

Lamoille County Broadband Feasibility Report and Financial Modeling

TILSON

Prepared for the Lamoille County Planning Commission



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1. Executive Summary

Working under a Vermont Department of Public Service Broadband Innovation Grant, the Lamoille County Planning Commission (LCPC) hired Tilson to provide Broadband Consulting services to develop, if possible, a feasibility study and financial model compliant with the program’s requirements. The viability and sustainability of a regional fiber to the premise network will require the Lamoille FiberNet Communications Union District (LFCUD) to organize in such a way so as to reduce start-up operational costs by teaming with other CUDs or working in partnership with a network operator already operating at scale with existing operational capabilities. As such Tilson presents operating models that include Public Private Partnerships between CUDs and private investors/operators.

As an initial component of the feasibility study and business modeling in this report, Tilson conducted a market research survey for Lamoille County, Vermont with the primary purpose being to determine the anticipated subscriber “take rate” on a fiber to the premise network if it were to be constructed, or the number of households and businesses that would subscribe to service on such a network and therefore contribute revenue to the project. The take rate survey results then informed Tilson’s projections in the financial modeling for this project, described below. While estimating the network’s take rate was the primary goal of the survey, other valuable market research information was collected from the survey and is described in the Market Research section below.

Also to inform the financial modeling required here, Tilson produced two high level network designs to help establish capital costs of the project. Tilson incorporated anticipated capital costs and operational costs into the model and ran two variations, one including the seven CUD member towns, and another where the town of Stowe is added to the design. The high level designs the business model is based on, as well as additional information, are available to view in detail on an ArcGIS Online (AGOL) map located at the following URL:

<https://tilsontech.maps.arcgis.com/apps/webappviewer/index.html?id=121153d7bdc241ea8b82b7581a15c24e>

Tilson’s financial model is closely integrated with our Geographic Information Systems (GIS) and network design and engineering tools (which include software packages such as Esri ArcGIS and Biarri FOND). This integration allows our engineers to model end-user locations and existing infrastructure using GIS and then develop network designs, existing plant, aerial and buried cable, cabinets, and other facilities using various specialized tools. Those tools then produce a Bill of Materials – such as number of feet of cable and conduit, optical line terminations, and other cost factors – which act as inputs to our financial model. This integration allows Tilson to forecast capital and operating

expenses based on actual network designs, rather than approximations. It also permits us to rapidly update the financial model based on scope changes or evolving network designs.

The challenge in developing the model for the LFCUD has been ensuring that the project is cash-flow positive within three years. According to the Vermont Department of Public Service Grant Application Instructions: “If, after submission of a finding that a proposed project is feasible, applicant shall seek permission to proceed to the second phase of the project- the production of an actionable business plan. For the purposes of this grant, a project will be considered feasible if the report’s findings show that the project will be cash-flow positive within three years of the receipt of required initial investment, considering projected income and project-related capital and operating expenses.”¹

This has caused our analysis to include, in addition to leveraging a network operator already operating at scale, an expedited construction timeline of 24 months, maintaining a 60-month to target take rate assumption. Achieving construction completion in this shorter time frame is a boost to revenue since the model assumes partial builds of the network are operational within the first 24 months and the full population of potential end users will be accessible after 24 months.

Tilson’s baseline model assumes that for the first ten years the project is owned and operated by a private enterprise network developer, perhaps an impact investor accustomed to investing in areas that include Opportunity Zones and in rural areas, with an ownership transfer to the CUD at the end of the initial ten year term. By year ten, the network will have achieved cash flow such that the CUD’s debt capacity will enable the refinancing and ownership transfer, and the initial investor will want a specific time horizon for their investment.

Under this structure, operational expenses (OPEX) such as billing, customer service and certain employee costs are borne by the network operator, with the network operator receiving a fee from the CUD for each subscriber for these services and the network operator collecting the full retail fee from end users and remitting that to the CUD.

The financing structure is particularly important. In order to achieve positive cash flow by year three while maintaining a positive net cash position, the project needs to be financed appropriately. The model assumes an initial investment of 64% equity and 36% debt. We are assuming that the project will initially be financed by a 24-month construction loan where interest is capitalized and refinanced at the end of the construction period.² We

¹<https://publicservice.vermont.gov/sites/dps/files/documents/Broadband%20Innovation%20Grant%201st%20round%208.6.2019.pdf>

² Tilson modeled two network designs, one for the seven CUD member towns and one adding Stowe. The seven town design requires the construction loan to be refinanced after year three, while the eight town design allows it to be refinanced after year two.

are also assuming that project will be sold at the end of year 10 to the CUD at an Earnings Before Interest, Taxes, Depreciation, and Amortization (EBITDA) multiple of 8x (~\$28.6M). In year 10, the CUD is able to utilize far more leverage given the strength of the project's cash flows at that time.

For the purposes of this model, we are taking a somewhat conservative approach and not applying capital or operational subsidies, such as federal or state grants or subsidies, nor utilizing other financial instruments such as Opportunity Zones in the region. While it is possible the CUD can expect to receive broadband infrastructure grant funding in coming years, even in 2021, the successful pursuit of grant funding is not guaranteed, and the amount of grant funding ultimately available to the CUD is uncertain.

Figure #1: Seven Town and Eight Town business models summary

Project Overview	8-Town Project	7-Town Project
Fiber Route Miles	604.5	469.7
Premises passed	10,222	7,584
Maximum Subscribers	5,054	3,750
Premises passed/mile	16.9	16.1
Total Initial Costs	\$37.2M	\$28.4M
\$/Premises Passed	\$3,647	3,745

Key assumptions in the model include:

- Make ready is assumed at \$8,000 a mile.
- Initial take-rate is set at 10% and rises to the maximum take-rate by year five. The baseline model assumes a take-rate of 45% (35% for Enterprise & Institutional (E&I) customers) and we provide projections for a small take-rate range.

Average Revenues Per User (ARPU) for the customers classes are:

- E&I: \$1,024.75 (0.5% of total customers)
- Commercial: \$196.30 (8.5% of total customers)
- Residential: \$88.50 (91.00% of total customers)

2. Introduction and Feasibility Scope of Work

To qualify for funding under the Vermont Department of Public Service Broadband Innovation Grant Program, the feasibility study requires certain items to be addressed. Below is a summary of how Tilson addressed these required items:

Survey-informed estimated “take rates” for new service: To inform estimated take rates for new service, Tilson developed an online-based survey and, with the assistance of the LCPC, encouraged responses from the target demographic. With the survey response rate about 10%, key assumptions on take rates were established and integrated into the baseline model. Based on survey data a conservative baseline take rate assumption of 45% was established. Below Tilson also displays revenue projections for a small range of take rates between 40% and 60%.

Inventory of vertical and underground assets: Tilson used publicly available asset inventory data and complemented that with additional data including satellite imagery and GIS information of electric utility infrastructure and desktop analysis for the high level network designs.

Analysis of alternative deployment routes: Our high-level design and business case analysis includes a baseline model and two possible variations involving alternate deployments from the baseline model. While all three models meet the requirement to be cash flow positive by year three, they provide alternate deployment options. Tilson utilized a powerful GIS-based design tool to consider different network layout scenarios based on factors such as address locations and types, pole infrastructure, and network architectures.

The presence or lack of commercial areas such as town centers, retail locations, manufacturing facilities, clinics, and whether they are adequately served: Tilson used GIS address point information to identify these location types. Our high-level design considers both building site types and density. The served or unserved nature of these locations is determined using FCC Form 477 data and survey data. This information informed our cost estimation and financial modeling based on commercial properties’ different levels of broadband service and usage.

Bandwidth needs: Bandwidth needs estimates are included as part of our business case analysis and incorporated into the modeling. Bandwidth needs estimates are based on survey results and demographic data.

Proposed project service area: The proposed project service area included in our high-level design and our business case analysis includes the seven member towns of the Lamoille FiberNet Communications Union District (LFCUD) : Belvidere, Waterville, Cambridge, Johnson, Eden, Hyde Park and Morristown; Stowe was added as the eighth town to the baseline design given it’s consideration of joining the CUD.

A basic technical design with sufficient detail to enable rough cost projections: Tilson's high level design is produced using the Biarri FOND design tool which produces a comprehensive high level design and includes a full bill of materials. This design and bill of materials informs the business case analysis.

Pro forma financial projections for the project for at least three years: The model considers not only initial capital costs but the rate of reinvestment over time. The model uses high-level to very detailed variable assumptions, which are identified in the model. The pro forma provides key financial metrics over time such as free cash flow, net cash, net income, ARPU, Internal Rate of Return (IRR), and cash-on-cash return. The model offers scenario analysis that shows the impact on a range of key financial metrics of changes to key cost and revenue assumptions, to better assess upside and downside opportunities and risks. Our model is income and cash-flow based, which we believe provides the most relevant picture at the feasibility stage of a project. Although it does not produce a balance sheet, it does incorporate related elements, such as the level of capital investment, equity investment, debt and repayment schedules.

An opinion from a reputable unrelated third party such as a lending institution concurring with a finding of feasibility: Tilson engages and has relationships with many telecom investors and can provide guidance on attractive business case options to pursue and ultimately pitch to secure investment. To that end, and to the extent a business case exists, we can work with recommending appropriate investors. We will rely on LCPC to procure a concurring opinion from a reputable third party to meet this requirement.

Final Report Drafting & Presentation: Tilson will compile all feasibility study task deliverables into a draft for presentation to LCPC, including an enumeration of project risks. Tilson will take any feedback to revise and refine the study into a final Feasibility Study as a deliverable. The report will include a recommendation on the type(s) of participation that should be feasible for LCPC.

3. Market Research

Tilson created an online survey for the LCPC to conduct targeted, regional market research for broadband expansion. The survey received 1,023 applicable responses at the time the data was extracted to display the results below, which is a response rate of about 9%. Normally a survey response rate of approximately 10% of entire sampling group is considered a good response, and with broadband satisfaction surveys the respondents tend to skew heavily to those highly dissatisfied with their existing broadband service. Those satisfied with their existing service and therefore those less likely to subscribe to a new service are less inclined to respond to such a survey.

The overwhelming majority of survey respondents indicated they would be willing to subscribe to broadband service on a new fiber to the premise infrastructure if it were constructed. This is in keeping with the assumption that survey responses skew to unsatisfied end users. However, this is taken into account in our take rate assumptions for business modeling purposes.

For example, the survey question “would you be willing to subscribe to a broadband access service on newly installed infrastructure in Lamoille County,” there were 1,023 respondents. Of those, 689 answered **Yes**, 119 answered **Unsure**, 17 answered **No** and there were 198 in the **No Response** category. The 691 **Yes** responses, compared to the total, represent a 67% positive response. The 17 **No** responses represent a 1.7% negative response. If we add the 119 **Unsure** responses to the 17 **No** responses that represents a 13% combined negative response. And if we add the 199 **No Response** results to that group that represents, of course, 33% in contrast to the 67% positive responses.

In summary, the primary question trying to determine anticipated take rate elicited an absolute positive response of 67% and negative response of half that only if the respondents of **Unsure** and **No Response** are added to the **No** column. For our baseline business model Tilson interprets these results conservatively and uses a blended anticipated take rate of 45%, though we do provide revenue projections based on a variety of take rates.

While the majority of the survey responses are described below in the Market Research section, the primary survey question determining anticipated take rate, “would you be willing to subscribe to a broadband access service on newly installed infrastructure in Lamoille County,” is summarized below:

Would you be willing to subscribe to a broadband Internet access service on newly installed infrastructure in Lamoille County? (Summarized)

Figure #2: Summarized eight-town survey results

Would you be willing to subscribe to a broadband Internet access service on newly installed infrastructure in Lamoille County? (Summarized)			
Yes	No	Unsure	N/A
689	17	119	198

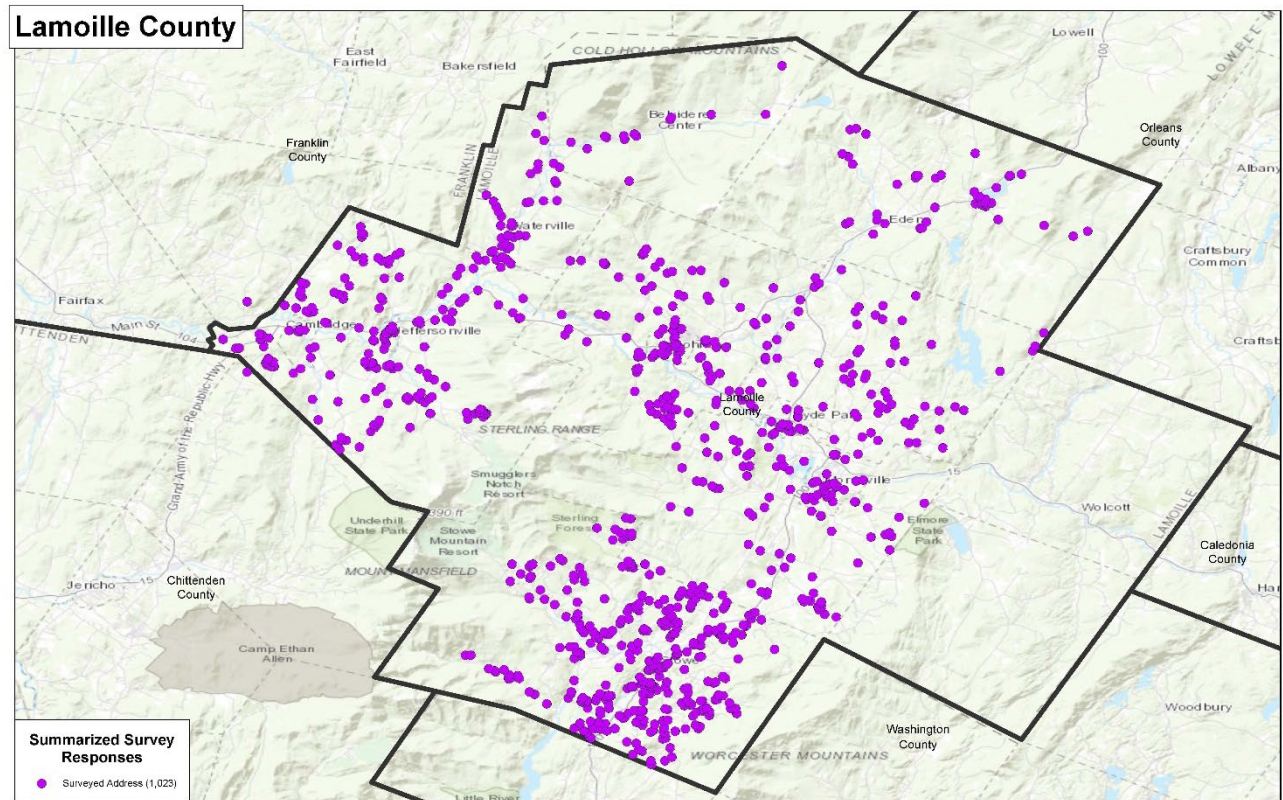
Figure #3: Town by town survey results

Town	Locations in Build	Trimmed Locations	Total Survey Responses	Yes	No	Unsure	N/A	Response Rate Total
Belvidere	187	12	18	14	0	3	1	9.05%
Cambridge	1452	262	194	136	0	19	39	11.32%
Eden	612	41	50	36	0	5	9	7.66%
Hyde Park	1325	64	98	64	5	13	16	7.06%
Johnson	1185	118	124	79	4	16	25	9.52%
Morristown	2393	143	109	73	0	17	19	4.30%
Stowe	2631	581	384	252	8	42	82	11.96%
Waterville	313	27	46	35	0	4	7	13.53%
Total	10098	1248	1023	689	17	119	198	9.02%

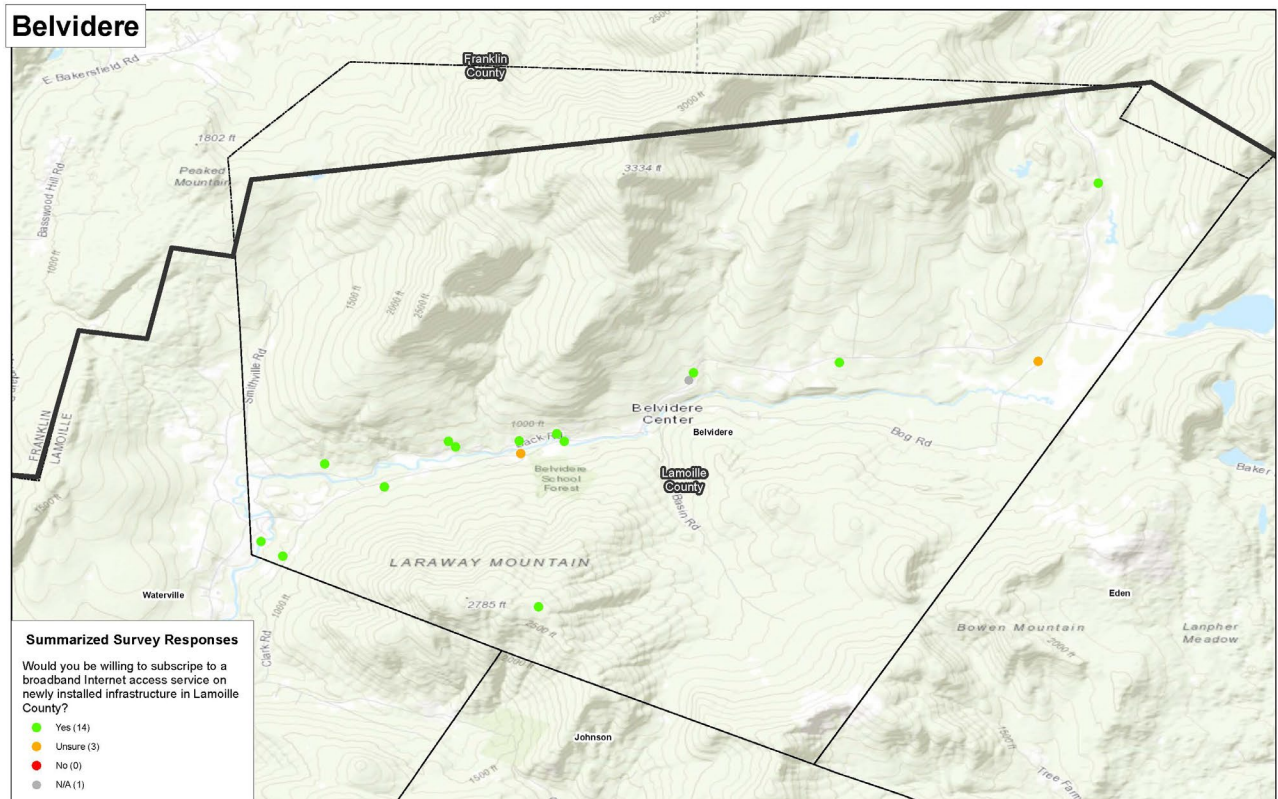
3.1. Lamoille FiberNet Communications Union District Survey Results

The Lamoille market research survey has 1,023 applicable responses at the time the data was extracted for this report. The geographical dispersion of those responses is depicted below. The survey did not include the Lamoille County towns of Wolcott and Elmore. The survey did receive approximately 70 responses outside of the intended survey area and those results are not displayed here. It is important to note the survey respondent locations and willingness to subscribe to service is depicted on the AGOL map Tilson has prepared for the LFCUD.

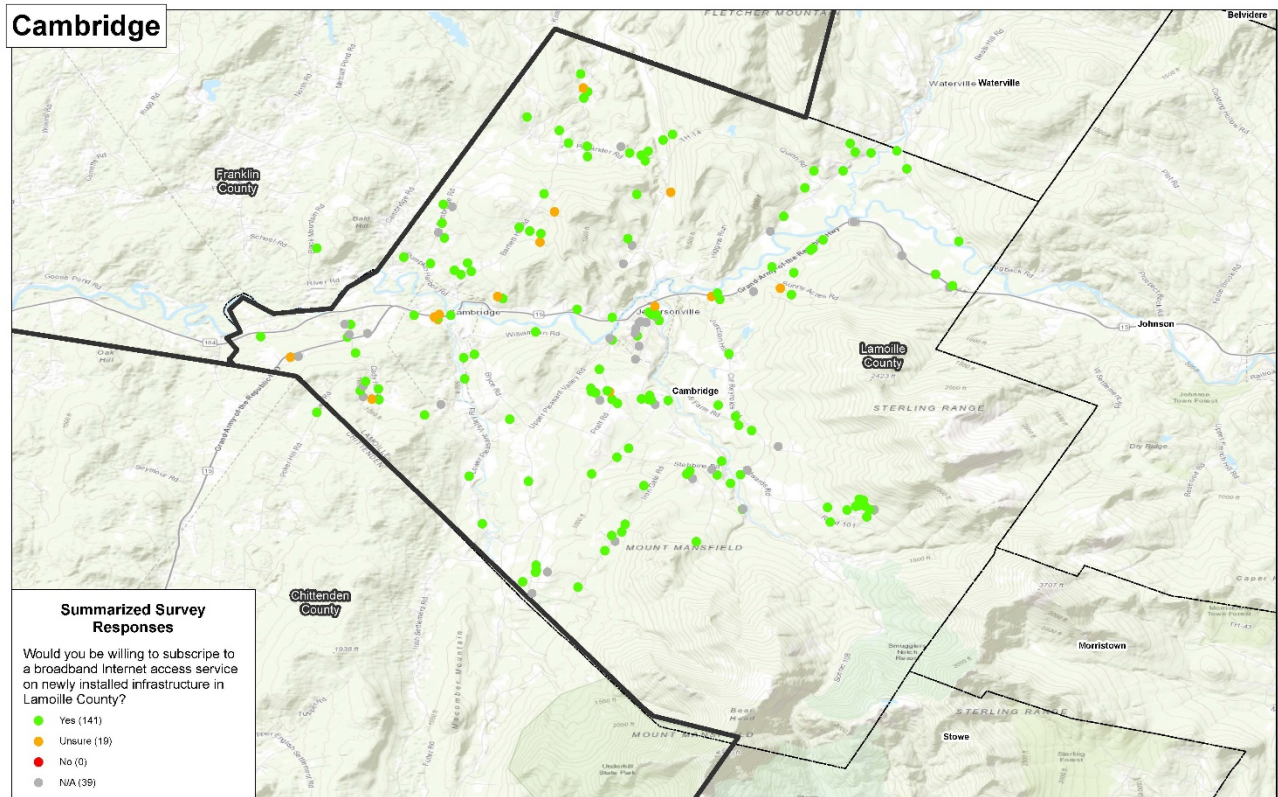
Figure #4: Geographic dispersion of survey respondents

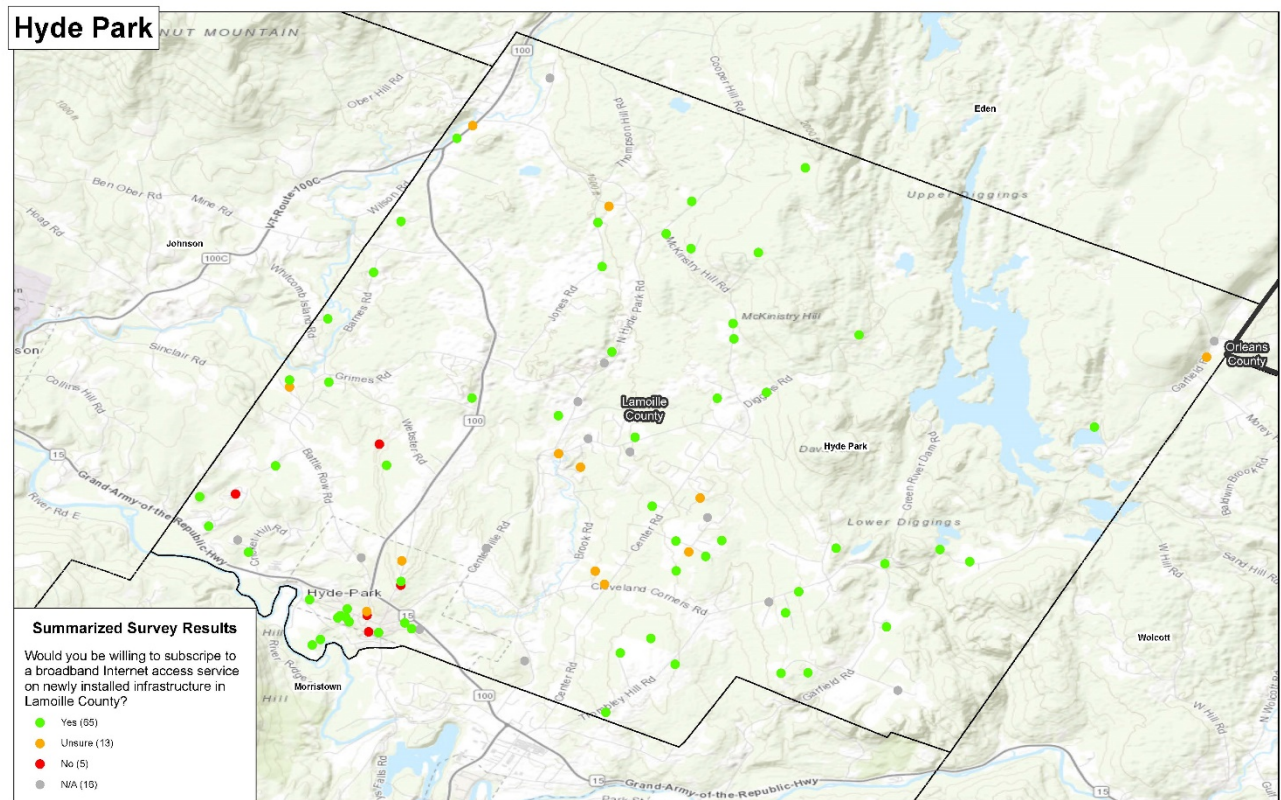
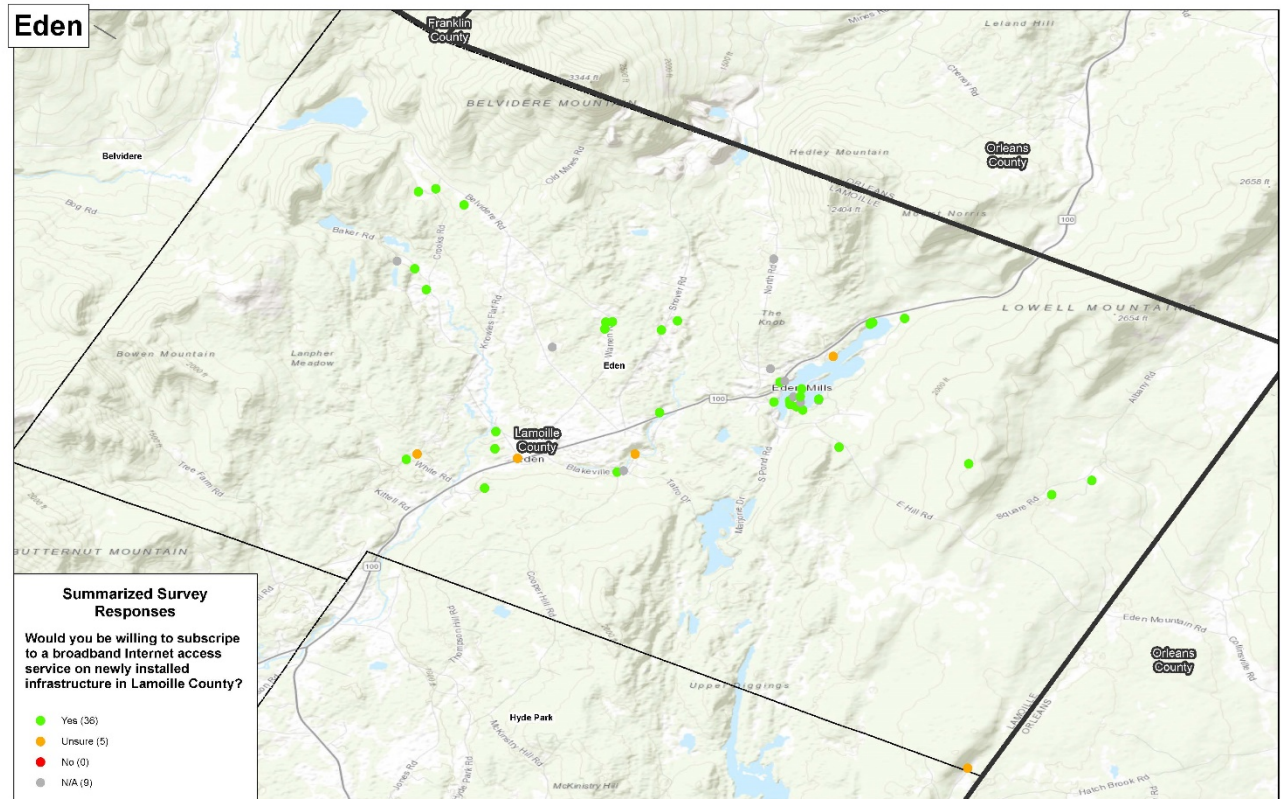


