



VERMONT LEGISLATIVE
Joint Fiscal Office

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Issue Brief

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Broadband Public Policy and Current Funding in Vermont

Summary

Broadband has become an essential service, only made more obvious by the pandemic. Vermont’s own capacity to boost broadband access, however, has until recently been relatively limited. Fortunately, recent and upcoming federal funds have the potential to significantly expand broadband access across Vermont. Available funds, however, may still not meet projected need in the state. This issue brief provides Vermont legislators and other interested parties with a summary of:

- Current levels of broadband access in Vermont;
- Recent efforts to expand broadband access;
- State and federal fiscal resources that have been provided during the COVID-19 pandemic era to extend broadband services in Vermont and to directly assist Vermonters of limited means with the cost of connectivity, and;
- Issues, challenges, or questions policymakers may want to consider as they:
 - Review funding provided to date and the outcomes of the programs established;
 - Refine or amend state broadband policy, and;
 - Allocate future additional state and federal resources to meet the State’s connectivity goals.

JFO’s Series of Issue Briefs on Major Investment Areas

The recent surge in federal funding to Vermont stemming from the coronavirus pandemic has facilitated significant investments in state funding priorities. During the fall of 2021, the Joint Fiscal Office will release a series of issue briefs on the priority areas identified in Section G.100 of the state fiscal year (FY) 2022 funding bill, Act 74 of 2021—investments in climate change, well-being and the economy, housing, broadband, and clean water. The General Assembly set a spending target of \$1.2 billion for the five areas over three years, although actual spending may differ. Each issue brief provides some background and context for the appropriations and lays out considerations for legislators when thinking about future appropriations in the five areas.

Current Coverage for Broadband and Mobile Service

Like the rural electrification challenges of a century ago, Vermont has long struggled with ensuring that every community has access to reliable broadband. The term “broadband” refers to high-speed internet service and the infrastructure required to provide that service. Service speed is noted in *megabits per second* (Mbps) with the first number denoting upload speed and second denoting download speed.

While private companies have built broadband infrastructure to serve more densely populated areas, many of Vermont’s communities are too dispersed to be economically attractive to extend service without public intervention. As a result, many Vermont households lack access to this critical service

According to the most recent service availability survey prepared by the [Department of Public Service on October 30, 2021](#), the breakdown of Vermont households by broadband access is as follows:

- 61,194 Vermont households (or 19.7% of Vermont's 310,633 E911 building addresses) are currently unserved or underserved.
 - Specifically, 3.8% of Vermont households are *unserved* meaning they have no access, or they have access only at speeds less than 4/1 Mbps.
 - A further 16% of Vermont addresses are *underserved*, meaning they have access at speeds less than 25/3 Mbps (but higher than 4/1 Mbps).
- In December 2020, the federal [Rural Digital Opportunity Fund \(RDOF\)](#) awarded five projects in Vermont for addresses lacking broadband access. Upon project completion, the number of unserved and underserved households is expected to drop to approximately 48,000.¹
- 158,711 Vermont households (or 51% of E911 addresses) have relatively slow, low-capacity broadband service of at least 25/3 Mbps.
- 90,728 Vermont households (or 29.2% of E911 addresses) are served with speeds of 100/100 Mbps.

Mobile Coverage

Expanding broadband infrastructure also has the potential to improve Vermont's mobile voice and data service coverage, which is currently lacking in many locations due to the challenges associated with siting and connecting communication towers in a rural state with rugged terrain. According to the most recent [10-Year Telecommunications Plan \(2021\)](#):

- Up to 40% of Vermont premises and up to 6,000 miles of class 1, 2, and 3 highway roads may not have *outdoor* mobile voice and data service.
- Approximately 63% of Vermont premises may not have mobile voice connectivity *indoors* and could receive in-home voice coverage over WiFi if 100/100 Mbps wired broadband connectivity was in place.

