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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 it 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:

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's 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/#tabs|0>

<sup>2</sup> <https://vtfuturesproject.org/vermonts-economy/top-indicators/#tabs|0>

<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

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

<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%20million%20people,percent%20of%20the%20state's%20workforce.>

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

<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>

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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).

**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>

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<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>

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

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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 outside a city 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 access that can reach 25mbps download speed, 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 little to show for it. What's worse is that we have been trying to solve a two-decade-old problem with equally old technology. The poles and wires that have supported our telecommunications infrastructure for the past century are quickly becoming irrelevant. Case in point; do you know anyone with a landline telephone who is under 35 years old?

Fiber optic cables may seem cutting edge, but they have been in use since 1988.<sup>23</sup> They are a relatively cheap 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 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. You could stomach that 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 connection to get those households connected.<sup>24</sup>

The Governor proposed \$16M in grants for FY22, which is a generous 33% increase.<sup>25</sup> However, even if we were able to sustain this level of spending, it would take over a decade to connect every underserved household to fiber. That is unacceptable.

We need a different solution. Fortunately, we have some options. 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>26</sup> Some providers cap data usage, which can be a downside

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<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://www.otelco.com/resources/a-guide-to-fiber-optic-internet/#:~:text=Fiber%20optic%20Internet%20may%20seem,connect%20the%20U.S.%20and%20Europe.>

<sup>24</sup> <https://publicservice.vermont.gov/content/2020-connectivity-initiative-awards>

<sup>25</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.>

<sup>26</sup> One example of a wireless broadband provider: <http://www.cloudalliance.com/what/residential/>

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for heavy users. Fortunately, the arrival of 5G is likely to increase the speed of these types of services dramatically and also make data caps irrelevant because 5G antennas can carry much larger bandwidth.

The newest kid on the block is Starlink, the satellite internet service from SpaceX. 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 400 miles above the earth, whereas most of these older satellites sit around 22k miles out. The shorter distance means lower latency and higher speeds.

This new technology is already available in Vermont and users are reporting up to 150Mbps download speeds. 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 wireless systems at around \$1,200 per year and a \$500 plus \$50 shipping equipment cost. The speed of the service is also likely to increase as SpaceX continues to launch several dozen satellites every two weeks.<sup>27</sup>

Both wireless and satellite broadband offer excellent alternatives to traditional fiber at a fraction of the cost. Our friend Tom Evslyn (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 focusing on these two technologies, **we could reach universal coverage NEXT YEAR**. See Appendix A for an explanation of why the state isn’t already doing this.

Vermont regulators have been so focused on fiber that even the bill currently being passed by the House seems to be fiber-specific in the way it is written. Saying that all money coming into Vermont (both state and federal) for broadband needs to go through the CUDs, who are committed to fiber only, means that the State will not have the flexibility to adapt to any new, perhaps even not yet thought of, technologies. There could be a totally different solution being designed in someone’s garage right now.

Further, it directs none of these funds towards families who can’t afford service as it is. On top of this, the current broadband strategy subsidizes the middle mile, meaning that if a house is at the end of a road we have to build past every other house on the road to get to them. This would be fine if all houses had the same need, but they don’t. In effect what this creates is a situation where in order to help the most in need we also may end up subsidizing their more affluent neighbors as well. Wireless and satellite technologies allow us to direct public funds where they will have the most impact, not where it’s most convenient to build.

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<sup>27</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>

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Enough is enough. We need universal broadband coverage NOW and we have tools to do it.

Here are two 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>28</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>29</sup> and Etsy grew 139% in the fourth quarter alone, posting \$617M in revenue.<sup>30</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>31</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>32</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. Instead of subsidizing providers, what if we issued grants to families who need to get connected? Most Vermonters have access to either 4G or satellite internet right now, but it's the cost of installation and the cost of service that are the problem. To some extent, we were already doing this through the [Temporary Broadband Subsidy Program](#) which ran out of funds in January of this year.

We recommend expanding the funding for this program to a level that can provide \$500 grants to households who are not currently connected to 25Mbps or faster service. We also propose a secondary monthly subsidy of \$40 to cover the cost of service for households who can demonstrate financial hardship and have an urgent need for service. If we threw all \$20M of the Governor's proposed

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<sup>28</sup> <https://upserve.com/restaurant-insider/online-ordering-statistics/>

<sup>29</sup> <https://www.google.com/finance/quote/SHOP:NYSE?sa=X&ved=2ahUKewjgxeD877TvAhWmSjABHa69AzUQ3ecFMAB6BAGYEBo&window=1Y>

<sup>30</sup> <https://www.cnbc.com/2021/02/25/etsy-q4-2020-earnings.html>

<sup>31</sup> <https://www.cdc.gov/coronavirus/2019-ncov/hcp/telehealth.html>

<sup>32</sup> <https://welkinhealth.com/remote-patient-monitoring-devices/>

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broadband budget at this, every household in Vermont could have broadband service by the end of next year, *nine years sooner than our current trajectory.*

Additionally, we should also change state statute so that it's platform agnostic. Vermonters should be able to access whichever 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. Consumers need different options that fit how they access and utilize the internet. Continuing to invest in copper and fiber could even make sense for some communities where the connection per mile is reasonable and the customer base exists to support the service. However, continuing to spend \$3k per connection is not sustainable and does not get us to universal coverage in an acceptable timeframe.

