

# Expanding Broadband in the Addison County

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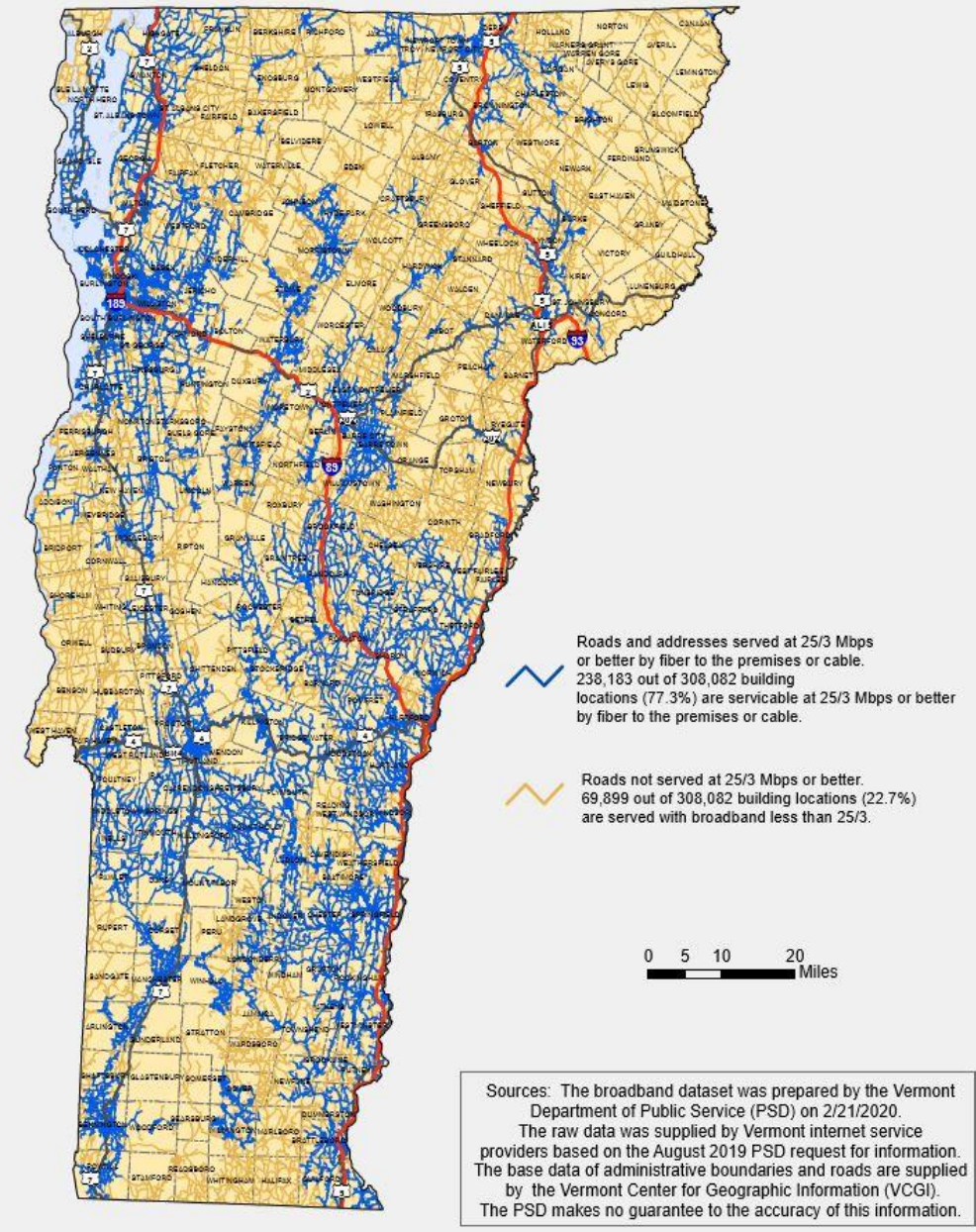
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# Broadband in Vermont

- **FCC Definition of Broadband:** Minimum 25 Mbps downstream and 3 Mbps upstream (25/3) - *Mostly Cable*
- **Vermont Statewide Goal by 2024:** Every 911 business and residential location in Vermont has a minimum speed of 100 Mbps downstream and 100 Mbps upstream (100/100) - *30 VSA 202c*
- **Vermont programs give priority to 911 addresses that are unserved or underserved** - lack 4 Mbps downstream and 1 Mbps Upstream (4/1). All programs must propose at least 25/3. *30 VSA 7515b*

