

TO: Senate Committee on Natural Resources and Energy
Senate Committee on Economic Development, Housing, and General Affairs
House Committee on Energy and Technology
House Committee on Commerce and Community Development
FROM: Sarah Buxton, Director of Workforce Development, Vermont Department of Labor
RE: Act 71 of 2021, Sec. 16 Report
DATE: January 18, 2022

Act 71 of 2021 required the Commissioner of the Vermont Department of Labor (VDOL) to conduct a survey and report findings to the committees of jurisdiction as outlined in this report.

A. Relevant Statutory Reference: Act 71 of 2021

Sec. 16. BROADBAND OCCUPATIONAL NEEDS SURVEY

(a) The Commissioner of Labor shall conduct an occupational needs survey to determine workforce needs in the communications sector specific to broadband buildout and maintenance. In conducting this survey, the Commissioner shall solicit input from employers and subcontractors throughout the State. The Department of Public Service and communications union districts shall assist the Department of Labor in identifying employers with workforce needs connected to this act. The purpose of the survey is to identify current and future employment opportunities and the prerequisite skills needed for widespread worker recruitment and building a talent pipeline to support the goals of this act.

(b) The Commissioner shall report his or her findings and recommendations to the relevant legislative committees of jurisdiction on or before January 15, 2022.

(c) Employers who do not participate in supplying information for this report will not be eligible for grant funding under this act.

B. Description of Work Performed

The Commissioner of Labor and key staff met with the Executive Director of the Vermont Community Broadband Board (VCBB) Christine Hallquist, Associate Dean of Continuing Education & Workforce Development at Vermont Technical College, Maureen Hebert, and NEK Broadband Executive Director Christa Shut in October of 2021 to kickoff planning for the development, distribution, and analysis of the occupational needs survey required in Act 71. Subsequently, several smaller group planning meetings were held with principals and staff of the original meeting organizations, eventually including the Program Coordinator for the Vermont Communications Union Districts Association (VCUDA) Will Anderson.

The workgroup considered the multitude of information needed from employers by group representatives and decided to create a single survey that would solicit information about current and future labor force needs, as well as project and work plans, employment characteristics, and training needs. VCBB

Executive Director offered to work with VCUDA Program Coordinator Will Anderson to compile the survey questions, distribute the survey, and collect the data. Information from the survey was thus solicited and shared with workgroup partners. VCBB and VCUDA finalized the survey questions, and the survey was distributed on December 21, 2021 with all answers collected for this report on January 14, 2022. The following letter accompanied the survey link:

On behalf of the Vermont Community Broadband Board and the Department of Labor, we are writing to request that you fill out the linked survey regarding workforce by the end of the day on January 7, 2022. Under [ACT 71](#), Section 16: "Employers who do not participate in supplying information for this report will not be eligible for grant funding under this act." While the legislation has tied the grant funding to this survey, you likely know that there is a significant business opportunity for you with the aggressive projects schedules that Vermont is putting together.

The state has been working to get every address connected to Fiber Optic Internet. It now appears, thanks to the American Rescue Plan Act and the Broadband Equity Access and Deployment Act that this goal is now within reach. The Vermont Community Broadband Board (VCBB) was established by the legislature to distribute these funds and provide support to the Communication Union Districts (CUDs) as the way to achieve the long-standing goal of Universal Service.

With that said, we know this significant influx of funding will create additional pressure on our region for resources, particularly labor resources. The COVID crisis has exacerbated a labor shortage that was already impacting electric and telecommunication projects. The VCBB is working with the Vermont Department of Labor, the Agency of Commerce and Community Development, the state college system as well as the CUDs to establish a "Pay it Forward" career development program to provide an estimated 200 fiber technicians to fill the human resource need of construction and telecommunication companies that will be helping to achieve the goal of Universal Service.


I am writing to you, as a potential employer of these technicians, to ask for your help in filling out an on-line survey so that we can create the most effective program to fill your needs. There is potential for a significant amount of work if we can collectively provide the resources needed.

