



Alright folks, here's the problem: no one knows what the heck to do about economic recovery from Covid-19 and perhaps rightly so. The last time this was done was over 100 years ago and today's economy looks *much* different than at the end of the last pandemic in industrial 1918 United States.

Here are a few things we do know about the current situation:

1. Vermont recovered more quickly from the 2008 recession than the rest of the country.<sup>1</sup>
2. Vermont did not see the explosive GDP growth that the US experienced in 2018-19.<sup>2</sup>
3. Our economy was constricted by a lack of qualified workforce prior to the pandemic.<sup>3</sup>
4. The tourism, restaurant, retail and manufacturing businesses were most impacted by Covid-19.<sup>4</sup>

If you look at the [list of bills](#) the legislature has passed so far, you might be tempted to think they are focused on the pandemic. However, if you look a little closer, you can see that these bills are actually reactionary. They would direct federal funding to emergency housing, food banks, and childcare assistance; all worthy programs, but they serve the immediate need, not the future need six months to a year from now. This is a tempting trap to fall into. It's easy when you are in crisis mode to only deal with what is right in front of you. It is natural to tune out long-term issues and focus all your energy and resources at immediate problems in order to survive the moment. The problem, of course, is that we are now a year into this crisis and it is time to start thinking beyond the issue most directly in front of us.

This is the piece that is sorely lacking in the legislature: planning and forward thinking. To be honest, the Administration hasn't been much better. They have been so focused on the vaccination program and meeting basic needs that all there is little leftover energy to ponder where we need to be six months from now. The good news? Most other states are in the same boat – too myopically focused on today's crisis and not tomorrow's. This, by the way, is how we ended up with a looming pension fund liability and a lake that will take decades to recover, but those are topics for another time.

So, what can we do? We can offer a clear vision for the state to move toward; one that takes into account our current public health crisis, pension liability catastrophe, as well as our collapsing economy. One that offers our failing small businesses a path back toward prosperity. I am astounded at how many empty storefronts we have as I drive around the state. Restaurants, coffee shops, cafes, souvenir shops, and even gas stations are gone. They are not coming back, but there are plenty more small businesses that could still survive. Let's talk about how we can help them do this.

Ben Kinsley - Secretary, Campaign for Vermont Board of Directors

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<sup>1</sup> <https://vtfuturesproject.org/vermonts-economy/top-indicators/#tabs10>

<sup>2</sup> <https://vtfuturesproject.org/vermonts-economy/top-indicators/#tabs10>

<sup>3</sup> [https://www.rutlandherald.com/news/business\\_vermont/business\\_vt\\_news/board-addresses-vermonts-growing-labor-shortage/article\\_c3c85d1f-e548-5d78-922b-1241a839bc19.html](https://www.rutlandherald.com/news/business_vermont/business_vt_news/board-addresses-vermonts-growing-labor-shortage/article_c3c85d1f-e548-5d78-922b-1241a839bc19.html)

<sup>4</sup> <https://www.statista.com/statistics/1106302/coronavirus-impact-index-by-industry-2020/>



## Economic Recovery from the Covid-19 Pandemic

May 13, 2021

Covid-19 is certainly a global health crisis, at the time of this writing more than 131 million people around the globe have contracted the virus and over 2.8 million have died from it.<sup>5</sup> However, it is also an economic crisis as trade routes and supply lines have been disrupted. Whole industries like hospitality, retail, and food service have nearly vanished. The Financial Times Stock Exchange (FTSE) index dropped 14% in 2020<sup>6</sup> and the World Economic Forum estimated that 114 million people lost full-time employment because of the pandemic leading to \$3.7 trillion in lost income.<sup>7</sup>

Vermont is not immune to workforce woes; our employment has dropped by 30,000 between February of 2020 and 2021, about 10% of our labor force.<sup>8</sup> Chances are you know someone who has been impacted by the pandemic, either from the virus itself or the downstream effects. There is no doubt the pandemic has changed things and the economy of tomorrow will not look like the economy of yesterday. However, our state does have a few strategic advantages as our global economy rebuilds. Join us as we explore some of them below.