Speed Tier	Served		Not Served	
100/100 Mbps	53,777	17.5%	254,305	82.5%
25/3 Mbps	238,183	77.3%	69,899	22.7%
4/1 Mbps	287,104	93.2%	20,978	6.8%



# Broadband in Addison County

## Rutland County

17876 total buildings

14.1% - 100/100 Mbps - Fiber

61.8% - 25/3 Mbps or better - Cable

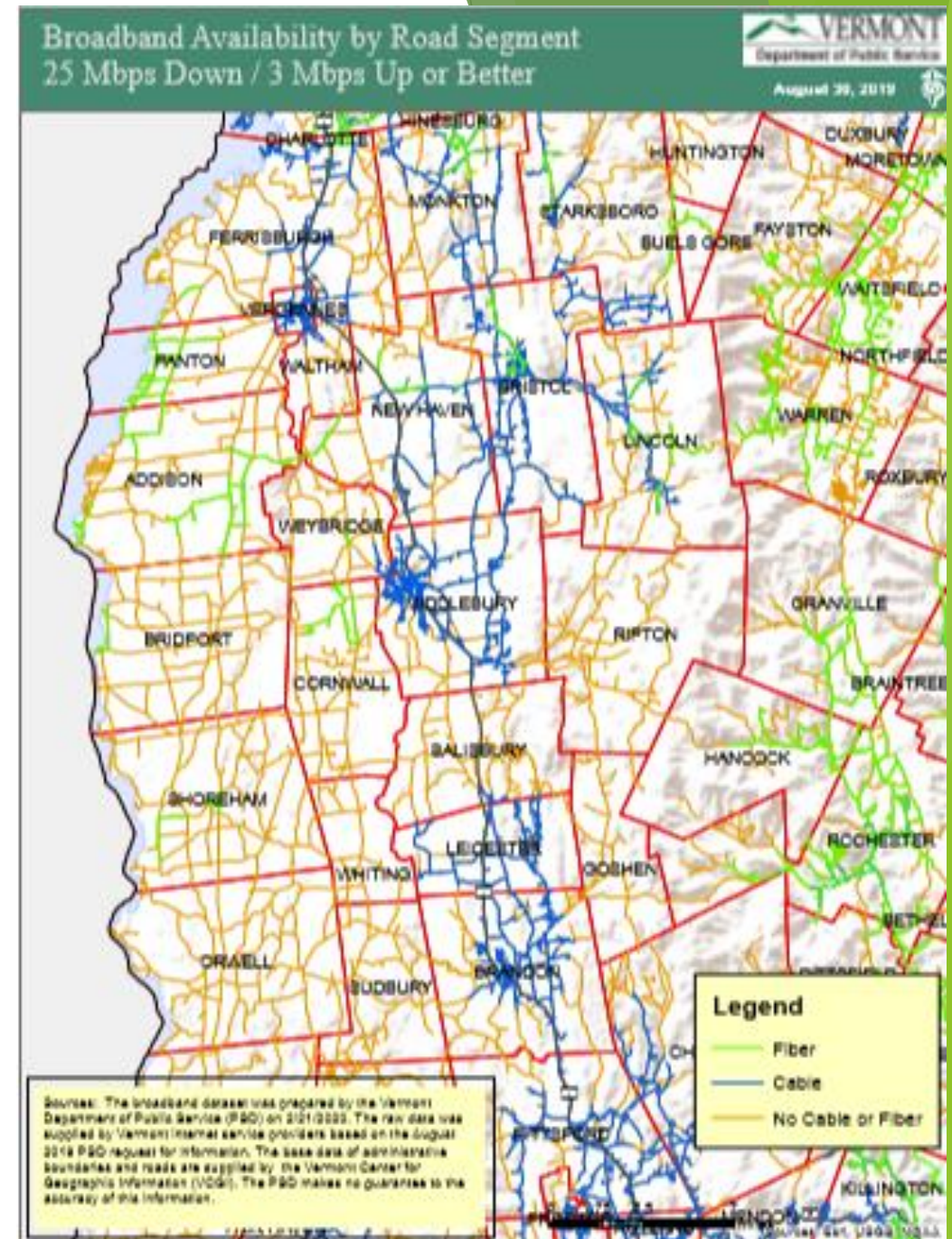
95.6% - 4/1 Mbps or better - DSL

**Unserved 784 4.4%**

## CURRENT FIBER?

- Waitsfield and Champlain Telecom
- Shoreham Telephone
- EC Fiber

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



# Broadband Coverage in the Addison County

*as of August 2019*

County	Town	Total Buildings	Served locations are affirmatively reported as servicable by specific providers						Underserved	Percent Underserved
			Served 100/100 or Better	Percent Served 100/100 or Better	Served 25/3 or Better	Percent Served 25/3 or Better	Served 4/1 or Better	Percent Served 4/1 or Better		
ADDISON	Addison	853	318	37.3%	385	45.1%	847	99.3%	6	0.7%
ADDISON	Bridport	662	65	9.8%	109	16.5%	581	87.8%	81	12.2%
ADDISON	Bristol	1600	465	29.1%	1,508	94.3%	1,594	99.6%	6	0.4%
ADDISON	Cornwall	582	110	18.9%	110	18.9%	543	93.3%	39	6.7%