**Phase 3 – The Long Game.** It's not enough to have a thriving tourism industry and universal broadband access in the state. Tourism is important to our state, but most of its jobs are low-wage with little growth opportunity. Broadband is an important recruiting tool and may be effective at convincing some remote workers to stay in Vermont to enjoy our quality of life and bring their jobs with them.

Fortunately, we have several examples of conditions that create growth. New York, Boston, and Silicon Valley all offer a unique mix of 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 that most often is 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>33</sup> In 2019 alone, UVM received \$136M in grant funding. What businesses were generated by that investment? What commercial projects were launched? None that we know of. That's a miss. Programs as simple as maker spaces can even assist with technology transfer as projects move from conceptual 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 consolidate all campuses under one umbrella are on the right track, but what's really needed is better

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<sup>33</sup> <https://www.prnewswire.com/news-releases/the-milken-institute-ranks-the-best-us-universities-for-technology-transfer-300442457.html>

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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%, even despite the pandemic.<sup>34</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 learners.

Some concerns have surfaced during this legislative session that there is a disconnect between tech centers and the VSC system and we agree.<sup>35</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.

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 are both in the top five cities in the world for investment in venture capital, beating out London, Los Angeles, and Berlin.<sup>36</sup> Vermont is surrounded by plenty of capital, but we have traditionally had a difficult time 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. 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>37</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

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<sup>34</sup> <https://www.wcax.com/2021/03/04/99-of-2020-vermont-tech-grads-find-jobs-despite-pandemic-economy/>

<sup>35</sup> Based on testimony by Joseph Teegarden in Senate Natural Resources on 2/24/2021.

<sup>36</sup> <https://startupsusa.org/global-startup-cities/>

<sup>37</sup> <https://www.zillow.com/vt/home-values/>



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need to generate \$52k<sup>38</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>39</sup>, which means that roughly 99.7%<sup>40</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. 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 already in retirement age.<sup>41</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.

**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

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<sup>38</sup> Based on 30% of household income going to housing costs

<sup>39</sup> Based on March 24, 2021 search of Craigslist rental listings with photos

<sup>40</sup> Calculated using census data on housing units: <https://www.census.gov/quickfacts/VT>

<sup>41</sup> <https://www.cnbc.com/2020/10/09/millennials-own-less-than-5percent-of-all-us-wealth.html>

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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. This idea is not so outlandish; the military has a history of investing critical defense infrastructure in rural parts of America. Take, for example, the former Plattsburgh Airforce Base which was part of the Strategic Air Command and a critical piece of cold war nuclear triad. Or, consider the Vermont Air National Guard who received the Airforce's best planes because they are responsible for protecting New York City and Washington DC.

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 development of an effective technology transfer program 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 We haven’t Already Adopted New Internet Technologies**

In response to the question of why the state isn’t pursuing some of the new available technologies now - inertia is one reason. We have been at this fiber game for so long we don’t want to give up on it. Let’s be honest though, we’ve been at this for two decades and we have at least another one to go. Sure, we have these new [Communications Union Districts](#) but they don’t change the technology, we are still playing the same game just with different players. There is also frustration, legislators have been told for decades that broadband is coming. It hasn’t yet.

Accountability is another reason; regulators like to have a local provider to point a finger at if service is interrupted or a company can’t deliver the promised level of service. The reality though is that we already have this issue with larger national providers like Comcast, Fairpoint, and Spectrum. There is another issue here as well, some local telecoms are designated as the “provider of last resort,” a holdover term from the buildout of the telephone and electricity grid. Basically, it means that if service for all other providers in an area are interrupted the provider of last resort is responsible for providing service. State regulators are reluctant to transfer this designation to new technologies, even if they might be more reliable than traditional cable networks.

The third reason, is the way that current state statutes are written. Looking at the incentives and definitions provided by the state it is clear they were designed by fiber providers. The way broadband is defined in statutes excludes wireless technologies in large part. A good example of this is the definition of high speed broadband which identifies 100Mbps symmetrical service as the gold standard. Symmetrical service means that both your download speed AND your upload speed meet that threshold. There are very few use cases where you need symmetrical service, and even fewer where you need 100Mbps upload speed. Really, the only time you would need that level of service is if you are a video editor, a high-end cybersecurity team, or uploading files that are several gigabytes in size on a regular basis. For most users, an upload speed that reaches half of their download speed is sufficient. So, why is the statute written this way? Because fiber is the only current technology that can provide symmetrical service.