**Phase 1 – A shot in the arm.** Vermont’s tourism sector has taken a beating. Last summer, hospitality revenue was down 97% and food service 86%.<sup>9</sup> This happened over the season when tourism should be firing on all cylinders. (Interesting fact, we generate more tourism revenue in the summer than winter.) What’s worse is that the usually stable revenue from weddings and other events fell precipitously as well. The Wilmington Inn, for example, saw a 40% drop in events during September and October, prime wedding season.<sup>10</sup> Most of our nightly lodging stock are small “mom and pop” providers which are part of a \$2.8B tourism industry and support 32k jobs in the state.<sup>11</sup> Vermont is the third most dependent state on tourism spending, but compared to regional states, our share of tourism spending is shrinking.<sup>12</sup> *The Vermont Department of Tourism and Marketing is asking for an additional \$1M for tourism*

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<sup>5</sup> Retrieved 4/5/2021 from <https://coronavirus.jhu.edu/map.html>

<sup>6</sup> <https://www.bbc.com/news/business-55500103>

<sup>7</sup> <https://www.weforum.org/agenda/2021/02/covid-employment-global-job-loss/>

<sup>8</sup> <http://www.vtmi.info/>

<sup>9</sup> <https://www.wcax.com/2020/08/31/vermont-tourism-industry-suffers-a-big-hit-from-covid/>

<sup>10</sup> <https://vtdigger.org/2020/08/26/allen-a-perfect-storm-is-buffeting-vermonts-storied-inns-and-hotels/>

<sup>11</sup> <https://vermontbiz.com/news/2018/december/21/scott-releases-tourism-benchmark-study#:~:text=In%202017%2C%2013%20million%20people,percent%20of%20the%20state's%20workforce.>

<sup>12</sup> Based on testimony to House Commerce Committee on 3/12/2021.



marketing. We should give it to them. Our annual \$3M marketing budget supports this industry that generates \$373M in tax revenue.<sup>13</sup>

Not only does this funding support a workforce that has been hit hardest by the pandemic, but it also makes sense for taxpayers. A study of the Pure Michigan marketing campaign indicated every dollar spent generated \$5.75 in tax revenue for the state. (Note: Michigan has a lower meals & rooms tax rate so Vermont's ROI could potentially be higher.)<sup>14</sup> This is a phenomenal return on investment all around.

We can likely bump this ROI even further using new digital marketing techniques as opposed to traditional print, billboard, and TV ads. These digital campaigns tap into what is called the experience economy where tourists themselves become net promoters based on their experience while staying here.

This also provides a quick economic boost. Vermont is within the drive market for major metropolitan areas like Albany, New York City, Boston, and Hartford. As growing evidence suggests, there is pent up demand for travel.<sup>15</sup> Many lodging providers are indicating that six-month bookings are up 40% over a normal year as people prepare to travel this summer.<sup>16</sup> Given that a large number of people may be reluctant to travel by air, this puts destinations within driving distance at a competitive advantage. However, this means that Vermont is in a footrace with our neighbors that have much larger marketing budgets than we do. An early investment here can pay dividends in spades later this year and provide the shot in the arm our economy really needs.

The second area that is a worthy investment for quick economic activity is housing. VT Digger reported in January that housing construction in Chittenden County dropped by 50% in 2020. That's a problem.<sup>17</sup> It's a problem not just for the state's 15k construction workers but also for the longevity of our workforce attraction and development programs.<sup>18</sup> If we hope to attract and retain a skilled workforce, we need to have housing they actually want to live in. Directing stimulus money into housing projects will create immediate economic activity from our idle construction workforce and also pay dividends for years to come (more on this later).

#### **Recommendations:**

1. Invest one-time funds in tourism and marketing budget
2. Consider heavier investments in digital marketing
3. Start investing in housing now

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<sup>13</sup><https://legislature.vermont.gov/Documents/2022/WorkGroups/House%20Commerce/Economic%20Development/FY2022%20Budget/W~Heather%20Pelham~Vermont%20Department%20of%20Tourism%20and%20Marketing%20Budget~2-9-2021.pdf>

<sup>14</sup>[https://www.canr.msu.edu/news/tourism\\_marketing\\_return\\_on\\_investment](https://www.canr.msu.edu/news/tourism_marketing_return_on_investment)

<sup>15</sup><https://www.travelpulse.com/news/features/theres-pent-up-demand-for-travel-but-covid-has-altered-consumer-behavior.html>