Recent Broadband Investments

Prior to the infusion of significant federal resources into the state in response to the COVID-19 pandemic, Vermont's past initiatives aimed at broadband expansion have been limited in scope. Annual appropriations for sustained support in this area have been modest relative to the scale of the need (see Tables 1 and 2 in the Appendix). In 2019, \$10.8 million of bonding capacity was made available to service providers, of which \$7 million remains to date. Over the past three years, less than \$1 million of State annual revenue has been dedicated for connectivity, and less than \$3 million of one-time State funding. Vermont's eligibility for certain pre-pandemic federal opportunities has been limited to areas not covered by the 2010 VTel Broadband Initiatives Program². Barriers to a State-funded major initiative in this area included modest state revenue growth, legacy cost demands in the state budget, a shrinking workforce, and the need to coordinate among many different institutions and stakeholders.

During the COVID-19 era, additional federal resources have been provided to improve broadband access and affordability. Nationwide, \$17.5 billion of federal funds have been appropriated to help citizens with the cost of connectivity via service providers, which has benefited over 8,500 Vermont families. In addition, Vermont has allocated over \$170 million from the general federal pandemic relief funds for broadband expansion initiatives, see Table 1 Acts 137 & 154 of 2020 and Acts 9 & 74 of 2021. Other smaller federal connectivity funding opportunities have been awarded or applications from Vermont entities are in process.

2021 Legislation Addressing Broadband and Implementation Follow Up

The COVID-19 pandemic underscored the importance of reliable and affordable broadband service in

¹ A decision the new Vermont Community Broadband Board (VCBB) will need to make is whether to fund projects in RDOF territories. The VCBB may seek to include locations purported to be served at 25/3 Mbps by a wireless carrier.

² In 2010 VTel was awarded \$116 million federal funding through grants and government backed loans to provide statewide or nearly statewide high speed wireless coverage, this restricted projects in VTel areas from eligibility for much federal ReConnect funding.

modern life. Federal legislation in response to the pandemic has created an unprecedented level of resources to help support Vermont's broadband connectivity goals. In 2021, the State responded to this influx of funding in several ways.

In June 2021, the State's 10-Year Telecommunications Plan established a goal of bringing access to 100 Mbps symmetrical broadband service (with scalability to faster speeds) to every Vermont home. The Plan prioritizes fiber as the preferred infrastructure and notes the possibilities that fiber expansion along travel corridors can have for improving mobile voice and data coverage. The Plan estimated that it could cost \$392 million to extend fiber to the premises of the then-estimated underserved locations lacking cable or fiber service, although actual costs could vary by significant amounts.³

Act 71 of 2021 created the **Vermont Community Broadband Fund** (VCBF) to make grants for broadband preconstruction and construction activities; workforce training and development; a comprehensive, statewide fiber optic engineering design, and administrative expenses of grant recipients. To fund the VCBF in the State budget bill, Act 74 of 2021 appropriated \$150 million in federal American Rescue Plan Act (ARPA) funds in FY 2022 and expressed intent to make additional appropriations from federal funds in FY 2023 and FY 2024 for a total of \$250 million over three years. Additional details are available in Table 1 in Appendix A.

The VCBF is overseen by the **Vermont Community Broadband Board** (VCBB), which was also created by Act 71. The VCBB is a 5-member body within the Department of Public Service that approves the budget, program design, grant awards, and all other funding allocations from VCBF. The overall coordination and facilitation of community broadband efforts is overseen by the VCBB through support and funding to Communications Union Districts (CUDs), partnership facilitation, and other activities necessary to carry out its mission to support broadband development. Through Act 71 of 2021 and the 10-Year Telecommunications Plan, Vermont chose to work through the existing Communications Union District (CUD) network and small carriers to make investments in broadband.⁴ CUDs are public-private entities responsible for on-the-ground coordination and development of broadband investments with the support and financial assistance of the State.

In general, the State's broadband strategy focuses on funding the efforts of CUDs and small carriers in building out broadband capacity in underserved areas. In a quasi-public private partnership, the CUDs would build the infrastructure and then partner with an operator to provide internet service, but the CUD would retain ownership of the infrastructure.

Act 71 of 2021 authorized the VCBB to issue preconstruction and construction grants to CUDs and small carriers to build broadband projects as part of a universal service plan. It also provided central resources and support to CUDs for planning, developing, and implementing broadband projects.⁵ Additionally, Act 71 aligns the existing Broadband Expansion Loan Program created by Act 79 of 2019. That program was designed to support the CUDs and eligible small carriers with start-up loans up to \$4 million to expand broadband coverage up to 100 Mbps until the borrower can refinance the loans through the bond market or other means.