The VCBB has been working closely with the CUDs to develop Business plans and High-Level Designs and we are now in the detailed design phase. This will result in a construction plan that will lead to construction in 2022. Preliminary estimates show that over 10,000 miles of fiber will need to be built over five years to enable the estimated 100K addresses that are underserved today.

That survey location is [Vermont Fiber Workforce Survey](#). Please support this effort. The greater access that you have to the labor resources, the more you will be able to participate in the work. The VCBB has significant grant funds available for constructing the networks.

We look forward to working with you. Feel free to reach out if you have any questions.

With warm regards,



*Christine Hallquist
Executive Director, Vermont Community Broadband Board*

C. Survey Questions

The following questions were loaded into SurveyMonkey and distributed to employers and other recipients noted in section D below:

The purpose of this survey is to collect information regarding the workforce needs for the development and provisioning of fiber-optic broadband services. There are two parts of the survey, one to collect the anticipated service and construction requirements of companies, and the other to assess the current capacity to meet those needs.

- *Employer Name*
- *Location of Business*
- *Contact Name, Email, Phone*
- *Which states do you operate in? If you operate in Vermont, please specify whether you work statewide or in a specific area*
- *Are you: A company that will need make-ready, construction, provisioning; or maintenance services for telecommunications purposes; A company that provides one or more of the following: make ready, construction, provisioning, or maintenance services for telecommunications or electrical purpose; Both or Other (specify)*
- *Which of the following best describe your company: Cable Provider, Cable Union District, Wireless Internet Provider, Competitive Local Exchange Carrier, Incumbent Local Exchange Carrier, Rural Local Exchange Carrier, Contractor, Other*
- *Please estimate how many miles of fiber (or other cable) you anticipate installing in each of the following years 2022, 2023, 2024, 2025, and 2026, Not Applicable*
- *For existing phone and/or cable companies, please estimate how many new customer installations you plan to complete in each of the following years 2022, 2023, 2024, 2025, and 2026, Not Applicable*
- *For existing providers, please estimate the number of existing customers you expect to convert to fiber-to-the premise in each of the following years 2022, 2023, 2024, 2025, and 2026, Not Applicable*
- *Of the fiber-optic cable mileage that you expect to install in the next five year, what percentage do you expect will be underground? Less than 5%, 5-10%, 10-15%, 15-20%, Other*
- *How many miles of existing fiber-optic cable do you maintain?*
- *Do you maintain an in-house work crew for fiber-optic cable construction? We do not maintain our own fiber work crew; crew can perform 1-25% of our planned work; crew can perform 25-50% of our planned work; crew can perform 50-75% of our planned work; crew can perform 75-100% of our planned work;*
- *List the number of employees in each of the following occupations:*
 - *Telecommunications (make ready work)*
 - *Electrical (make ready work)*
 - *Electrician*
 - *Telecommunications (Construction Line Workers)*
 - *Fiber splicer*
 - *Equipment/vehicle operators and engineers*
- *Please list the number of employees you have in the following categories that are capable of supervising a new trainee?*
 - *Telecommunications (make ready work)*
 - *Electrical (make ready work)*