<sup>16</sup><https://corp.inntopia.com/new-winter-records-in-occupancy-and-rate-for-southeast-lodging-properties-strength-continuing-into-summer-months/>

<sup>17</sup><https://vtdigger.org/2021/01/31/new-apartment-construction-in-chittenden-county-dropped-by-half-in-2020/>

<sup>18</sup><https://www.bls.gov/eag/eag.vt.htm>

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**Phase 2 – The Courtship.** There is little doubt that Covid-19 has changed our world for good. One of the most meaningful ways is how we work. Many employers have discovered the benefits and limitations of remote work. Major corporations like Microsoft, Google, Facebook, Twitter and Spotify have gone remote. Salesforce even went as far as to declare that the 9-5 workday was dead. Office buildings in downtown San Francisco and Manhattan are now empty. What’s more, the majority of workers prefer to continue working remotely even after restrictions are lifted. Experts are predicting that 25-30% of the US workforce will still be working from home, at least part-time, at the end of 2021.<sup>19</sup>

This presents a massive opportunity for Vermont. Again, we are within the drive market of multiple major metropolitan areas, we have an international airport, and our quality of life was ranked #2 (behind Hawaii) by CNBC in 2019.<sup>20</sup> This allows workers the flexibility to live a rural lifestyle but have relatively easy access to international travel or corporate offices should the need arise.

The major hurdle? Internet access. About 70k addresses in the state don’t have internet speeds that can reach 25mbps download, and more than 250k (82%) don’t have access to service that can reach 100mbps symmetrical.<sup>21</sup> Overall, Vermont ranks 47<sup>th</sup> for access to broadband.<sup>22</sup>

This is the issue we need to solve in order to compete in a 21<sup>st</sup> century economy as well as a post-pandemic economy. However, we have been at broadband buildout for far too long with too little to show for it. The polls and wires that have supported our telecommunications infrastructure for the past century are a reliable and efficient option for urban areas where houses are close together and the number of connections per mile is high. They become much more expensive (on a relative-basis) to install and maintain in places like rural Vermont, which is where (surprise surprise) most of our lack of high-speed internet is centered.

Vermont awarded almost \$12M in grants last year for broadband buildout and connected over 10k households at a cost of about \$1,200 per connection. That number is palatable until you realize that two-thirds of those connections were wireless broadband which costs significantly less than fiber. If you look at just fiber connections, taxpayers spent \$3,036 per household.<sup>23</sup>

The Governor proposed \$16M in grants for FY22, which is a generous 33% increase.<sup>24</sup> However, even if we were able to sustain this level of spending, it would take over a decade to secure the financing to connect every underserved household to fiber. Fortunately, it looks like the federal government might help solve this issue for us. While they have not yet announced rules around how the funds can be used, there is potentially \$250M or more on the table for broadband expansion in Vermont.

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<sup>19</sup> <https://buildremote.co/companies/companies-going-remote-permanently/>

<sup>20</sup> <https://www.cnbc.com/2019/07/10/these-are-the-best-places-to-live-in-america-in-2019.html>

<sup>21</sup> <https://publicservice.vermont.gov/content/broadband-availability>

<sup>22</sup> <https://broadbandnow.com/Vermont>

<sup>23</sup> <https://publicservice.vermont.gov/content/2020-connectivity-initiative-awards>

<sup>24</sup> <https://governor.vermont.gov/press-release/governor-scott-delivers-annual-budget-address-0#:~:text=The%20%2420%20million%20broadband%20package,the%20areas%20that%20need%20it.>

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Even with this unprecedented level of federal funding, the cost per connection of installing fiber cables is likely to increase as we push further into rural areas. Additionally, the cost of maintaining that fiber infrastructure may be impractical in the lowest density areas. Fortunately, we have some options to address this. There is the aforementioned wireless broadband which utilizes 4G mobile technology and a specialized modem to connect households without a physical cable. This technology can reach speeds of 25Mbps currently and costs roughly \$1,100 per year with a \$200 installation fee.<sup>25</sup> Some providers cap data usage, which can be a downside for heavy users.

Fortunately, the arrival of 5G would likely increase the speed of these types of services dramatically and also make data caps irrelevant because 5G antennas can carry much larger bandwidth. [Current providers](#) elsewhere are claiming 200Mbps download speeds and no data caps with this technology. The downside, however, is that you essentially need a clear line of site between the tower and the receiver on your house, so it may not work in all instances.

