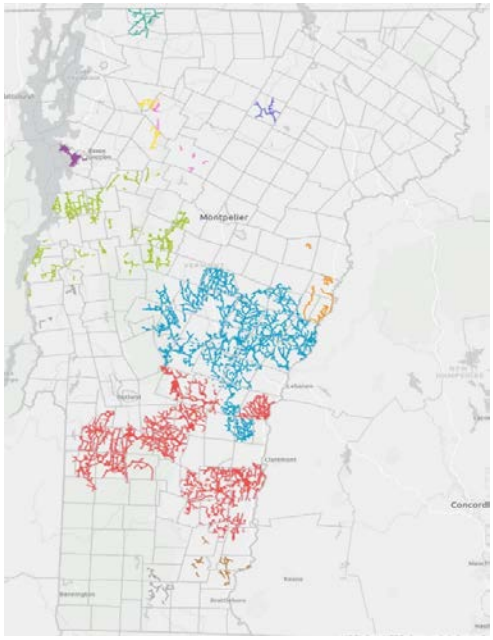
Broadband Infrastructure: What's Vermont's Mountaintop?

The American Recovery Plan (ARP) will shower billions of dollars on rural broadband, and Vermont is going to get over $100 million, maybe a lot more. Vermont needs to decide what mountain it is climbing with these funds.

Is the mountain only a big hill consisting of around 60,000 locations without access to cable or fiber internet for entertainment delivery? If that is all it is, for $40.2 million you can buy everyone a SpaceX Starlink lashup, and pay for shipping and sales tax, and call it done. You could also pay for whatever tree removal was needed to clear a view of the northern sky for those folks -- and still have money left over.

The 'around 60,000 locations' that has become a shorthand description of the broadband crisis in Vermont is just plain wrong. The real crisis is that two out of three Vermont premises do not have access to world-class broadband. World-class broadband is not 300 megabits per second (mbps) download and 25 mbps upload. World-class broadband is not affected by trees leafing out and interfering with signals from your local cell tower or the low earth orbit satellite passing overhead. World-class broadband is fiber-to-the-premises (FTTP), capable of 5000mbps (5Gs) or more, and delivered "square" – the same speed up and down.

The good news is that Burlington Telecom, Consolidated Communications, ECFiber, Franklin Telephone, Kingdom Fiber, Mansfield Community Fiber, Otelco, StoweAccess, Topsham Telephone, VTel and Waitsfield Telecom are all providing FTTP in Vermont now to one degree or another. As the map of FTTP in Vermont as of 2020 shows, there are many miles of road remaining to be covered.



FTTP networks in Vermont 2020

VTel (red) and ECFiber (blue) account for the bulk of mileage; Burlington Telecom (purple) accounts for 20% of the 55k premises (of 308k) with FTTP in the state.

Map courtesy David Healy

ECFiber plans to add another 800 miles to its network over the next three years at a cost of around $32 million. CVFiber, 330 miles for around $14 million. CCI, the phone company which inherited the old New England Telephone system, is planning on adding 2,500 miles over the next 5 years at a cost of $140 million. The big difference in those plans? ECFiber and CVFiber are both committed to serving every premises that is on the grid in the towns they serve. CCI says 'there are locations for which there is no business case that can be made' and has not published plans that communities and Communication Union Districts (CUDs) can use to evaluate where efforts need to be concentrated.

ECFiber is already climbing the mountain. The CUDs established during the past 18 months are getting organized at Base Camp. Now is the time for everyone in the state leadership, and the leadership of the phone companies, and the leadership of the CUDs to come together and agree on the mountain we are going to climb: FTTP for every on-grid premises -- residential, commercial, or institutional -- in the state.

When Vermont's FTTP infrastructure is universal, there will be no excuses any more for why the state is not seeing the creation of thriving businesses that attract young people. There will be no limitation on where prospective transplants from other states might move. There will be no reason why any high school student cannot access the full range of AP courses. All these barriers begin to fall when we have disposed of the problem of world-class broadband accessibility. And once agreed on the mountaintop, we can establish the route to the top with affordability front and center.

To those who want better wireless service, FTTP infrastructure makes more and better cell service possible – installing small cells to cover remote valleys can be done in a snap. For everyday internet at home, though, aside from the leaf issue, wireless is a fragile technology, with upgrades and replacements limiting equipment life. We do not want to be spending the same money on the same issues every 5 to 10 years. Fiber-optic cable has a useful life of at least 50 years.

To fans of cable, who wonder why 25/3 or 200/20 is not enough for everyone: coaxial cable technology inherently limits the upload speed. While it is true that business-class users can get square service for a price, and it is also true that cable companies can upgrade to FTTP if they choose, in Vermont we see no indication of investment in that direction by national providers. Instead, we get genial shade-throwing on the notion that anyone actually needs 100/100 availability (Act 79's entry-level description of world-class broadband). To that I say, nobody really thought the internet would turn into delivery of movies and television, allow legislatures to work remotely, or enable doctors to examine MRIs within minutes of their completion. It has become clear that 25/3 and even 100/100 is not going to be enough in a few years. What widespread 5000/5000 internet makes possible over the next fifty years is worth pondering.

One thing we as Vermonters can do is to take advantage of the once-in-a-lifetime funding the ARP represents. We can make sure every nook and cranny of the Green Mountain State is ready to start participating in that future. We can build FTTP to every premises in Vermont.

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