

creating the Vermont Universal Service Fund, allowing the creation of Communication Union Districts (CUDs), and using loans from the Vermont Economic Development Authority to facilitate broadband expansion.

Still, many gaps remain, and the Covid-19 pandemic has introduced new challenges to those without access to broadband. According to Public Service Department data, there are 60,511 premises in Vermont without access to broadband infrastructure that could deliver speeds of at least 25/3 Mbps, excluding those that will soon receive service under the Emergency Connectivity Initiative and GVCNI. (For the purposes of this report, locations that will soon be served by the Emergency Connectivity Initiative and GVCNI are considered served.)

8.2.1 Types of Unserved Premises

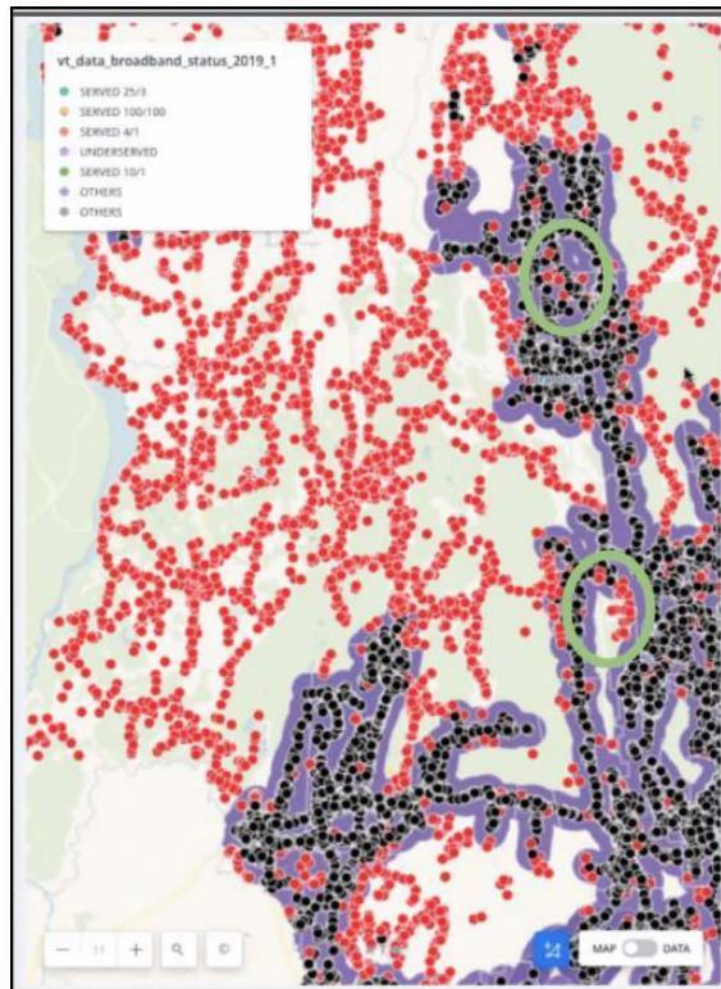
We have identified three primary “categories” of unserved premises. We note that the category numbers do not indicate prioritization or emphasis in terms of the State’s approach to filling its broadband gaps; the numbers are merely a convenient way to refer to the categories. All three of these categories of unserved premises are prevalent and distributed throughout the State.

- **Category 1: Large, contiguous unserved areas where there is no wired provider available for miles.** These areas are typically rural and have a low density of premises per mile. CUDs in particular are eager to serve these areas as it is significantly cheaper for a new provider to build out in areas with no existing cable or fiber presence, and being the only provider offering 25/3 much less 100/100 in those areas provides for healthy penetration rates. However, these areas cannot be connected with wired service quickly enough to address the Covid-19 pandemic, as the infrastructure does not exist in close proximity; however, wireless infrastructure, including 4G LTE service, does reach the majority of these locations.
- **Category 2: Discrete clusters of unserved addresses in an otherwise largely served area.** These can also be referred to as “pockets” or “islands” of unserved houses. The isolated unserved premises are typically on roads that are particularly long relative to the number of potential broadband customers on the road; in other words, they have a lower density of potential customers than the surrounding areas. The incumbent ISP has not built infrastructure on those roads because their potential return on investment is not great enough to prompt an investment in reaching the potential customers who live there. Given the low density of houses, too, a cable provider is not obligated to build infrastructure on those roads under the terms of their cable franchise agreements with the local jurisdiction.

For the residents on roads like these, which exist in locations in many parts of the State, this situation is particularly challenging; the cost of an ISP’s line extension down their

road—which the residents would be required to pay in order to get service from those companies—can be high. Furthermore, these locations are unlikely to be served by a CUD or another competitor in the near future because of similar investment costs and lack of return needed to keep CUDs sustainable. Reaching these locations would require overbuilding significant amounts of cable or fiber, which increases construction costs, and due to the low-density in these areas, means expected revenue is low. Based on our analysis, an estimated 16,000 unserved premises are within a half-mile on either side of existing cable or fiber infrastructure, and 27,000 unserved premises are within a mile of existing infrastructure. (Note, this calculation includes premises with lengthy drops, mentioned below.)

Figure 26: Unserved Premises Close to Existing Infrastructure



However, we advise that the Public Service Department identify the pockets to be prioritized by line extensions, rather than large, contiguous sections that extend out into category 1 areas. The map (above) of portions of the western side of the State illustrates

the difference between Category 1 unserved contiguous areas, and Category 2: unserved pockets. The Purple “buffer” demonstrates a half-mile distance from existing cable and fiber plant (Category 1); green circles identify unserved pockets surrounded by, and a short distance away from, existing wired service (Category 2).

- **Category 3: Premises with long driveways or requiring underground conduit.** Here, homeowners struggle to get service, despite the presence of broadband infrastructure passing the entrance to their driveway, due to being set so far back from the road that the ISP has no obligation to build the service drop from the road to the user’s premises at no cost to the customer. This generally refers to locations where the home or business is more than 300 feet away from the road—that distance being the typical limit for cable franchisees’ obligations to install a service drop at no cost to the customer.

Additionally, ISPs may charge customers for installations that must be connected via underground conduit; manufactured housing parks in particular often must be connected by underground conduit. Although these homes are effectively unserved because many homeowners find the drop construction cost unaffordable, the homes do not always fit into the category of unserved for purposes of federal or Emergency Connectivity Initiative funding. The State has taken some actions to solve this problem, though: GVCNI funds fiber-to-the-premises customer drops and installations, and up to \$500 of a LECAP grant can be applied to the cost of customer drops beyond 300 feet.

8.2.2 Strategic Recommendations for Connecting Unserved Premises

This strategic plan is designed to quickly and efficiently bring internet service capable of performing work from home, telehealth, and remote learning tasks, to unconnected Vermonters in the pandemic, without harming the State’s progress toward a long-term 100/100 solution. Therefore, recommendations focus on leveraging existing infrastructure whenever possible.

For unserved areas, we are using the following “triage” of service mechanisms. The fastest, most economical solutions are tried first; more challenging, slower, and/or more expensive solutions are implemented in areas where the optimal solutions are not viable. The triage is as follows:

1. Cellular service has expanded in the State, due to AT&T’s FirstNet deployments, and roaming agreements between carriers and VTel. Where good cell service is available, **provide mobile hotspots to low-income families.**
2. **Fund Line Extensions in a targeted way to reach “pockets” of unserved premises surrounded by existing wired service.** Mobile hotspots can be provided to low-income residents in these locations to bridge the gap until line extensions are built.