ADDISON	Ferrisburgh	1667	182	10.9%	937	56.2%	1,568	94.1%	99	5.9%
ADDISON	Goshen	141	0	0.0%	0	0.0%	105	74.5%	36	25.5%
ADDISON	Granville	269	241	89.6%	241	89.6%	255	94.8%	14	5.2%
ADDISON	Hancock	245	226	92.2%	226	92.2%	233	95.1%	12	4.9%
ADDISON	Leicester	699	0	0.0%	673	96.3%	683	97.7%	16	2.3%
ADDISON	Lincoln	682	178	26.1%	442	64.8%	673	98.7%	9	1.3%
ADDISON	Middlebury	2926	36	1.2%	2,802	95.8%	2,907	99.4%	19	0.6%
ADDISON	Monkton	905	175	19.3%	676	74.7%	895	98.9%	10	1.1%
ADDISON	New Haven	820	105	12.8%	534	65.1%	785	95.7%	35	4.3%
ADDISON	Orwell	748	0	0.0%	0	0.0%	705	94.3%	43	5.7%
ADDISON	Panton	330	138	41.8%	177	53.6%	328	99.4%	2	0.6%
ADDISON	Ripton	377	4	1.1%	36	9.5%	260	69.0%	117	31.0%
ADDISON	Salisbury	877	0	0.0%	134	15.3%	742	84.6%	135	15.4%
ADDISON	Shoreham	741	100	13.5%	100	13.5%	698	94.2%	43	5.8%
ADDISON	Starksboro	916	129	14.1%	637	69.5%	912	99.6%	4	0.4%
ADDISON	Vergennes	1017	7	0.7%	1,017	100.0%	1,017	100.0%		0.0%
ADDISON	Waltham	225	1	0.4%	118	52.4%	189	84.0%	36	16.0%
ADDISON	Weybridge	409	38	9.3%	178	43.5%	396	96.8%	13	3.2%
ADDISON	Whiting	185	0	0.0%	0	0.0%	176	95.1%	9	4.9%