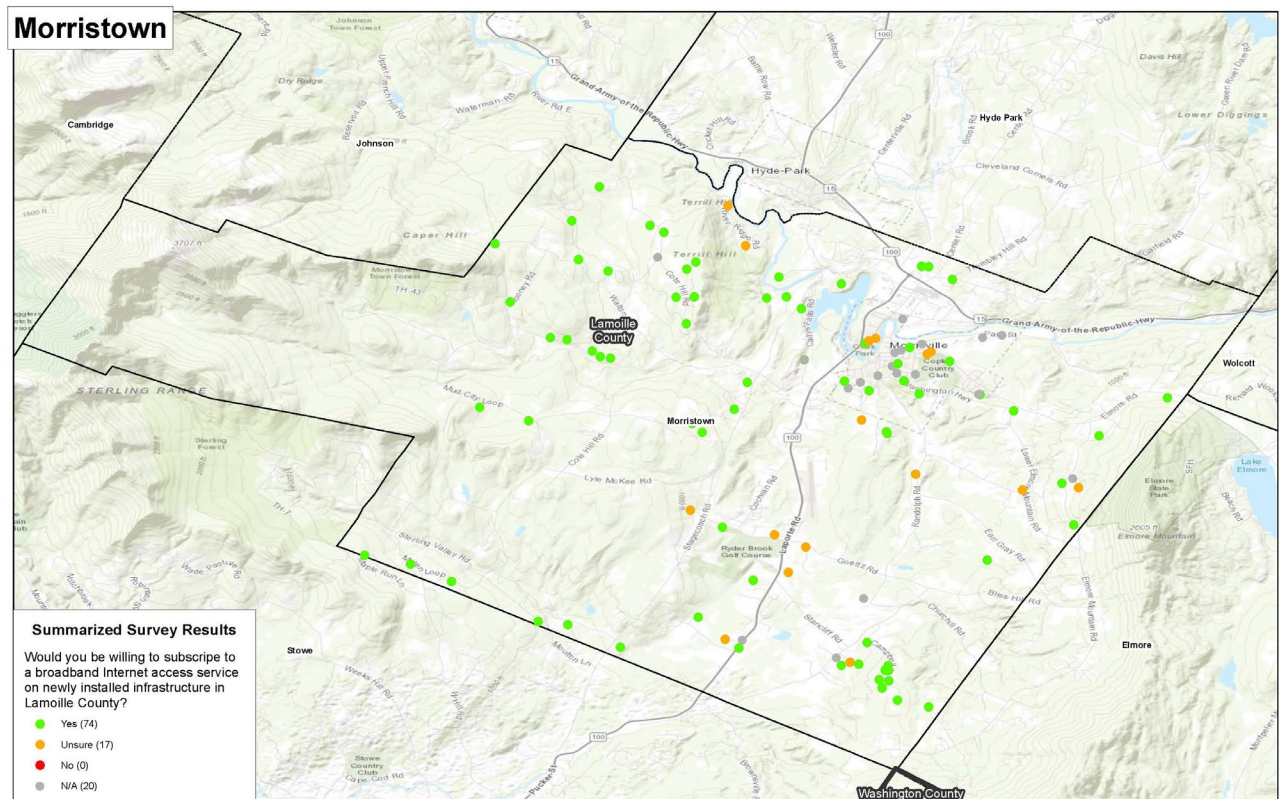
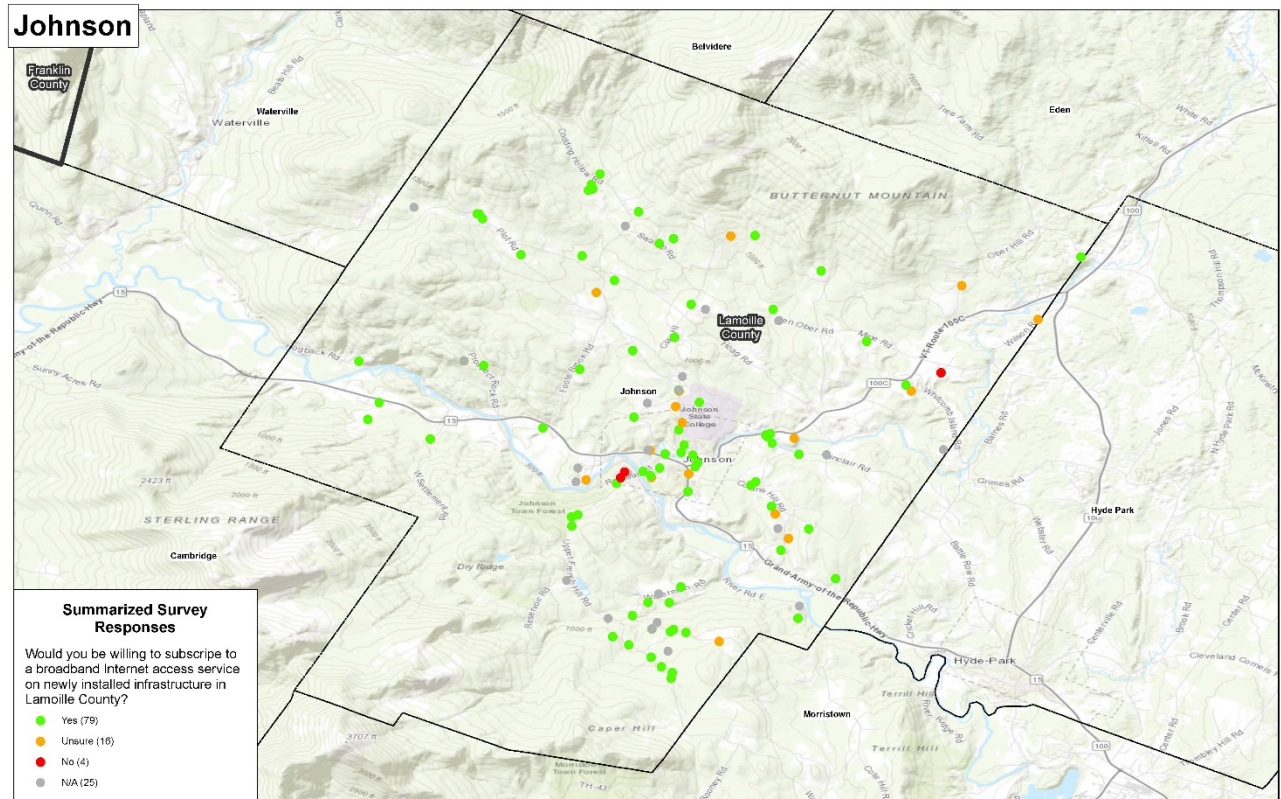
Belvidere

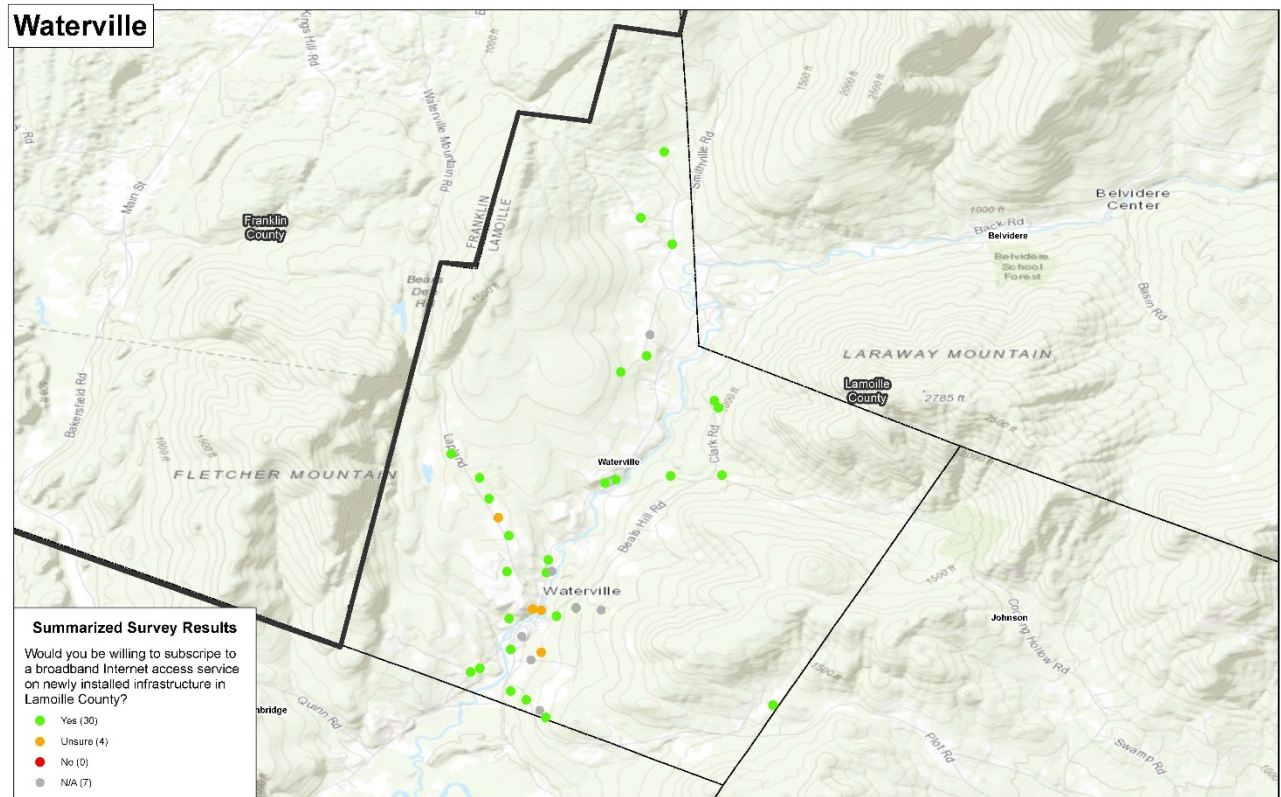
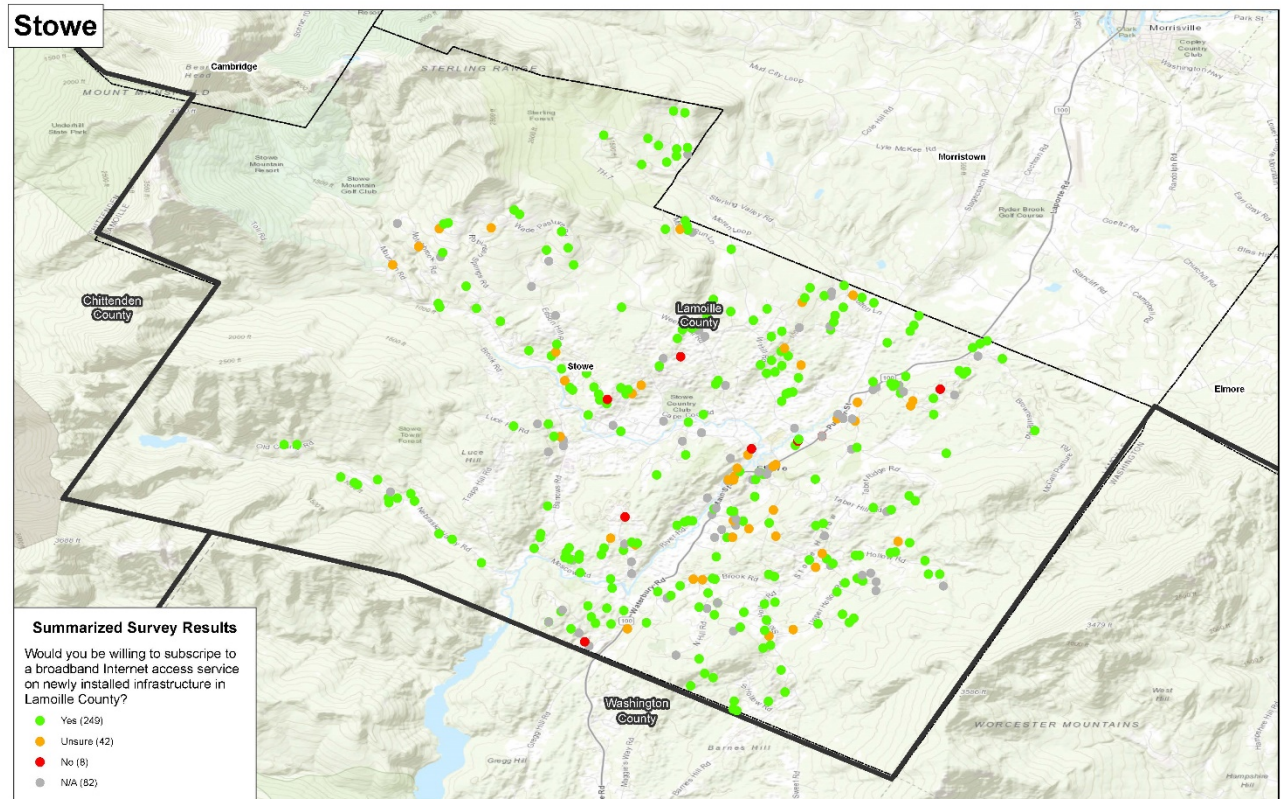


Cambridge









3.2. Survey Question Responses

Below are tabulated responses from the Lamoille market research survey. For each question Tilson determined the best format to display the results, whether in table, chart or narrative format. Similar to the basic demand survey question of “would you be willing to subscribe to a broadband access service on newly installed infrastructure in Lamoille County,” the responses skew to respondents who are dissatisfied with their current Internet access service. Again, survey respondents skew to those who lack good Internet access service (or any Internet access service); survey results do reflect fewer responses from residents with satisfactory Internet access, but this is due in part because they have less motivation to respond to such a survey but also in part because there are simply fewer of them throughout the county compared to unserved and underserved residents.

The set of questions and responses below show a snapshot of general Internet access availability and satisfaction:

Do you currently have Internet service at your home?

Yes	No
973	50

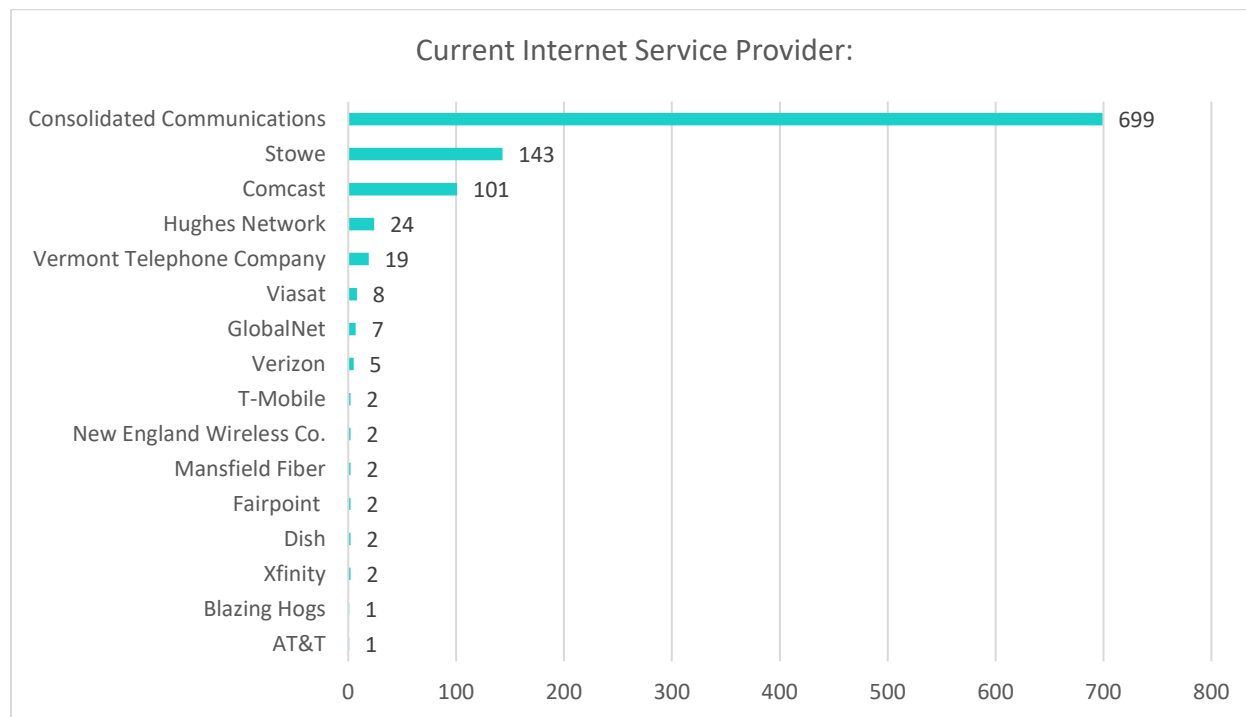
If answered “No” to “Do you currently have Internet service at your home?”

Please rate your interest in reliable and affordable Internet service:

Not Interested	Neutral/Unsure	Somewhat Interested	Very Interested	Must Have
0	1	2	18	33

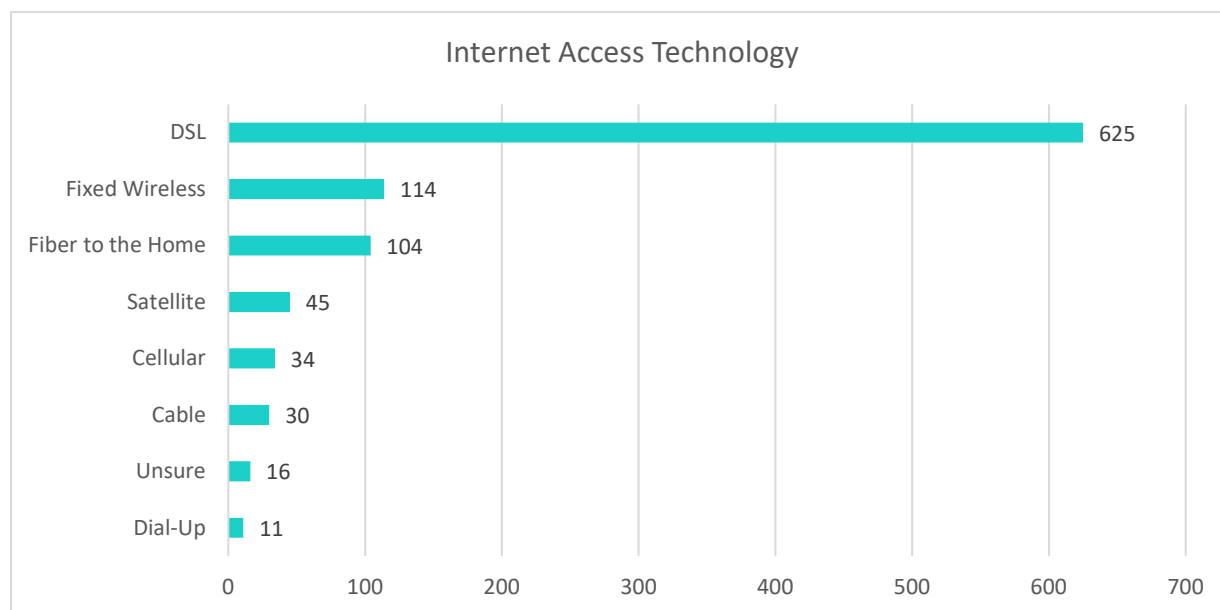
If answered "Yes" to "Do you currently have Internet service at your home?"

Please select your current Internet service provider:



If answered "Yes" to "Do you currently have Internet service at your home?"

What type of Internet access technology do you use?



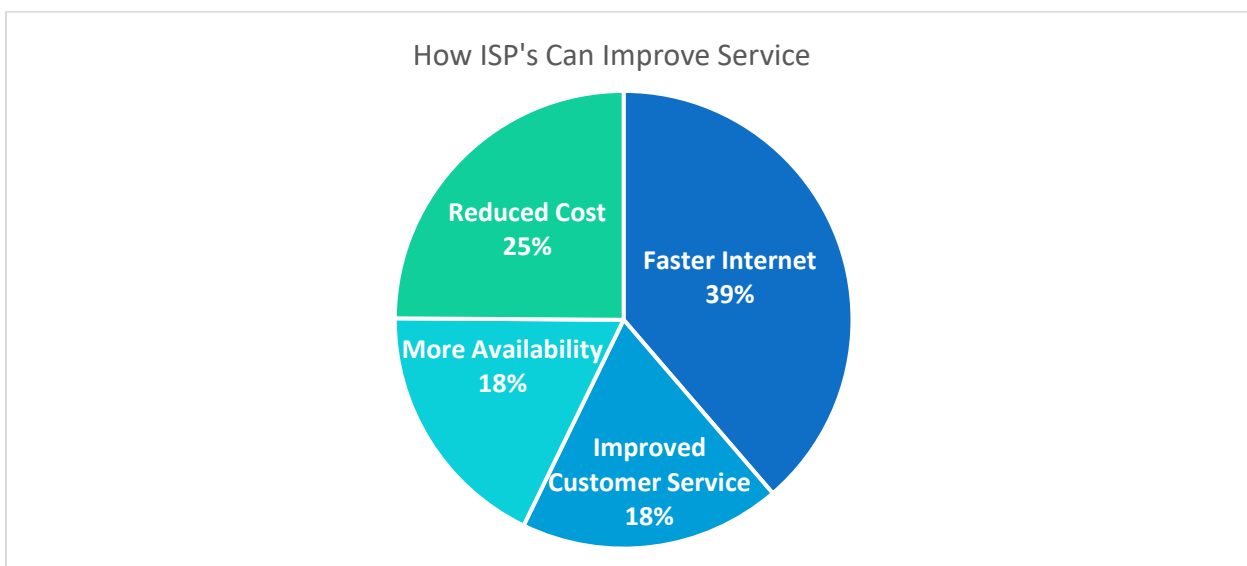
If answered “Yes” to “Do you currently have Internet service at your home?”

Overall, how satisfied are you with your Internet service provider?

Very Unsatisfied	Unsatisfied	Neutral/Unsure	Satisfied	Very Satisfied
279	325	207	147	60

If answered “Yes” to “Do you currently have Internet service at your home?”

How could your Internet service provider improve service?



The next set of questions cover the issue of existing Internet access reliability and the importance of Internet connectivity to the end user for their daily tasks and responsibilities.

If answered “Yes” to “Do you currently have Internet service at your home?”

How often does your Internet connection lose signal/connection?

Never	Rarely	Sometimes	Often	Very Often
24	158	286	323	237

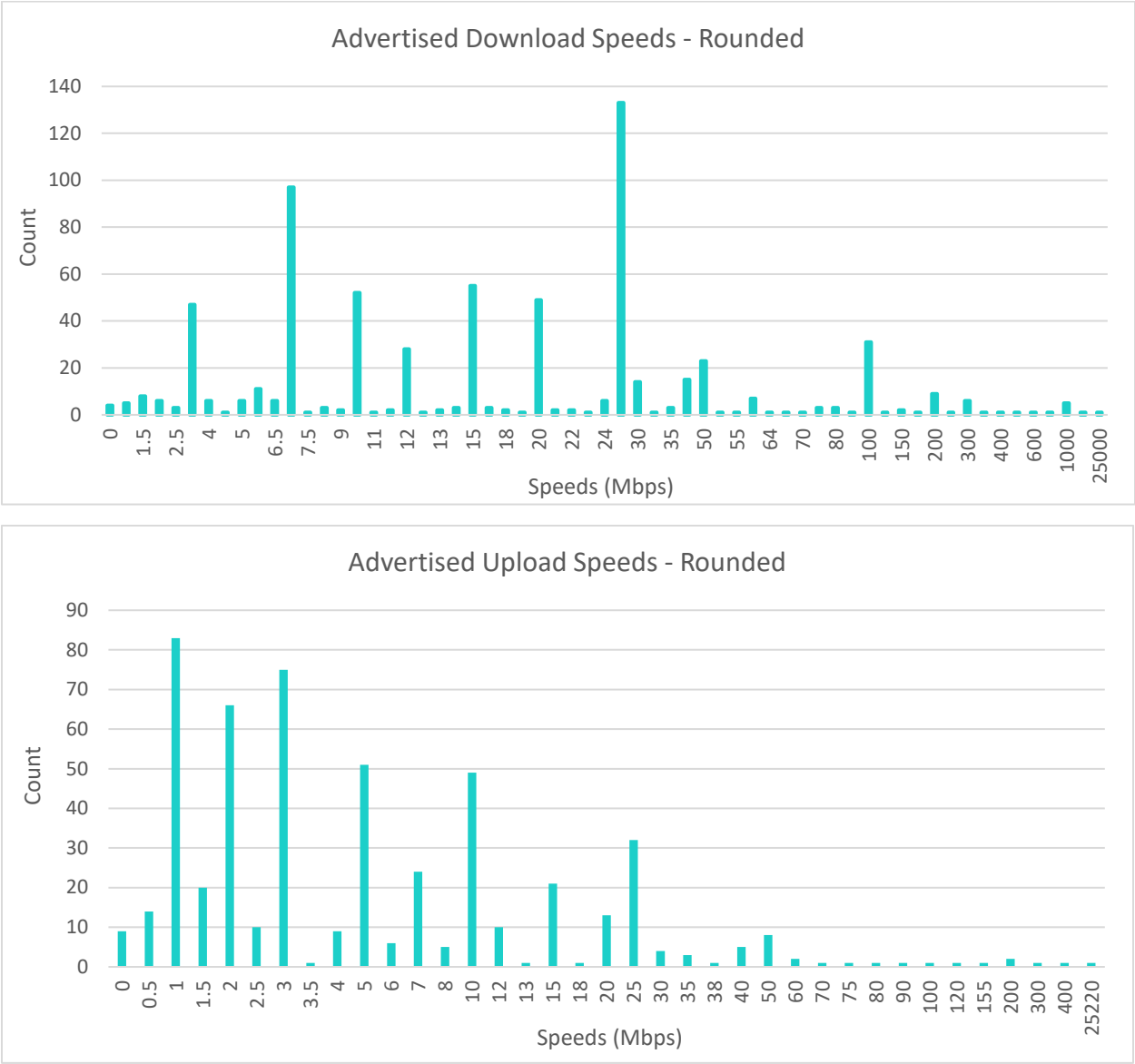
How important is Internet access in your household?