In the near term, the VCBB and its staff will be moving forward to support CUDs with implementing the 10-Year Telecommunications Plan and the provisions of Act 71 through:

- Technical and administrative support

³ The Department of Public Service notes that the \$392 million cost estimate represents an all-in cost, not a subsidy derived through a competitive process such as an auction. The cost estimate assumes a greenfield build-out but excludes "inside plant" and other business costs that CUDs would need to cover to establish operations. The total cost could vary drastically depending on the vendor used, as well as decisions about what is an eligible location.

⁴ CUD's were created by Act 41 of 2015 to facilitate the construction and operation of multi-town, community-owned communications systems. See 30 V.S.A. Ch. 82.

⁵ Act 71 defines a "universal service plan" as "a plan for providing each unserved and underserved location in a communications union district or in a municipality that was not part of a communications union district prior to June 1, 2021 access to broadband service capable of speeds of at least 100 Mbps download and 100 Mbps upload." These plans are to be developed by either CUDs or eligible providers.

- Preconstruction and construction grants. The Board issued its first four grants (worth nearly \$10 million) to CUDs for detailed planning and engineering preconstruction work in November 2021.⁶
- Developing high-level designs (if not already completed) and business plans to assess where fiber currently exists and how the network can be expanded to ensure that everyone can be served.
- Developing more detailed designs and plans to assess what technology is needed, and at what cost, to define how the specific broadband build-outs will look.
- Advocacy, coordination, and funding assistance.

New Federal Funding Opportunities in The Infrastructure Investment and Jobs Act (IIJA) 2021

The new bipartisan infrastructure bill (IIJA) enacted in November 2021 contains \$65 billion additional for broadband infrastructure and created new funding programs available to states as well adding resources to existing federal broadband expansion programs. The formula and competitive grant programs are listed below.⁷ The IIJA renames the FCC Emergency Broadband Connectivity consumer subsidy program as the Affordable Connectivity Fund and adds \$14.2 billion to be available until expended. Broadband service providers who take this consumer assistance money must offer lower-cost options to eligible customers.

Federal Formula Grant Programs

Broadband Equity, Access, and Deployment State Grants - \$42.5 billion nationwide with a minimum Vermont statewide allocation of \$100 million. Funds are available until expended and require a 25 percent non-federal project cost share that can be waived in high-cost areas or met with funds from federal regional commissions or federal COVID-19 relief. Funds cannot supplant state funds and may be used to award subgrants for installation of infrastructure; data collection, mapping, and planning; providing internet-capable devices, and other uses deemed to be eligible. States will also be able to apply for funding that remains available above the state minimum allocations.

State Digital Equity Capacity Grants - \$1.5 billion nationwide over 5 years, with a state minimum of 0.5 percent of available funds. Funds promote digital equity and inclusion to covered populations through one-year planning grants to states for developing a digital equity plan with subsequent annual grants (each with 5-year periods of performance) to implement the plan. Funds must supplement and not supplant state funds. Assuming the state minimum, Vermont's share will be approximately \$7.5 million.

Federal Competitive Grant Programs

Vermont entities are likely to apply for funding from the following:

Digital Equity Competitive Grants - \$1.25 billion nationwide over 5 years to increase access among covered populations. Funds must be spent within 4 years and require a 10 percent non-federal match (waivable based on need) and must supplement, not supplant other federal and state funds.

Middle Mile Grants - \$1 billion available nationwide through FY2026 for expansion of broadband infrastructure that does not connect directly to end-user locations (thereby lowering the cost of connecting unserved areas and increasing network resilience). Grants may not exceed 70% of total project cost.

The USDA's **Rural e-Connectivity Broadband Pilot (ReConnect)** received an additional \$1.926 billion. The bill also alleviates the previous eligibility restriction Vermont projects faced in seeking this funding stemming from the 2010 federally funded VTel initiative.

Broadband loans under the Rural Electrification Act received \$74 million in additional funding.