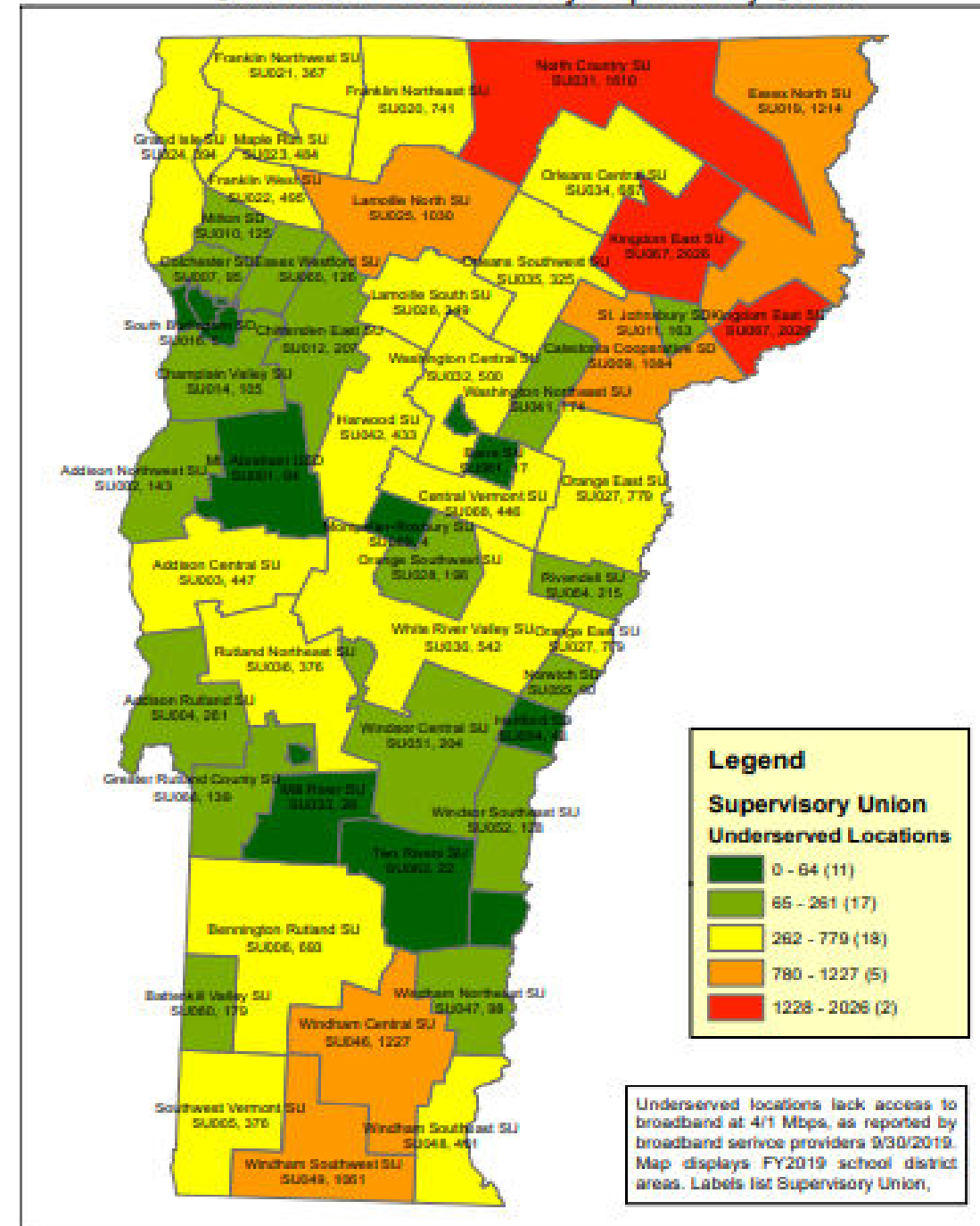
# COVID-19 Homework Gap

- Lists of unserved address by SU  
<https://outside.vermont.gov/dept/PSD/students/layouts/15/start.aspx#/SitePages/Home.aspx>
- Data for specific addresses can be found on the Interactive Broadband Availability Map. Click on a location and fill out a survey. We will use this information to identify whether a student lacks access because it's not available, not affordable, or if there is another barrier.