Not Important	Neutral/Unsure	Somewhat Important	Very Important	Must Have
2	2	38	232	812

The next set of questions covered the issue of cost, affordability, and value of existing Internet access service:

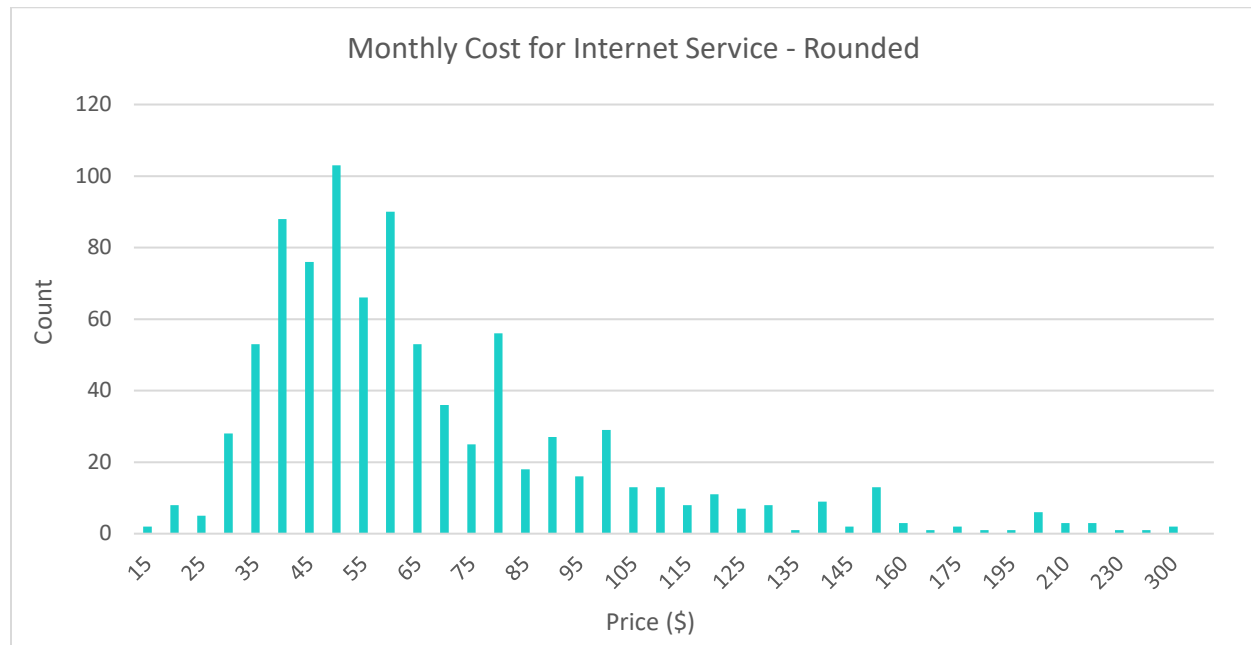
If answered “Yes” to “Do you currently have Internet service at your home?”

What advertised Internet access speeds are you paying for?



If answered “Yes” to “Do you currently have Internet service at your home?”

What is your monthly cost for Internet service (\$)?

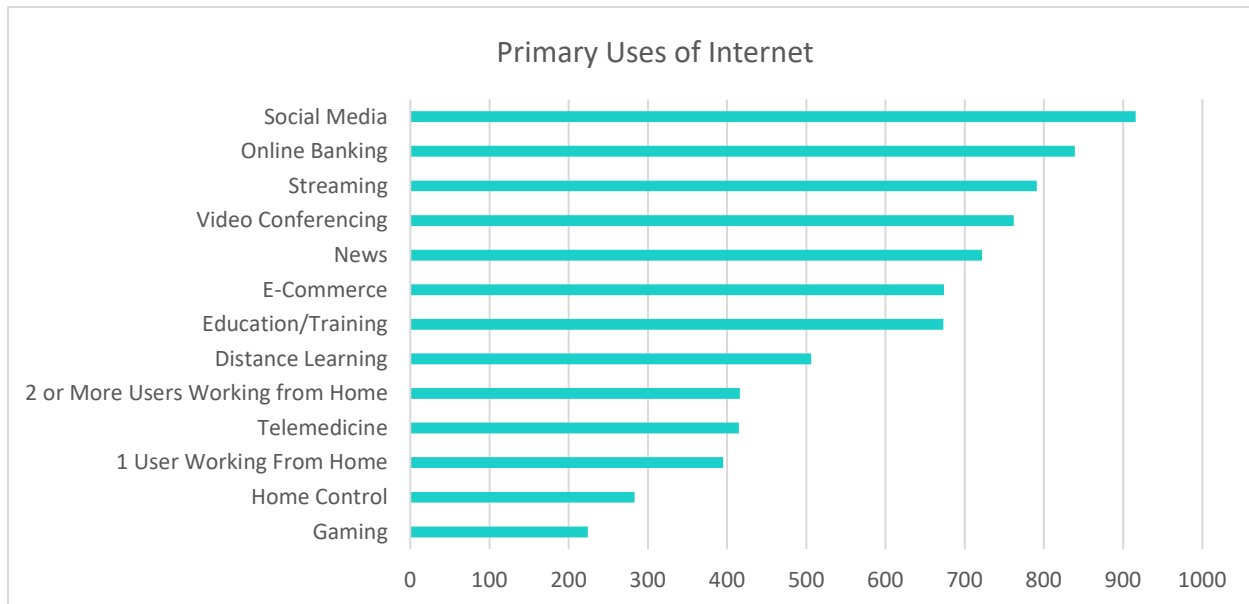


If a faster, more reliable Internet service were made available, how willing are you to pay more per month?

Not Willing	Neutral/Unsure	Somewhat Willing	Very Willing
119	224	335	390

The set of questions and responses below explore the issue of how residents use the Internet. As with several questions in the survey, respondents were allowed to choose several responses to this question. The results reflect a mix of uses including entertainment as well as telecommuting uses:

What are your primary uses of Internet?

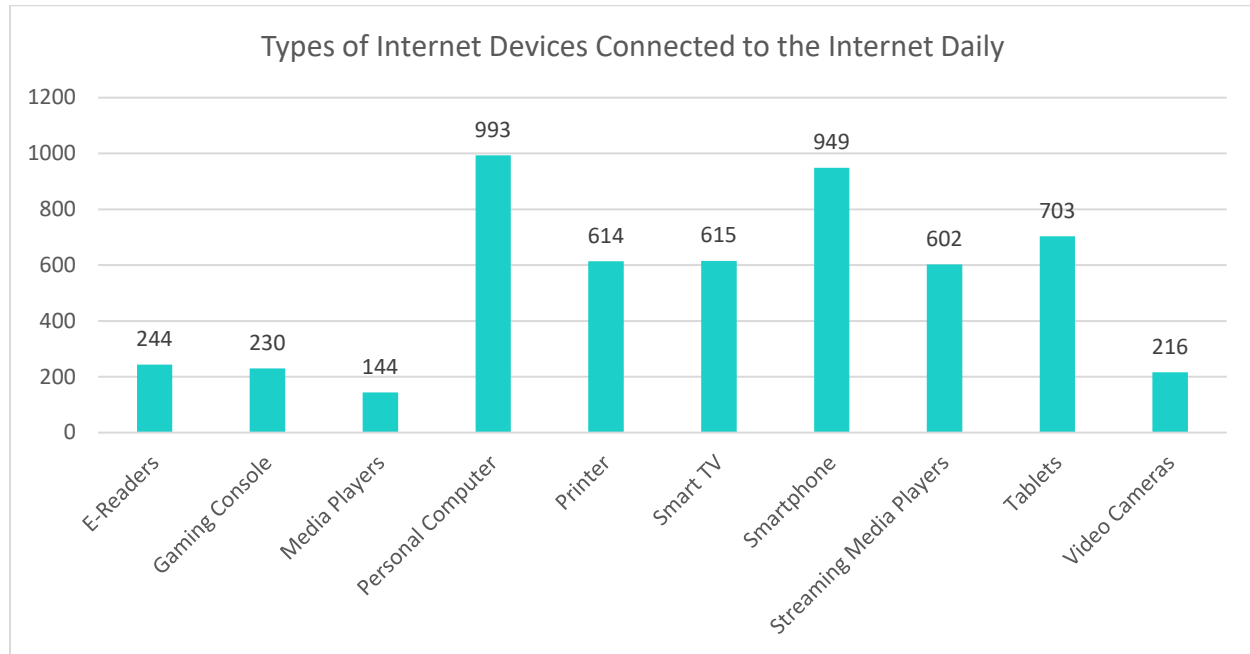


How many Internet users are in your household?

0	1	2	3	4	5+
3	106	481	201	203	91

If answered “Yes” to “Do you currently have Internet service at your home?”

What Internet devices are connected to the Internet on a daily basis?



The responses to the question below reveal how more devices than sometimes realized rely on an Internet connection to fully function:

If answered “Yes” to “Do you currently have Internet service at your home?”

Approximately how many devices in your household are accessing the Internet at any given time?

1 – 2	3 – 4	5 – 6	7 – 8	9 – 10	11+
195	414	202	94	55	72

The questions below were set up to elicit narrative responses. We try to limit the number of survey questions requiring narrative responses as respondents often find them tedious, but the narrative responses themselves can be very informative and revealing. Below are a small sample of the narrative survey responses. The full set of narrative responses can be found in Appendix B of this report.

The first question here was inspired by the mission statement of the Lamoille FiberNet Communications Union District, which is “to make locally-controlled, affordable, and reliable high-speed internet service available to every address in our member towns.” In the question below, we asked survey respondents to weigh in on what their vision was for a new broadband Internet access network:

What do you envision a new broadband network in Lamoille County looking like? Who are the key stakeholders? Who are the key participants? (Summarized)

Affordable access for anyone, from any home. Community owned not-for-profit organization that seeks to invest heavily in ensuring that everyone has access. A group that fully understands the positive economic impact high quality internet access can have.
I envision a fiber optics network through all the towns in Lamoille. There would be a cooperative where the network is controlled- both payment and Service- by local people. Otherwise, each town should have at least two options so there aren't monopolies and bad service isn't a given.
I envision a wireless service to provide service to rural households. A public/private partnership would be best to be able to provide subsidies to low income residents. The key stakeholders are residents, private telecom providers, state and local governments.
I picture something like the electrical co-op, with end-users including businesses and households as the key participants. In addition, the state and federal government, through our tax money, would need to provide some funds to go that last mile. It's an infrastructure question, with equal access for all the end goal.
I would appreciate a company that takes value in its customers as well as their employees. The stakeholders are the ones within the community. There should an equal amount of reps from each town in the county. These people should be able to understand the issues each town faces and how to report out to the towns.
I would have to see only 1 choice for providers. We are happy with ours because we have the choice and did switch providers in the last year. Have been happier with service, and cost is way less than previous company. This is both our home and place of business.
Reliable, high-speed at an affordable price. Infrastructure that allows for growth and scalability. All people, corporations, governments, etc. are stakeholders -- high speed internet is a utility all must have access to. Representatives of all stakeholders must be participants.
Set up competitive network to help drive consumer pricing down. Allow providers to access telephone lines to distribute fiber. Work through a feasibility study with stakeholders to develop sharing opportunity over time of infrastructure.
The network will use technology that is dependable and capable of symmetrical high speeds. Key stakeholders are: ISP that focuses on the last mile underserved customers, offers affordable service; Electric Utility; local bodies e.g. Lamoille FiberNet CUD.
Wireless or partnered with the power providers. Broadband should be provided by an organization with the infrastructure in place to support it, not a start-up. Stakeholders are anyone doing business on the web. Almost everyone needs to participate to make it cost effective.

And in the question below we elicit respondents' comments on any issues or concerns not directly addressed in the survey:

Please describe any concerns or ideas you might have regarding broadband access in Lamoille County that was not covered in this survey (Summarized).

We have a very spread out, rural community. It would be important to know there was a commitment to reach the wider community regardless of how far out folks are from the hub.
We have a landline phone with our current service and would like to keep it
It needs to be minimum 100mbps. Having that access will be a major economic gain in this community while also ensuring that our children have the best access to education possible.
Fiber is the key. If the investment were made it should carry us for numerous years. I feel this will only come with substantial governmental assistance as there simply are not enough users, spread over too much land, for it to work privately alone.
I really hope this can happen for my community and I am willing to help to make sure everyone can access good internet service
While I am keen to support locally-grown initiatives, companies like Verizon (FIOS) have figured this out end to end in impressive ways, including installation, service delivery, support / customer service etc. We should wave companies like them in!
We strongly support fiber optic or other high speed internet service in Stowe. In fact, we would also expect that access by low income residents be subsidized by the provider, the government and user contributions.
Would want to minimize infrastructure installation that requires habitats destruction. We believe new telecom should have access to existing infrastructure where capacity exists. Required infrastructure building should be buried where possible.
Any new, government funded service MUST BE Fiber! Ownership of taxpayer funded infrastructure must be owned either by a member owned electric utility OR a municipality.
Truly feel it is very important to have this level available to everyone. It should be regulated so everyone has affordable access to service.

Included in this section is just a sampling of the narrative survey responses. Included as Appendix B to this document is the full set of narrative responses from the survey.

4. Iterative High Level Design Process

In order to produce a financial model that is cash flow positive within three years Tilson had to make a few fundamental modeling assumptions. The costs associated with a startup organization, starting from scratch with no existing operating systems, was too much of a cost burden to the model and had to be reduced. The assumption was made that the way to move forward with a viable model was to assume that a network operator with existing infrastructure such as a billing system, a customer care system and a network operations center, among other existing infrastructure, would be needed in order to save the project the costs of such systems upon start up.

In addition to this fundamental assumption and reduction of OPEX costs, Tilson needed to value engineer the high level design to reduce additional capital expenditures during the first few years of operation. To do this, Tilson identified broadband serviceable locations that were unusually expensive to construct to and, for the purpose of this modeling, those locations were removed from the scope of this model.

4.1. Eight Town Design - All Broadband Serviceable Addresses

To begin the high level design process, which is an iterative process, Tilson generally starts with the largest possible design, including all possible areas and all possible addresses. For rural projects requiring specific financial modeling performance characteristics, such as being cash flow positive within three years, this initial all-inclusive high level design often needs to be winnowed down to achieve those financial performance characteristics.

The initial iteration of the high level design included all broadband serviceable addresses within the eight towns of Belvidere, Waterville, Cambridge, Johnson, Eden, Hyde Park, Morristown and Stowe, the Eight Town design. The capital expenditure necessary for this model, even with a construction time frame of 24 months, did not allow for the project to be cash flow positive within three years. This initial design included 11,470 locations and required a capital expenditure of \$60,259,531, or \$6,417 per premise.

In order to create a financial model that was cash flow positive within three years, we needed to lower capital expenditures. To do this we identified locations among the 11,470 included in the initial design that were the highest cost to connect due to conditions such as low density or served by underground facilities. 1,248 such high cost locations were identified, removed from the model, and remodeled as described below.

Broadband serviceable addresses include E-911 address that have been filtered by address type. The following address types were excluded from the high level design:

- Lookout Tower
- Park and Ride / Commuter Lot
- Picnic Area
- Public Beach
- Public Telephone
- Public Water Supply Intake
- Pump Station
- Rest Stop / Roadside Park
- RV Hookup
- Temporary Structure
- Trailhead
- Utility Pole with Phone
- Wind Facility / Wind Tower

4.2. Eight Town Design - Excluding High Cost Addresses

With the above modeling effort not being cash flow positive within three years, even with a construction time frame of 24 months, Tilson needed to reduce the project's construction costs. The next iteration of the design reduced the scale as little as possible and excluded high cost locations within the eight town region. Using GIS and network design software as well as a manual process of visually analyzing the design, Tilson identified 1,248 high cost locations that are unusually expensive to construct fiber to due to the presence of a significant amount of underground construction or very low density, or both.

These high cost locations were identified throughout all eight towns and they were removed from the scope of the project for the purpose of this modeling. After removing the 1,248 high cost locations the scope of the project includes 10,222 locations and has a required capital expenditure of \$37,284,031. This is a savings of \$22,975,500 or about 38% of initial project costs for a reduction of about 11% of locations. This also had the effect of lowering the cost per premise from \$6,417 in the initial model to \$4,076 in the revised baseline model.

By backing those capital expenditures out, the model is cash flow positive within three years. Tilson removed as few locations as possible from the design in order make it cash flow positive within three years. These 1,248

locations can be connected to the network going forward using funding mechanisms that do not adversely affect key aspects of the model.

Figure #5: Summary of revised baseline model with high cost locations removed

Locations removed from initial model: 1,248
Total Capital Costs before removing: \$60.3M
Total Capital Costs after removing: \$37.3
Total Savings: \$23M
Per premise cost before removing: \$6,417
Per premise cost after removing the addresses: \$4,076

While the 1,248 locations were removed based solely on their cost to connect, below is the current broadband availability for those locations.

Figure #6: Summary of broadband availability of 1,248 high cost locations

Service breakdown of the 1248 addresses:
<ul style="list-style-type: none">• 195 Unserved• 1053 Served• 456 Served 4/1• 5 served 10/1• 546 served 25/3• 29 served 100/100• 17 missing data

4.3. Seven Town Design – Excluding High Cost Addresses

With the eight town model with high cost locations removed cash flow positive within three years, Tilson next designed a seven town (current CUD members only) network, using the same pool of broadband serviceable address with high cost locations removed, to determine if that seven town design would also be cash flow positive within three years with the removal of the densely populated area of Stowe. With Stowe removed from the design

in order to produce a financial model that is cash flow positive within three years the construction loan period was extended from two years to three years in order to manage cash flows and gain customers before refinancing.

By doing this the financial model is cash flow positive within three years, and during the one year extension of the construction loan additional interest is compounded. It should be noted that even though the construction loan is increased from two to three years in this model the construction schedule itself remains two years. It should also be noted that even though the financial model for the seven town design is cash flow positive within three years, the model would need to be further optimized in order to better attract potential equity investors.

5. Business Models

Tilson modeled two network designs for the region, one including the CUD member towns of Belvidere, Waterville, Cambridge, Johnson, Eden, Hyde Park and Morristown, and a second design that added the town of Stowe. When the initial financial modeling for the project did not prove to be cash flow positive within three years, Tilson made a few assumptions altering the scope in order for the project to be cash flow positive within three years.

Firstly, we assumed that the costs associated with standing up network operations facilities from scratch were not viable for a project of this limited size, and that the LFCUD would need to work with an operator partner that has an existing operations of a certain scale with existing operations infrastructure such as billing, network operations center and customer care. Teaming with other CUDs in a similar position to achieve economies of scale is recommended to optimize costs. With this assumption made and the associated costs removed from the financial model, we still needed to reduce capital expenditures such that the model was cash flow positive within three years.

In order to do so, high cost locations within all eight towns were identified and removed from the pool of addresses used in the high level design process because their cost to connect added enough to the project's initial capital expenditure that it was not cash flow positive within three years. 11,470 address points were included in the first iteration of the model, all eight towns, and 1,248 high cost locations were value engineered out of the high level design. The final model for these eight towns includes 10,222 locations. The modeling is based on a high level design for a Gigabit Passive Optical Network (GPON) fiber to the premise network.

Tilson then modeled the seven CUD member towns without the town of Stowe.

Both designs are cash flow positive within three years. The eight town design is cash flow positive within three years with a construction loan that can be refinanced after the two year buildout period, and the seven town design requires the construction loan to be maintained for a third year while keeping a buildout period of 24 months to completion.

The modeling assumes the network will be owned for the first ten years by a private enterprise network developer, perhaps an impact investor accustomed to investing in areas that include Opportunity Zones and in rural areas, with an ownership transfer to the CUD at the end of the initial ten year term. By year ten, the network will have achieved cash flow such that the CUD's debt capacity will enable the refinancing and ownership transfer.

While it is possible the private enterprise network developer may also fill the role of network operator and retail service provisioner, perhaps it is more likely that they will not and therefore a network operator will need to be hired to fill the role. The modeling assumes the network operator entity receives a fee per subscriber from the CUD to cover operations, maintenance, service provisioning, billing, and all other required tasks for network operations, collects the full retail fee from end users and remits those retail payments to the CUD.

5.1. Financial Structure

The network buildout heavily relies on equity financing to get to cash flow break even in three years. Infrastructure projects in general have varying financial structures, and this is especially true in the case of broadband network development. Unlike surface transportation or water infrastructure, digital or telecom infrastructure does not operate as a monopoly and relies heavily on attracting and retaining customers. This reliance increases the investment risk profile of the project when compared to other types of infrastructure, raising borrowing costs and rates of returns required by investors. This risk profile makes the financing structures in broadband development project-specific and contingent on factors such as the regional economy and demographics. As with most transactions, however, financing options can range from typical bank-debt to private equity investments and government subsidies.

Significant equity investments in public-private partnerships are common across the spectrum in infrastructure development, and in many cases, becoming more significant with constraints on local and state government spending. Opportunity Zones, such as the one in Johnson, can provide additional support to investors looking to invest in broadband networks. In one such example, Arctaris Impact Investors, an investor that works with targeted rural communities, agreed in principle in 2019 to invest in broadband fiber infrastructure in several Opportunity Zones in Maine.³

Outside of equity investments, debt financing often is attained through relationships with local financial institutions who can receive Community Reinvestment Act (CRA) credit through funding broadband initiatives in low-income areas. The CRA, which was enacted in 1977, requires federal banking regulators to develop guidelines for financial institutions to help meet the credit needs of the communities in which they do business, including low and moderate income neighborhoods.

³ <https://www.businesswire.com/news/home/20190710005254/en/Finance-Authority-of-Maine-Agrees-to-Partner-With-Arctaris-Impact-to-Help-Attract-Opportunity-Zone-Capital-to-Local-Investments>

Given the important role that broadband plays in workforce and community development, federal agencies responsible for banking regulations issued revised guidelines in July 2016, stating that certain activities receive CRA consideration if they “revitalize or stabilize” an underserved rural areas. This guidance includes broadband internet that serves the community, specifically including low and moderate income residents.

These revised guidelines have expanded the opportunity for organizations looking to develop broadband infrastructure in rural communities across the country. While the debt and equity mixes, partnership structures, and government subsidy vary from project to project, cooperatives in rural areas, such as Reservation Telephone Cooperative, Inc. (RTC), in Parshall, North Dakota have been able to form relationships with local banks to expand broadband access in their communities. In the RTC case study, the cooperative was able to use its position as a local internet service provider to attain debt and grant funding from the Department of Agriculture’s Rural Utility Service, and a local bank, First International Bank and Trust (FIB&T), provided bridge financing, for the original construction. FIB&T provided subsequent lines of credit for construction and operations, and refinanced RTC’s debt once the network was fully established.⁴

5.2. “Fixed Capital Costs” and “Variable Capital Costs”:

Variable capital costs are those incremental costs incurred per mile or per subscriber, these include outside plant costs, such as fiber optic cable, customer installation and equipment, and makeready. Fixed costs are set at a project level and include vehicles, transport, and GPON Optical Line Terminals (OLTs) and distribution costs.

5.3. Business Model Details

Details of both the Seven Town and Eight Town financial models are included below and are also included in a separate PowerPoint slide deck.

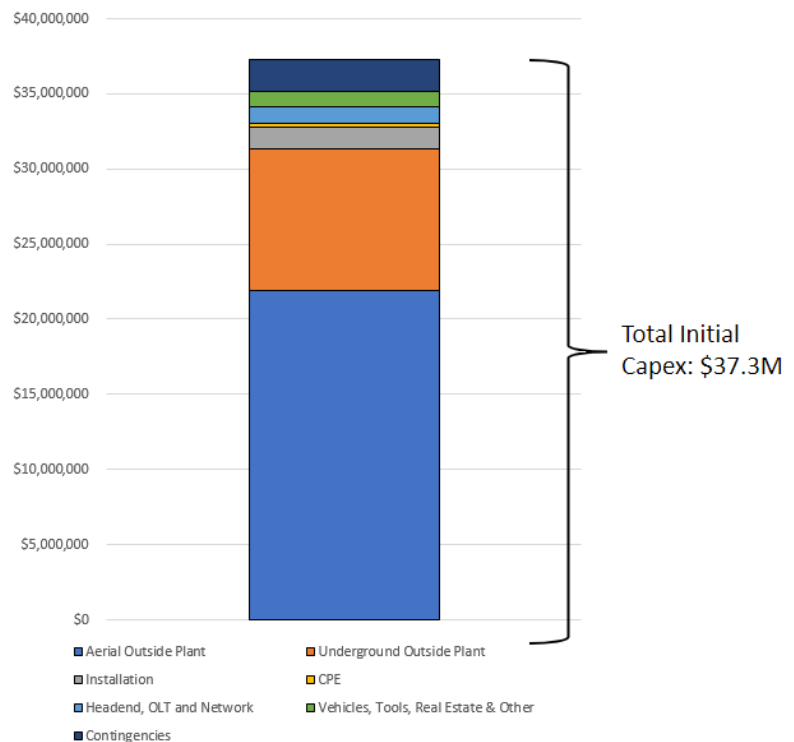
⁴ OCC Rural Broadband Webinar

5.3.1. Project Overview and Capital Costs

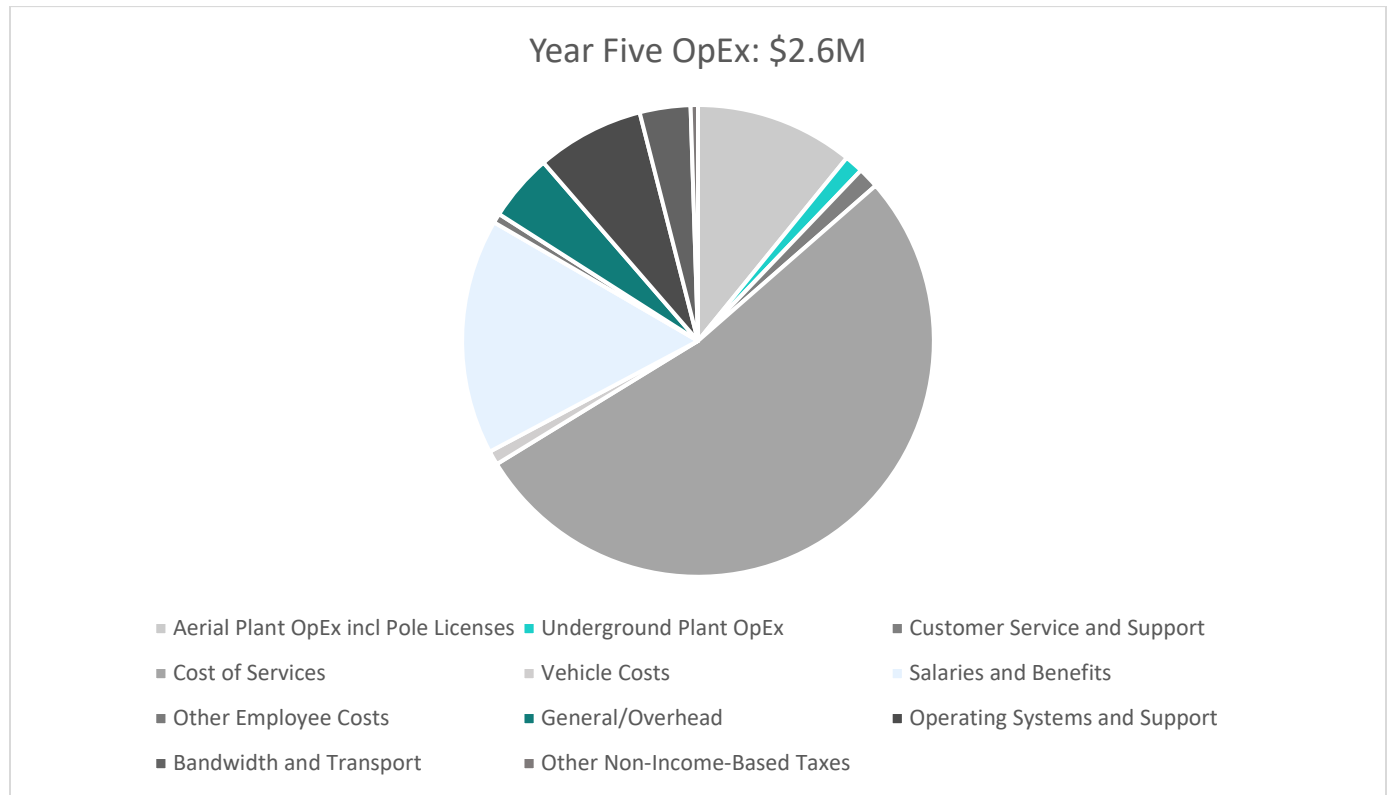
Project Overview	8-Town Project	7-Town Project
Fiber Route Miles	604.5	469.7
Premises passed	10,222	7,584
Maximum Subscribers	5,054	3,750
Premises passed/mile	16.9	16.1
Total Initial Costs	\$37.2M	\$28.4M
\$/Premises Passed	\$3,647	\$3,745

5.3.2. Capital expenditures (CapEx) Overview

Cost Factor	\$
Aerial Outside Plant	\$21,883,320
Underground Outside Plant	\$9,483,411
Installation	\$1,366,176
CPE	\$276,640
Headend, OLT and Network	\$1,106,247
Vehicles, Tools, Real Estate & Other	\$1,024,404
Contingencies	\$2,143,832
Total	\$37,284,030