⁶ <https://publicservice.vermont.gov/press-release/governor-scott-announces-99-million-grants-accelerate-broadband-buildout-four-vermont>

⁷ According to FFIS Issue Brief 21-22, September 17, 2021 "Broadband Funding in the Infrastructure Investment and Jobs Act."

Other Considerations for Legislators

While the State has established a strong framework for expanding broadband capacity, additional questions remain. Moving forward beyond implementation, some areas the General Assembly will need to consider include:

- The most recent 10-Year Telecommunications Plan estimated that it could cost approximately \$392 million to build the infrastructure needed to extend fiber to currently lacking premises. Although actual costs will vary with construction methods and customer uptake, costs to achieve universal broadband access may likely exceed the funding available through ARPA and the IIJA. What will be the true cost needed to achieve the state's coverage goals, and where will the funding come from to complete the work?

What will be the funding source for meeting matching requirements?

- Upon consideration of funding guidance and match requirements, how should the State leverage the expected \$100 million for broadband deployment and \$7.5 million for digital equity capacity grants in the IIJA and other competitive grant opportunities to further develop Vermont's broadband goals?
- What long-term conditions (e.g., affordable service plans, net neutrality compliance, open access requirements, ownership, etc.) should the State put on the money being distributed to CUDs and service providers?
- How should performance and accountability for using the funds be measured and evaluated?
- Given the demographic challenge Vermont faces, what steps must be taken to ensure that a sufficient workforce is available to build the broadband infrastructure? Will the infrastructure development be impacted by material supply chain issues facing many industries?
- In the context of concurrent climate change response actions that impact Vermont's electrical grid, the Legislature should continue to review the interplay between the electrical grid and broadband expansion to identify opportunities for meeting symbiotic policy goals in the areas of broadband, energy and climate resiliency.

Appendix A

Table 1. Summary of Significant Broadband Expansion Efforts

Table 1 describes the various initiatives passed by the Legislature to address the need for broadband expansion with links to the enacted Vermont legislation. Federal legislation or action has been the primary source of funding for broadband expansion. In some cases, Vermont entities have applied for funds but awards if any are not yet announced. Amounts to date awarded to the State or directly to entities in Vermont are listed with the various national program funding amounts.

Table 1: Summary of Vermont’s Broadband Investments and Initiatives	
State/Federal Act	Description
Act 190 of 2014	Created the Connectivity Initiative, a state-funded capital improvement program with the goal of providing each service location in the state with access to broadband.
Act 41 of 2015	Authorized Communications Union Districts (CUDs) to coordinate broadband development and operations across multiple municipalities.
Act 79 of 2019	<ul style="list-style-type: none"> • Created the Broadband Initiative Grant Program (within the Dept. of Public Service) to fund feasibility studies related to broadband deployment. • One-time General Fund appropriations in FY2020: <ul style="list-style-type: none"> ○ \$700,000 for Broadband Initiative grants ○ \$205,000 for Connectivity Initiative grants ○ \$50,000 for feasibility studies ○ \$45,000 for technical assistance grants to municipalities planning broadband projects. • Increased the State Universal Service Fund charge on retail telecommunications service rate by 0.4%, known as the Connectivity Initiative. Act 71 of 2021 redirected this initiative under the VCBB and its approximate \$800,000 annual revenue into the VCBF. • Additionally, the Broadband Expansion Loan Program through the Vermont Economic Development Authority (VEDA) was created to make up to \$10.8 million of loans to expand broadband service at 100/100 Mbps. \$540,000 was appropriated from the General Fund to serve as a loan reserve. As of 2021, borrowers are limited to CUDs and service providers working with CUDs, or municipalities outside CUDs as of June 1, 2021. Loans cannot exceed \$4 million or 90percent of the project cost. As of September 21, 2021, four loans totaling \$3.8 million were issued with \$7 million of program capacity remaining.
Federal Communications Commission (FCC) Rural Digital Opportunity Fund (RDOF)	The RDOF is an FCC voice and broadband subsidy program funded by federal Universal Service Fund (USF) charges on telephone services. The \$20.4 billion RDOF was established in August 2019 to bring high-speed fixed broadband service to rural homes and small businesses lacking broadband service. The funding framework used reverse auctions in two phases. In December 2020, the FCC announced five winning bids to providers in Vermont covering 18,489 of the state’s 310,633 known E911 addresses.