- *Electrician*
- *Telecommunications (Construction Line Workers)*
- *Fiber splicer*
- *Equipment/vehicle operators and engineers*
- *What number of workers do you have on a typical make-ready crew?*
- *How many miles of make-ready work can one of your crews usually complete in a week, on average?*
- *How many workers do you have on a typical construction crew?*
- *How many miles of fiber line can one of our crews install in a week, on average?*
- *How many workers do you have on a typical drop and provisioning crew?*
- *On average, how many drops can one of your crews complete in a day?*
- *If your company does on-premise installation and hook-ups, on average, how many installations can be completed in a given day, per crew?*
- *How would you describe your need for additional employees to complete your planned fiber construction in Vermont (and beyond) in the next five years?*
- *Are you currently seeking to hire additional employees? If yes, which positions are you actively hiring?*
- *Which positions do you have the most difficulty filling?*
- *For which occupations do you provide on-the-job training in lieu of or in addition to requiring an industry recognized credential?*
- *Would you be willing to collaborate with Vermont Technical College to assist with training future employees?*
- *Would you be willing to consider a reimbursement program to VTC, paying back the college for employees that stay on for a given period of time? If yes, what period would be reasonable from your perspective?*
- *Do you value on-the-job training more than instruction provided by an accredited training provider?*
- *If aspiring telecommunications workers were trained in OSHA standards, pole climbing, fiber handling, first aid, rigging and line support, how many additional employees would you anticipate hiring in each of the following years: 2022, 2023, 2024, 2025, 2026*
- *Have you participated in a Vermont Training Program?*
- *Have you participated in the DOL apprenticeship program?*
- *Are you willing to participate in either of the above programs? Yes, no, need more information*
- *Are your employees paid: Per hour, per unit, other*
- *If per hour: what is the range of starting wages for telecommunications line workers?*
- *If per hour, what is the range of wages for a senior telecommunications worker?*
- *If per unit, what unit do you use and what is the rate of compensation?*
- *What benefits do you provide: healthcare, retirement, bonuses, career advancement/development, other*
- *What percentage of your line workers are: seasonal, part-time, full-time*
- *What is the average length of your employees' workday? Please also provide a range for workday length is possible*
- *What is your overtime pay structure?*
- *For what percentage of a construction period are your crews away from home (i.e. housed and working at a remote location)? 0-10%, 10-25%, 25-50%, 50-75%, 75-100%, other.*
- *Do you provide transportation assistance?*
- *Do you provide childcare assistance?*
- *Please feel free to describe any additional ideas or concerns you have regarding your need for workers to install fiber networks in Vermont.*

D. Survey Distribution List

The following organizations received the survey via email. Companies that completed the survey portions relevant to future labor force need are indicated in bold. Those who completed some portion of it but did not enter information into the labor force needs sections are italicized.

Apex Group	New England Wireless (NewCo)
Burlington Telecomm	Northline Utilities
Comm-tract	NRTC
Consolidated Communications	Otelco, Inc.
Eustis Cable Enterprises	Precision Valley Communications
Fiber Broadband Association	Quantum
FiberNext*	Riggs Distler
FirstLight Fiber, Inc.	Sertex
Fujitsu Network Communications	Stowe Cable
Grattan Line Construction Corp	TDS Telecom
Granite Telecommunications	Topsham Telephone
Great Works Internet (GWI)	<i>Tilson Technologies</i>
ISPN Network Services	Trans-video
JCR	TriWire Engineering Solutions Inc.
Kingdom Fiber	ValleyNet, Inc.
<i>Layer Eight/Champlain Technology Group</i>	Vermont Telephone Co, Inc. (Vtel)
<i>Mansfield Community Fiber, Inc.</i>	Waitsfield and Champlain Valley Telecom
Mission Broadband	Waveguide Solution
<i>NEK Broadband</i>	

E. Survey Results

See Attachment A for labor force needs related data.

Respondents to the survey indicated that it is difficult for them to project their future workforce need with any specificity. While no one cited a current “crisis” level need for workers, general fiber splicers, service technicians, line workers, and general construction experience seem to be in demand.

F. Training Program Updates

VTC has consulted with VDOL, employers, and members of the Communication Union Districts or CUDS. Three needs have been clearly identified:

- Incumbent worker training to advance skill development and promote retention
- Develop a new pipeline of skilled workers through a new Registered Apprenticeship Program
- Create a connection to CTE’s /High schools through a pre-apprenticeship program

Incumbent worker trainings are already funded and being offered. Working with industry recognized subject matter experts (SMEs), VTC has developed a registered apprenticeship program that has been submitted to VDOL for review and approval, and funding. VTC would offer opportunities throughout the state through its Vermont Tech facilities, connections with employers and connections with CTE’s through the CEWD work and its Career and Tech Ed Teacher licensure program. VTC’s second offering will be held in March 2022 and continue to run several times this year if funding is available. Additionally, VTC will align the related instruction to its degree programs – such as the Associate’s degree in General Engineering Technology at Vermont Tech.

