3. **Provide signal boosting equipment** to premises with poor cell signal via rooftop antennas.

This triage also enables the State to serve the low-income households that are also unserved with the subsidy program outlined in recommendation #1—because a mobile broadband solution is very likely to be technically attainable for low income households, whether or not they are passed by 25/3 wireline service

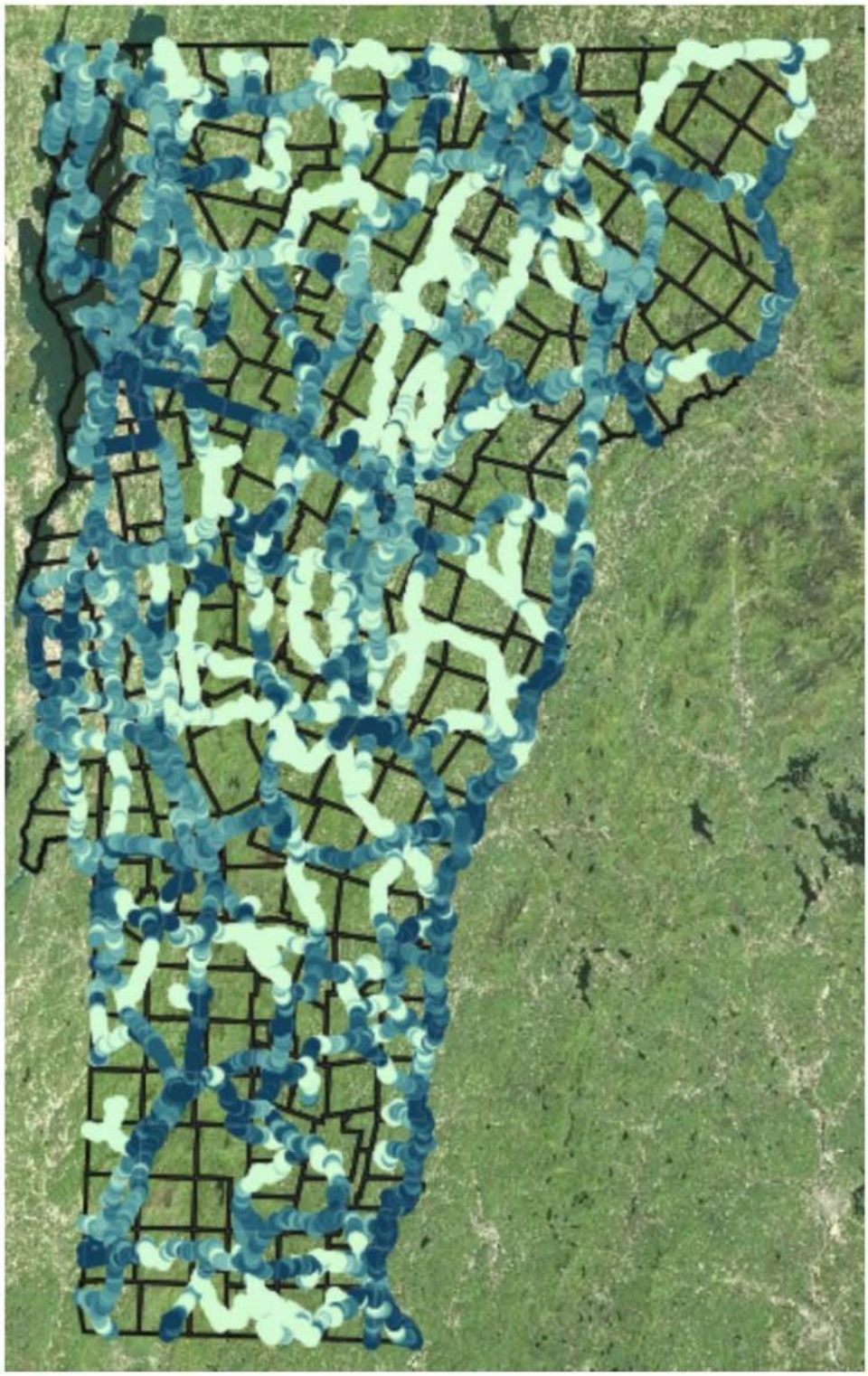
Lastly, this section will also discuss considerations around other technology solutions that were vetted and deprioritized.