5.3.3. Operating Expenses (OpEx) Overview



Cost Factor	Unit	Escalator	1	2	3	4	5
Variable - Distance	\$/mile	2.50%	\$285,000	\$292,000	\$300,000	\$306,000	\$314,000
Aerial Plant OpEx incl Pole Licenses	\$ per aerial mile	2.50%	\$255,000	\$261,000	\$268,000	\$274,000	\$281,000
Underground Plant OpEx	\$ per underground mile	2.50%	\$30,000	\$31,000	\$32,000	\$32,000	\$33,000
Variable - New Subs	\$/new sub	2.50%	\$43,000	\$47,000	\$37,000	\$37,000	\$39,000
Variable - Subs	\$/sub	2.50%	\$213,000	\$529,000	\$856,000	\$1,128,000	\$1,400,000
Customer Service and Support	\$ per sub	2.50%	\$6,000	\$14,000	\$23,000	\$30,000	\$37,000
Cost of Services	\$ per sub	2.50%	\$207,000	\$515,000	\$833,000	\$1,098,000	\$1,363,000
Fixed	Fixed \$	3.38%	\$759,000	\$786,000	\$812,000	\$842,000	\$873,000
Vehicle Costs	Fixed \$	2.50%	\$22,000	\$23,000	\$23,000	\$24,000	\$25,000
Salaries and Benefits	Fixed \$	2.50%	\$379,000	\$389,000	\$398,000	\$408,000	\$418,000
Other Employee Costs	Fixed \$	2.50%	\$16,000	\$16,000	\$17,000	\$17,000	\$17,000
General/Overhead	Fixed \$	2.50%	\$108,000	\$111,000	\$113,000	\$116,000	\$119,000
Operating Systems and Support	Fixed \$	2.50%	\$173,000	\$178,000	\$182,000	\$187,000	\$191,000
Bandwidth and Transport	Fixed \$	17.10%	\$48,000	\$56,000	\$66,000	\$77,000	\$90,000
Other Non-Income-Based Taxes	Fixed \$	0.00%	\$13,000	\$13,000	\$13,000	\$13,000	\$13,000

5.3.4. Revenue Assumptions and Profiles

Core Revenue Profiles	
<ul style="list-style-type: none"> Tilson used three core profiles to drive revenue assumptions: Enterprise and Institutional, Residential, and Commercial Take rates for each profile are initially set to 10%, rising to 45% (35% for E&I subscribers) by month 60 and 48.5% (38.5% for E&I subscribers) by month 120 Monthly churn rate assumption is .42%, or approx. 5% annually Implied ARPU's for the three profiles are \$1,024.75 (E&I), \$88.50 (Residential), and \$196.30 (Commercial) Model assumes that revenue can be generated with a partial build of the network 	

Enterprise & Institutional	Monthly Price Per Unit	Average # of Units Per Sub Taking the Service	% of Users Subscribing	Residential	Monthly Price Per Unit	Average # of Units Per Sub Taking the Service	% of Users Subscribing	Commercial	Monthly Price Per Unit	Average # of Units Per Sub Taking the Service	% of Users Subscribing
DIA	\$ 1,000.00	1.0	50%	Highest Speed Internet	\$ 105.00	1.0	5%	Highest Speed Internet	\$ 250.00	1.0	10%
Metro E	\$ 100.00	1.0	50%	Mid-High Speed Internet	\$ 95.00	1.0	15%	Mid-High Speed Internet	\$ 159.00	1.0	20%
Hosted PBX Lines	\$ 30.00	9.0	50%	Mid-Low Speed Internet	\$ 85.00	1.0	40%	Mid-Low Speed Internet	\$ 124.00	1.0	50%
SIP trunks	\$ 40.00	12.0	40%	Lowest Speed Internet	\$ 75.00	1.0	40%	Lowest Speed Internet	\$ 90.00	1.0	20%
DID Lines	\$ 12.00	20.0	55%	Phone	\$ 25.00	1.0	20%	Phone	\$ 35.00	3.0	50%
Switch lease	\$ 35.00	1.0	45%					Static IP	\$ 7.00	1.0	50%
Implied ARPU	\$1,024.75			Implied ARPU	\$88.50			Implied ARPU	\$196.30		

5.3.5. Pro Forma Cash Flows

First Ten Years – Eight Town Model

Financial Summary \$T											
Year	Initial	1	2	3	4	5	6	7	8	9	10
Average Subscribers		633	1,538	2,427	3,121	3,779	4,331	4,630	4,756	4,849	4,941
Revenue	-	759	1,893	3,063	4,027	4,969	5,813	6,329	6,639	6,918	7,189
Operating Expenses	-	1,356	1,742	2,129	2,467	2,806	3,107	3,314	3,456	3,593	3,734
EBITDA (Operating Revenue)	-	(597)	151	934	1,560	2,162	2,706	3,015	3,183	3,326	3,455
<i>EBITDA Margin</i>	0%	-79%	8%	30%	39%	44%	47%	48%	48%	48%	48%
Debt Service	-	-	-	582	635	635	635	635	635	635	635
Net Income	-	(597)	151	352	925	1,528	2,072	2,381	2,548	2,691	2,820
Capital Expenditures	8,279	15,173	13,845	325	411	508	576	655	749	863	986
FCF (inc. operating subsidy)	(8,279)	(15,770)	(13,694)	27	514	1,019	1,495	1,726	1,799	1,828	1,834
<i>Cumulative FCF</i>	(8,279)	(24,050)	(37,744)	(37,717)	(37,203)	(36,183)	(34,688)	(32,962)	(31,164)	(29,336)	(27,502)
Capital Sources	37,623	-	-	-	-	-	-	-	-	-	-
Interest on Cash	-	116	25	0	1	5	11	19	28	38	47
Net Cash	29,344	13,689	21	47	563	1,587	3,093	4,839	6,666	8,531	10,412

*FCF stands for Free Cash Flow

5.3.6. Take Rate Comps

Target Take Rate ¹	Project FCF Year 3 (\$T)	Total Project EBITDA at Year 5 (\$T)
40%	\$(156)	\$1,810
45%	\$27	\$2,162
50%	\$212	\$2,516
55%	\$394	\$2,869
60%	\$580	\$3,223

1) Commercial and Residential Target Take Rates Only, E&I Target Take Rate is still 35% by month 120

(\$T) means multiple the amount by 1,000 for the actual amount

6. Key Risks and Merits

Below is a summary of the project's key risks and key merits.

Key Risks:

- Interest Rate Risks
- Low interest rates may not persist
- Partnership Risks
- Network Operator
- Investor
- Construction Risks
- Take Rate Risks

Key Merits:

- Strong cash flows provide flexibility
- This model does not currently incorporate more sophisticated debt and financing options:
 - Opportunity Zones
 - Municipal/Tax Exempt Debt
 - Partnerships
 - Subsidies and government financing
- Further refinement of the business case could also yield significant returns
- Net cash position at year ten can also be benefit to a partner via an exit dividend

7. Business Plan Scope of Work

The business plan is the next phase past the feasibility of the project and mostly will be derived off the input of the LCPC and deeper optimization of information by Tilson.

High Level Engineering and Design Plans: The majority of this task will be the refinement of the initial deployment route analysis based on feedback gathered from LCPC in the feasibility study.

Market Analysis: Using results from the initial feasibility study as well as survey results provided by LCPC, Tilson will undertake a market analysis for the region. Economic status data gleaned from an analysis of the Grand List data and the American municipal Survey Data from the Bureau of the Census will be married with the survey results obtained in the feasibility study phase to establish and refine take-rate estimates.

Financing Models and Pro Forma Financial Projections: Tilson will review and refine its financial model and associated projections from the feasibility study based on the proposed build-out scenarios and will prepare a ten-year revenue analysis based on the experience of other municipal ISPs. Additionally, we will research and describe the major potential sources of funding and financing, including FCC, USDA, EDA, NBRC, VEDA, and VPSD sources.

Estimated Construction Costs: Tilson will develop construction cost estimates and will refine the financial model's initial and ongoing cost and revenue inputs, accordingly producing a high and low range for each. We will draft a narrative that explains the factors that can cause variability and explain the likely range of impact on the overall model. We will utilize the model's ability to provide sensitivity analysis to show how the cumulative effect of these items may affect key model outputs.

Ideal Operational Models and Costs: The requested detailed operating costs are identified in our financial model:

- Staffing or Contracting Operational Costs
- Power costs
- Line maintenance
- Customer interface
- Rental space for switching (and other) facilities
- Costs for access to one or more bandwidth connections to the global internet system

At this stage of modeling, we can also provide budgetary estimates for:

- Negotiating contracts with internet service providers

- Negotiating contracts with construction and maintenance firms
- Serving as the fiscal agent responsible for financing projects, determining the costs of each project to individual municipalities and collecting necessary revenue from participating towns.
- Performing legal work, make-ready negotiations and all other functions of a permanent utility responsible for building and maintaining broadband service.

8. Potential Sources of Grants, Subsidies and Loans

For a rural FTTP network of this magnitude, communities often rely on a large tranche of grant funding from a single or multiple sources in order to move forward with the initiative. Even if the grant award covers significantly less than 100% of network construction costs it is often necessary to reduce financial contributions required of private sector partners and to stimulate their participation. Given the funding limitations of any one grant opportunity, the overall cost of the entire proposed network and concentration of demand, it is possible that individual grant opportunities, and individual complementary funding mechanisms, may need to be pursued for individual network segments. The deployment cost of a specific network segment must be determined based on a design for that particular network segment based on a specific grant opportunity's requirements.

State level broadband grant funding is limited. Because these state level funding opportunities do not represent the largest possible single grant funding source, funding strategy should include pursuit of a federal broadband infrastructure grant in addition to state level grants and loans. Several appropriate funding opportunities are described below.

8.1. Vermont Economic Development Authority Broadband Expansion Loan Program

Program Purpose & Use of Loan Proceeds:

- Loans may be made for startup broadband projects and expansion of existing broadband networks. Eligible project costs include working capital, construction, and infrastructure / installation.
- Applicants may contact the Vermont Department of Public Service for grant and technical assistance opportunities for developing feasibility studies. (Refer to the Broadband Innovation Grant Program).⁵

8.1.1. Eligible Applicants

- Borrowers eligible to participate include communications union districts and other units of government, nonprofit organizations, cooperatives, and for-profit businesses.
- Applicants must be capable of offering broadband service speeds of at least 100 Mbps symmetrical.

8.1.2. Loan Terms and Borrowing Limitations

- Maximum Loan Amount: \$4.0 million.
- Maximum Financing: Up to 90% of project costs.
- Term: Loans up to five years with amortization up to 15 years.

⁵ <https://www.veda.org/broadband-loan-program>

- Interest: Variable Rates based on VEDA Base + appropriate risk-based spread.
- Collateral: First security interest in all business assets; assignment of all applicable contracts and agreements necessary to operate the system.
- Guarantees: Personal guarantees of owners of 20% or more, if available.
- Feasibility study and/or a detailed business plan is required.

8.2. US EDA Public Works and Economic Adjustment Assistance Grant Program

The United States Economic Development Administration (US EDA) Public Works and Economic Adjustment Assistance (PWEAA) grant program provides strategic, competitive investments to support economic development, foster job creation, and attract private investment in economically distressed areas. The program provides investments that support construction, non-construction, planning, technical assistance, and revolving loan fund projects. PWEAA grants are designed to leverage existing regional assets and support the implementation of economic development strategies that advance new ideas and creative approaches to advance economic prosperity in distressed communities.⁶

8.2.1. Eligible Applicants

- A District Organization of an EDA-designated Economic Development District
- State, county, city, or other political subdivision of a State, including a special purpose unit of a State or local government engaged in economic or infrastructure development activities, or a consortium of political subdivisions
- An institution of higher education or a consortium of institutions of higher education
- A public or private non-profit organization or association acting in cooperation with officials of a political subdivision of a State.

8.2.2. Eligible Areas

An eligible area must meet the EDA's distress criteria. The proposed funding area need not be contiguous or defined by political boundaries but should "constitute a cohesive area capable of undertaking self-sustained economic development."⁷ Applicants must provide third-party data indicating the area is subject to one (or more) of the following economic distress criteria:

- The proposed project will be located in a region that meets EDA's economic distress criteria or,

⁶ Notice of Funding Opportunity Public Works and Economic Adjustment Assistance Programs

⁷ Ibid.

- The proposed project is located in an Economic Development District (EDD) that is located in a region that does not meet EDA's economic distress criteria, and EDA determines the proposed project will be of substantial direct benefit to a geographic area within the EDD that meets EDA's economic distress criteria; or,
- The proposed project will be located in a geographic area of poverty or high unemployment that meets EDA's economic distress criteria, but which is located in a region that overall does not meet EDA's distress criteria

8.2.3. How the Funds May be Used

Subject to the availability of funds, EDA may award grants or cooperative agreements to eligible applicants to help support economic development project based activities.

8.2.4. Funding Parameters

The average size of a Public Works grant investment has been about \$1.4 million and generally range between \$600,000 to \$3,000,000. The EDA has awarded funds for between 80 and 150 Public Works projects a year. The average size of an EAA grant has been about \$650,000 and generally range between \$150,000 to \$1,000,000. The EDA has awarded funds for between 70 and 140 EAA projects a year.⁸

EDA grant award generally do not exceed 50% of a project's total cost, but areas demonstrating significant economic hardship can apply for funding up to 80% of a project's costs. Applicants must demonstrate access to appropriate matching funds.⁹

8.3. USDA ReConnect Round 3

The United States Department of Agriculture (USDA) ReConnect program was instituted in 2018, received applications and dispersed funding in 2019 during Round 1, and received applications for Round 2 in 2020 with Round 2 award decisions expected in the Fall of 2020. While ReConnect Round 3 has not yet been funded or announced, there is good reason to believe it will be and will be conducted during 2021. ReConnect Rounds 1 and 2 were funded with approximately \$600 million each.¹⁰ Unfortunately, areas within Protected Broadband Borrower Service Areas are ineligible for this funding, and much of the LFCUD is within such an area. Please refer to the ArcGIS Online Tilson created to view eligible areas for this program.

⁸ Notice of Funding Opportunity Public Works and Economic Adjustment Assistance Programs

⁹ Ibid.

¹⁰ <https://www.usda.gov/reconnect/program-overview>

The unserved requirements for ReConnect Rounds 1 and 2 were stringent, eligible areas must lack access to 10/1 Mbps Internet access service. Funding is available only for areas lacking 10/1 Mbps service, but infrastructure necessary to serve those areas can be constructed through areas already capable of receiving 10/1 Mbps service. It is so far unclear if the same bandwidth requirement will apply to ReConnect Round 3 or if that bandwidth threshold will be adjusted upwards, perhaps to 25/3 Mbps. Regardless, for USDA ReConnect applications, applicants define their own proposed service areas (they do not have to be contiguous) based on data they collect. Tilson's location based, speed test platform described above, customized for the LFCUD, can serve as an important data collection tool for a USDA ReConnect funding application. The proposed service area can be defined using the location and speed test data collected, with proposed funded service areas drawn around the qualifying address points. Below are the ReConnect Round 2 guidelines:

8.3.1. Eligible Applicants

- Cooperatives, non-profits, or mutual associations
- For-profit corporations or limited liability companies
- States, local governments, or any agency, subdivision, instrumentality, or political subdivision thereof
- An Indian tribe (as defined in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. § 450b)).

8.3.2. Eligible Areas

- Only areas that are not inside a Protected Broadband Borrower Service Area are eligible for additional USDA funding. Protected Broadband Borrower Service Areas are depicted on the ArcGIS Online map Tilson has provided. Lamoille County has limited areas of eligibility for USDA funding opportunities but eligible areas include the western part of Morristown, and very small parts of Johnson, Hyde Park, Eden and Cambridge.
- Lack Sufficient Access to Broadband: At least 90% of households in the proposed funded service area (PFSA) must lack access to fixed, terrestrial broadband service of least 10 megabits per second (Mbps) downstream and 1 Mbps upstream.
- Be in a Rural Area: A rural area is any area that is not located in a city, town, or incorporated area that has a population of greater than 20,000 inhabitants or an urbanized area contiguous and adjacent to a city or town that has a population of greater than 50,000 inhabitants. If an applicant is applying for multiple PFSAs, each service area will be evaluated on a stand-alone basis.¹¹

¹¹ <https://www.usda.gov/reconnect/eligible-service-area>

8.3.3. How the Funds May be Used

- Applicants must propose to build a network capable of providing service to all premises in the proposed funded service area at a speed of 25 megabits per second (Mbps) downstream and 3 Mbps upstream.¹²

8.3.4. Funding Parameters

- 100 Percent Grant
 - Up to \$200,000,000 was available for grants. The maximum amount that could be requested in an application is \$25,000,000.
 - Applicants must provide a matching contribution equal to 25% of the cost of the overall project. The source of funds must be clearly identified. If matching funds are provided by a third party, a serious commitment from the third party must be submitted indicating that the funds will be available at the closing of the award if approved.¹³
- 50 Percent Loan / 50 Percent Grant
 - Up to \$200,000,000 was available for loan/grant combinations. The maximum amount that could be requested in an application is \$25,000,000 for the loan and \$25,000,000 for the grant. Loan and grant amounts will always be equal.
- 100 Percent Loan
 - Up to \$200,000,000 was available for loans. The maximum amount that could be requested in an application is \$50,000,000.¹⁴

8.4. USDA Community Connect Grants

The USDA Community Connect Grants program helps fund broadband deployment in rural communities where it is not economically viable for the private sector to deliver service.¹⁵ Unfortunately, areas within Protected Broadband Borrower Service Areas are ineligible for this funding, and much of the LFCUD is within such an area. Please refer to the ArcGIS Online Tilson create to view eligible areas for this program.

¹² <https://www.usda.gov/reconnect/funding-categories>

¹³ Ibid.

¹⁴ Ibid.

¹⁵ <https://www.rd.usda.gov/programs-services/community-connect-grants>

8.4.1. Eligible Applicants

- Most State and local governments
- Federally-recognized Tribes
- Non-profits
- For-profit corporations

8.4.2. Eligible Areas

- Only areas that are not inside a Protected Broadband Borrower Service Area are eligible for additional USDA funding. Protected Broadband Borrower Service Areas are depicted on the ArcGIS Online map Tilson has provided. Lamoille County has limited areas of eligibility for USDA funding opportunities but eligible areas include the western part of Morristown, and very small parts of Johnson, Hyde Park, Eden and Cambridge.
- Rural areas that lack any existing broadband speed of at least 10 Mbps downstream and 1 Mbps upstream.

8.4.3. How the Funds May be Used

- The construction, acquisition, or leasing of facilities, spectrum, land or buildings used to deploy broadband service for:
 - all residential and business customers located within the Proposed Funded Service Area (PFSA)
 - all participating critical community facilities (such as public schools, fire stations, and public libraries)
 - The cost of providing broadband service free of charge to the critical community facilities for 2 years
 - Less than 10% of the grant amount or up to \$150,000 may be used for the improvement, expansion, construction or acquisition of a community center that provides online access to the public

8.4.4. Funding Parameters

- The minimum grant request amount is: \$100,000
- The maximum grant request amount is: \$3,000,000
- Matching funds of at least 15% from non-federal sources are required and can be used for operating costs.¹⁶

¹⁶ https://www.rd.usda.gov/files/CC_Application_Guide_FY2019_final.pdf

8.5. CARES Act Funding

There is also limited broadband infrastructure funding available through the Coronavirus Aid, Relief, and Economic Security Act, also known as the CARES Act, passed in March 2020 intended to address the economic fallout of the COVID-19 pandemic in the United States. While most of the economic stimulus funding available in the CARES Act is for general economic relief purposes, a small portion of it is applicable to broadband projects, especially those projects that address issues of distance learning, telemedicine and even telecommuting. CARES Act funding that is applicable to broadband projects that has been allocated for distribution to different federal entities, in addition the general Coronavirus Relief Funds distributed directly to states for their discretionary disbursement, are described below.

8.5.1. The US Department of Education

The CARES Act allocated \$30.75 billion to the Education Stabilization Fund, which in turn is funding the programs below:

Elementary and Secondary School Emergency Relief Fund

“Congress set aside approximately \$13.2 billion of the \$30.75 billion allotted to the Education Stabilization Fund through the CARES Act for the Elementary and Secondary School Emergency Relief Fund (ESSER Fund). The Department will award these grants to State educational agencies (SEAs) for the purpose of providing local educational agencies (LEAs), including charter schools that are LEAs, with emergency relief funds to address the impact that COVID-19 has had, and continues to have, on elementary and secondary schools across the Nation.

ESSER Fund awards to SEAs are in the same proportion as each State received funds under Part A of Title I of the Elementary and Secondary Education Act of 1965, as amended, in fiscal year 2019.”¹⁷

A portion of the ESSER funds can be used for broadband infrastructure to facilitate distance learning. However, the limited ESSER funds may be entirely spent on projects other than broadband.

Higher Education Emergency Relief Fund

The Higher Education Emergency Relief Fund (HEERF) is divided in two portions, one for student aid and one for institutional aid. Potentially funding from the institutional portion of the program can be used for distance learning

¹⁷ <https://oese.ed.gov/offices/education-stabilization-fund/elementary-secondary-school-emergency-relief-fund/>

programs. Section 4(b) of the Recipient’s Funding Certification and Agreement for the Institutional Portion of the HEERF (“Funding Certification and Agreement”) states that “it is permissible for Recipient to use the funds for Recipient’s Institutional Costs to reimburse itself for costs related to refunds made to students for housing, food, or other services that Recipient could no longer provide, or for hardware, software, or internet connectivity that Recipient may have purchased on behalf of students or provided to students.”¹⁸

Governor’s Emergency Education Relief Fund

Congress appropriated about \$3 billion of the Education Stabilization Fund to the Governor’s Emergency Education Relief Fund (GEERF). The Department will award these grants to governor’s offices based on a formula stipulated in the legislation: (1) 60% on the basis of the State’s relative population of individuals aged 5 through 24. (2) 40% on the basis of the State’s relative number of children counted under section 1124(c) of the Elementary and Secondary Education Act of 1965 (ESEA).¹⁹

8.5.2. US Economic Development Administration

Coronavirus Aid, Relief, and Economic Security Act (CARES Act) Recovery Assistance

The US Economic Development Administration’s (EDA) CARES Act Recovery Assistance “is designed to provide a wide-range of financial assistance to communities and regions as they respond to, and recover from, the impacts of the coronavirus pandemic. Under this announcement, EDA solicits applications under the authority of its Economic Adjustment Assistance (EAA) program, which is intended to be flexible and responsive to the economic development needs and priorities of local and regional stakeholders.”²⁰

The EDA grant program, funded through the CARES Act, is funded with \$1.5B nationwide with \$266,000,000 appropriated to the EDA’s Seattle regional office.

Eligible applicants include:

- District Organization
- Indian Tribe or a consortium of Indian Tribes

¹⁸ <https://www2.ed.gov/about/offices/list/ope/caresact.html>

¹⁹ <https://oese.ed.gov/offices/education-stabilization-fund/governors-emergency-education-relief-fund/>

²⁰ <https://www.grants.gov/web/grants/view-opportunity.html?oppld=321695>

- State, county, city, or other political subdivision of a State, including a special purpose unit of a State or local government engaged in economic or infrastructure development activities, or a consortium of political subdivisions;
- Institution of higher education or a consortium of institutions of higher education
- Public or private non-profit organization or association acting in cooperation with officials of a political subdivision of a State.

Eligible projects include:

“Examples of projects that may be funded through CARES Act Recovery Assistance include economic recovery planning and preparing technical strategies to address economic dislocations caused by the coronavirus pandemic, preparing or updating resiliency plans to respond to future pandemics, implementing entrepreneurial support programs to diversify economies, and constructing public works and facilities that will support economic recovery, including the deployment of broadband for purposes including supporting telehealth and remote learning for job skills.”²¹

8.5.3. US Department of Agriculture

Distance Learning and Telemedicine Grants

The USDA’s Distance Learning and Telemedicine grants Window 2 applications window opened on April 14, 2020, and will remain open until July 13, 2020. Up to \$25 million allocated from the Coronavirus Aid, Relief, and Economic Security Act (CARES Act) will be dispersed during Window 2. The CARES Act requires these funds be used to prevent, prepare for, and respond to coronavirus. Applicants are encouraged to identify how their application addresses the COVID-19 pandemic.

“Approximately \$71.7 million was made available for funding under Window 1, which included \$47 million in funds appropriated for FY2020 as well as funds totaling \$24.7 million which were not awarded during FY2019 and have been carried forward to the current year. Window 1 closed April 10, 2020. The Agency will be processing applications and making Window 1 awards in the coming months. Funds not awarded under Window 1 will be made available under Window 2, along with the CARES Act funding.”²²

²¹ Ibid.

²² https://www.rd.usda.gov/sites/default/files/USDARUS2020_DLT_FOAR2CARESActFunding_04142020.pdf

There are a few significant limitations to this funding, such as a 20% limit on broadband infrastructure spending, and that all equipment be new or non-depreciated. It can be combined with the ESSER funds if possible, but can be used on its own as well.²³

8.6. Rural Digital Opportunity Fund Reverse Auction Round 2

Round 1 of the FCC's Rural Digital Opportunity Fund (RDOF) reverse auction will be conducted starting late October, 2020 with a \$16B budget. While the RDOF Round 2 date has not yet been announced, it has been announced that it will have a budget of \$4.4B plus whatever is left over from Round 1, and the FCC has the discretion to add to the Round 2 auction budget as needed.

However, between Round 1 and Round 2 of the RDOF auction the FCC plans to institute the Digital Opportunity Data Collection process, a more granular data collection process to determine broadband availability and auction eligibility, including a public challenge process utilizing a crowd-sourced online portal.²⁴ The more granular data collection process will require Internet service providers to submit to the FCC broadband coverage polygons for each service and speed offering, specific geographic territories for specific speed and technology offerings. The information depicted in those polygons can then be challenged by state and local entities including members of the public. Tilson's location based speed test tool can be a powerful tool here as well during the challenge process. Using an online portal, a resident can enter their address and conduct a speed test. The results will then be mapped, and the address points and speed test data can be used to challenge the broadband coverage polygon data. The FCC plans to advance the Digital Opportunity Data Collection program during their July Commission meeting.²⁵

Funding for the RDOF is a total of \$20.4 billion with \$16 billion earmarked for the 2020 auction and \$4.4 billion, plus whatever is left over from Round 1, earmarked for Round 2. No date has been established for Round 2. Auction winners would receive a subsidy out of the Universal Service Fund's High Cost program, monthly for ten years. This is a subsidy to be able to provide service at a specific speed to subsidized locations if they request service. The main caveat for the RDOF auction is the auction participant, and the subsidy recipient, must be a retail Internet service provider.

²³ https://www.rd.usda.gov/sites/default/files/FY2020_DLT_App_Guide_Final.pdf

²⁴ <https://www.fcc.gov/digital-opportunity-data-collection-dodc>

²⁵ <https://www.fcc.gov/news-events/events/2020/07/july-2020-open-commission-meeting>

It is difficult to estimate how much funding may be available in the LFCUD during RDOF Round 2, and difficult to estimate when it will occur, but it will not occur until the FCC institutes their new data collection program, and the data collected from that program is released publicly for a challenge process.

8.6.1. Eligible Applicants

RDOF auction participants ultimately need to be able to offer retail broadband and voice service to all locations within subsidized census blocks. Companies wishing to apply for auction participation do not have to provide retail service at the time of application, but they will need to do so in order to receive the subsidy that is won at the auction, which comes from the High Cost program of the Universal Service Fund.

8.6.2. Eligible Areas

Eligibility for the RDOF Round 1 is determined by a lack of availability to terrestrial 25/3 Mbps Internet access service as determined by the data in the most recent publicly available FCC Form 477 filings, which ISPs are required to file twice each year. Eligibility for RDOF Round 2 will incorporate the more granular data collection process of the Digital Opportunity Data Collection process, as well as the challenge process associated with it.

8.6.3. How the Funds May be Used

RDOF Round 1 auction winners will receive a subsidy to be able to provide broadband and voice service to all locations within subsidized census blocks (more granular areas for RDOF Round 2). These locations are classified by the FCC as High Cost, or locations that require a subsidy in order for private sector companies to be able to provide service to them. The subsidy can be spent on capital expenditures to construct new broadband infrastructure and on operational expenses related to running the network over which the services are delivered, but ultimately the obligation is to be able to provide service if requested within subsidized service areas.