This technology could also be deployed using [mobile hotspots](#) like Vermont (and many other states) used last year as a temporary solution to get people access. Mobile 4G coverage from AT&T and Verizon blanket nearly the entire state with coverage.<sup>26</sup> These devices could continue serving to bridge the gap while longer-term solutions are being put in place.<sup>27</sup> Additionally, in areas of weak service, booster antennas could be deployed to increase the speed and reliability of the service.

The newest kid on the block is Starlink, the satellite internet service from SpaceX. This new technology is has been beta tested in Vermont and users are reporting up to 150Mbps download speeds and surprisingly low latency (an issue for previous generation satellites). Currently, the company is focusing on rural users exclusively (which makes sense as this technology is most useful where fiber is cost-prohibitive). The cost is comparable to the fixed wireless systems at around \$1,200 per year and about \$550 for shipping and equipment cost. The speed and reliability of the service is also likely to increase as SpaceX continues to launch hundreds of satellites per month.<sup>28</sup> Two notable limitations are that while Vermonters can sign up for the service now, the installation equipment is not expected to arrive until sometime over the summer.<sup>29</sup> You also need to have a clear view of the northern sky. See Appendix A for more information on why this technology might be game-changing.

Both wireless and latest generation satellite broadband offer excellent alternatives to traditional fiber at a fraction of the cost. Our friend Tom Evslin (who is the former Chief Technology Officer of the state by the way) compared these two services and the pros and cons of each. His [blog post](#) on this is well worth a read. By incorporating these two technologies into our current strategy, we could reach universal

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<sup>25</sup> One example of a wireless broadband provider: <http://www.cloudalliance.com/what/residential/>

<sup>26</sup> <https://www.whistleout.com/CellPhones/Guides/Best-Coverage-in-Vermont-USA>

<sup>27</sup> As suggested in the VT emergency telecom plan:

[https://publicservice.vermont.gov/sites/dps/files/documents/VT%20Emergency%20Telecom%20Plan\\_Final\\_Dec%202020.pdf](https://publicservice.vermont.gov/sites/dps/files/documents/VT%20Emergency%20Telecom%20Plan_Final_Dec%202020.pdf)

<sup>28</sup> <https://www.reviews.org/internet-service/spacex-starlink-satellite-internet-review/#:~:text=Starlink%20satellites%20will%20sit%20closer,between%20urban%20and%20rural%20areas.&text=Each%20Starlink%20satellite%20will%20communicate%20with%20four%20other%20satellites%20using%20lasers>

<sup>29</sup> <https://www.pcmag.com/news/spacex-opens-starlink-pre-orders-but-it-may-take-months-to-arrive>



coverage THIS YEAR<sup>30</sup> and potentially provide stop-gap service while construction of fiber infrastructure is being completed.

Here are three more great examples why rural internet service matters:

1. 60% of US consumers order delivery or takeout at least once per week and prefer to order directly from the restaurant's website instead of through a third-party app. Additionally, digital ordering is growing 300% faster than dine-in traffic.<sup>31</sup> This presents a new revenue opportunity for small Vermont eateries.
2. Achieving universal broadband coverage will open this new market up for many Vermont craft producers and also make available commerce and marketing tools to accelerate growth. The commercialization of craft is happening, and Vermont's brand is well positioned to take advantage of it. As farmers markets shut down in 2020, many craft producers around the country moved online to platforms like Shopify and Etsy. Both companies are growing at an incredibly fast rate because of an influx of users. Shopify grew 260% in the past 12 months<sup>32</sup> and Etsy grew 139% in the fourth quarter alone, posting \$617M in revenue.<sup>33</sup>
3. Telemedicine has made leaps and bounds during the pandemic. It is now showing promise for rural elderly persons who have mobility issues. Vermont has few public transportation options outside of our city centers so for someone not able to drive actually getting to a doctor's office can be the largest hurdle to accessing care.<sup>34</sup> It also has the potential to allow patients to stay closer to home at a local hospital, clinic, or long-term care facility while still receiving care from a specialist hundreds or thousands of miles away. There are also benefits to remote patient monitoring devices that can notify a doctor of any concerning trends with their patients.<sup>35</sup> These sorts of technologies have the potential to increase quality of life, avert chronic conditions, and reduce healthcare costs.