8.2.2.1 Cellular Service Expanded by Hotspots

As noted, there are approximately 61,000 unserved premises according to the Department of Public Service, after Emergency Connectivity Initiative grants were awarded. These premises are distributed throughout the entire state.

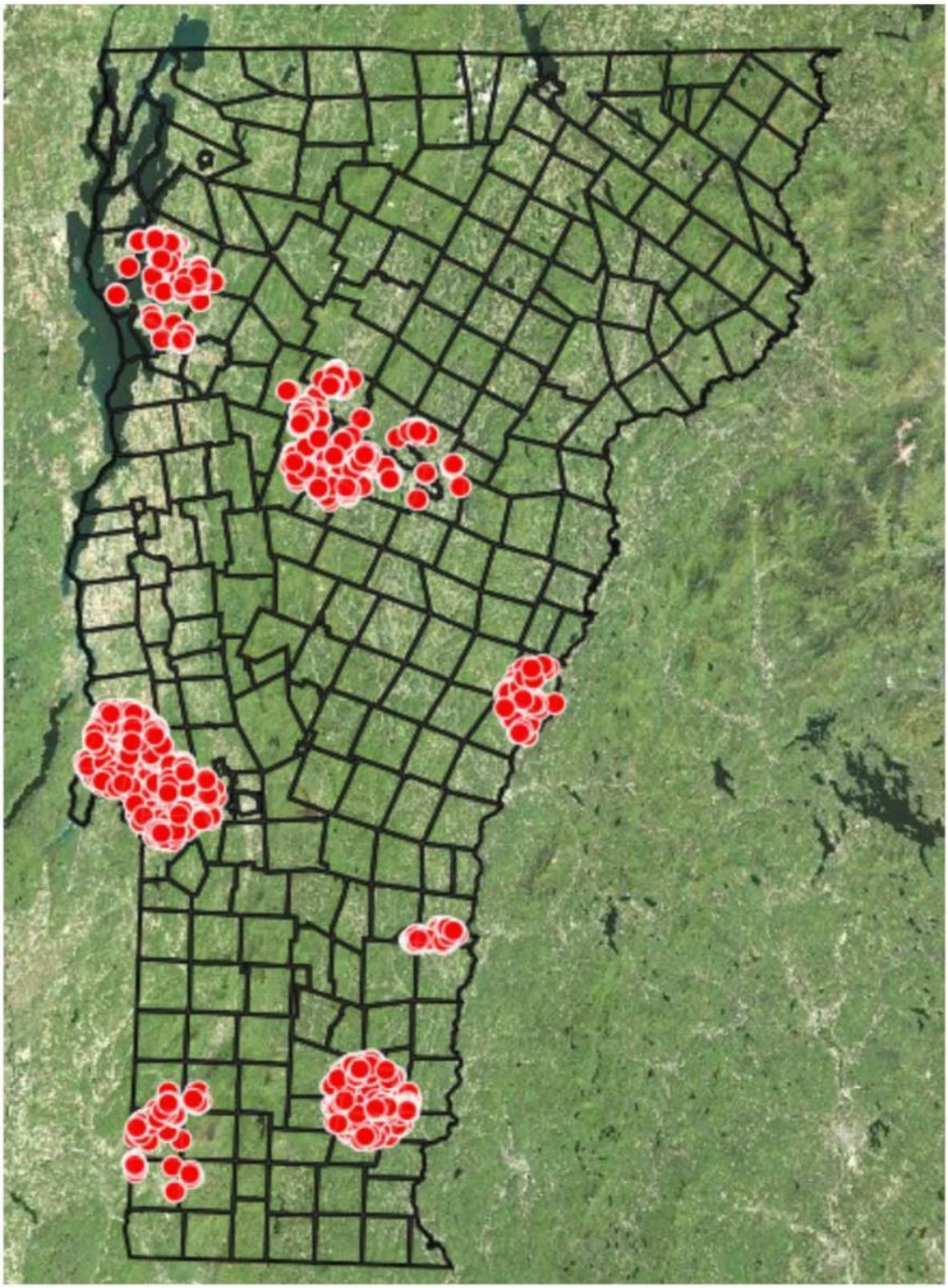
Using cellular coverage data compiled by 2018 drive tests on major roads, 2020 volunteer drive-tests, 248a tower applications that list at least one mobile data provider, and a list of AT&T's FirstNet deployments projected through the end of 2020, we identify areas where we estimate there will be acceptable mobile broadband service. With the drive test results, we identify areas that had a minimum download speed of 10 Mbps or higher in 2018 and any point within a half-mile as likely mobile broadband service areas; 21,700 premises can be reached according to drive-tests.