<p>Federal CARES Act of 2020 (Covid-19 Pandemic Response)</p>	<p>Sources of broadband funding include:</p> <ul style="list-style-type: none"> • Coronavirus Relief Fund (CRF) – Broadband funding was allocated in Act 137 of 2020 (see below) from Vermont’s \$1.25 billion <u>state</u> federal assistance grant. <p>Other Federal CARES Connectivity funding programs:</p> <ul style="list-style-type: none"> • \$100M to USDA Rural Utilities Service (RUS) ReConnect Program, and \$25M to RUS’s Distance Learning, Telemedicine, and Broadband Program. • \$50M for the Institute of Museum and Library Services (digital inclusion) - \$56,000 awarded to Vermont • \$200 million to FCC’s new COVID-19 Telehealth Program - \$833,000 awarded to Vermont entities. • \$180 million to HHS’s Public Health and Social Services Emergency Fund (rural hospitals). • \$2.15 billion to Department of Veterans Affairs (telehealth). • \$13.5 billion in Education Stabilization Funding (K-12 grants to states).
<p>Act 137 of 2020</p>	<p>Appropriated federal CARES Act state Coronavirus Relief Fund dollars for the following broadband initiatives in response to the pandemic:</p> <ul style="list-style-type: none"> • \$16,913,500 for a new COVID-19 Response Accelerated Broadband Connectivity Program: <ul style="list-style-type: none"> ○ Financial assistance for customer costs associated with line extensions to unserved priority locations. ○ The Get Vermonters Connected Now Initiative to offset customer costs of fiber-to-the-premises installations at priority locations. ○ The COVID-Response Temporary Broadband Lifeline Program, which provides subsidies for customer monthly service costs. ○ Wi-Fi hotspot deployment. • \$833,603 for the COVID-Response Connected Community Resilience Program to fund recovery planning efforts of CUDs. • \$475,000 for preparation of a COVID-Response Telecommunications Recovery Plan. • \$800,000 to the Department of Health for Telehealth Connectivity. <p>Amounts reflect authorized adjustments to appropriations through Joint Fiscal Committee action in fall 2020, and subsequent adjustment authority granted to the administration to meet the federal time limitations related to CARES Act CRF monies.</p>
<p>Act 154 of 2020</p>	<p>The FY 2021 State budget allocated one-time General Fund Appropriations:</p> <ul style="list-style-type: none"> • \$250,000 to DPS for State’s 10-year Telecom Plan • \$1.5 million to DPS for grants to CUDs for cash equity to secure loans to finance broadband projects (including the 10 percent of project costs required for loans through the VEDA Broadband Expansion Loan Program).