We have an opportunity and responsibility to make Vermont competitive in a global marketplace. We just have to take the leap. Our current approach subsidizes providers and their infrastructure buildout and providing service, but what if we also issued grants to families who need help to get connected and subsidies to keep those service affordable? Nearly every Vermonter is in a service area for fiber, cable, 4G, or satellite internet right now, but it's the cost of installation and the cost of service that are preventing access. **Vermonters need universal broadband access NOW and we have tools to do it.**

Something we don't talk about, but should, is that even if a fiber or copper cable runs past your driveway it doesn't necessarily mean you have service. Often times if there is a long driveway the

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<sup>30</sup> Claim based on state funding levels and reporting on the rollout of satellite and 4G services (both fixed and mobile)

<sup>31</sup> <https://upserve.com/restaurant-insider/online-ordering-statistics/>

<sup>32</sup> <https://www.google.com/finance/quote/SHOP:NYSE?sa=X&ved=2ahUKewjgxeD877TtAhWmSjABHa69AzUQ3ecFMAB6BAgYEBo&window=1Y>

<sup>33</sup> <https://www.cnbc.com/2021/02/25/etsy-q4-2020-earnings.html>

<sup>34</sup> <https://www.cdc.gov/coronavirus/2019-ncov/hcp/telehealth.html>

<sup>35</sup> <https://welkinhealth.com/remote-patient-monitoring-devices/>





homeowner has to cover the cost of running a cable up it themselves, this can be thousands of dollars. Even in instances where internet service providers do drop a cable to the house the cost of routing that cable indoors and setting up a modem is still the homeowners responsibility.

The second financial barrier is the cost of the underlying service itself. Large providers like Comcast and Charter have reasonable low-cost plans for people, but these providers are mostly in urban parts of Vermont and the uptake rate is very low. Many local providers don't have these programs available to customers. This matters for people who can't afford to spend between \$600 and \$1200 per year on internet service.<sup>36</sup> This could prevent people on social security or other fixed incomes from accessing critical telehealth and remote monitoring services. Another issue exposed by the pandemic, and contributed to the rise of the "McClassroom"<sup>37</sup>, was that low-income families couldn't afford (or didn't have access to) reliable internet service that supported Zoom lectures. As a result, students sought out WiFi connections at their local McDonalds or Dunkin Donuts to stream lectures or upload projects.

Those who can afford these costs are finding ways of getting connected and shouldering the cost of doing so, which is broadening our digital divide in concerning ways. Over the next few years, as we continue to build out infrastructure, the largest barrier to high-speed internet access is likely to be related to cost and not availability. To some extent, we were already addressing this through the first half of the pandemic with the [Temporary Broadband Subsidy Program](#) (TBSP) which was offered through the Department of Public Service sadly ran out of funds in January of this year.

#### **Recommendations:**

We recommend restoring funding for the TBSP that provided \$40 per month subsidies to cover the cost of service for households who can demonstrate financial hardship and have an urgent need for service. Additionally, we would expand the program to provide up to \$500 connection grants to households who are not currently connected to the federal standard of 25/3mbps or faster service (similar to the [LECAP](#) program). These grants could be used for the installation of any service of qualifying speed, regardless of the technology. The application process for this program should also be streamlined and we should better advertise its availability. We recommend setting aside \$35M of the federal relief dollars for these efforts over the next three years. This gives the state time to develop a more sustainable long-term solution for affordability.

The remaining \$215M should be directed into thoughtful infrastructure buildout. If we are able to maintain a (publicly funded) average cost per connection close to \$3k, this should be sufficient to reach universal coverage with the current round of funding.

In order to determine which service model makes sense for each underserved area, we recommend the state conduct a detailed infrastructure poll survey to map which utility poles are ready and available for fiber cables now in underserved areas. Much of this information already exists with electric utility

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<sup>36</sup> Average cost of most available services per <https://www.allconnect.com/local/vt>

<sup>37</sup> <https://www.mynbc5.com/article/mcclassroom-where-vermont-students-access-wifi-highlights-broadband-gap/36054189#>





providers and could likely be gathered relatively easily by state officials. This mapping data will help inform decision-making around where to deploy fiber or alternate technologies.