Figure 27: Drive Test Routes



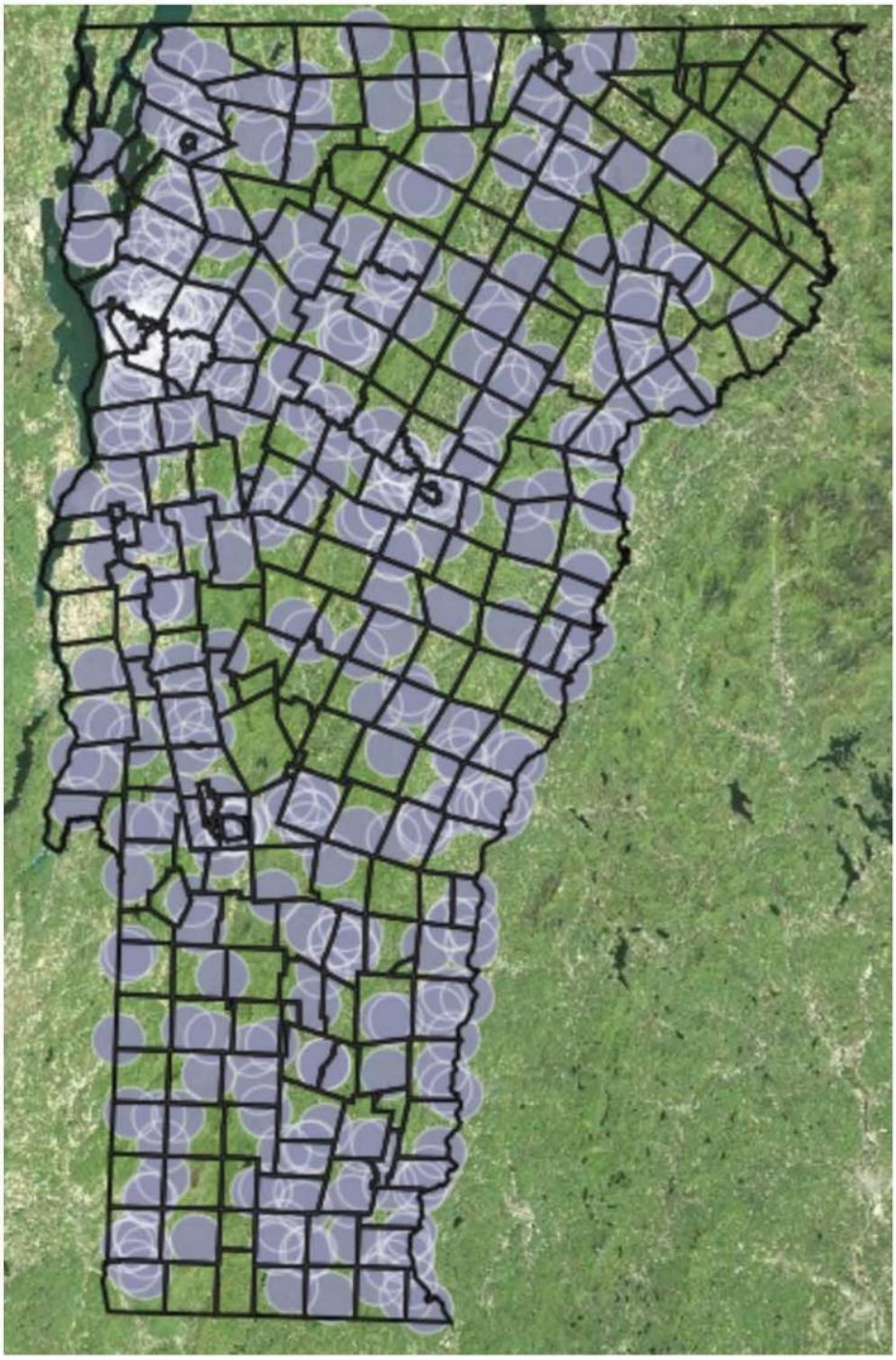
An additional 2,800 premises can be reached via AT&T FirstNet deployments that are required to be completed in 2020.