8.6.4. Funding Parameters

The Rural Digital Opportunity Fund is funded with \$20.4 billion for both Rounds 1 and 2, with \$16 billion allocated for Round 1 and \$4.4 billion for Round 2 plus whatever is leftover in Round 1. The RDOF is a reverse auction, with winning bidders ultimately bidding below the maximum bid price. Round 1 eligibility is determined by FCC Form 477 information (self-reported broadband availability information reported by ISPs) and potential eligibility for Round 2 will largely depend on the more granular data submitted by the regions ISPs as will be required by the Digital Opportunity Data Collection process, as well as a public challenge process to that data. It is impossible to accurately estimate the potential available funding for the LFCUD for RDOF Round 2.

8.7. Opportunity Zones

The Opportunity Zone designation encourages investment in communities by granting investors federal tax advantages for using their capital gains to finance new projects and enterprises.²⁶

Qualified Opportunity Zones were created by the 2017 Tax Cuts and Jobs Act. These zones are designed to spur economic development and job creation in distressed communities throughout the country by providing tax benefits to investors who invest eligible capital into these communities. Taxpayers may defer tax on eligible capital gains by making an appropriate investment in a Qualified Opportunity Fund and meeting other requirements.

For investments made for two years after January 1 2020, investors won't pay tax on 10% of their deferred capital gains, and their remaining federal tax obligation is deferred for seven years. For example, if an investor realizes a \$1M capital gain on the sale of an asset, the investor has 180 days to put that amount in a qualified Opportunity Zone investment. In that scenario, at the end of seven years, the investor would pay tax on \$900K.

8.8. New Market Tax Credits

The New Markets Tax Credit (NMTC) Program incentivizes business and real estate investment in low-income communities via a federal tax credit. The program is administered by the US Treasury Department's Community Development Financial Institutions (CDFI) Fund and allocated by local Community Development Entities (CDEs) across the United States.²⁷

The NMTC Program attracts private capital into low-income communities by permitting individual and corporate investors to receive a tax credit against their federal income tax in exchange for making equity investments in specialized financial intermediaries called Community Development Entities (CDEs).

A CDE is a domestic corporation or partnership that is an intermediary vehicle for the provision of loans, investments, or financial counseling in Low-Income Communities (LICs). Benefits of being certified as a CDE include being able to apply to the CDFI Fund to receive a New Markets Tax Credit (NMTC) allocation to offer its investors in exchange for equity investments in the CDE and/or its subsidiaries; or to receive loans or investments from other CDEs that have received NMTC allocations.

²⁶ <https://www.irs.gov/newsroom/opportunity-zones-frequently-asked-questions>

²⁷ <https://www.cdfifund.gov/programs-training/Programs/new-markets-tax-credit/Pages/default.aspx>
<https://www.cdfifund.gov/programs-training/certification/cde/Pages/default.aspx>

To become certified as a CDE, an organization must submit a CDE Certification Application to the Fund for review. The application must demonstrate the applicant meets each of the following requirements to become certified:

- Be a legal entity at the time of application.
- Have a primary mission of serving LICs.
- Maintain accountability to the residents of its targeted LICs.

Examples of regional CDEs include Vermont Rural Ventures and Coastal Enterprises, Inc.

<http://vermontruralventures.com/>

<https://www.ceimaine.org/>

9. Conclusion and Recommendations

With both the Seven Town model and Eight Town financial model being cash flow positive within three years, Tilson recommends continued business planning and business modeling for network design optimization and business and financial model optimization leading to the identification of a private equity partner(s) willing to invest in the project under the conditions required by the model.

Critical to this would be the finalization of locations to be included in the project scope, including among towns already members of the LFCUD as well as those considering joining it. As part of the network design and modeling optimization, the inclusion or exclusion of specific towns and areas needs to be finalized. While it is possible to include additional towns or areas after initial project implementation is underway, the initial design and model will need to stand on its own and any additions after the initial service area is defined will have to be carefully analyzed as to their effect on the model, including the effect on project cash flow within three years as well as the ten year ownership transfer window.

Also recommended is serious consideration of teaming with other Vermont CUDs to achieve economies of scale and purchasing and negotiating leverage with network operators and creating a project of a scale more attractive to investors.

As the current financial models do not include any sophisticated debt or financing options such as Opportunity Zone investments or municipal tax exempt debt, those options should be considered and incorporated into the final optimized modeling as appropriate. Potential investors specializing in Opportunity Zone investments should be qualified early in the process given the fact that only the town of Johnson is a designated Opportunity Zone, and only a small part of the fiber to the premise infrastructure and electronics would be located in Johnson, and the limitations of Opportunity Zone investors' involvement due to this fact needs to be clarified.

The current financial modeling also does not take into account capital from grant funding opportunities, state or federal. At the appropriate time, when network and business planning are at a more advanced stage, and depending on what specific grant opportunities may be available regionally at the time, optimized modeling can incorporate potential grant or subsidy funding. For example, the United States Department of Agriculture's ReConnect broadband grant program will likely have a third round of funding in early 2021, and while much of Vermont is considered a Protected Broadband Borrower Service Area and not eligible for this funding due to a grant issued to

VTel Wireless in 2009, certain limited parts of Lamoille County may be eligible.²⁸ The same may be true for the FCC's Rural Digital Opportunity Fund's second round of auction subsidy funding, and a Public Works and Economic Adjustment Assistance grant may be possible through the US Economic Development Administration. It is important to note that few grant programs will offer funding substantial enough to dramatically affect the financial model, but such grant funding may improve certain aspects of the financial model making the project more attractive to investors.

²⁸ <http://ruraldevelopment.maps.arcgis.com/apps/webappviewer/index.html?id=51bbfce8e72549dcb5374d0aa32e1736>

10. Appendix

10.1. Appendix A - Glossary of Terms

ArcGIS Online Map (AGOL) is an online map containing multiple layers of information that can be turned on or off individually

Average revenue per user (ARPU) is the average amount of monthly revenue that you receive per user. ARPU is calculated by dividing total revenue by the number of customers you have.

Capital expenditures (CapEx) are funds used by a company to acquire, upgrade, and maintain physical assets such as property, plants, buildings, technology, or equipment. CapEx is often used to undertake new projects or investments by a company.

Earnings before interest, taxes, and amortization (EBITA) is a measure of company profitability used by investors. It is helpful for comparison of one company to another in the same line of business.

Enterprise & Institutional (E&I) customers are customers such as schools, universities and hospitals.

Free cash flow (FCF) represents the cash available for the company to repay creditors or pay dividends and interest to investors GPON

Gigabit Passive Optical Network (GPON) is a point-to-multi point access mechanism. Its main characteristic is the use of passive splitters in the fiber distribution network, enabling one single feeding fiber from the provider's central office to serve multiple homes and small businesses.

Internal Rate of Return (IRR) is the annual rate of growth an investment is expected to generate.

Operating expense (OpEx) are ongoing costs for running a product, business, or system.

Optical Line Terminal (OLT) is the active component of a Gigabit Passive Optical System that allows connections to multiple end users using a single OLT port.

10.2. Appendix B – Additional Survey Results

In the Market Research section of this report we included a sampling of the narrative responses to survey questions.

Here in Appendix A we include the full version of all narrative survey responses, with no editing or selection bias.

What do you envision a new broadband network in Lamoille County looking like? Who are the key stakeholders? Who are the key participants?
The network will use technology that is dependable and capable of symmetrical high speeds. Key stakeholders are: ISP that focuses on the last mile underserved customers, offers affordable service; Electric Utility; local bodies e.g. Lamoille FiberNet CUD.
Education, Healthcare, Small Business, EMS, all age groups and social demographics are the stakeholders. Critical to economic development and attracting workers to Lamoille County and keeping them!
fiber to every home, even in remote rural homes; very high speed (100mbps symmetrical) for home businesses, schools, public spaces and libraries
Fiber network, CUD, local utilities and service providers
I don't have a vision yet. Things are still too amorphous
Reliable, 100Mbps or better service available to all households
Cooperative with its members/subscribers.
A local based company with local employees including support staff that can help customers. Shorter times to get hooked up to new service. Fast service that doesn't drop.
A model similar to ECFiber, where access and speeds of 100/100 are available and affordable and where low-income folks also have accessibility.
Universal fiber-to-the-premises.
BTW the monthly cost that I entered includes VOIP, which is great. The survey didn't ask anything about VOIP.
Stowe Cable is planning on running synchronous fiber optic through Cambridge and Jeffersonville later this year. Check w/them and they can provide details
I know living in a rural area we will not have the best speeds around and that is ok. But we need to have reliable connections. Consolidated's network infrastructure is out of date and barely functions. However they are the only viable option for us.
Municipalities
I would love to see universally available high-speed fiber, opening up more opportunities for remote work and education. I expect that internet access is one of the major requirements keeping people and businesses from moving to Vermont in general.
No idea, but better, faster, and more reliable
all households, schools, services, businesses, government access
I don't even know what that means. We just NEED to get internet that's worse than third world.
Key stakeholders are the residents that subscribe/participate as well as our local elected officials
A coop with local support hiring local people.
Anchor businesses and institutions. Connections to every address. Primarily fiber but some cellular and wireless.
Business Homeowners
I don't think I understand enough about this topic to answer this question.
I'd like it be a utility. Affordable, reliable, and effective.
town elected officials, school boards, medical and social services
Not really sure, but maybe something similar to a coop. Like VTEC
would love to see a local, stable provider who is truly invested in the community
I would envision a locally owned and operated broadband network managed by member towns/ It would be essential to allow the service to reach each and every home and town in our County of 10 towns, assisting the 25 K residents, with the capability to grow
FTT Premises. Stakeholders (I hate this term) are primarily Real Property owners. Tenants can choose landlords with or without internet, as the tenants' preference dictate.

I envision that anywhere in VT internet is accessible. It is absolute must have cheaper cost
Not sure. It has to reach the ends of roads/utility lines etc, not just be where there is a denser population one that can serve and service the community at a reasonable fair price and provide the opportunity to work for all homestead as the need for a dependable fast internet service is a necessity for our rural communities to growth .
With at least 100 Mbps available
A network enabling economic growth.
cheaper with fewer interruptions.
Comcast. Loved it! Used to have them, reasonable to work with and had so many options.
Most important is providing broadband to people who don't have that option now. Faster and/or cheaper options in Comcast's service area would also be great. We don't have Comcast because of the cost. Faster but more expensive broadband may not help us.
Run like a public utility, across the county, with equity and fairness for all to the last house. At my workplace in Morrisville I get over 50 for download speed. At home, where it matters even more, I fought for many months to finally get up from 2 to 6.
Not sure-very out of technology world
It would provide reliable high-speed internet to ALL residents of Lamoille county, not just those in village areas as with Comcast.
Fast. Uninterrupted. Affordable.
Lamoille FiberNet CUD, funding mechanisms.
I would like to give up satellite TV service in favor of a service that uses fibre-optic cables. Satellite service goes down in bad weather, and Direct TV's billing has tripled over the past ten years.
I would like to see local control (Town, City, State); participants should be local individuals or companies that rely on it's use.
I would like to see an internet service that is equivalent to the rest of the United States. Fast. Reliable. And worth the extra monthly costs.
Fiber to the home. I need state of the art fiber.
I think the utility companies should be a major component.
I think xfinity needs to be supported in getting here. I would be willing to pay more for better internet that was more reliable.
I envision a broadband internet that actually exists. It's frustrating paying what I do to get nothing, especially trying to work from home with COVID. I would pay more for better internet, gladly. My job is in the tech field.
Reliable, short term contract, affordable to everyone. Stays on 95%+ of the time and no hidden fees/fine print. Xfinity or Comcast.
We want fair point
My priority is ensuring equitable access to all members of our community despite income or geographic location. I believe there must be representation from or for communities that fall within this gap in service.
Accessible to low-income families, reliable and fast, customer service that actually wants to help and can help when there's issues, remove contract barriers. Internet should be a public utility, accessible to everyone.
Fiber connectivity
I envision it reaching every home. That it is fast, reliable and affordable. Key participants are both business in town, folks that work from home and telecommuters. Key stakeholders are the local municipalities, bigger businesses and perhaps the state.
Fiber to home Everyone is a stakeholder and should be a participant as well.
Not a clue
Fiber Optic Family
Preferably at least minimum speeds available. A company willing to upgrade and update. It would be nice to stream (unable to do so now because speeds are so low) . Daughter could not participate in college zoom meetings.
no idea
Fiber to the home on existing utility poles. Network administered by new non-profit. Not existing electric or telecom utilities,
Musk sky net Fiber thru elec co (VEC)

Residents and those of us trying to work from home as well as local businesses.
Call me crazy, but could this be a co-op sort of thing? Honestly, I'd love to invest in local broadband and shift away from the monopolized system of utilities presently in place.
Public or public/private non-profit solution. Possibly building on existing infrastructure like local NFP utility. Allow for flexible/hybrid solutions recognizing unique topography and dispersed population needing to be served.
I would love faster internet service! I use to have Comcast in Morrisville and they were great.
We need broadband for all on fiber network. I would think this applies to the majority of the citizens of Lamoille County.
Difficulty envisioning a new bb system. I do not have another option available other than current provider. I feel the community should be the key stakeholders as well as the employees. Key participants: the counties in which the broadband serves.
At least 100mbps
Providing atleast 100 mbs upload and 100mbps are essential for the growth of our community both socially and economically.
Something that isn't consolidated and has actual reasonable cost to performance. I had been having internet issues for months and they kept closing the ticket saying it was fixed. I really got on them about it this past week and they found a major issue.
All residents need broadband. Romania offers 500mps to their citizens. We should be able to to have 1/10 of that, at a minimum
Faster speed, reliable,
One that will be able to provide service and not tell you "the line is full", and leave you without service in trying times
We want a company that is committed to bringing superior broadband service to our entire region.
It should be a co-op structure with membership eligibility for those living in a designated service area. Service area should be universal within Lamoille County and if financially feasible expanded into adjacent areas on request.
no idea
I would think Vermont Electric Coop would be a key player. As well as Velco as they have a lot of fiber in the area.
Increased speeds and availability. Actually getting the speeds we pay for, but still affordable. The cost via Comcast is absurd. Most of the time I only get 18MBPS. Co-Op model? Grants? Larger local organizations that would benefit?
Every home should have access to fast broadband internet.
We have been told that because we are at "the end of the line" our service will not be as good as others. A new network should be reliable and provide the same service to all customers.
Not sure
Anyone but Consolidated Communications
Public WiFi service throughout the county
Our whole community having access to affordable high speed internet at all times regardless of their locale.
Pleeease find some way to provide at least 25 mb access to all households regardless of proximity to a town center. Individuals should not have to pay massive sums to get internet infrastructure extended to their homes.
Everyone has reliable and consistent access in their homes that is affordable. I think everyone is a key stakeholder - COVID made that clear.
Operating foremost for the public interest, i.e., keeping up with consumer's evolving Internet needs, providing highly reliable service at prices that are reasonable relative to the costs of providing service.
Cable or Fiber would be amazing. Local govt should want to incentivize more reliable quality Internet to attract more of us that work from home.
Students and teachers are able to video conference and learn remotely without interruption.
Clearly every local business is a stakeholder as it is hobbling to try to work here without adequate internet access. On a larger scale, entire community's economics are centered on attracting and retaining businesses and their talent, so they are key too
Like Ammonds, Idaho, I foresee internet provided as a public utility - I think it is biased for it not to be so. It is untenable that only wealthy people have access to high speed internet.
residential customers, commercial users, small businesses
Ideally, fiber to the home... A plan to get there needs to get the providers working together instead of fighting over pole space. Consolidated, Stowe Cable are the leading options. VTEL Wireless works pretty well, but is expensive, and is metered.

i would like to envision optical cable internet
Reasonable cost and super reliable.
It should provide 100% coverage, or the same coverage that electricity provides.
faster reliable service for all of the above usage.
No idea, just that it has to reach everyone.
I envision increased access to cable as demand increases. Stakeholders and participants would include companies that promote working from home, schools that require students to work from home, institutions that offer online courses, home internet users, and cable companies.
Gosh, this is a broad question. I can't look into the future, folks. I would only hope that someday the residents of Lamoille County will have access to high-speed broadband Internet access. It's 2020. I used to live in Los Angeles so I know what we're missing out on.
A community owned internet access network
homeowners, health care offices, children and others studying at home, people banking and shopping. People accessing libraries, state offices and other services.
I would prefer cable internet with other options associated with cable providers. They seem far more reliable. Since our electricity is relatively unreliable, I am concerned with internet being linked in any way with electric service provided.
Do not know .
i don't know but it seems like it will need an option that has regulation and oversight bby government...it should be treated like electricity was 60-75 years ago...its to important to just let private companies offer it only when it is financially profitable for them
all of use
High speed, widely available access, no more expensive than currently available services
anyone who is home most of the time; elderly, retirees, working people , covid refugees, children.
I believe high speed (actual high speed) internet should be available to all residents at an affordable cost. It's how we stream shows, work , bank, etc.
A reliable connection in rural VT to accommodate working from home, and access to services for community members who lack transportation. Currently available options for rural internet are unreliable in inclement Vermont weather (which is often), and neither provide fast enough or reliable enough internet at an affordable enough price to work from home and/or access healthcare services. I don't want to consider moving in order to have reliable enough internet to continue working from home.
We currently do not have access to internet via laptop . We haven't been able to get internet even after the Johnson elementary provided us with a Jetpack service so our children could do there remote learning from home. The Jetpack did not work at our house. Previous owners had Hughes Net with a dish set up outdoors. That was disconnected. although I heard it was not high speed interne .
I am unsure, but a necessity for online teaching for remote learning.
Fiber optic. Public utility. Locally owned and managed. Baseline connectivity (enough for remote learning and telemedicine) paid for out of taxes. Improved connectivity paid for on a per-household opt-in basis, by people like me who work from home and need super fast internet, and we can pay more in order to help supplement the baseline for low income folks who need it.
Fiber-optic to the last mile for everyone. I think every citizen/visitor to Lamoille County should be considered a "stakeholder". Obviously, the private sector ISP's have to play a major role in any final solution.
It should be a utility like electric and landline telephones.
Fiber access with up to 1GB SPEED. Owners would be locals and key participants.
Ideally fiber to home via Vermont Electric Coop
I don't know but I'm baffled that it's not available and very concerned now with having to work from home.
I just want reliable Internet that doesn't cost a mortgage payment
Better than it is now.
Everyone!
I Hurd Stowe communications is better than Consolidated and has better reliability my service goes out daily
ONE THAT IS RELIAIBLE AND ACCESSIBLE TO ALL.
I don't care as long as it's unlimited high speed internet

Good reliable service
We the users are the key. I expect we will try to get a service provider to work with us.
??
Community members- parents and children - esp regarding distance learning
Adults
fiber to the home
No Idea
I'm unsure of what it will look like, but I am willing to participate and also be sure that my neighbors are aware.
Access for everyone, not just downtown or on select streets. Also, if new/additional equipment is required it should be free of charge.
All Students have access
Anybody that can supply fiber at a reasonable cost
High speed, dependable service.
Somewhat like a public utility
people who work from home
All residents, all residents
We need more options for internet. Literally the only provider I have access to is consolidated communications, and if I'm unhappy with their service I have no recourse. Stowe cable services our road but their line stops three houses before ours. I would like to see local providers based in Vermont that are accessible to help with service issues.
This should be a coop. The subscribers are the stakeholders. Verizon FIOS, Comcast Xfinity, are great, but the answer to shareholders and ultimately will push what provides the most value to them, not the subscribers
Dependable and affordable
Fiber network. Stakeholders are residents, businesses, schools/colleges, and employers.
Must be fiber optic cable. I'd like to have what Fairfax has : options for Comcast or other national provider. With deals and unlimited data and 100+ download speeds
It would be nice if it was some kind of coop or partnership of all the users, non-profit or regulated so that the cost is reasonable and you don't keep getting cost increases for the same mediocre bandwidth and service. I'm really getting sick of companies like Consolidated that suck and the customer service is horrible. I think everyone should have access to reasonable service without breaking your bank account.
Anyone with a computer.
I would envision all residents would eventually participate once available. Key stakeholders include employees, employers, entrepreneurs, retirees, students, retailers, residents, shoppers... everyone!
Broadband service is critical to the future of Vermont. We are very far behind every other state I have lived in, worked in or visited. The economy is increasingly dependent upon people effectively working from home. Households rely on good internet everyday life, and ours is always in the way of getting things done.
1) A local public utility akin to the electricity co-ops. 2) The stakeholders being the community, those who provide the capital and the clients (users) (I would refer you to the town of Shrewsbury in Massachusetts as an example of a long-running and very successful service run by the town. https://www.selco.shrewsburyma.gov/)
I envision a wireless service to provide service to rural households. A public/private partnership would be best to be able to provide subsidies to low income residents. The key stakeholders are residents, private telecom providers, state and local governments.
Locally owned and operated would be great
Less expensive and more consistent connection
Private with public grants
Not sure
Unknown
Normal. Reliable. No lag.
Businesses. Students. Families
Being able to do my teaching job from home

I can't answer the last two questions, but I can certainly imagine more efficient reliable service that should be lower cost as more people are pooled together to use it. Key participants are everybody right?
The need to work from home and provide income to our family or is 100% dependent on internet. It's the most stressful part of living here, not having fast internet we can depend on not to stop working all the time.
Stakeholders: students, businesses, remote workers, teachers
I picture something like the electrical co-op, with end-users including businesses and households as the key participants. In addition, the state and federal government, through our tax money, would need to provide some funds to go that last mile. It's an infrastructure question, with equal access for all the end goal.
Stowe cable is available at the end of our private road but to run lines to my home I need to come up with \$4000.00
As long as it doesn't look like Fairpoint/Consolidated Communications, I'd be content with whatever fiber options are rolled out.
Can a community form a group? Is it possible for stakeholders to also be the consumers? I clearly don't know enough on this matter to have a form of an opinion.
Affordable access to all.
Key stakeholders are the users. Without having enough folks to sign up, we're not going to be able to implement this without a higher rate. Another is the ISP. Currently the folks in the area seem to not care about rolling out fiber as they have the monopoly on it.
a co-op that offers better service at lower prices.
Coalition of towns supporting fiber optic high speed 50-150Mbps services
The Lamoille County broadband would provide better service for some residents and access to those people who have no internet at this time.
Actual high speeds. I honestly don't really care who the key stakeholders are although a co-op of some sort would be amazing.
A reliable network and infrastructure with redundancy. All full time residents in Lamoille County are stakeholders. There are a surprising number of people who work from home full time as well as home schooling. Small business owners/sole proprietors would also be key stakeholders.
More competition please!
Idk
Consistently faster speeds, but most importantly reliable, reliable, reliable! Everyone has a stake in this, regardless of how heavily they use/rely on the internet, but it is most critical for local businesses and remote-workers who absolutely require greater bandwidth and reliability to function. In Stowe, beyond the relatively small area covered by Stowe Cable service is often too slow or unreliable.
Lamoille County desperately needs faster and more reliable internet. And more choices and availability from providers! I would very much prefer to keep my dollars local. I've had fantastic service from Stowe Access, I just wish my internet were faster and more reliable.
I don't know I just want faster internet for a reasonable price and I don't think that's asking much honestly.
Don't know...just need better service
I would hope the existing electric utilities would be involved, since they already have billing infrastructure in place and own most of the utility poles that the fiber optic cables would hang from.
We are paying double the cost for 40% of the service obtainable in suburban areas. The internet is a utility and should be provided on the same basis as electricity.
Unsure.
My family come from the UK where the internet is treated as a life essential by the Government. The internet is treated like the supply of water, electricity and sewage. Therefore everyone has access to fast internet at an affordable price. Competition is key to maintain quality and service standards. Here in Stowe we have one mainline supplier for faster speeds with other satellite providers which are slower. Stowe needs to have more fibre providers and consumer choice.
Broadband should be available to everyone and there should be competition among providers in order to drive the cost down.
Latest technology, highest speed, 100% coverage available access. Robust enough to support high in season demand on network, and new work/learn from home life style. Building this network is critical to the future commercial success of the

region, both in terms of business development and real estate prices. Key stakeholders include businesses, municipalities, schools, resorts and citizens. Participants should include all stakeholders.
Looking like Comcast and do not like. For those of us who are fortunate to already have great internet, thanks to Stowe Cable, I envision a new network that does not involve Stowe Cable. Save Stowe Cable. (I am not a co-owner in the company).
It should be fiber and built to withstand the huge influxes of tourists that come at peak times. Our internet speeds measure in the low single digits during peak times and it's essentially unusable.
Fiber
Access to fiber along all public roads. Stowe Cable
faster upload, faster streaming on the rare occasion i do that
?
We're pretty happy as VT Elec Coop customers, could a coop provide internet (user-owned model?)
Fibre for all. Preferably a community-based provider, though whenever a municipality attempts this, the lobbyists for communications companies convince legislators to prohibit them. Broadband service and cell phone access should be a utility, not run by for-profit companies. In the absence of a community-based provider, the for-profits should be heavily regulated, providing reasonable service to all in their coverage area at a regulated cost, similar to electricity.
I just want it to be reliable.
Fast and reasonably priced. Consolidated Comm charges way too much for such slow speeds. I'm more used to 100+ mbps in Boston.
Providing small businesses, teachers and students with access and speed they need to be top notch is my main concern. I am none of these, but our economy requires this.
fast, uninterrupted speeds for streaming and uploading of web info.
Local town, vecoop,users
never thought about it, wouldn't know where to start thinking about what's appropriate
Consistency With good speeds
Reasonable pricing
Impacts everyone - businesses, schools and residences
I just want cable internet on Bryan Road. I don't care what it looks like. We need high speed internet here.
I think key stakeholders are residents AND local businesses - not sure how to answer the other questions.
The Wild West. Lots of options and competition. And if private companies aren't willing to do the job, we do it ourselves as a municipal fiber option
There needs to be competition, better prices, options, and reliability.
I'm very happy with Stowe Access.I envision someone like Stowe Access or Comcast providing quality Internet access across the county.
Fiber to Homes. Consumers would be the stakeholders.
Stable and reliable. Not weather dependent. Enough bandwidth that the number of users in the community doesn't slow the overall speed. Download speed is more important than upload. would like to see speeds in excess of 60 Mbps. Price is a secondary issue, but still important. Feel like I'm paying too much for what I have.
Faster service, much better customer service. If you have a problem you shouldn't have to wait 9 weeks for an upgrade.
Fiber optic network. Utility companies and phone providers who own the poles
Reliable faster speeds
Local non-profit, like Burlington telecom before they screwed that up. But honestly just get me decent speeds and I'll put up with anything.
Any competent ISP.
Internet quality similar to that in a metropolitan area. Our download speeds from Comcast are 360 with uploads around 200
Fiber optics
I expect everyone to have high speed internet with no exceptions. Stakeholders? Just everyone period
Has to be better than the sub-par one we have now. And the customer service is just as bad
I envision it being more like a utility, with the stakeholders being the people who use the internet, and the towns participating in plans for expansion and upgrades.
I envision a regular fiber optic network, much like in many areas of the country. Old landlines are spread across the town already, but with the shifting technological landscape internet cables should be replacing the old phone cables, as residents