Attachment A: Survey Results

Company	Where do you operate?	Telecom: make-ready	Electrical: make-ready	Electrician	Telecom: line workers	Fiber Splicer	Equipment or vehicle operators; engineers	Describe your need for additional employees to complete your planned fiber construction in Vermont in the next five years?	Are you currently seeking to hire additional employees? If yes, which positions are you actively hiring?	Which positions do you have the most difficulty filling?	If a worker were trained in safety, pole climbing, fiber handling, rigging and line support, how many additional employees would you anticipate hiring in:		
		Number of Current Employees									2022	2023	2024
Company A	All 50 states, including Vermont	0	0	0	0	0	0	We anticipate hiring outside plant construction inspectors and managers as well as project managers.	Construction and project managers.	Outside Plant Inspector	4-6 inspectors or project managers	2-4 inspectors or project managers	1-2 inspectors or project managers
Company B	ME and Vermont (statewide)	6	(no answer)	(no answer)	(no answer)	(no answer)	6	We will augment our customer support and OSP field service crews by hiring in VT once construction is complete.	Yes; currently community engagement and marketing.	None at the moment	(no answer)		
Company C	23 states including Vermont	12	0	0	12	< 95	33	Company has sufficient resources to complete its planned build but with the possibility of more work, Company is always looking for an onboarding more splicing and contract construction crews.	Company is actively hiring splicers.	To date Company has not had an issue filing positions.	Company trains its employees in these areas. Company is currently looking to hire a few splicers but Company does not have a specific future hiring plan beyond that.		
Company D	NY, VT (Statewide), NH, ME, NJ, CT, MA, RI, PA, DE, OH	(no answer)	300+	50+	(no answer)	(no answer)		N/A	Journeyman Linemen	N/A	N/A Local Union Labor. Would need to apply to the Apprenticeship Program.		
Company E	Vermont (statewide), NY, NH, ME, MA, PA, Other states as needed	160	0	0	160	35	100	Need is high -- particularly fiber crews and splicers and workers with acceptable driving records with climbing experience.	Yes - Experienced Line Construction Managers, Foremen, Linemen, Groundhands/Laborers -- All positions	Experienced foremen, linemen and splicers	50-100 in all years		
Company F	VT - Mad River Valley and southern Champlain Valley regions	0	0	0	0	3	3	In the event of employee turnover, replacement headcount will be necessary.	At the current moment we're fully staffed; however, change is constant. I anticipate closely monitoring the need for craft/technical positions such as Splicers and Service Technicians.	Craft/technical positions such as Splicers, Service Technicians, etc.	Estimated 1 - 3 per year.		
Company G	Vermont, Chittenden County	0	0	0	0	6	6	Some limited growth in installation and provisioning	Yes, installation and provisioning/tech support	Technical	2	0	0
Company H	VT in Shoreham area, ME, CT, MA, NY, AL, MI, WV,	10	0	0	50	10	100	Not a great deal of additional resources required.	Yes, but not a large number in Vermont	Install Technicians	100 in all states		
Company I	VT statewide, MA, ME, NH, NY and PA	15	(no answer)	5	88	20	107	Company anticipates expanding and growing our footprint in VT to continue to meet customer needs and with it, we will be looking for talented and driven individuals to join our team.	Yes, 4 splicers, sales and engineering	Sales Engineers, Network Engineers, Managed Services Engineers and Project Managers	4	3	2
Company J	MA, NH, ME, NY, CT, RI, VT - Statewide	50	50	0	50	2	10	Moderate, at this time we are pretty well staffed	Yes based on project workload, Journeyman Lineman and Line Apprentices	Line Foreman and Journeyman Lineman	10	10	10
Company K	NH, VT, MA, and ME	10	10	0	10	0	11	Company belongs to the IBEW; pulls resources as needed	lineman	lineman	We are Union so its not an option		
Company L	Stowe and Cambridge Vermont	3	0	0	6	2	1	Currently Adequate	No	RF positions	0	2	0
Company M	Vermont and New Hampshire.	2	0	0	5	0	7	We are concerned we will not be able to meet our needs	Yes, Fiber Splicer, Fiber drop crews, fiber installers	Splicer	(no answer)		