Figure 28: Premises That Can Be Reached by AT&T FirstNet



Lastly, adding in an analysis of 248a tower permit data outside the other mobile broadband service areas, we believe an additional 20,300 premises not captured in the drive-test data or by new AT&T deployments, that are within 3 miles of the additional towers, can be served by cellular data.

Figure 29: 248a Installations With at Least One Cellular Data Provider



In addition, recent roaming agreements between VTel and cell carriers, and the fact that not all roads were surveyed likely make this number significantly higher.

Using the threshold of 22 percent of Vermonters as qualifying as low income, we project that 9,850 of these households may qualify for the recommended subsidy program, and should the State anticipate subsidizing mobile hotspots for all of these low-income premises for 1 year, the cost would be approximately $2.4 million.

8.2.2.2 Targeted Cable and Fiber Line Extensions

Many Vermonters live in proximity to areas served by cable networks but their homes are not passed by cable service. These pockets of unserved locations are unlikely to be served by entities other than the providers that are already close by, as that would require costly and extensive construction by the new provider solely to reach them.

An estimated 16,000 unserved premises are within a half a mile of a cable or fiber line, and 27,000 unserved premises are within a mile buffer, although some of these premises are located on the outskirts of existing wired infrastructure (Category 1) and are therefore not considered in an "unserved island" (Category 2). Using geospatial analysis techniques, the project team identified 39 towns where at least 85 percent of the existing road miles are already served by cable or fiber according to PSD data; these towns are most likely to have islands of unserved premises. We then performed some visual verification of maps of those towns to confirm unserved premises were indeed in pockets, and removed towns from the list without substantial pockets or towns known to be in the process of being built, resulting in a list of the top 31 towns where we believe line extensions could be prioritized. In these towns, there are 1,397 premises in islands within 0.5 miles of existing cable or fiber, 1,651 premises within 1 mile of cable or fiber, and 1,701 total unserved premises. There are approximately 148 road miles without infrastructure, not including interstates and two-lane highways. Assuming the cost of cable and fiber deployment remains at $30,000 per mile (the number the State of Vermont has used as a benchmark for cable line extensions), the project team estimates that building out the unserved areas in the 31 towns would cost $4.5 million. This results in a cost per premises of around $2,650.

It is important to note that during the performance period of this project, Consolidated Communications, Inc. (CCI) won many FCC Rural Digital Opportunity Fund (RDOF) locations around the state and announced its intentions to build fiber to 200,000 premises, a substantial number of which are likely to be in already-cabled towns. Though ideally the State could anticipate where CCI was going to build and when so as to not fund a line extension in a location about to be built using private funds, the State will not likely be able to predict or know where CCI intends to build (outside of its RDOF blocks), and so should proceed with line extensions until it knows with certainty when and where CCI will build.