<https://publicservice.vermont.gov/content/interactive-broadband-map>

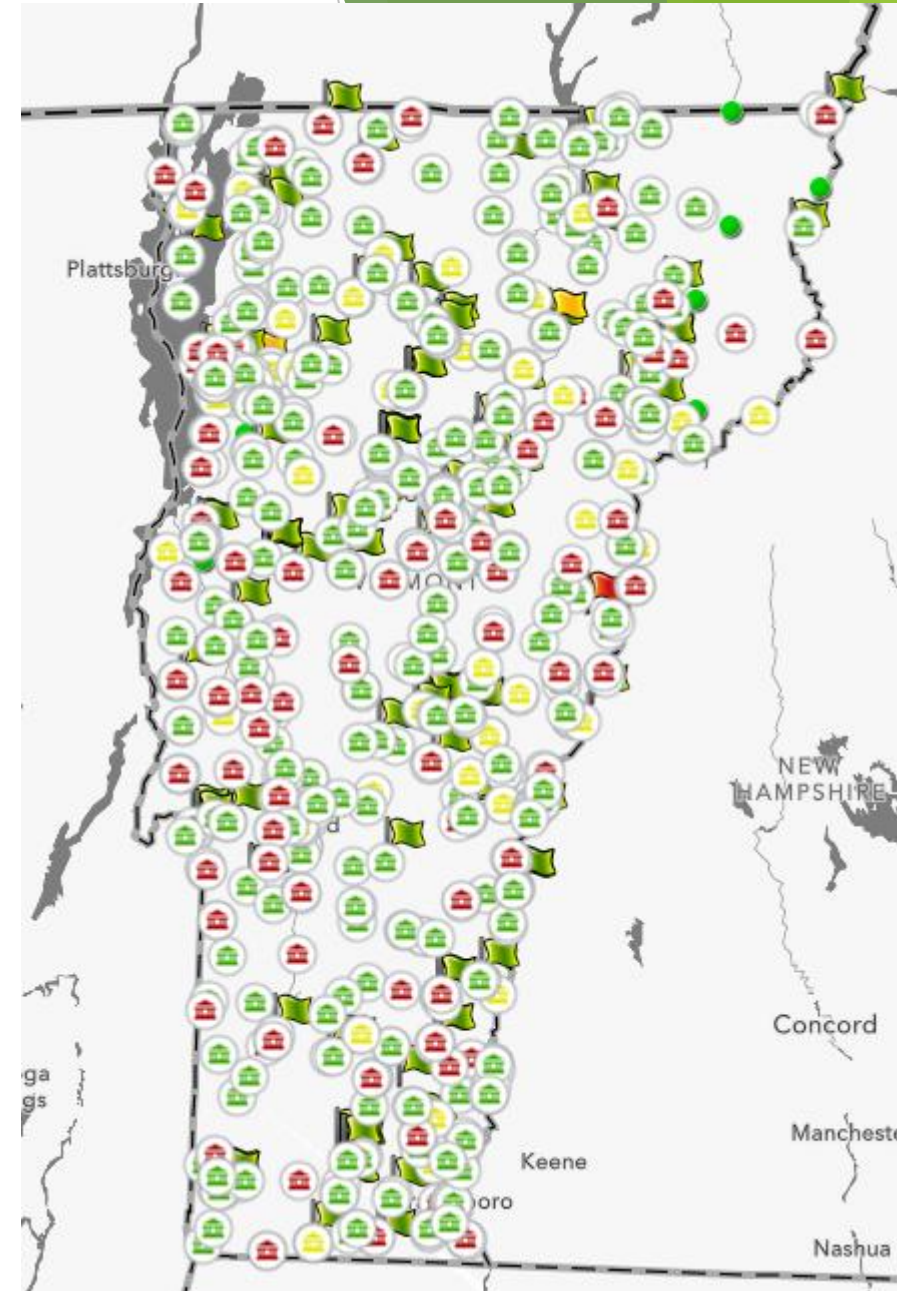
**PLEASE SHARE WITH YOUR COMMUNITY AND SCHOOL DISTRICTS**

Underserved locations by Supervisory Union



# COVID-19 Wi-Fi Hot Spots

- **Wi-Fi Hot Spots**
  - **Directory of Self Reported Wi-Fi Hot Spots**
  - **Deployed additional hotspots - Microsoft/RTO**
    - Ferrisburgh Central School
    - Monkton Central School
    - Waltham Town Offices
    - Robinson Elementary School
  - <https://publicservice.vermont.gov/content/public-wifi-hotspots-vermont>