often use more cell phones and internet than wired phones. Key stakeholders should be At&T, Verizon, the usual. The key participants should be year round and part time residents.
Faster, more reliable, less expensive
Local control. Transparency on pricing, open communication with community members. Stakeholders should be everyone and anyone who needs internet access (which is everyone these days!) Key participants should be a central committee or team that manages, with regular communication and input from the LCPC and town Selectboards and broadband committees. And regular open forums and/or newsletters to keep locals informed.
Fiber broadband. Locally controlled. Local residents.
Something affordable that everyone who wants to participate can.
Dependable, available, fiber network to home
One that works all the time and fast enough for three or more people to use devices, and be capable of expanding into all the valleys and hidden ground.
Fiber owned by the Town of Hyde Park to every resident and business with Internet from competing ISPs.
All citizens
Faster more reliable internet is a necessity for working from home, and education, something that has become prevalent during the pandemic. It is also a safety issue. I believe it is an economic driver.
A board of directors representing each municipality
Best would be Fiber to the last mile. Like a mix of public/private. The People!
Schools, business owners
Something more than the consolidated or Hughes nonsense. Fiber would be best. I'm a teacher doing distance learning and my students have suffered due to the internet access. All people on lampooned county would be stakeholders. Key participants are homeowners, students, businesses and schools.
Local responses to problems and not told they don't care.
Association members.
Users would be key stakeholders organized and managed centrally
Available to all in the county. Town as stakeholders. Appointed officials
Teleworkers, local businesses
Symmetrical high speeds - no one except businesses, organizations, and huge households needs anything over 500Mbps down, but with remote work and learning becoming the norm, symmetrical data rates are now required to accommodate the need for large uploads. Key players would likely be professionals working from home, and some of the areas small businesses without adequate ISP coverage.
Everyone would have access to internet with a reasonable connection cost and at least 25 MPS speed. Biggest issues are 'last mile' connections - getting from the pole to the house
Customer service first. Consolidated is horrible. One hand does t know what the other is doing. Reliability is horrible. I have to shut the router down at least 3 times per work day.
?
In my richest dreams, I envision fiber everywhere. That's probably not realistic. However, the ability to work remotely in tech-heave fields (which is nearly all of them now) while living remotely is a very attractive proposition. Employees currently working remotely; NVU; education should be stakeholders as well as employers in nearby areas.
High speed internet available everywhere at reasonable rates. The year-round permanent residents are the key stakeholders and should have a say in decisions
I dont know how to answer this question.
No idea
Being able to get through a business call without having to walke around the house trying to find a signal; Attend a meeting or get through a work day without having to reset the internet 4-5 times.
Fiber.
I'm not quite sure how to answer this question. I would expect some sort of enhancement- fiber to the household.
I think having a key utility like Broadband Service that is so critical to day-to-day commerce and education controlled by a commercial monopoly-like stakeholder such as Consolidated Communications is an issue. They are not simply not motivated to improve their service nor their customer service. I am very supportive of a community-based service where I

would foresee members of the governing board coming from the community for example and has accountability to their members.
Cooperative, nonprofit
not a clue
Organized in a manner which can actually provide customer support and is answerable to the customers vs just paying lip service and providing unreliable service
Less expensive than xfinity would be nice. Both of us
I would support high speed access for all!
Not sure what this is really asking. Broadband should be available to every household and place of business in the county that wants it. Anyone living or working in Lamoille County is a stakeholder.
No idea. I'd just love something more reliable that can support my growing family as the kids start school soon.
Equal access to all, regardless of physical location. Stakeholders are govt, citizens, schools and internet providers.
Broadband access should be considered a public necessity as water or electricity. Covid has only made this abundantly clear with people working from home and quarantined with a need for faster speeds. Up until 2 months ago we had only 7mbs download speeds making almost any online task unbearable!!! A recent upgrade to 40mbs is a vast improvement but still lags behind the rest of the world. My mom lives in very rural northeast kingdom and has broadband access. It's ridiculous stowe does not!
I'd appreciate something reliable that isn't affected by the weather.
Free for all!
access for EVERYONE
Unknowm
I don't think a new network is necessary. Funding for current providers to expand and improve services would be most logical in my mind.
An expanded network to cover most areas with higher bandwidth. Fiber to the desktop would be preferred. Local selectboards, residents including from underserved areas, and current providers.
fiber to the home
I would have to see only 1 choice for providers. We are happy with ours because we have the choice and did switch providers in the last year. Have been more happy with service, and cost is way less than previous company. This is both our home and place of business.
One that starts with a base that is somewhat in excess of current needs in terms of capacity and is set up to be easily expandable to about 10x that capacity. The system needs to be wide spread and easily accessible by remote locations as well as more densely populated areas
Home owners, and business are the key participants. This will also help to increase business traffic and opportunities in Stowe.
Unsure
Something with better download and upload speed. With modest costs
Anything would be better than present (summer 2020) situation
I would like to see a system that serves everyone from casual users to businesses. In our case, one of us is in contact with European galleries constantly for his art. The other uses it primarily to keep in touch with friends and family.
We wish everyone had what we have, as it's the best in our area, however, it is expensive. We'd love to upgrade, but cannot afford to do so. Previously, we had Consolidated, a bonded line @\$45/mo. We doubled our monthly cost, but are benefiting from better service.
Better more reliable service that is more widely distributed Work from home. Local business, short term rental owners, work from home residents. Everyone really
Access improved in more remote areas. My daughter wants to move here and buy a house (from Colorado, bringing an Internet-based job.)
?
We simply want and NEED access to high speed internet. We are maxed out at a speed of 7 with Consolidated and it has been a brutal fight with them to even get there. We had two full time working from home parents and two schooling kids in the spring trying to all do what we needed to do and it was IMPOSSIBLE. Failed on all fronts. We are desperate and it's to the point we may need to consider moving, when we really do have a nice home and property. HELP!!!

I'm hoping it would enable more households to access faster, reliable and affordable connectivity. Participants include families with school age children involved in Distance learning, small business owners trying to work remotely, educators and the general public.
People working from home and students who are doing remote learning
Coop would be nice, .. I was happy with Burlington Telecom in Burlington
above fee is a bundle deal, tv, internet, & voice
Ideally it would be a Coop so that cost is controlled by the users. If it was strictly for profit, if I look at Comcast, price increases occur regularly. If the utility companies infrastructure is used, then I would like customers to have a say in how things will function going forward.
I think that if there was a new internet available where I am I would want to try and get cable internet or at least something that is faster than my current data light internet.
Federal, State and property Tax supported infrastructure, with subscribers paying on income/sliding scale, or with other subsidies
I want to see an affordable system that everyone has access to and subsidies or free services to those who cannot pay. I want everyone to be able to access reliable fast service.
Public internet just like electric. Absolutely necessary in this day and age.
I would like to see a Fiber Network installed throughout the region. The infrastructure is present. The need is there. The expense seems to be the interference . Stowe Cable would seem to be the best choice to manage a local network. They have Fiber experience. They would need government assistance to access the telephone poles controlled by Consolidated Communications. The size of Consolidated Communications hinders their ability to serve their customers.
Don't really know
students, remote workers and homeowners are the key participants.
5G – private Fiber second option
Broadband has to be accessible to everyone, not just some. quality has to be monitored. There must be accountability to someone - at either town or county level. macro or even the town-level data paints a much better picture than reality. There are people who are less than 5 miles away from our neighborhood who are getting over 50Mbps, and then there are neighborhoods that have less than 3 Mbps through DSL and no cable access. It affects our ability to work/our livelihoods and our home values.
I am not sure what this means
Not sure I understand the question
No idea!
Affordable reliable and fast. I moved here from rural America. Not Vermont which claims to be rural. People here dont realize 70 miles to the next town with no houses in between and our internet was County based and five times the speed and half the cost.
Not sure, maybe comcast or consolidated
Key Stake holders- Lamoille County residents, Key participants- same
I'm not sure what it would look like. But I'd like to be able to consider a "work from home" opportunity if internet was up to speed. I'd like to save money on my Dish Network Bill by cutting back significantly if I was able to stream shows of interest now and then.
Cheaper and faster like Europe.
fiber optic-Town-Community
It is paramount that an investment be made to furnish a robust broadband opportunity as we live in a connected world. The pandemic has exposed the shortcomings of internet service in Stowe as individuals are reliant on this platform for education, healthcare, business, entertainment and the facilitation of a modern home's operation.
Combination of fiber, coax, and radio.
Wireless or partnered with the power providers. Broadband should be provided by an organization with the infrustrcture in place to supprt it, not a start-up. Stakeholders are anyone doing business on the web. Almost everyone needs to participate to make it cost effective.
Not broadband, ideally. Fiber would be best. Key stakeholders should be local organizations, businesses, and consumers, and ideally ratepayers would own the infrastructure.
a utility, fiber optic, fast speed

Updated fiber optics
That broadband becomes a public utility, like electricity.
Just something that works consistently. My job involves working on websites 8 hours a day. With the pandemic I'm home until at least January, and would like to continue working from home. But I don't know if that is possible. I got cut out of a Go To Meeting in the middle of a client call last week and the internet didn't come back online for about an hour.
Reliable, high-speed at an affordable price. Infrastructure that allows for growth and scalability. All people, corporations, governments, etc. are stakeholders -- high speed internet is a utility all must have access to. Representatives of all stakeholders must be participants.
We just want to get what we pay for, internet that works. Consolidated told us they will not upgrade our internet because it is not financially worth it for them.
More availability, more speed, cell phone service, better Wi-Fi calling
Affordable and reliable service for students.
Fiber optic
Publicly owned or coop structure , Not sure about the other questions
Consolidated has high speed within a few hundred feet of my place. I'm near the Stowe/Morristown town line and all providers stopped high speed short of each town line.
There are several houses/businesses in this gap that needs to be filled with high speed.
Fiber. = Every Where for Everybody, All persons are equal
I feel like Belvidere is rarely considered because we are so few residents and up out of sight. That shouldn't matter. We need tk be fully included in area technology
Municipalities at the forefront. We have zero access where we live, save for Satellite which was a tremendous waste of money.
Dependable high quality service available 24/7/365 at a reasonable price. The COVID-19 pandemic has made it clear that internet access is essential for students, home-based employees, shopping, and communication, including tele-medicine.
We need cable. DSL is just not robust enough for more than two users at one time. I really don't care who it is. I would prefer a private provider if possible
access for our home is right down the Main Street but we do not have the funds (3,500 estimate) to get lines run to our home from the main road at Bartlett's Hill Rd.
I would love a community owned provider.
Available as an option for all regardless of where they live.
Towns and utilities
No idea
Government/quasi-government run would be acceptable. Possible funding with bond sales. It's apparent private enterprises such as Consolidated Communications do not wish to upgrade delivery systems. They don't have to, they are a company of last resort.
It is nearly impossible to Work from Home with our internet which is why we thought about moving but no one would buy our house will no cell service for any providers and bad internet.. Remote learning requires us to Drive somewhere and sit in our car for a couple of hours to get the homework done. It's our number one complaint about living here and it has not improved in the 10 years we have owned this land but our dependence on internet is much greater now! Very stressful!
FAMILIES, PEOPLE WORKING REMOTELY
A company that is local, and receptive to customer feedback. One that actually works and is reliable in MULTIPLE rural locations.
Local businesses or town offices would make sense. Students, business owners and people working from home, or want to.
Similar to that offered by Stowe Cable but at a lower cost.
Cooperation; schools, local businesses, towns, community members
Fiber network to each house no matter the distance to pole. Stakeholders will be the citizens for the citizens. Thus to lower the cost should be part of property taxes. Hi
Local company, access for all neighborhoods, free to join, affordable

Right now we are lucky to have Stowe Cable as our provider. Their service meets are internet needs at the moment. I know our road is one of the lucky ones to have fiber optics available. I hope that our situation becomes the norm throughout Lamoille County.. I also envision several companies offering internet services to promote competition.
High speed cable and unlimited data for all.
I have always thought the most reliable and fastest systems are cabled, rather than "beamed tower to tower". It is speed and reliability that is most important to me. I think it is (has become) a utility, like electricity, and could be handled in the same way.
Reaching further into rural communities and becoming affordable for all families.
Let's just imagine that there is a Virus that affects Lamoille County and all the Schools, Colleges, and Churches are all closed and all classes and services are held online. If you live where there is no internet service then your SOL. What if staying employed means working from home online. We're all key participants.
I would appreciate any company that offers a fair price For internet service that actually works.
The network should bring fiber to the home. There are some smaller companies currently offering this and expanding their network slowly, such as Stowe Cable. I don't envision larger companies being involved as they seem preoccupied with their existing networks.
I would appreciate a company that takes value in its customers as well as their employees. The stakeholders are the ones within the community. There should a equal amount of reps from each town in the county. These people should be able to have a understanding of the issues each town faces and how to report out to the towns.
Fiber would be great but anything over 25mbps would be helpful. Soon is important as it sounds like kids will be remote learning 3days/week and one or both of us parents are working remotely. How about VEC install the infrastructure and lease it out to providers?
???
Reliable access
Having more than one option would allow for choice and more competitive pricing and service.
No opinion, just want access to technology the rest of the country has had for decades.
Coax cable with high speed internet that doesn't lose strength with increased nighttime users, covid stay home users and / or bad weather. I am not sure what you mean by 'key stakeholders?
Ideally fiber optic cable but could also be 5g network through cell towers.
We're all stakeholders/users. We're all key participants.
A robust, reliable high speed fibre system , The community are both participants and stakeholders
A collaboration between service providers and those currently struggling to get Acceptable speed and service. Clear SLA's that are measured and obtainable. There are 23 homes in this development most getting 2-5MBS and CCI has offered to upgrade the lines for \$211k. We are willing to invest nearly 50k as an association to offset investments but 211k is unacceptable. Comcast is 3/4 mile away but not allowed to come to Stowe without Cert of Public Good. Reduce regulation increase competition.
We must provide reliable, fast internet to every home. I am 30 seconds from the high school and do not have reliable service. It is unacceptable to expect parents and children to work with such poor service.
With 100 MBPS common elsewhere we have a long way to go.
Fiber to home service for all. Everyone is a stakeholder and should be a participant.
I would just be happy if Comcast would run a line to my house.
I currently cannot get broadband because Consolidated Communications has no available lines. Being able to get it would be nice.
A service that gives us unlimited data/service where we live.
Cooperative similar to or part of VEC
Something that is available to every home and has the signal strength to handle many homes using broadband at the same time. The broadband slows significantly during high tourist times as they fill up the empty homes and hotels and use bandwidth as well. It also slows now during school hours when lots of students are online. I cannot use it at certain times because I can only get 1-2mbps download speed.
It sounds to me like a overhaul of the system, providing more access. I completely agree with the column from andy server yesterday. https://finance.yahoo.com/news/why-the-founding-fathers-would-want-us-all-to-have-fast-internet-114817838.html

I think that broadband internet is a broad term in general. DSL is not acceptable n this day and age, we need to have higher speeds like what waitsfield telecom and VTel are offering. Comcast even runs in to the village of Johnson but they cannot expand the infrastructure up the road? We personally feel even comcast would be good because we could do a triple play package and bundle voice, internet, and TV all in one.
Reliable, new infrastructure put in place. A company with competent workers. Our last outage was a technician who had a bad work order for another customer and took our lines off grid for 3 days. Our constant need of repairs of late have been of broken lines/wires and sloppy work.
Fiber on all poles, 250 mbs
Stowe Cable - fiber up to 1Gig
An extension of the existing Stowe Cable Network into areas that are relying on Consolidated/satellite - the selectboard/a new committee focusing on improved internet for the town of Stowe could spearhead this, based on input from the community. I think it is clear there would be no question on buy in from those in more rural parts of town who do not have access to broadband.
Currently our 'stated download speed' is 25 but , Consolidated guarantees only 80% of that if we are hard wired to the modem. This is impractical at best and an impossibility if there is more than one device being used. This puts us into the dark ages of internet service. We need a much faster and more reliable download speed .
Starlink satellite Internet
I would hope they allow existing infrastructure to be utilized. For example the service line for Comcast that goes to johnson is outside my window but I cannot get Comcast because some rocket scientists at the public service board won't allow it.
We are waitng for MC fiber and they are coming!
Every home in Lamoille county should have access to broadband internet, the same way everyone has access to electricity and water.
Private company fast internet...government subsidized if necessary to get it to happen.
Consolidated told me my neighbors are using up all the bandwidth so I couldn't even be considered unless one of them dropped service. I work remotely but because I have satellite I am unable to use my system at home. I am currently working out of a closet in a church. We need fiber in my area. Taxes are crazy high in morrisville and going up every year. Can't we use taxpayer money to get fiber?
I would like to see Efficient and user friendly access be available. Reliable and fast internet. My household is trying to work and learn from home and with our current options it is near impossible to do so. Many days we have to leave our home and access internet at family members homes or sit in downtown morrisville.
It must be affordable with the key players being both common people n business owners. We need a board that represents all parties.
More affordable cable access to rural roads in Lamoille County. I'm luck to have cable access but many do not; key stakeholders are remote workers, students, families, schools, employers, and utilities.
faster and less expensive
A cellular or satellite based network. Ideally, it'd be a public utility that's cooperative by participating teons/counties in nature... but I'd take anything at this point.
High speed internet access by cable
Schools and businesses.
Everyone in Lamoille County has access to reliable high speed internet regardless of their economic situation. In the era of COVID the key participants are students and teachers. The internet is a utility and it would be nice to see utilities non run by major for profit companies.
It should be reliable and deliver what customers pay for.
Presumably fiber optic. I am remote, and do not expect fiber optic soon.
something that works well for everybody with working from home learning from home a lot of people are disadvantaged
Smaller privately owned fiber companies. The power companies need to be more involved with make ready work
I don't know.
Fast and adorable speeds of atleast 100/100 for und \$100
I work at our local library, which is closed for now. Many patrons use our computers and wifi because they lack access to reliable internet at home, to any internet, and/or to computers, smart phones, etc., from which to access the internet or wifi. A new broadband network in our county should prioritize getting broadband connections to all low-income residents of

Lamoille County, for distance-learning, applying online for jobs, unemployment, etc., during this pandemic and for the future.
Provide internet at reasonable speed to every home.
Expansion of a VTEL over the air system or one tied to VELCO.
This question is useless. Every resident is a stakeholder. As a layperson how do you expect me to answer this.
I don't know anything about the stakeholders.
I am not sure what the answer to this would be
We need internet so badly. We can't use anything. The people who lived at our house before we bought it had DSL when we moved and tried to sign up we were told we couldn't and had to get sat internet
To be in par with the rest of the country and state. Stowe only allows CCI and Stowe Cable. Stowe cable does not service our street even though we are within a mile of a main road. We are only getting speeds on best day of 17 mbps. Spectrum communications services more remote as well as larger metropolitan areas in VT and their minimum speeds are 100x fast and not exaggerating with min speeds in remote areas of VT of 200 mbps. Lastly we pay for a service that we are not getting.
Town govt, public utilities, businesses, homes, schools, hospitals, police and fire
Google fiber
Paying for "up to" 80 mbps. Getting 49 down and 17 up on WiFi now. Never gets better than that. Towns and counties should be able to create their own systems just like a utility. That would be better than profit motivation. Key stakeholders...all the citizens of the county and businesses. Ditto participants. That's not socialism it's being smart. Internet is more important now than ever and will only get more so.
Stowe cable, Comcast, consolidated comm. , state of Vermont
Anything with more speed and reliability would be better than what is currently available.
I don't really understand why we can't someone like Comcast to broaden their existing network. Their speeds are crazy fast and it is quite reliable. If I could get them in Stowe, I would pay them in second.
WE SHOULD HAVE THE BEST FASTEST SERVICE AND IT SHOULD BE A NEW COMPANY NOT CONSOLIDATED WHO DO NOT CARE.
Affordable for all, and one that doesn't go out if the wind blows too strong
I envision a fiber system that offers various packages based on speed and service. Also, there should be discounts or credits for poor performance.
Just extend Comcast service It's the only reliable provider
We had to pay \$13,000 to Comcast in order to have them lay cable to our home in order for us to be able to work from home. It would have been nice if this discussion happened 15 years ago but here we are now. Obviously it would be great if everyone could have access to the high speed internet that we now enjoy without having to spend \$13K!
A internet that actually works daily and allows me to do my classes online without shutting off. People that live on back roads where not a lot of people live
Prefer- Competitive region based operation run as public utility. Reality- Comcast
I would love to see Verizon. I had them when we lived in Grand Isle. We had the internet essentials program with 2 school aged kids and me on a budget it was very helpful and worked every time with not one problem. Now our internet is always out and very unreliable. Very sad we couldn't transfer our service when we moved.
A cooperative venture, similar to VEC.
Hopefully one not back by any municipality. Private access
We need fiber optics that don't cost us a fortune. Stowe Cable offered to run cable to us- to the tune of 4000.00 because we have underground wires- despite the fact we have a conduit in place. That is outrageous. We are not rich. A new broadband would be available to all, with a fair and equitable monthly rate. Key stakeholders- citizens, contractor for the laying of cable, the internet service provider and county officials
Multiple devices could access the internet for business and entertainment. Our children stayed at camp on Lake Eden to try to work from home but found that only one at a time could have a visual/zoom call.
Good quality reliable affordable
FiOS hardwire. It's faster & more reliable. Copper was even more reliable than what we have now. That never went down!

Affordable access for anyone, from any home. Community owned not-for-profit organization that seeks to invest heavily in ensuring that everyone has access. A group that fully understands the positive economic impact high quality internet access can have.
Fiber optic network; key stakeholders are community anchors; either a Vermont based telecom or utility
No idea.
Looks? Solid and consistent service, fair price, access by all. Stakeholders? County or town co-op or similar business committee representing all towns [like VT Elec. Co-Op] . Everyday working residents like me. Families, Renters, Businesses, Tourists.
High speed preferable fiber internet with speeds > 100mbps available to all houses.
Everyone equally deserves high speed internet despite living in a rural area..
Elon musk satellite
Xfinity comcast
We are all stakeholders, and it should be treated like a public utility.
Homeowners - families with adult and children as users as well as home automAtion devices (i.e., for safety and security).
Fast, reliable
Businesses, schools, residents
Locally grown with some state funding and technical assistance. Business and government stakeholders.
The broadband network needs to be designed in a way where the stakeholders are organized in a cooperative fashion. Not for profit. The important question remains to whether this would be an "opt it" or "opt out" service"
Increased speed and band width to support all residential tele-workers and businesses.
A network that is accessible and affordable to all residents
Allow Comcast in to Stowe!!!!
With so many working from home and kids needing internet to do schoolwork (whether distance learning or in-person), working residents need better internet more than ever. The state of VT will lose many residents to frustration with internet. Additionally, older Vermonters who need internet to stay connected, in touch and safe in their homes. AND, all our local businesses who employ many of our residents require internet to stay open and viable.
I would envision a broadband network that works with our rural residents to ensure fair and equitable access to high speed internet. There would be local tech support services - instead of an overseas call center that takes 1-2+ days to solve issues. I think schools would also be stakeholders to ensure that the upcoming distance learning can be accommodated. Participants would be all residents, businesses, and schools of Lamoille County.
fast and reliable
Participants? Every occupy-er.
Accessibility to rural areas where kids can zoom for school and older, isolated seniors can get access to family members and the world via the Internet.
Comcast, cellular is too sketchy (mountains)
Truthfully I'm not sure we need a "new" service. Stowe cable seems to have a lock on Stowe, in that Xfinity can not provide service here. I don't see how a municipal entity can build out and operate a broadband network. What happened in Burlington is proof. Perhaps quasi gov. Where significant \$\$ are injected and mandates to upgrade with latest technology and must reach all residential homes.
I would envision a network run by the people who actually use the network. It would be wonderful to have a network that is not run for profit but only takes in enough revenue to support itself.
I'm fine with the service I have.
There needs to be competition so that companies will provide affordable service and customer service. I receive no customer service. I have to turn my router on and off at least once everyday since March.
This is critical for remote workers. If remote working is going to become the norm, we need fast reliable internet.
Comcast, broadband or fiber
Set up competitive network to help drive consumer pricing down. Allow providers to access telephone lines to distribute fiber. Work through a feasibility study with stakeholders to develop sharing opportunity over time of infrastructure.
Please , HELP!!! This new normal society has created is not treating everyone fairly! How are we supposed to work remotely, when we can not with out high speed internet? It doesn't work that way. INSTALL MORE TOWERS, LIKE VTEL. I am in a valley, my neighbor receives the signal high speed, I receive NOTHING. GMP installed those WORTHLESS industrial wind turbines,

but you can't take care of the community that needs the power to run their Internet, good for corporations! Shame on the law makers! TY
I would like something similar to cable that is available in many places where I could bundle TV, internet, and cellular service!
I would love to see a public utility.
NOT 5G! Not safe for humans nor necessary. We need internet to work from home
We just need a fiberoptic service like Comcast to run the fibers. I don't understand why they haven't. EVERYONE on my rural road would subscribe. I have been put at risk by not being able to telework during the COVID crisis, simply because I live in Wolcott.
A faster and more reliable network. I have employees in other parts of the country who have faster internet on their cell phones that we have at home. EVERYONE I work with has significantly faster upload and download speeds.
We need higher speed options and due to the number of people in town on busy weekends/weeks, the system must be able to accomodate an additional 15,000 devices.
comcast
Don't know
I think there are many people who have no options besides a Consolidated Communications and would like to at least have a choice of another plan. With so many people dependent on the internet because of the pandemic more and faster service is really necessary.
We need fiber!!!
We need fiber.
lower price
Readily available , Cost effective
Ease of access and affordable products. Available to residents, homes and businesses.
I think there should be fiber optic internet to everyone's home. Set it up like a local utility for the towns in the county that are a part of this. The participants are the users in need of better internet. It should start with those that do not have access, or have limited access in the ore rural areas. And it needs to happen as soon as possible.
Something akin to what ComCast provides
Hi-speed fiber or equivalent wireless available at EVERY address, with extremely high reliability. Our experience with T-Mobile cellular home internet shows that that particular wireless technology can be an excellent infrastructure platform. Existing cell towers, new towers, transmitters on top of telephone poles instead of stringing fiber to every address.
Businesses, government, schools, residents, homeowners: high speed internet access should be considered a utility and required for all - particularly in this era of distance learning and the need to work from home.
Due to the recent pandemic, I feel the most important are students having access to distance learning and adults working from home.
Faster more reliable and affordable
Optic fiber to every household and symmetrical speed of no less than 500Mb/sec
non profit co op. Will upcoming satellite based services change internet accessiblity and cost?
I would like to have fastest possible with reliable coverage. I'm so tired of internet failing with increased afternoon usage, or during evenings. Community needs to provide to increase desirability of neighborhood, community and county.
An inclusive public infrastructure to EVERY home and business which would allow a high speed internet marketplace to encourage competition from multiple diverse providers.
DSL for home, Fiber for businesses
Everyone would have access.
Faster and more reliable service at a reasonable price
No idea. Just need significantly better internet (and CELL) service. Must be faster and more reliable. I work a lot from home and really have no options except DSL. We have dealt with dial up, satellite, and now DSL through Consolidated.
I'm very happy with Stowe Cable actually, but it's time for them to roll out fiber in more places as well as reach the more remote areas in Stowe. They're working hard at it, but are also a for-profit company. I'm not familiar enough with the other towns in LC, but I could see some kind of coop with state/federal backing.
Not sure
We need more competition in the market place, it will drive down cost !

Everyone has internet and we stop complaining about how slow it is. Universal availability at low cost. Local and regional governments. Residents
I'd like a fiber network that reaches my home and business. That could be backed up with local wireless point to point for more remote customers? We the residents and business owners are the stakeholders. I don't really care who installs and manages it as long as it works and is not crazy expensive.
Fiber network. Wireless point to point for more remote. Residents, business owners, distributing company are stakeholders. I don't care who installs or manages it as long as it works, is reliable and not overpriced.
I would like reliable/fast access
Widespread service at prices much closer to national average. Our entire community benefits. Visitors rely on ability to work from anywhere more than ever.
Fast internet is a selling point for any community, business or home. It's essential to attract and retain people. To educate and support. Public and private citizens and organizations need to collaborate. Federal, state, local officials, economic dev committee, local business owners, residents, school board...
More provider options. Consolidated has a monopoly and no reason to improve. I'm Not concerned around details of broadband network- just look forward to expanded access.
Don't really care, please just get us reasonable and reliable internet
I want reliable, high speed internet across the entire county. It needs to be available and legally required to be provided like landlines.
This will need leadership and deployment at the state level. Fragmenting by community is part of the problem.
We would love fiber. I am a teacher and I'm feeling incredibly stressed about teaching remotely this upcoming year. Our internet made it very difficult last spring.
Legally required to be provided like a landline. At least 27 mbps minimum.
Faster quicker reliable
don't know
Fast, consistent bandwidth, reliable with some resiliency to outages
Efficient and affordable. There is currently a lack of competition in the market, so I would see that this is addressed to offer customers more options and to give providers a need to improve their services. Lack of competition stifles the desire or indeed the need for improvement.
Fiber optic run as a public option utility
Not sure.
Comcast.
Verizon and At&T, Google
We have very good bonded DSL service. The only thing better would be fiber optic. Stakeholders and participants include both businesses and residences.
Fiber optic. The other two questions -just about everyone.
Reliable, low cost. Would love Comcast to be available in Stowe
We want starlink
No idea
Fiber Opics
Not sure how to anwer this.
Every house hard wired with high-speed internet. System owned by subscribers.Use and maintenance fees.
I envision fast and consistent internet for everyone, that doesn't crash when more people are in town
This area needs reliable high-speed internet that isn't based on speed for consumer cost. Everyone should have access to the same high speed just as we have water and electricity. The internet is now undeniably a necessary utility. For as popular as this area is, it becomes even more necessary. Providing the same high speed access to all benefits residents and visitors.
If it is not consolidated communication I do not care who owns it
Whatever gives us faster more reliable service than we now have and at a reasonable cost. We don't care if its fiber to each home or some type of wireless. These days everything runs on the internet and it has become an essential service for us. The service dropouts, even if they are for a few minutes at a time, are very frustrating.
one that works consistently thruout the state and country.
Stowe private 5G as a non profit service will boost our economy and increase migration to our area.