We also recommend that the Department of Public Service investigate the potential of negotiating with AT&T and Verizon to either raise or eliminate data caps for customers who are in underserved areas or only have access to mobile internet service. Achieving this will make those services more viable as a “digital bridge” until other technologies reach them.

Additionally, we should ensure that grants and subsidies are platform neutral. Vermonters should be able to access whichever high-speed broadband technology is most amenable to them in their service area, whether that is satellite, 4G/5G, fiber, or even copper cable. A network of different technologies is a good thing, there is no one-size-fits-all solution here.

**Phase 3 – The Long Game.** It’s not enough to have a thriving tourism industry and universal broadband access in our state. Tourism is important, but most of its jobs are low-wage with limited growth opportunity. Broadband is an important for a whole host of reasons, but it won’t solve all of our problems.

New York, Boston, and Silicon Valley all offer a unique mix of conditions that create growth: culture, innovation, and capital. This formula has been repeated in places like Chattanooga and Boise with great success. Here in Vermont, Chittenden County already has the potential to be an up-and-coming tech bubble. Springfield shows some signs of this as well. Middlebury has a burgeoning aerospace and advanced manufacturing industry, as does Saint Albans. And, of course, we all know about Vermont craft beer, cider, maple syrup, coffee, and ice cream. Many of these products are the best in their industry and it comes down to innovation, craftsmanship, and investment.

Innovation is reliant upon talent (human capital) and technology transfer. The latter is most often generated by universities that are able to transition their research and development grants into actual commercial enterprises. Universities like Columbia, Stanford, and MIT do this with stunning efficiency.<sup>38</sup> In 2019 alone, UVM received \$136M in grant funding and has generated nearly two dozen startups<sup>39</sup> and many more companies who are licensing technology developed at the University. We can expand this, both at UVM and other institutions. Programs as simple as maker spaces can even assist with technology transfer as projects move from the conceptual stage to proof of concept.

Another key piece of innovation is workforce. Having a leading research university (and even a couple supporting ones) is great, but we also need a reliable and affordable skills-based talent pipeline. This is where our state college system (VSC) has fallen flat. Both UVM and VSC have been chronically underfunded for decades. UVM focused on relevant and in-demand programs and has grown consistently while VSC has hemorrhaged both students and revenue. The current proposals to

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<sup>38</sup> <https://www.prnewswire.com/news-releases/the-milken-institute-ranks-the-best-us-universities-for-technology-transfer-300442457.html>

<sup>39</sup> <https://www.uvm.edu/ovpr/innovation-uvm>



consolidate all campuses under one umbrella are on the right track, but what's really needed is better curriculum alignment. There is too much program duplication and, perhaps more concerning, a misalignment between what skills are needed by our workforce and what education is available through our state colleges. In short, they are out of touch with their communities and our economy.

Despite the negative headlines and financial problems, there are bright spots. Vermont Tech is able to boast one of the highest job placement rates in the country at 99%, despite the pandemic.<sup>40</sup> CCV has also outpaced the other schools in the VSC network by focusing on in-demand programs and creating talent pipelines with Vermont employers. This is what we need the entire VSC network to do. We also can't forget technical education centers as they offer an accessible point of entry to higher education for adult learners and technical-minded post-secondary students.

The most frequent complaint we hear from Vermont businesses is that they can't find enough qualified workers. This was true at the start of the pandemic and it's even more true now. Training and re-training our workforce, increasing participation, migration, and immigration are all key to solving this challenge.

Some concerns have surfaced during this legislative session that there is a disconnect between tech centers and the VSC system and we agree.<sup>41</sup> We need to re-evaluate our entire talent pipeline and make sure it aligns with student needs as well as our workforce needs. We should be engaging Vermont employers to make sure our programs are relevant and teaching the correct skills, whether it is advanced manufacturing techniques at a tech center, an engineering management program at Vermont Technical College, or just general upskilling by taking a class at CCV.

We also can't forget about K-12 education. Families may move to rural Vermont for the safe atmosphere and beautiful surroundings, but they won't stay if our rural schools are sub-par. Vermont schools are some of the best resourced in the country, but it's WHERE and HOW those dollars get spent that is key. Increasingly it is becoming clear that our funding system favors urban schools, we need to fix this. Our schools are [well-positioned to be world-class](#), but we need to get more of our funding to classrooms and students. We believe that Vermonters would be more willing to pay our high property taxes if we felt we were getting a good return on that investment.

