consider the applicants' broadband adoption facilitation strategies and community impact.⁹²

Some states will even award additional funding to assist areas in economic need. California's grant process permits an additional 30 percent of funding for areas classified as low income.⁹³ Maryland increases the amount it will contribute to a project to 75 percent if the area is a priority community.⁹⁴

Other consumer benefit stipulations can be attached to projects accepting grant funds. California's funding program obligates applicants to provide marketing and adoption outreach plans.⁹⁵ Recipients of California's funding program must also provide free installation and are forbidden from raising rates for two years.⁹⁶

Funding programs can also target more specific deployment needs. For example, Virginia's Community Improvement Grants evaluate comprehensive community development plans that would involve broadband or projects that would help specific housing or community service facility needs.⁹⁷

III. Program Execution, Monitoring, and Adjustment Phase

Once a state’s broadband funding program is developed, the real work of its state broadband office begins. State broadband administrators have a variety of responsibilities, including providing assistance to deployment grant applicants and underserved communities looking for private partners, monitoring previous grant recipients’ deployment progress, updating the state’s broadband mapping and digital equity information, and working with other state offices to unify the state’s approach to broadband policy. However, these ongoing tasks do not reflect how much a state’s broadband strategy must change from year to year.

Each round of deployment grant funding changes the state’s deployment needs in subsequent rounds, often shifting focus to more difficult or scattered deployment areas. Each grant cycle also provides information about what has worked and what has not, with grant application patterns serving as a valuable source of feedback about the program’s design choices. Making matters more complex, technology and broadband uses continue to evolve, and the nature of the digital divide changes as well. As the primary focus of broadband shifts toward broadband adoption and utilization among chronically unconnected groups with fewer digital skills, program administrators increasingly work to ensure that availability is leading to real digital connectivity.

State broadband leaders try to continually update and refine their programs to adapt to these shifts in the broadband strategy landscape. They are not alone; across the nation, state broadband offices have implemented a series of best practices to:

- Evaluate deployment performance to refine grant processes
- Adapt the program in light of lessons learned and new circumstances
- Fine-tune the program’s relationship with other programs

Evaluate deployment performance to refine grant processes

Even well-designed funding programs can generate unforeseen outcomes as a result of complex market behaviors and unexpected interactions between program rules and other regulations. These emergent problems can be identified through the use of smart program outcomes evaluation strategies. State experience suggests that the answers to three questions should be monitored closely:

- Are the submitted applications of the right type and scale to achieve program goals?
- Are projects delivering on commitments for being completed on time and within budget?
- Are completed projects achieving the intended results?

Some states have found that where program requirements were overly restrictive, too broad, or biased to favor one type of organization or technology, the number or types of applications were insufficient to meet the goals of the program. When it effectively restricted its grant program to only companies offering wireline telephone or cellular telephone services, California's grant program narrowly restricted the types of organizations that could apply.⁹⁸ The requested support in applications fell well below available funding and did not adequately facilitate new deployments.⁹⁹ Policymakers found that only \$41 million of the \$100 million in grant funding available had been disbursed. More than three-quarters of disbursed funds primarily went to the construction of middle-mile networks that connected Californian households.¹⁰⁰ The California Public Utilities Commission explained, "There are few compelling reasons to believe that eligible entities will participate in the program in substantially greater numbers or that more applicants will seek grants for last mile facilities."¹⁰¹ California statute requires the program administrator to publicly request legislative action to remedy problems with the program.¹⁰² However, most long-standing programs have made noticeable adjustments to their funding programs as a result of prior successes and challenges.

Successful programs also conduct ongoing outreach to providers and potential applicants to determine whether participation strategies can be improved and to offer meaningful opportunities to obtain feedback.

Funding program administrators carefully track the rate at which projects receiving state grants are completed to ensure they deliver on time. Alabama, for example, has a robust verification program to ensure timeliness and compliance with grant conditions. Delaware conducts considerable oversight and fieldwork to verify that new facilities have indeed been constructed and activated.

Compliance issues may be apparent to program administrators managing the grant process, or these problems may only appear as a result of more systematic analysis. States that integrate grant eligibility, application, and project award information, and updated deployment information using a mapping program can better track these performance patterns, while also more quickly identifying areas still needing assistance.

Adapt the program in light of lessons learned and new circumstances

As broadband needs increase and new deployments launch, the most successful state programs have adapted to changing circumstances, including higher bandwidth requirements, greater understanding of broadband affordability and adoption challenges, and expanded broadband availability. Some states, such as Minnesota, Illinois, Vermont, and Washington, have recognized that existing federal definitions of broadband are insufficient for the long-term needs of their residents and have increased their own definitions of adequate service to 100 Mbps download speeds.¹⁰³

Furthermore, states increasingly recognize that the digital divide is more than a deployment challenge. Broadband service affordability and digital skills programs are becoming more important, and state funding programs are increasingly expanding their focus to include these concerns. The state of Maryland, for example, recently expanded the portfolio of the Office of Rural Broadband to include a wide range of responsibilities related to affordability and access issues in urban areas—and provided funding for addressing this greater range of functions.

Fine-tune the program's relationship with other programs

Departments that address housing and urban development, business development, and educational programs work in areas that increasingly intersect with the state's broadband strategy. As a result, many programs within a state coordinate with one another to ensure that efforts are not duplicative and instead work in conjunction with one another to achieve shared goals.

In particular, economic development grants with a broadband connectivity component support both broadband and related goals for economic revitalization, workforce preparedness, and other key government goals. Several states have supplemented their broadband strategy with economic development grant programs that provide resources for broadband deployments, often in conjunction with other infrastructure improvements.

For example, in Virginia, the Commonwealth's Development Opportunity Fund is designed to attract economic development and support expansion of existing industry. The fund can be used to support public and private installation, extension, or capacity development of high-speed or broadband internet access.¹⁰⁴ Maryland's Rural Maryland Prosperity Investment Fund is designed to help raise rural areas' standard of living to a level that meets or exceeds statewide benchmark standards; it can be used for broadband infrastructure.¹⁰⁵ Ohio allows the director of development services to provide grants of up to \$750,000 to counties for activities including broadband if the director determines that such activities will create new jobs or preserve existing jobs and employment opportunities.¹⁰⁶ Maine's regional economic development revolving loan program creates a revolving loan fund for local, regional, and statewide nonprofit or governmental economic development corporations to create jobs and revitalize local economies.¹⁰⁷ North Carolina's Rural Ready Sites program provides funding to local governments to help build infrastructure, including broadband infrastructure, to attract new businesses.¹⁰⁸ (In contrast, North Carolina's Industrial Development Fund Utility Account is administered by the Department of Commerce to help local governments in economically distressed counties create jobs. The fund supports construction of new infrastructure and improvements to existing infrastructure, including high-speed broadband.¹⁰⁹)

Endnotes

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