Fiber. The people.
Increased working and learning from home
Faster, more reliable service with choices of service providers
I envision a fiber optics network through all of the towns in Lamoille. There would be a cooperative where the network is controlled- both payment and Service- by local people. Otherwise, each town should have at least two options so there aren't monopolies and bad service isn't a given.
The ability to have the household all use their devices and no one have a dropped signal.
Anything NOT satellite based - worried about weather and more interruption
No idea. Assuming hotels and resorts.
Providers including Verizon offering lower prices for better internet
50 to 100 mega bytes
Getting reliable service at a reasonable cost
With distance learning being a big this this school year, I would like both my children. to be able to participate in their classes at the same time.
A system that gives everyone equal access and equal reliability/speed. I think the county or town should be a stakeholder.
Access for everyone regardless of geographic location or socioeconomic status. Ability for everyone and anyone to reach and use the internet, distance m learning, social media on an equal basis, whether they access everything or not, the capacity should be available to them.
I would like fiber as deep as possible with 5G used for last Mike where necessary
Faster access for everyone.
????
Private industry provider
Fiber wire everywhere
We are looking for good quality cable or fiber internet that can ensure 50/100 MBytes per second to support business needs.
I would love to have consistent, higher speed internet at my home. However, some of my neighbors can't get any internet at all. I would like to see multiple providers, to have options. The stakeholders and participants should be the families who live (own/rent) in the County. We advertise as being a state that is friendly and welcoming to teleworkers and 2nd homeowners, yet they (me!) can't get sufficient service to work from home.
More people are working and learning from Home. We need faster and more reliable internet.
If Stowe Cable, Consolidated Communications, or other commercial providers are not willing, for any reason whatsoever, to connect every Stowe household with up to 100 mbs, then all agreements with such commercial providers should be voided and Lamoille County should create a public utility to provide cable tv and internet service
I imagine it being available to all residents, and being owned/controlled by the towns, such that a corporation does not control access , prices, speeds, or content.
Faster downloads!
a faster more stable connection for everyone.
Don't know
More business friendly.
Fiber please
Better service so that it does no get bogged down when there is heavy use in my home or the neighborhood.
I don't know about the governance and who the provider(s) would be. Ideally every business and household would have internet access. Were all the families in Lamoille County able to access internet from their homes during school closings during the spring? I doubt it. Here we are with the school year opening with remote learning for some students. It is inequitable for some to have and others not to have.
Wireless is like electricity and plumbing 100 years ago. Need it to survive/function in today's world.
A new provider that can rival comcast's speeds with a better price would be amazing. 100 megabits for \$40 and every household would switch.
Would like to see the people at the end of the lines get better service.

I don't know. I'm a transplant from B'klyn, NY who went to Plattsburgh State & moved to Burlington when Bernie Sanders was mayor and eventually moved to my place near the Green River Reservoir in Hyde Park.
not sure
I would like to see fiber optic cables available to all, but I can't even get Stowe Cable to come up to our road. They said we would have to pay over \$10k to have it done, even with 9 homes on the road. I work from home and cannot live video. WFH is now usual. We must have high-speed internet. Additionally, my cell service is spotty at best.
Fiber optics with reliable connection and holding the connection regardless of how many people in Stowe are on the internet. I'd like to see the citizens of Stowe be the stakeholders.
Businesses and residents.
Let's just catch up with 3rd world countries. It's embarrassing living here in 2020 and still talking about it.
Fiber to the home network. Residents, businesses, schools, local government.
I think most residents are willing to pay for better reliable internet service
Remote workers
less expensive, better speeds/bandwidth/access. I have a home in FL where I pay \$25/mo less than here, & get 150/150mbs there vs 25/? mbs here. The internet situation is probably the most disappointing part of being here
Accessible by/for all. High speed. Stowe Cable seems like a good option.....only we've had trouble getting them to follow-thru and complete the necessary work to get us connected.
Whoever can provide consistent high speeds at a reasonable price
Everybody
Better access with more reliability for everyone.
Does not really matter.
Taxpayer investment in modern fiber lines to all areas giving us modern speeds 100mbs
Stowe Access having more dedicated lines to streets, their trunks being powered as much as possible to provide 21st century technology to each and every home in the Stowe area. It is not the providers fault, technology has gotten out ahead of the infrastructure and this is something that Stowe as community needs to invest in and demand swift action on. Also being able to increase cellular service would help reduce the load on the infrastructure for dedicated lines.
EVERYONE...FROM UNI PROFS TO PLUMERS TO TODD @ STOWE RD AUTO...EVERYONE NEEDS TO HAVE INTERNET AND A SYSTEM THAT WORKS...OURS IN N VT DOES NOT IN ANY WAY WORK
Public/Private Partnership has to be the way to get this done. Fiber 100/100 is what we all deserve
If it was set up like the coop where we all had a say and a vote. With company who can actually be worked with and fix problems
Faster, reliable internet, that doesn't hold you hostage for cost.
Everyone needs fiber optic internet to function and work properly.
Reliability, speed and affordable
Copy of Waitsfield telecom
Without Internet you no longer can communicate. The phone book does not work for cell numbers or most business phones numbers so it has become impossible to live without. Plus most businesses are going paperless so how do you have a record. With COVID it has been the only connection one can have if you are compromised. Travel has not been possible and settling family members passing during this time required internet settlements.
Members of our community - professionals who need internet access to work from home; families who need to use internet to home school their kids...etc.
Fiber optic. Affordable. Key state holders. The customers.. Everyone.

Please describe any concerns or ideas you might have regarding broadband access in Lamoille County that was not covered in this survey.
The rollout can keep up the with funding sources. We have the money coming in - how fast can we turn it around!
major concern is that real speed improvements will only be made for connections along already served routes; wireless will not work in the mountains of Belvidere; people will be left out with excuses made;large ISPs will not deliver on speed promises
Having access is no good unless it is affordable for the majority of people. If more expensive broadband access pushes out less expensive forms of connection, is that really a good thing? Would that enable more or fewer people having access to the internet?
I would want to ensure that the access is reliable. Current access is unexpectedly intermittent and unreliable.
This new service should be affordable. We have a lot of seniors living in our area who live on fixed incomes so the price point should be accessible by all. VT electric coop has been surveying customers regarding a fiber build out as well. Thank you.
I live on a deadend dirt road where the poles are buried. When the road was built, the developer contacted the cable company and offered to let them run cable in the conduit but they declined the offer. Buried poles may mean we'll never get fiber.
It's too expensive
Add Stowe Cable to your ISP listing.
We do not have broadband even available for our house . Every other house on this street in Belvidere has it available. When I called consolidated they told me there was not enough lines available to add one more home.
Cost
I would be concerned if new infrastructure is poorly planned and does no protect against outages. Also, if it only mildly improves access, requiring further investment in the future.
environment, health, rip-offs, balancing, beauty
I'm concerned that although we already have miserable DSL - our area/dirt roads won't get service with broadband. It will be impossible for us to telework or have our kids do distance learning without it. DSL is not keeping up with technology demands
If we had better access we both would be able to work from home. Speed, cost and reliability.
My concern would be that it is mismanaged and turns into Burlington telecom.
I'm not even sure this survey applies to me... Where we live, there aren't even telephone poles going to our house (we have underground conduit for electricity). We are not currently able to afford to pay for the installation of new telephone poles.
Will a wireless infrastructure (cell networks) provide needed coverage and be more affordably upgraded as technology advances or should the focus be on getting the last mile in for the fiber trunks already in place. A multi generational plan is required.
privacy, vs accessibility. the accountability of any service providers, and those who benefit by the service to reach the community.financial transparency
It's not just about having reliable service, it's about the speed. It is very challenging to run two devices at the same time.
We have a very spread out , rural community. It would be important to know there was a commitment to reach the wider community regardless of how far out folks are from the hub.
N/A
Any new, government funded service MUST BE Fiber! Ownership of taxpayer funded infrastructure must be owned either by a member owned electric utility OR a municipality.
Yes!
Look at people who could potentially use Comcast now but don't because of the cost. Will a new service help them or be even more out of reach?
It needs federal, or at least state coordination, input and funding. Leaving every small town to reinvent the wheel while large cities are well served is an injustice. Underserved people need community help! Leaving each household to themselves is unfair.
I want to support the project to help folks get service that don't currently have it. Just don't have the \$ to put out.
After obtaining access the quality and responsibility of the provider will be important.

I would think that Lamoille's system would have to "talk" to similar systems in surrounding counties and the rest of the world. Is this in the plan?
Concern with the "donut" leaving off-the-path rural homes with very slow service which is frustrating and useless in many instances. We don't need rates of \$80 a month. We can not afford that.
Satellite internet is not worth the time or money. Starlink looks like it will be the best option for satellite internet, but who knows when that will actually go online. Look at how it would be possible to get cable lines up streets for internet.
I'm am concerned that providers won't want to go to the last miles. I really think this service is a public good and needs to be regulated like any monopoly. Or even better owned by the community or a nonprofit.
I think it's, quite frankly, bullshit that Vermont will pay out of state residents to come "work here remotely" when the residents of Vermont cannot even get reliable internet even when willing to try every option AND pay for it. Something's gotta give.
Having a reliable connection. If I'm paying for it, I want it to be on 95% of the time (besides storms and such).
Income and racial inequalities in access to reliable and affordable internet is paramount and needs to be addressed in rural VT, especially now due to Covid-19, and actions need to be taken to ensure that everyone has access to affordable internet.
Just to be sure it gets to the "last mile."
Consolidated will not provide us with internet service unless someone in the area cancels
Currently have a promotional price. Normally it would be double what I am paying right now, my speed will drop as soon as that promotion ends. No idea what upload is supposed to be, bill doesn't say.
Cost and reliability.
slow internet
We live close to town but are literally two telephone poles away from access to cable options. As the only house at the end of a long road, no companies will help us get better access.
do not know about it
Stick to what you know and do well. This will not go well if run by local electric utilities. Mo'ville Water and Light should not attempt to administer this. Lease poles only.
Internet is a basic utility that should be made available to all, especially in the current climate (COVID) as so many businesses, doctors, schools & other essential services are shifting online! We need better/faster internet & increased cell service.
Speed of implementation is critical. I cannot operate my single-person professional business from home due to limited internet capacity and latency; made more vital given cellular services at our home (both AT&T and Version) is spotty at times.
It needs to be all-encompassing to cover all areas in need.
We need access for all!
It needs to be minimum 100mbps. Having that access will be a major economic vain in this community while also ensuring that our children have the best access to education possible.
Price
We live beyond the current access area for faster internet speeds. Any new company that provides internet service should focus their efforts on reducing the disparity between "downtown" service (with faster speeds) and more remote locations.
The success of this venture will be heavily dependent on the total cost to subscribe. I am also following the progress of Starlink and will choose whatever option works best for me.
Cost stability and reliable connection
None
Who would own the actual lines/connection? If its Comcast, or another current company, you will most likely run into the same challenges we currently have.
Our daughter and future son-in-law have considered moving to Morrisville. They will not and can not buy a home here without broadband service - they both work in the IT field and they currently are working from home.
frequent outages/non-connect, email message to some is not deliverable, slow connections at times
It would be nice to have public WiFi once I leave my house, as ATT does not have cell service in the area
This was absolutely essential even before Covid. Lamoille county (and VT as a whole) could be a huge draw for people who can live and work remotely, and could also be allowing vermonters access to great paying remote jobs, but we have awful internet.

Cost and access for all.
None. Get it done.
I'm not in the village and my rural location may not offer higher speed then I already have. Consolidated is way too slow for our needs.
While I am keen to support locally-grown initiatives, companies like Verizon (FIOS) have figured this out end to end in impressive ways, including installation, service delivery, support / customer service etc. We should wave companies like them in!
My VTEL fixed wireless service has a data cap. The consolidated fiber does not. My VTel plan coasts \$120 a month. Consolidated costs 73, but I don't know how good it is.
fiber is the key. If the investment were made it should carry us for numerous years. I feel this will only come with substantial governmental assistance as there simply are not enough users, spread over too much land, for it to work privately alone.
Last mile is always the challenge, obviously. Stowe Cable apparently has a long term plan to extend service. How do we help support/accelerate?
I said I don't have it because I use my neighbor's wireless, so I don't have my own, but I do have access.
Hopefully we can partner with a tier 2 service provider in order to obtain the best possible service.
none. All were covered.
We need landline phone and like Comcast cable TV. With faster internet we could probably stream TV, can't really do that now. When you market this new service you need to show how Comcast customers can still get phone and cable service plus the broadband without paying more. Also, I wouldn't mind helping to pay for getting service to areas that are now not served all. That could be by donation, I guess.
If the county/state is truly committed to bringing broad-band access to all Vermonters, it appears that subsidizing the installation of cable throughout the area would reach this goal. Consolidated Communications will be upgrading my internet line in a few days for a download speed of 7MB. However, they are unable to increase my upload speed beyond the 768 kb. This does not allow for reliable, uninterrupted, google conferencing in google chats or other applications and is unacceptable.
I'm concerned that it won't be available to residents in our area - just outside of town limits. Or, that we would have to pay more because of our location.
It needs to be affordable for retired people
I think electric distribution and transmission lines should be buried whenever possible and cable should be colocated with buried electric to reduce the overall cost of this project. Alternatively, I think neighborhood mapping with approaches that attempt to aggregate low-coverage areas to make costs more manageable per household with subsidization (federal and state monies) whenever possible. The road that I live on could also include upgrades to cellular service to help further reduce costs.
I would like to try Comcast, but they are unwilling to run cable up our road even though we are so close to their satellites. Many on our road would love to use their cable to improve speed and reliability
needs better, more reliable speed, than presently available, with good customer service, speaking english as a first language
We have the "fastest" wifi we can get it and it is so poor. My son is unable to watch his TV in his room and it's not that large of a house.
My only concern is cost. It would have to be comparably priced to the current services available in Vermont's more developed areas (Comcast, Verizon, etc.).
Upper French Hill Rd has a hard time getting access I believe do to the close proximity to Mt. Mansfield. We are able to get internet service there via our smart phone.
Cost
Should be available to all households with school aged children. Also, at little or no cost for the families who can't afford it but must have it.
Customer support and management should be local. Years ago I could call Fairpoint and talk to someone local who knew the area and understood the technical issues. Now when I call Fairpoint, I get someone in a different time zone who is only trained for sales - what a disappointment.
The cost "of last mile fiber" is my major concern. Unfortunately, because of this very high cost I am not confident we will have enough subscribers to make it economically viable. The recent experience of Burlington Telecom is a significant case-in-point.

Lack of internet service will continue to choke the feasibility of living in a rural community.
We live .9 miles off the main road, and our utilities are buried. There is an internet backbone on the main road, but we can not get the utility to trench the line to our homes.
Stowe Cable comes within 3/10th of a mile of my house and it's frustrating that they haven't expanded coverage. I'm very interested in that "new" company but I don't see any plans for them to come this way. I'd love to DITCH consolidated and work with someone local.
Reliability, affordability
I wanted to upgrade my internet to a faster speed. But Consolidated Communications told me the wires to my house were old and I need new wires run to my house in order to do the upgrade. I said sure run me the new lines. They said they would do it but I had to pay for the new lines in the order of \$2,000.00. So I said screw that I'm not paying for their lines.
Losing streaming, more than 1 working at the same time, slow speed
No
If I can get unlimited high speed internet, I'll sign up instantly no question. We've had 3 providers in 4 years and it's become exhausting having to limit our use.
Would love to have an option! To have a local company that cares and understands the need for rural Vermont to have high speed internet! This is awesome!
We are in a location that is "on the edge" of various types of internet coverage. Kind of a Black Hole of accessibility. We hope that any buildout of new infrastructure will be inclusive of all locations, not just those with the most customers.
None
Sorry but I can't get on to my bill with CC to find out what my speeds are but I do know that we don't get whatever it is we're supposed to have!!
High speed Ethernet necessary to function in today's world
It was a big problem when people were working at home and kids were doing homework. It crashed regularly connections out to the boonies
I am satisfied with the survey. Thanks!
I'm worried it will be too expensive.
Just faster internet in my area
How reliable would the service be?
Rapid service for issues that cause interruption's with broadband access.
Get it done
We have a landline phone with our current service and would like to keep it (not sure how something like this factors in)
How does this relate to the VEC initiative. Competitive?
Consolidated is terrible. I don't want another "buy local" option only to be underserved. Must have the infrastructure to support our needs. I've signed up for Elon Musk Satellites Starlink but that's years away
I understand to get broadband where I live trenches will have to be dug and cables laid. I'm willing to pay a chunk of money up front to get good broadband and technical support where I live. That's why I think a non-profit partnership of some kind would help keep our monthly costs down, or at least reasonable. Like I said before, I'm sick of getting gouged because there aren't other options. Thanks for doing this study. I'm definitely interested.
Cell towers are needed!
The download and upload speed is not the question. It's really about consistency. The time of day and the day of the week really matter. We avoid those times due to the aggravation. Early mornings and weekends are terrible.
Broadband access for all is critical to the future of Vermont. In an economic sense we will be left behind without it.
1) Internet access has grown up from being a discretionary service to become an essential utility. Many businesses and government services are moving to internet based access and moving away from face to face service. 2) I expect it to be fiber-optic 3) It must be reliable 4) Hire the guys who install maple tree sap lines. they seem to be able to put in thousands of connections in difficult remote terrain in a weekend. (I am of course making a weak joke)
While we can afford to pay more for better service, I am concerned about access that all residents can afford. I am also concerned about coverage for truly everyone. I hope that 5G service can be an option on the table.
No contracts

I am a teacher and I had to drive into town during distance learning to upload things for my students and take part in webinars and zoom trainings. It's not comfortable in rain, cold or heat! A quick solution would be great as we will likely move again to distance learning sometime this school year. Our internet speed doesn't work well enough to participate in zoom meetings (especially bad at dinner and after). We can turn on one device at a time, which is tricky as we both work from home often.
we have only one choice at our address not including cellular or satellite which we won't consider for streaming
We really would like better communications especially during the pandemic.
Extending Comcast high speed internet outside of just the village.
Must be reliable as our Ives May depend on getting information and connecting with others
Actual costs. I currently use Verizon for our cell phone service and internet for our computers. I pay for internet access but it doesn't work and uses data while trying to connect. Verizon is my only choice out here.
I couldn't imagine anything being wrong except that the prices are unattainably high because of capitalizing on the novelty of it being a Vermont based company.
Security
Do it soon!
My concern would be cost
Upload speed is important for my work, and I am currently often only able to get 1 to 2 Mbps. I need faster upload speed so I can work effectively, and not have to constantly mail USB drives via overnight delivery for large media files relevant to my business.
Consolidated has lied and deceived us since we purchased our home and their service has let me down on numerous occasions during crucial meetings and presentations.
Concerned that we may roll out new broadband but existing individuals with terrible service or old wiring in units/houses, will be unable to connect without paying dearly for the connection.
none
How are folks who have no internet service finding out about this opportunity? Has this initiative been interfaced with the Lamoille North SU?
None
There are still sections of Lamoille County that are not covered by broadband.
Coverage has been VERY spotty in Lamoille, some still have NO internet. As this has become a necessity, EVERY house should have access. We only got reliable internet 6 weeks ago - prior to this is was virtually nonexistent (0.1 mps). It may not be feseable to string fiber, but certainly if every house has a telephone, they should be able to get high-speed DSL.
We are relatively lucky to have upgraded to a bonded DSL service when Fairpoint (now Consolidated) was offering the service. It offers bandwidth that us usually sufficient for our needs for a fairly reasonable cost, but with speeds that fluctuate dramatically (from 5-7Mbps to over 20Mbps). Talking to friends and neighbors, most people are very dissatisfied with bandwidth, reliability and service. Working from home or schooling from home ranges from challenging to barely possible.
Consolidated is a disaster so we switched to stowe cable. Better but very expensive for speed and not widely available. Xfinity is available in Waterbury? I'd say open up bidding to all companies and figure out how to subsidize build out to less accessible areas. fiber should be dropped wherever a ditch is opened or road work is done.
We need better service ASAP
In the town of Stowe, the current monopoly enjoyed by Stowe Cable and incompetence of Consolidated is a disgrace. Comcast is available in Waterbury and in Morrisville - why are they not allowed to offer service in Stowe?
It is important to ensure that all schools and the regions poorest & most elder have equal access.
See above. Save Stowe Cable. Thanks.
start in the outlying areas that have very limited access to service, there are many areas of Stowe, mine included, that have basically zero options for access and speeds.
unsure
With cell coverage as spotty as it is, we rely on Wifi calling for our cell use. Although we have this, it only works when internet is functioning. So, we also maintain a land-line. With reliable internet we could count on, we could shave another expense. Our internet through Consolidated is more than standard DSL, It is called a bonded pair. When we upgraded to

this, our speeds improved. Could enhancements to Consolidated's capabilities better serve everyone? Phone lines are reliable.
The speed check that was conducted at beginning of survey said I had 20 MB's uploads. It is more like 2 Mbs
Local, state and federal governments should help fund installation of reasonable broadband speed at reasonable cost to all parts of Vermont. Vermont needs to revisit how its tax dollars are spent and reallocate funds to this critically important area.
It would be nice if customer service at Consolidated could tell us if and when we are scheduled for an upgraded service. However when I asked that question the person I spoke to had no idea.
My internet bill doesn't tell me what my access speeds that Ol'm paying for are.
Essential for future growth, Tourists look for a minimum level of service, I don't always lose my signal but daily time out messages because service is so slow. My test was in the afternoon which is okay. Nights after 8:00 are often not worth trying to get much done online
We need modern broadband for our community's health, safety and the financial stability of our residents. Being within a 4 mile radius of the center of the town in Stowe with no access to cable internet is frustrating.
I think it's critical that the goal and outcome should be universal access to high speed internet for ALL residents, regardless of where they live in the county. I have had endless disruptions and orders for upgraded service from Consolidated cancelled twice - and I assume many others have had similar experiences. Appreciate your work on this. Feel free to contact me with questions, for more info, etc. I also am in the phone book.
There is a will to do this and a way to make it happen. Let's keep up the community engagement and not let roadblocks get in the way.
The security of it.
I have done this from my office, where I pay a lot for faster speeds. My home internet is unreliable, and slow speed!!
Making sure electric utility customers are not bearing the costs of make ready work needed for pole attachments for fiber network.
Access to our home/availability, Cost, Reliability of service
Lamoille county has a fantastic opportunity to attract early stage companies, focused on AI and Machine Learning. A pipeline of entrepreneurial engineering talent flows from Montreal, via Prof Yoshua Bengio, who is credited as the 'godfather' of AI. Talent is the key constraint for AI startups and many fresh grads would be delighted to begin their careers, 'close to home', but that's virtually impossible without a modern internet infrastructure. Starlink is my current hope.
State money to get the infrastructure in place
If Sri Lanka has 5 bars all over the island and Switzerland has even when driving way into a very long tunnel then I fail to see why we can't have in small towns in Vt. This having to subscribe thru different companies in different areas of Vt. is ridiculous. We are so so far behind in this it is laughable..... has even been in the NYTimes that on busy weekends in Stowe there is no cell service. Great promotion for our towns!
We need this ASAP- this has been a struggle for us since we moved here 13 years ago. As an educator and small business owner, a husband who should be working from home and two boys who are active internet users both for education and personal time, this struggle to have basic internet is not acceptable. We have both consolidated and VTel and still can't get basic internet. We have explored every internet option and this is the best we can get. Stowe needs to find a solution ASAP.
Who would be running it. Is GOOD customer service offered
I only have concerns that the red tape of bureaucracy would get in the way. Just get it done.
The internet issue needed to be addressed years ago...but here we are today....with extremely antiquated , slow, unreliable, expensive internet.
My biggest hope is that expanded broadband access around our county means my family can consider a move to a home that's off busy Rt 100. Right now we live where we do largely because we knew we could get decent internet service in order to work from home. The tradeoff is we are on a loud and busy road.
Must be reliable and cost effective.
None
It must be Fiber. The Fiber must be owned by each town. It must go to every address in each town.
Getting the final distance to our house. We are 0.2 miles off town road
Safety and reliability is paramount.

Consistency of service is the biggest problem I am seeing now. When my network is providing the advertised 12/2, we can run alright (2mbps is awfully slow for upload regardless). The biggest problem is that we rarely actually get our full speed and are often throttled to much less than that. A consistent 15/10 would probably meet 98% of our needs, at least for now (obviously any infrastructure added should be future proof)
You did not address business and non profits
Xfinity is 1/4 of a mile away from me. Fiber is only a mile. Please help!
Must be fiber as local copper is old
We are a household completely involved in some level of distance learning - two teachers working in Lamoille County schools and two Lamoille County students. Although our internet company claims our download speed is 200 mbps, it is 64 in reality. We are looking for affordable service that can support multiple video conferences simultaneously so we can do our school work. The students in our classrooms across Lamoille County desperately need this as well. Thank you for the effort!
The monthly cost
Some roads and homes will be difficult to access with the fibre. Others will be easy. How would these differences be handled?
Kinks and growing pains to start...then unfair competition resulting in fewer options
Need more affordable options. The only option available to me is Consolidated Communications, so I'm stuck no matter the cost.
We live in a more rural area of Hyde Park, and would be worried that the new fiber optics would not make its way up here.
Competing directly with large corps can be difficult, may be best to first start out in areas that do not have good coverage (farther from routes 15 and 100). It may also be tempting to try to provide TV service like Burlington Telecom but with streaming today that may be a waste of resources. There is also potential for partnerships with local wireless ISPs like Global Net to use high speed (500-1000mbps) radio shots for remote locations where it's prohibitively expensive to run fiber.
I live on a street with cable access. I would expect to be a low priority for any service changes. People living beyond the reach of the existing cable system would need to be a higher priority - many don't have cell access as an alternative either.
Note. I ran a separate speed test using ookla speed test.com and recvd very different result than your test. 1.6 Mbs download. .7 Mbs upload
None
I want students to be able access, where ever they are.
Make internet affordable for every Vermonter. No child should lack educational resources because of their parents income levels
Always concerned that the "haves" will get more/better internet because they can afford it, and the "have nots" will not because they cannot afford it. And that in general, the folks with less money remain disconnected from the ever morphing interconnected world we live in with no means to change it.
My bill does not provide upload and download speeds we pay for, simply says "HSI", so numbers are approximate. Our speeds vary by the hour; evenings you often cannot stream. Consolidated hopeless to deal with. No other reliable provider available at our location.
No Mbps info is on our internet bill from Consolidated Communications.
I also subscribe to Vermont Telephone (VTEL) as a backup because my Consolidated Service is so unreliable. VTEL is unreliable as well but we work from home and I simply need a backup. There may be other residents in the same situation. I pay on average another \$150 per month for this service making my total for broadband roughly \$120 per month. I would be willing to pay more for faster/reliable service. Vermont in general greatly underestimates the potential economic benefit of broadband.
That it might end up costing the town and customers a lot of money but not being able to deliver on providing more reliable service at a competitive cost to the current cable company I have now
I am sorry - I am not interested in providing information about my online activities or installed equipment coupled with my street address - what a nice directory that would be for thieves.
Access, which I suppose is price for decent speeds, and of course rock-solid reliability.
A neighbor recently paid to have fiber brought to his house (his business paid for it), via Consolidated. When I called, they didn't know anything about it. But when I called back as a business, they were more than happy to set us up with fiber. We own a business so we are having it brought to our house. But you shouldn't have to be a business to have access to fiber. Consolidated's DSL service is very unreliable - goes out nearly every day.