The second source of fuel for economic growth is capital. Acquiring capital has always been a challenge for Vermont. We don't have many deep-pocketed families willing to invest millions of dollars in startup ventures like the former merchant cities of Boston and New York or the gold-rich investors of northern California. Our former industrialist families like the Vanderbilts, the Webbs, the Fairbanks, and the Billings invest more in philanthropy than industry these days.

Fortunately, what we do have is proximity to financial markets. New York City and Boston both rank in the top five cities in the world for investment in venture capital, beating out London, Los Angeles, and Berlin.<sup>42</sup> Vermont is surrounded by plenty of capital, but we have traditionally had a difficult time

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<sup>40</sup> <https://www.wcax.com/2021/03/04/99-of-2020-vermont-tech-grads-find-jobs-despite-pandemic-economy/>

<sup>41</sup> Based on testimony by Joseph Teegarden in Senate Natural Resources on 2/24/2021.

<sup>42</sup> <https://startupsusa.org/global-startup-cities/>



attracting it. This may be changing. As workforce shifts away from the cities, investors may follow. Rural Vermont suddenly seems like a more attractive investment if a concentration of highly skilled workers moves here or if outstanding post-secondary schools are turning out well-qualified students who would prefer to stay in the Green Mountains and there is infrastructure to support them. It might be time to give this a fresh look.

The third leg to the stool supporting long term economic development is housing. We mentioned some immediate investments earlier, but if we are going to train, attract, and retain a world class workforce that supports a vibrant 21<sup>st</sup> century economy, we need somewhere for them to live; somewhere they *want* to live. Vermont home prices average \$279k, which is pretty affordable compared to other neighboring states.<sup>43</sup> However, that still represents nearly \$1k per month in mortgage costs. Add taxes and insurance to that and it's more like \$1,300. For a family to afford that "average" house, they would need to generate \$52k<sup>44</sup> of income; pretty doable for some of the industries we have talked about above. The problem is, you can't find them. A search of available real estate yields only a handful of properties near this price point and most under \$400k are either undeveloped, underdeveloped, or in need of renovation or repair.

Looking at the rental market leads to even more discouragement. Fewer than 300 units are available for rent<sup>45</sup>, which means that roughly 99.7%<sup>46</sup> of Vermont's rental units are occupied. Even more concerning, half of those available units are \$1,500 or more per month and those that are not suffer from the same issue as our owner-occupied housing stock: they look to be in poorly maintained buildings or are badly outdated. These are not places that will appeal to the young professionals we hope to attract.

Our housing stock is a problem. The disappointing part is that we have so many beautiful homes from previous generations that are rotting in place and unusable. Many of them are on main roads with convenient access to commuting routes or downtown centers and they often have sufficient square footage to subdivide for multi-family use. Even the Commissioner of Housing has identified this as an issue - citing 7,000 buildings in the state that are not currently suitable for habitation.<sup>47</sup> Redeveloping and refurbishing these properties would maintain our state's natural charm while creating more usable housing stock.

There are also other innovative ideas that could prove fruitful; things like redeveloping now empty office spaces for residential use. This is already being done in places like South Burlington. There are also other developments that may offer solutions like college campuses that have closed could be repurposed as residential innovation hubs with onsite resources like workshops and maker spaces.

The market might also not just be young people. Some of this redevelopment could be aimed at high-end retirement housing. Baby boomers, after all, control most of the country's wealth and many are

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<sup>43</sup> <https://www.zillow.com/vt/home-values/>

<sup>44</sup> Based on 30% of household income going to housing costs

<sup>45</sup> Based on March 24, 2021 search of Craigslist rental listings with photos

<sup>46</sup> Calculated using census data on housing units: <https://www.census.gov/quickfacts/VT>

<sup>47</sup> Cited in testimony to House Natural Resources on April 20, 2021



already in retirement age.<sup>48</sup> Encouraging them to move to a beautiful state with good health care infrastructure might not be that tough of a sell.