Federal Consolidated Appropriations Act of 2021 (2020-2021)	Federal legislation enacted in December 2020 provided additional resources for broadband expansion <i>nationwide</i> : <ul style="list-style-type: none"> • \$300 million for competitive broadband infrastructure deployment grants National Telecommunications and Information Administration. • \$250 million for COVID-19 telehealth (FCC) - \$606,997 awarded to UVM Medical Center. • \$730 million for the USDA Broadband Program, including \$635 million for ReConnect. • \$3.2 billion for the Emergency Broadband Benefit Program.
Federal American Rescue Plan Act (ARPA) (2021)	<ul style="list-style-type: none"> • ARPA - Coronavirus State/Local/Capital Fiscal Recovery Funds • FCC Emergency Connectivity Fund \$7.17 billion <i>nationwide</i> to help schools and libraries extend service to communities and households. As of October 12, 2021, the first two waves of funding awards committed \$1.4 million to Vermont schools and school districts.
Act 9 of 2021	<ul style="list-style-type: none"> • \$1.6 million from federal ARPA State Fiscal Recovery funds for preconstruction and general support to CUDs, CUD groups, or external partners. • \$200,000 from federal ARPA State Fiscal Recovery funds for contract services for CUD technical assistance and support, Wi-Fi hotspot licenses, and VT Relay Conference Captioning service. • Authorized reserved but already appropriated \$3.2 million of the federal CRF funding in Act 137 (2020) for the Line Extension Customer Assistance Program and COVID-19 Temporary Broadband Lifeline Program. Each initiative received \$1.6 million.
Act 74 of 2021	The FY 2022 State budget appropriated \$150 million from federal ARPA State Fiscal Recovery Funds in fiscal year 2022 for broadband, including: <ul style="list-style-type: none"> • Grants for preconstruction, construction, workforce development, statewide fiber engineering design, and centralized CUD resources. • Administration of the Community Broadband Board established in Act 71 of 2021.
Federal ARPA Coronavirus Local Fiscal Recovery Funds (2021)	ARPA appropriated \$200.7 million to Vermont municipalities for a range of uses to be determined by the municipality. Broadband expansion is an eligible use of the funds. It is yet to be reported if any Vermont communities are allocating funds from this source for local connectivity-related initiatives.
ARPA Coronavirus Capital Projects Fund (2021)	This \$10 billion fund is for states to use on capital projects that may include broadband infrastructure, digital connectivity devices, and multi-purpose community facilities that directly enable work, education, and health monitoring. Vermont's allocation is \$113.1 million. Use of these funds will be determined in 2022 legislative session.
Federal 2021 Infrastructure Investment and Jobs Act (IIJA)	The federal bipartisan infrastructure bill contains \$65 billion for broadband access and infrastructure, with a minimum initial state allocation of \$100 million expected for Vermont. An additional \$7.5 million is expected for Vermont for digital equity capacity.

Appendix B

Table 2. Summary of User Financial Assistance Initiatives

While Table 1 summarized funding and initiatives for programs whose purpose was the investment and build-out of broadband, Table 2 lists the various programs in place to assist individuals and households with broadband connectivity.

Table 2: Summary of User Financial Assistance Initiatives	
Program	Description
Lifeline	This program, funded by the federal Universal Service Fund, discounts phone and broadband services for qualifying low-income consumers. It provides \$9.25 monthly rates for wired and wireless voice, broadband, or bundled technologies based on categorical or income eligibility. Vermont had 9,353 participants in 2020 with an estimated 50,000 eligible as of January 2021.
VT COVID-19 Response Temporary Broadband Subsidy Program	Created by Act 137 of 2020, this State initiative was funded with federal CRF and provided eligible households facing economic hardship due to COVID-19 with \$40 monthly internet service credits plus funds for devices. This program ends on December 20, 2021, concurrent with the federally-allowed date for use of CRF funds. It is intended that families served by this program, to the degree they are eligible, will migrate to the federal assistance program - see below.
Federal Emergency Broadband Benefit Program (now renamed Affordable Connectivity)	This federal program established by the Consolidated Appropriations Act (December 2020) with \$3.2 billion to aid households struggling to pay for broadband service during the pandemic. The program provides income-eligible households with service discounts of up to \$50/month, plus a one-time discount of up to \$100 for equipment. \$14.3 billion was added and the program extended in the IIJA. Vermont enrollment as of October 2021 is 8,585 families.
Emergency Rental Assistance Funds and Homeowner Assistance Funds	These federal programs were created and funded by the Consolidated Appropriations Act and ARPA, and a portion of the funds may be used to assist renters or homeowners with utilities including broadband connectivity. To date, no funds from these federal programs have been used for broadband assistance in Vermont.

Additional Resources:

1 - Act 71 of 2021 - <https://legislature.vermont.gov/bill/status/2022/H.360>

2 - Vermont 10-Year Telecommunications Plan (June 2021) -

https://legislature.vermont.gov/assets/Legislative-Reports/10-Year-Telecom-Plan_Final_June30_2021.pdf

3 - Broadband Deployment in Vermont Presentation - November 15, 2021 -

<https://publicservice.vermont.gov/sites/dps/files/documents/Broadband%20Deployment%202021.pdf>

4 - Other JFO Broadband reports and issues briefs - <https://ljfo.vermont.gov/subjects/covid-19-documents/requested-briefs/filter/subject/covid-19-documents>