None.
Hope we can work together to get this done, vital in these challenging times and the new realities of working and learning from home.
Lines should be buried if possible. We live 1 mile from "downtown" stowe and struggle for decent speeds. This is unacceptable for this day and age. Thank you for anything you can do.
The cost of new internet service.
I have two houses in Stowe. Maple Street is my residence and is serviced by Stowe Cable. My service hasn't ever gone out. My other house is on Birch Hill Road. It is serviced by Consolidated Communications. The speed is FAST and the service has never been interrupted. I feel badly for the folks experiencing problems with both of these providers but I have found their service to be PERFECT for my needs and for the needs of my guests and rental clients.
Speed and security
None
essential in this pandemic time for school, business- must have
Most people can't distinguish issues between their ISP and their hardware. How are you going to differentiate between the two? Couldn't you kill two birds with one stone by expanding cell coverage in Lamoille County, infrastructure would still be costly but full LTE coverage in the area could address phone communication and internet access issues, both of which are linked to safety as well as economic opportunity.
High bandwidth broadband is not available in many areas outside of town or along major roads. There isn't sufficient incentive for major carriers to expand their networks. Comcast ends its service a mile from my home. DSL or an over the air (wireless, satellite) are available, but insufficient for modern needs. Cloud services, such as Apple or Google services require much higher upload bandwidth than traditional email or viewing of web pages.
who would be isp
Na
I really don't understand the process. I do know I keep getting messages that my carrier is outdated and my security may be breached and if this applies to Consolidated Communications I am concerned.
I don't know how Stowe gets better internet with the current agreement in place that doesn't allow broadband providers to come in and compete. We've got Fairpoint & Stowe Cable. Almost a monopoly.
As a Real Estate Broker, I can assure you that reliable, affordable internet service is critical to the economic development of our entire area. I'd say that close to 100% of people coming to our area need, rather than want, good service. Those already here may find creative ways to compensate, but that should not be necessary, nor should the value of their home be negatively impacted by the lack thereof.
This is a must have service/infrastructure for the 21st century. Covid-19 has laid bare how places too dependent on one industry (tourism) can be wasted by a natural disaster. We need a more diversified and larger tax base in this state and part of that is getting remote workers to live and work here as well as convincing businesses that we are good place to land.
I don't know enough about it to comment
I have none at this time.
We will pay more and have been shut down by the Consolidated monopoly. I am happy to talk further and brainstorm how we can "solve" instead of flat out "no". Thank you for listening!
I am concerned about coverage for the folks that live in "the last mile.". We live away from the center of town and have only one option for internet and no cell coverage.
That it will be expensive, .. that there are few people it is serving, maybe hotspots etc are better, ... I am concerned that this survey is online, if people do not have service or limited service they can not access this survey. I end up using my Verizon LTE and hotspot a lot... this will cut into people using broadband??
broadband access is necessary in 2020 for the current pandemic, including working from home, population growth,
Like many, I have serious concerns about 5G technology which I would like science to answer. I hope that private and govt sector can cooperate together to agree on the ultimate goal and consider this not for profit but as an essential service to the community.
When would it be available if it was Released?
Broadband access should be considered essential in this day and age. It is no longer a luxury, but is necessary to our livelihood, health and well-being

Only concern is this change will not occur fast enough. Broadband availability in the town of Stowe has always been subpar and antiquated.
I need a constant internet signal that I cannot presently get. I think that Lamoille County should assist in getting this service available to all. If you want to sell your home in Stowe you had better have bulletproof internet. It is becoming a deciding factor for new home buyers. Without internet you are unable to sell your home. Would be happy to get involved. Gene Cullen 793 1797
geographic location impacting availability of fiber
Stowe should monetize 5G in a private public partnership
We need to look at the micro data to get the real story. Even data from the switch is misleading as line quality to the local loop is so terrible here. No-one since Verizon (and I bet not even since NE Telephone) has anyone really invested up here. Add that to no cable access and there is a huge opportunity for someone to provide an alternative and to make it possible for us to work and be educated from home. (FYI - Your speedtest for this survey overstates our download speed at the house).
I will have fiber optic cable service to my home installed by the end of the month. I would be unwilling to contribute \$\$ to another superfluous system if my new service is properly functioning.
I couldn't find any download or upload speeds on my bill.
Un needed growth
Major concern would be that any broadband provider may be hesitant to bring it to our area because there is a lack of potential subscribers. (population density being too low and not cost effective) They ran fiber optic cables along VT RT 118 but did not run it down Crooks road because there were only 4-5 houses in that vicinity.
We are overlooked constantly up here in Eden/Belvedere line. Roads aren't maintained well. We need new pavement Year round, not just patch pavement. and in the winter they aren't even plowed! We pay a lot of state taxes to be overlooked constantly. Cable is less than 1/2 mile from our house but we are again overlooked (3 houses in the area, away from rte 118). And NO CELL RECEPTION! We have to drive 1-2 miles up the road to check our cell phone voicemail, or to make calls out. UNACCEPTABLE.
speed
It must be robust!
This focus on broadband as the only acceptable way to do Internet expansion is the result of years of lobbying by the telecoms giants. We must ditch broadband and move into the future with current technology.
How would this influence taxes, how can low income families afford this service? The gap between the haves and have nots is already large.
It's an incredible challenge with 2 teenage boys who need access for online schoolwork, and I have to work too. If we could get this in place our county would be a much more attractive place to live. Imagine the possibilities for people to work remotely.
I am concerned with equity in our communities, specifically if investment costs or cost to connect are unreasonable for families and unprivileged.
It should work. With covid 19 and distance learning and remote work the current format was mostly useless
Equity in access amongst community members
I have 3 apartments and two office spaces. I am having trouble renting because students can't do online classes and workers can't work from home without some speed.
True advertised speeds. Not almost 8 Mbps sometimes {7.2 - 7.8} down paying for 10.
Would you accept 3 quarts in a gallon of milk?
Improve access! I have a friend living in a third world country who has better access to reliable and fast enough broadband.
Upload/download speeds not list on Bill so this was left blank on survey
We would like fiber.
Need more consistent access and customer service response.
Consolidated Communications offers DSL and I fear that is considered "broadband" we had their service and cancelled it because we were often unable to load a simple google search, and seldom ever able to watch a 2 minute YouTube video without it freezing up.
We may be homeschooling and husband works from home. We need better internet.

Reliable and consistent connection. Cost. Options to choose what fits the best for households and not just a one for all. Customer Service and response to communication issues.
Na
I teach and with Covid both myself and my children are on the computer at the same time. I need something that will allow all of us to work without being kicked off of sessions with my students.
Oversight and security monitored by a disinterested party.
RIGHT NOW, WE HAVE MOST OF WHAT WE NEED. SOMETIMES, WITH 4 PEOPLE WORKING REMOTELY THERE ARE DIFFICULTIES FOR ALL OF US TO HAVE SOLID CONNECTIONS.
I'm worried about trusting something new, not knowing if it'll work and breaking my current contract with Consolidated because I'll lose money.
I am sure there is going to be a high start up cost. That would drive the price up too high I am afraid. Would there be a trial period? Would there be a contract?
I just hope it is more reliable with faster speed than consolidated!
I would like to see cell service expanded to cover existing dead spots.
Worried it will be too expensive
None
Getting back to advertised speed...The service I pay for claims "up to 25 Mbps" with small print stating "for a wired connection". I am getting significantly slower speeds using the wireless modem through the house. More transparency about that would be welcome!
I think that a newer system, when developed should be implemented in rural areas with currently no internet service. Working backwards, the last to receive new systems should be areas that currently have the best service. Every upgrade to internet in VT has failed before implementation or completion. Working backwards would increase total number of homes with internet even if there is a failure before completion.
Municipal broadband has worked in other rural communities. For example, Leverett, MA developed their own broadband capabilities. This might be something that should be looked into as a possibility for rural communities in Lamoille County.
Due to COVID-19, it would seem that internet has become a Necessity just like water, electricity and heat. It's unfortunate, but having to travel or deal without internet hurts our economy, access to healthcare and public education. It should be noted that a large part of Lamoille should also consider the size of Lamoille and the economics of the county. Many families struggle with living costs, and adding another bill would be difficult.
Providers are available (Mc fiber) but it sounds like It takes 9 months to take care of permitting. Can this be expedited without too big of a compromise? They say public service board and legislature have this control of This timeline
Cost and reliability
Cost of installation
I wonder how many more people would create jobs online and work from home if reliable fast internet was available. Helping Vermont discover new ways to make a living no matter what age or stage they are in is important to our health and well-being.
It is very difficult to work from home with such slow internet speeds. There are no other options for our house. This is an essential infrastructure item and one holding back more people from working in VT
I know that cell towers were any issue for e 911 communications for many years. Don't know if fiber would help solve that but hope so.
The infrastructure required should not offend the visual beauty of Vermont. Fast broadband access is absolutely key to the future of Vermont - COVID has made that ever more apparent
VT must reduce regulations around a Certificate of Public Good allowing Providers to serve areas currently underserved. Comcast is 3/4 mile away & won't enter Stowe Hollow because they lack a CPG for Stowe. Simplify, provide service by areas and not by Town. Stowe Cable won't extend to 55+ homes on the Wtrbry side of Dewy Hill Rd. We will help fund infrastructure, CCI unwilling to listen or offer solutions. Network of low cost Microwave Relay's may provide line of site solutions for many
With remote learning and work this is essential asap. Our students. Ant learn without adequate internet access. I don't understand why service is so poor and we are 1 mile from R. 100 and Consolidated has upgraded the line just before our house but we can't get any answers from them. So frustrating.
Lack of broadband access is impacting real estate values, impossible to work from home. We tried satellite service a few years back and that was much more expensive and the service was terrible.

Our current options are satellite or DSL. The DSL maxed out at 10 Mbps and the satellite is very unreliable and frequently much slower than its advertised 25 mbps. Neither option is actually good enough for the needs of our household, especially during this time when we need to work from home.
I am concerned it will not reach my house in a manner that will offer unlimited data/service. With schools functioning on a virtual platform, we feel like we can not properly participate. We have 3 students who need good internet service for streaming classes and 1 business that uses internet, all coming from 1 house.
People who have been charged for basic DSL; yet, provider does not provide that speed, "because your location is at the end of our line" with no discount offered for such poor performance. We experience very frequent loss of connection, constant stoppage of any download video media (even at 250p - netflix 1hr show typically takes 1.5hrs), many router resets, half-a-day to upload any photos to social media, and all for the wonderful privilege of paying for DSL which isn't DSL.
I am a summer only resident. As a result, I can't sign a 1 year contract
There are no concerns, only benefits that are required now if we are all going to be stuck at home for the remainder of the pandemic.
As well, and equally important, we have no cellular service at our residence so we are required for safety purposes to have a land line which adds an additional cost of \$51+ dollars to our monthly bill; this is money that could be spent elsewhere very easily instead . Cellular access should be a 21st century right and safety issue .
see above statement about comcast.
It is soo frustrating! Stowe cable is a mile from our house one way. and Comcast/Xfinity is a mile in the other direction but no choice for us- Only DSL and many people think that is dial up. I am a Realtor and have trouble selling homes with only DSL.
Need it now. VT is 10 years behind the rest of the country...and world.
Monopoly services providers vs. public utility
There's an almost complete lack of infrastructure for real broadband Internet. If an investment of tax dollars is required, it'll probably never happen.
If there is a new player in town Comcast may increase their rates
What would the environmental impacts be if this project were to be pursued?
None
My biggest concern is that it would be cost prohibitive.
Keep looking
Guarantee of speed and reliability. I will pay more as it's such a need during this pandemic, but have little trust on the speed being delivered. (Consolidated indicated 'up to' speed, with no promise it will increase any with a higher cost)
We need a service plan that is not only fast but has high gigabyte usage allowances with no additional fees if a customer goes over there allowance
I strongly feel that we need to invest heavily in broadband access in our rural county, but we also need programs to provide affordable devices (tablets, smart-phones, etc.) to our low-income neighbors, so that they can access the internet for distance learning, communication, etc. I'm also concerned that this survey, being online, is not reaching residents of Lamoille County who do not have internet access, and so their voices are not being heard in this vital discussion.
now more than ever we need reliable internet. We recently upgraded to bonded service from Consolidated which is a little better, but we are left behind in the dust with the poor quality of service that we are able to get.
I'm concerned that this is not addressed at the national level. We are one of many rural areas that were similarly the last to get electricity. We need an REA approach to vital access for everyone.
None, I just don't know enough about it.
We need it so badly please help!! My husband has a business at home and I work for UVM from home. We can barely get by.
Broadband access and service should be open to all areas and not be restricted to certain localities. Ex. stowe only allows Consolidated and Stowe Cable. Unless we have tens of thousands of dollars to personally fund stowe cable for access, we are at whim of CCI to continue to pay for poor service both in connectivity and customer service. We consider moving out of state as internet affects both of the income owners jobs.
Biggest issue is speed at which it can be complete and financial wherewithal of the provider to be selected.
100 mbps download...consistently.

Fiber was recently run on our main road (Stowe cable), but customer has to pay cost to get it from the road to the house. My house is approx. 1800 ft from the main rd to the end of our private road/driveway, so cost is prohibitive. Funding to offset the cost of getting connected would help drive customers to new infrastructure.
Please, can we move from copper lines! What century are we living in!
The cost to the end user of broadening this network. I also think that this will take years to accomplish.
PLEASE GET NEW SERVICE IN WOLCOTT
I'm not for 5g. I would move if it comes this way.
None.
It is way overtime that Vermont did something to expand its internet service to all the rural areas of the state. I have heard for years now that this company or that company was given the rights but nothing ever happens. The pandemic has finally brought to light the inequity of this service in Vermont and I hope that now something is done to rectify the problem, however, the little bit of money that the governor put forward for exploring this idea is real quite pitiful.
It being just as slow as the one we have now
Worried that a plan will be put into action and the service will not include my area.
We have no cellphone reception in our area unless we use our WIFI. When the internet is down, we have to drive .5 mile to make a call.
Cost of connection, for those who are not close to overhead utility lines.
That other rate payers will have to pay for the last mile.
Again, we have 2- DSL and we have a backup plan. We need consistent HIGH SPEED internet that is available to all- we should not have to pay for public road access points, only for access to the house from the road...and if the road does have underground electric- you fix it so it gets to my property. Thank you.
Improve or replace consolidated communications, very unreliable. Waiting for hook up to fiber with Stowe Cable in Sept.
This timeframe in particular when so many people are trying to work from home has made clear the inadequacies of the current system. We would pay whatever rate established for excellent internet but as we are seasonal residents....would need a a seasonal hold rate for when we are at our primary residence in Maine.
That it will take a long time to establish and that it's cost will be prohibitive
Concerns about The negative health affects associated with 5G. Being near the modem all day seems to make me tired. Studies show the radio activity is not good for our health & will change our DNA
Network needs to be scalable and future proof (in as much as possible)
I am a remote worker and the speed and quality available to me is barely functional. I need high quality internet to continue working here. I work for a Seattle company but live here and pay taxes. I believe I am exactly the type of worker the state is trying to attract. I was raised here in Vermont, left for many years and recently returned to try living here and working remotely.
Idk
It would be great to have cellular service that actually worked to back up the WiFi when it isn't working. Need more cell towers especially to handle the spikes in vacation use surges. Cell service is horrible in Stowe
Reliability even more important than speed
Residents of the Robinson Springs, Stowe are charged much higher internet fee rates by Consolidated Communications than their publicly advertised rates available to other Stowe residents. Consolidated Communications say they have a contract with the Robinson Springs Property Owners Association that allows this, which is not true. My monthly internet fee is higher than their rate published online and they require monthly fee increase well over published rates for a speed increase at my address.
My beliefs on providing a reliable, high speed, and 21st century network are vital to day to daily life in this society and paramount to the rural residents of this county. Saying we all need this service is one thing. That is a given, based on the current and limited option for many whose only option is DSL. Giving voters detailed and outlined road maps to achieve this network should be published to give the piece of mind needed to make a well thought and concise decision.
Consolidated is raping customers for Terri le service.
Please make this happen. Our main complaint about living here is it is so difficult to work here because of unreliable, weak internet.
The environmental impacts of needing to put in new infrastructure for fiber, and the potential for govt. assistance for those who cannot afford to support a local network but would prefer to over large companies

just reliable and fast. Nothing special
I wondered why CC was not considering fiber when considering my request
It would be beneficial to have the ability to meet with our doctor using video from home.
stowe has always been heavily compromised by pathetic service from our cable provider.
we are surrounded by comcast which has much faster speed, for less \$\$, and complies with state mandates to serve neighborhoods/areas based on population density. we have no service in many areas and no competition for consolidated's dsl in others.
Fair point and Stowe cable need to allow Comcast into the Stowe area. They should be mandated to upgrade lines with significant grants from the government.
I am concerned with the health risks of 5G and would not be interested in having it. I would move to another state. 3G is working fine for my needs
No concerns. We just really need faster internet. We are hoping Comcast can extend into our town, (fingers crossed) especially with at home workers such as my wife.
DON'T WALK. RUN, DID I say RUN to make this happen sooner than later. In my opinion this is an emergency and going way back to when Gov. Jim Douglas claimed VT would b the first state to have border to border internet and cell phone coverage. So what happened, maybe BERNIE SANDERS THE RAT IS TO BLAME !!! HE DOES NOTHING, TERRIBLE
Please just get it done.
Speed and price
My concerns are , we were told we would have better access to faster speed (by Fairpoint) which is no more , 10 years ago ... We're still waiting !!!!!
1. we are personally affected 2 and more importantly, the lower income based families have no or little access to the internet that affects children's schooling, family connections through email and social media, as well as opportunities or working remotely and other employment needs.
My main concern is always the support system offered for the service that is provided. My knowledge of technology is limited so I need a strong customer support service.
Faster speed would help many people.
Need fiber. Working full time from home
The cost
None
Customer service for consolidated communication had a wait time for customer service of 23 minutes yesterday. Are you kidding me? I'm not waiting on my cell phone for 23 minutes when the WiFi keeps cutting out at my parents house when I was calling for a update or upgrade to the crappy service.
With people staying home because of the Covid-19 pandemic our internet infrastructure is more important than ever before. Even after the pandemic ends more people will be working from home. With reliable broadband people can open a business from their home. And this is a green initiative. With the pandemic we have seen pollution around world dissipate. Vermont's biggest climate issue is commuting. Reliable Broadband internet will get people out of their cars like we have seen during the pandemic
Didn't big nose Summy provide internet to every Vermonter?? Sure, and trump is going to give a new health care plan this week
I really hope this can happen for my community and I am willing to help to make sure everyone can access good internet service
We strongly support fiber optic or other high speed internet service in Stowe. In fact, we would also expect that access by low income residents be subsidized by the provider, the government and user contributions.
Can't think of any. I hope we get some reliable service be fore 2021 before the covid virus dies,
existing service is too costly for the product delivered
Make sure it's accessible and affordable. And better than current, out of date model. So much better is possible.
Regional monopolies and a lack of options/competen. If it's going to be a public project, then it needs to include every home and business, without economic or geographic exceptions. Please don't raise the already exorbitant taxes.
Do not provide 5G until safety assured.

Access and quality seem to be the main issues. I had better internet connection while traveling in the middle of Iceland than here in Stowe. Not good for remote working, school or businesses. I don't want my internet speed to slow down when the town is full of visitors.
Many rural areas of Vermont, including Stowe, are losing potential residents/vacation owners, due to lack of decent internet. Certain areas of Stowe do have internet through Stowe Access; however, most home owners do not have this service as Stowe Access is not expanding their capabilities.
I just think it's incredibly important for economic development in our county. I would personally NOT want to live in a town which doesn't have usable internet with decent upload speeds (the same goes for cell service, by the way.) We are holding ourselves back at this point.
Elon Musk is coming out with a satellite system , might revolutionize everything and make most wired systems obsolete. Or at least drive Down costs. The primary reason for poor and expensive internet access in this country is a lack of competition!
Must be cost effective as it is critical today that everyone has access in the same way they have access to electricity.
Funds should be leveraged to allow existing providers to expand connectivity quickly and more efficiently.
I'm concerned with the virtual school coming up that we won't have enough service.
It's should be a top priority for economic development, our students and teachers safety and student success, attracting new residents and creating equality... Zero concerns. Just do it.
Just the incredible need we have for improvement! Especially with the circumstances that we are currently in.
You may have received this twice but I don't think my first submission went through due to our terrible internet service.
Reliability
Don't want to wait forever. End the bureaucracy and just get it done. Internet access is now like electricity!
We were very restricted in where we could buy a home because access to internet is required for our income. The internet structure here is archaic and overpriced for mediocre service and quality. The fact that some people can't get high speed internet at all because the service providers don't deem it "profitable" is absurd; fast (truly fast not service that's advertised as fast but really is terrible) and reliable internet is a must have to operate in our world. This should be a public utility.
We do not want our provider to have access to our personal information.
Speed and dependability are important for working at home. Entertainment is secondary but it would be nice to not have service interruptions while watching a show which currently happen all the time. Often a message that the service is not responding and we miss part of the show we are watching
Comcast in Stowe. I've always had Comcast before moving to stowe. They're reliable, their prices can't be beat. I find it stat on the top of a mountain and Johnson Vermont I was able to have Comcast, but right on route 100 in Stowe Vermont I cannot get Comcast.
All fiber
Stowe hollow is the worst area in Stowe. Can't even get Stowe cable on goldbrook road
None
needs to be competitive companies as well as very reliable service
No other concerns.
I am little worried about getting the 5G Network due to healthy concerns. I wish there were other solutions.
With Covid everyone is at home and we need to work and be educated. Even without the pandemic our internet was iffy. Now its essential though
None
Nothing comes to mind.
I have heard that the Tesla company is putting many many satellites up and we will all have very hs internet within a year.....you might want to look into this...before spending
More expensive
Skip putting more lines up and move to 5G. I can help and even have telco partners that will invest.
None
We literally have one choice for internet service, it's not reasonable.
As of now we only have one option for internet- and if we don't like it there is no other option. This is a monopoly and shouldn't be happening.
Consolidated is just so spotty. It works great about 50% of the time. Terrible the rest. I'd be happy to pay more for solid service it's just not available.

Our geographic layout makes signal availability difficult. Line of sight is very difficult in some of our more remote areas.
We bought a house in Stowe and hoped to spend more time up here but have to commute back and forth to Boston. For distance learning and working from home because internet is not reliable here - awful
What the cost would be.
Congestion
I am concerned that if we have to shut down the state again, and everyone is having to use the internet, getting emergency news updates may be delayed or inaccessible during this pandemic especially since our local news paper just closed its doors. Also, I am concerned that my children will not be able to access their schooling if they go back to distant learning. Lastly since the pandemic hit I am having to use telehealth weekly.
I worry about cost. Also we live on a private road, will it even be available here?
Not really pertinent to this section but I was unable to type an answer on the advertised speed my provider offers. That information is NOT printed on my bill. Also, from time to time I get a warning onscreen that my service provider is out of date and not secure and I'm not sure what to do about that.
Equal and equitable access for all who want it and 24/7 access to tech support, which is part of that accessibility as not everyone has the same facility or a way to learn. I find it very difficult that there is no way to speak with anyone after hours or on weekends when there is a problem with connectivity.
I believe that poor internet service is holding back economic growth in the county
None
It must handle peak usage in the winter.
No fiber wire here
Speed of implementation. This is critical to ensure remote work in Lamoille County, if this is not remedied soon people will have to move out of this county to work. Thank you!
We did not anticipate having 2 full time teleworkers and a full time online student at our home when we bought it. The pandemic had changed our internet needs - from wanting better service to needing it! And others on our street have it worse than we do. Internet used to be a luxury, but with schools closing and going hybrid, it needs to be a utility like electricity.
No concerns it's needed.
Price comparisons are tricky. We pay \$39/month (and that includes a \$9 triple pt. bundle discount, w/landline + DirectTV). If we dropped internet, landline would go up \$23. Also I was told the 7 MB plan goes for \$59.88 now, so I wonder when they will update our price. (With a viable alternative I could perhaps negotiate...) This potential for sudden price increases completely beyond our control may be another reason to switch to locally controlled service, even if the cost is initially higher.
My only concerns are that customer service and reliability would be worse than consolidated, if that's possible.
State needs to promote a more business friendly environment; Lower taxes, less regulations = more business and more tax revenue to invest.
We are dealing with a monopoly so with no competition there is no need for quality.
not sure about whether our provider, Stowe Cable Systems, falls.
I am not sure about my upload and download speed. My bill says 7M access (2YR) Is this for upload and download? there are no other numbers on the bill. Any company, present or future, needs fast internet to do business in Vermont. Try selling a home in Lamoille County without high speed internet. Many buyers won't even look at a home until they are assured of high speed internet, fiber optic etc.
Won't be fast enough. Comcast or Consolidated will block infrastructure
Still not getting good speeds due to our location
Not much but I couldn't answer your question of download speed. My email is gregglaikin5@gmail.com
don't know
I cannot locate my internet speed on my bill - when I do fast.com it comes up as 22 MBPS - I have no idea if that is upload or download. We have a rental cottage next door and that speed is 4 MBPS - and Consolidated has said there is no more room to upgrade, so I cannot rent it out to anyone long term - And yes, their Non customer service is horrendous - thanks for reading
Service needs to be consistent

Only a few blocks out of town makes a huge difference. I'm right in town so have fairly reliable service but this must impact buying and renting decisions, especially when so many people are working from home.
To keep costs down, should not waste money by overbuilding infrastructure. Fiber technology has tremendous capacity to carry high speed for everyone. Should be shared infrastructure for all users/isps so that we can all benefit at lowest cost.
Just needs to have higher speeds available
When it works, I have no issues. The problem is that it goes out with no explanation and I have to call customer service.
I think it's all been said. We are a professional couple both working from home. Access is limited and often interrupted. We're willing/eager to pay for guaranteed better service. Vermont needs this. WE need this. And - it needs to be implemented ASAP. There are more and more of us working remotely. It can't be a 5-year plan.
Cellular service is equally bad in parts of Stowe, and it's just unnecessary in this day and age with the amount we pay to these service providers that there are not better options available.
The Verizon jet pack that we use has been sufficient even when one of us worked one day a week at home. However we have not streamed with it. I now have unlimited internet. Did have 8 gb but was not enough some months so went unlimited. Could buy a gb for additional \$15 per month.
None. Need the internet!!!
Internet should not cost so much just because we live in the country.
We are summer residents of Lake Eden. Although there are only two persons on the deed, our summer camp is often home to children, grandchildren, and other guests, all of whom bring computers, tablets, phones, etc. This area of Vermont with its beautiful lakes has a population that grows during the summer and broadband access must take into account the summer draw increase when it plans for the future!
Costs skyrocketing because they say it is "new technology" but it is actually the same mediocre service at a higher monthly cost. Cellular service for data transmission also has to be increased a great deal. It is shocking to many that all the cellular towers on the top of Mansfield, the highest peak in the state, barely provide a halfway decent cell reception throughout the Stowe community.
I HAVE SPENT YEARS AND YEARS IN THE REMOTER PARTS OF THE PLANET....OUTER HEBRIDES....MASAILAND EAST AFRICA....LOFOTEN N. NOWAY...FOR EXAMPLE. ALL HAVE STUNNING HI SPEED INTERNET UNIVERSAL AVAILABLE TO EVERYONE....BUT NOT US...PERFECT EXAMPLE: STOWE MT RESORT HAS FIBER RUNNING AT 800 TO 1200 MBS...NOT MEGABITS....PAYING TAXES TO STOWE WE SUBSIDIZED THIS...WHAT DO WE GET....NOTHING BUT A BANKRUPT CO THAT THE PSB OF VT CHOSE....CONSOLIDATED HAS A MONOPOLY ON N VT...ITS LIKE BEING IN COMMUNIST RUSSIA
We need to get this done ASAP
Stowe Access needs to run fiber optics currently in place on Rt. 108 to the roads off of Rt. 108. We have to be able to work from home, especially now, and as we go forward trying to compete in the global economy without having to move out of VT in order to function normally in business!
From our experience Comcast is not competent and they misrepresent what they can deliver. We wish we could get Stowe Cable where we live.
Would want to minimize infrastructure installation that requires habitats destruction. We believe new telecom should have access to existing infrastructure where capacity exists. Required infrastructure building should be buried where possible.
Truly feel it is very important to have this level available to everyone. It should be regulated so everyone has affordable access to service.Hope
PLEASE bring broadband to Lamoille County!!!! Thanks!
Cost..

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to deliver

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