There may even be new ways of financing these projects. Typically, the state has either issued bonds to subsidize the buildout of affordable housing or issued “loans” that they don’t actually intend to recoup the cost of. Real estate is actually one of the highest profit margin businesses at around 29%, leveraging crowdfunding mechanisms to revitalize aging buildings could offer local investors the ability to keep their money in state and also contribute to their local community.

Coupling these ideas with our existing downtown redevelopment efforts could yield excellent results for the state and we can’t afford to take our foot off the gas pedal. There are incredible opportunities for Vermont if we can be forward-looking, strategic, and make the right investments.

#### **Recommendations:**

- Develop robust technology transfer programs at our leading universities
- Work on attracting seed capital from nearby cities
- Leverage the VSC system as the foundation of a relevant workforce development pipeline
- Invest heavily in housing over the next five years, focusing on redevelopment efforts and innovative financing models.

**Conclusion** – Let’s wrap this up. We need to start thinking long term. The past year has been about crisis management, but we now have a once-in-a-generation opportunity to revolutionize our economy and the trajectory of our state. Making the right investments in the right areas could transform Vermont. Between an economic boost, investment in infrastructure, and alignment of education and financial capital (not to mention federal stimulus money that could measure in the tens of billions), the opportunities are endless.

A quick example of how these things could come together: both Norwich University and Champlain College have developed reputations for leading cyber-security programs. We could jump start a cyber security industry in Vermont if we developed a talent pipeline to feed into these two schools, create a retention program to keep graduates here, and expand high speed broadband. This effort could attract investments for startup enterprises.

This investment could come from our urban neighbors, but it doesn’t have to. The US military and federal government have been investing heavily in cyber security. In fact, Norwich University has already been the beneficiary of several rounds of government grants in this area. Access to gigabyte internet speed, proximity to leading research and development, and a ready talent pipeline could prove convincing.

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<sup>48</sup> <https://www.cnbc.com/2020/10/09/millennials-own-less-than-5percent-of-all-us-wealth.html>

# CAMPAIGN FOR VERMONT

CampaignForVermont.org

The bottom line is that Vermont CAN be successful and create prosperity for ALL Vermonters by being strategic, capitalizing on what we do well, and making the right investments. As such, we are calling on the legislature to make immediate strategic investments in the following: marketing and tourism, accessible and affordable high-speed internet, workforce development and the state college system, the expansion of effective technology transfer programs for both our public and private universities, and support middle- and low-income housing. We hope they will join with us in this endeavor.

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## Appendix A – Why Starlink Could be Game-Changing

Satellite internet itself is not a new concept; providers like [Hughesnet](#) have been around for decades, and their level of service is similar to 4G except for one major problem: latency. Latency is the amount of time it takes for data to be transferred between the original source and its destination. This is often described as “lag” and having low latency is becoming ever more important in our world of video conferencing. It’s difficult to have a conversation if your audio/video are six seconds behind.

What is so different about Starlink? Leaving most of the technical jargon aside, the underlying difference is that Starlink satellites are in much lower orbit than older generation satellites. A Starlink satellite orbits at around 350 miles above the earth, whereas most of these older satellites sit around 22k miles out. The shorter distance means lower latency, higher speeds, and a more reliable connection.

Download speeds that beta-testers are reporting are already competitive with many high-speed broadband services available in Vermont. SpaceX has launched over 1200 satellites so far but plan to have ten times that many in service when their network is completed. As more satellites launch, connection speeds are expected to increase and may actually exceed speeds currently available through fiber in most parts of the state.<sup>49</sup> Vermonters can sign up for pre-orders now through the Starlink website, but it may take a few months to actually receive the equipment in the mail.

Another important advantage of the Starlink system over existing options, particularly 4G, is weather impacts. Reports from beta-testers indicate that the service is not significantly impacted by moderate weather, including rain, snow, and wind. The stronger signal from low-orbit satellites seems to penetrate cloud layers more easily than previous generation satellites. Additionally, the ground receiver is heated to melt off snow that might interfere with signals.<sup>50</sup>

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<sup>49</sup> <https://www.pcmag.com/news/tested-spacexs-starlink-satellite-internet-service-is-fast-but-itll-cost>

<sup>50</sup> <https://www.businessinsider.com/spacexs-starlink-still-provides-rapid-internet-speeds-in-bad-weather-2020-11#:~:text=From%20what%20users%20have%20reported,SpaceX%20upon%20receiving%20the%20kit.>