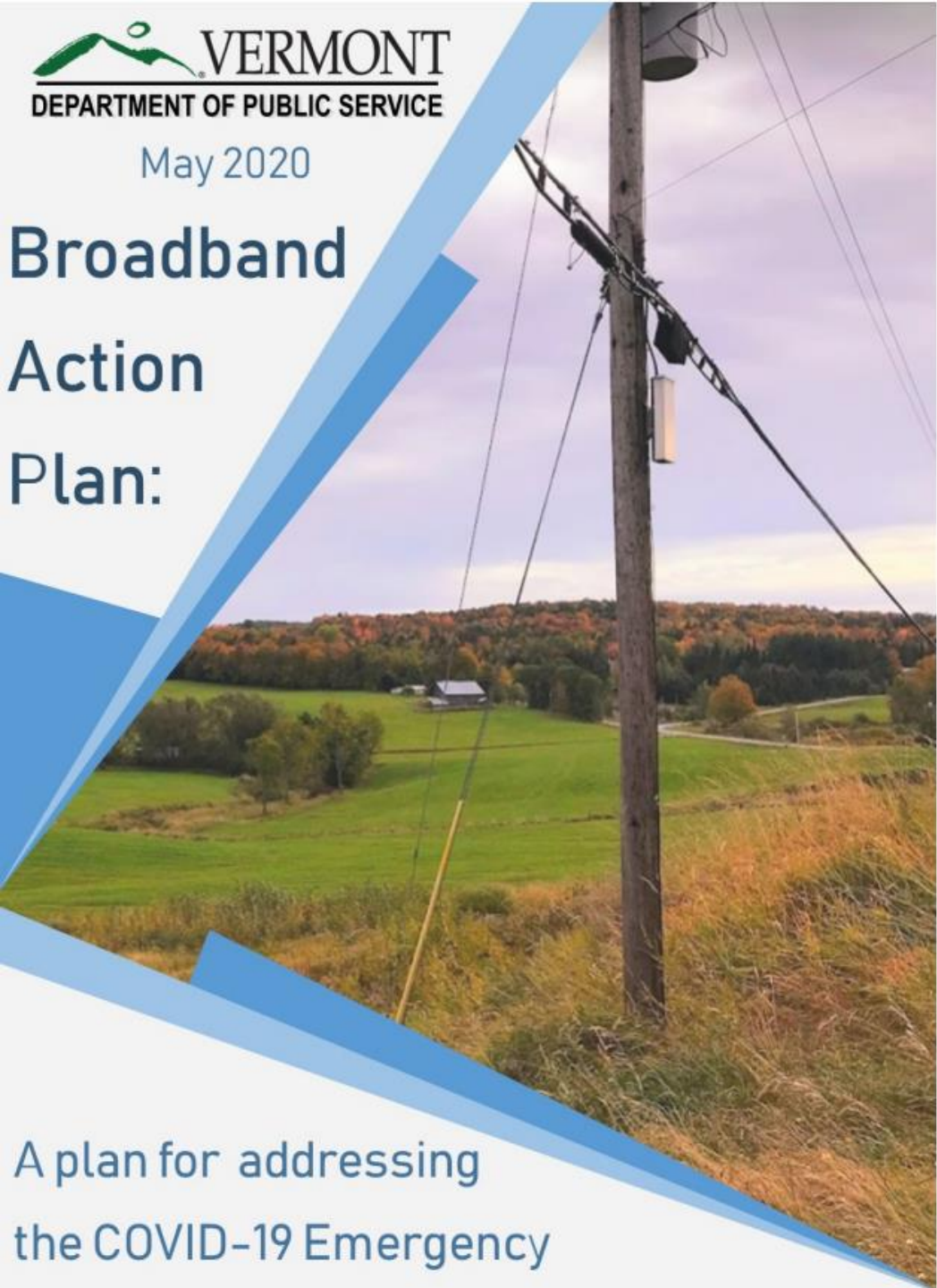


# COVID-19 Response

- **Emergency Broadband Action Plan**
  - <https://publicservice.vermont.gov/content/emergency-broadband-action-plan>
  - **Public Hearing - Thursday, May 21**

May 2020

## Broadband Action Plan:



A plan for addressing  
the COVID-19 Emergency

- Releasing our broadband data to empower communities

- Planning Data for Community Fiber

<https://stone-env.maps.arcgis.com/apps/PublicInformation/index.html?appid=2b4ee9dbeb014c73acc0b38619d1a39c>

- Note: This is not a state tool, but uses state data

The screenshot displays the 'Planning Data for Community Fiber' web application. On the left, a 'Layers' panel lists various data layers, including 'Broadband Status (2019)', 'Supervisory Unions FY2020', 'FCC RDOF Eligible Census Blocks (Mar.17,2020)', 'Communication Union Districts 0420', 'Cable Routes (2017)', 'Fiber Routes by Owner (2019)', 'State of Vermont Fiber Network', 'Towers by Type', 'Number of Businesses-CVFiber', 'E911 Structures', 'Municipal Boundaries', 'Vermont Parcels', 'Road Centerlines', 'Trails', 'Vermont Substations', 'Electric Substations', 'Electric Transmission Line Corridors', 'GMP Poles', 'GMP Distribution Lines', 'WEC Poles', and 'VEC Distribution Lines'. The main map area shows a detailed view of Vermont with various towns and geographical features. A text box is overlaid on the map, containing the following text:

**Planning for Community High Speed Broadband in Vermont**

This application is a compilation of all available GIS data related to planning for Fiber to the Premises (FTTP). It was created to support Statewide efforts in bringing high speed broadband to everyone in Vermont.

The work has been done by myself as a volunteer to CVFiber and as GIS professional and advocate. I want to thank Stone Environmental ([www.stone-env.com](http://www.stone-env.com)) for use of their ArcGIS Online subscription for this useful set of data. I retired from Stone at the end of 2019. Stone has completed a number of broadband studies over the years.

Special thanks goes out to Corey Chase and Rob Fish at the Department of Public Service for compiling some of the most useful datalayers.

If you have questions or suggestions please feel free to contact me at [healy.david.j@gmail.com](mailto:healy.david.j@gmail.com).

COVID-19 Response

# Broadband Market Challenges

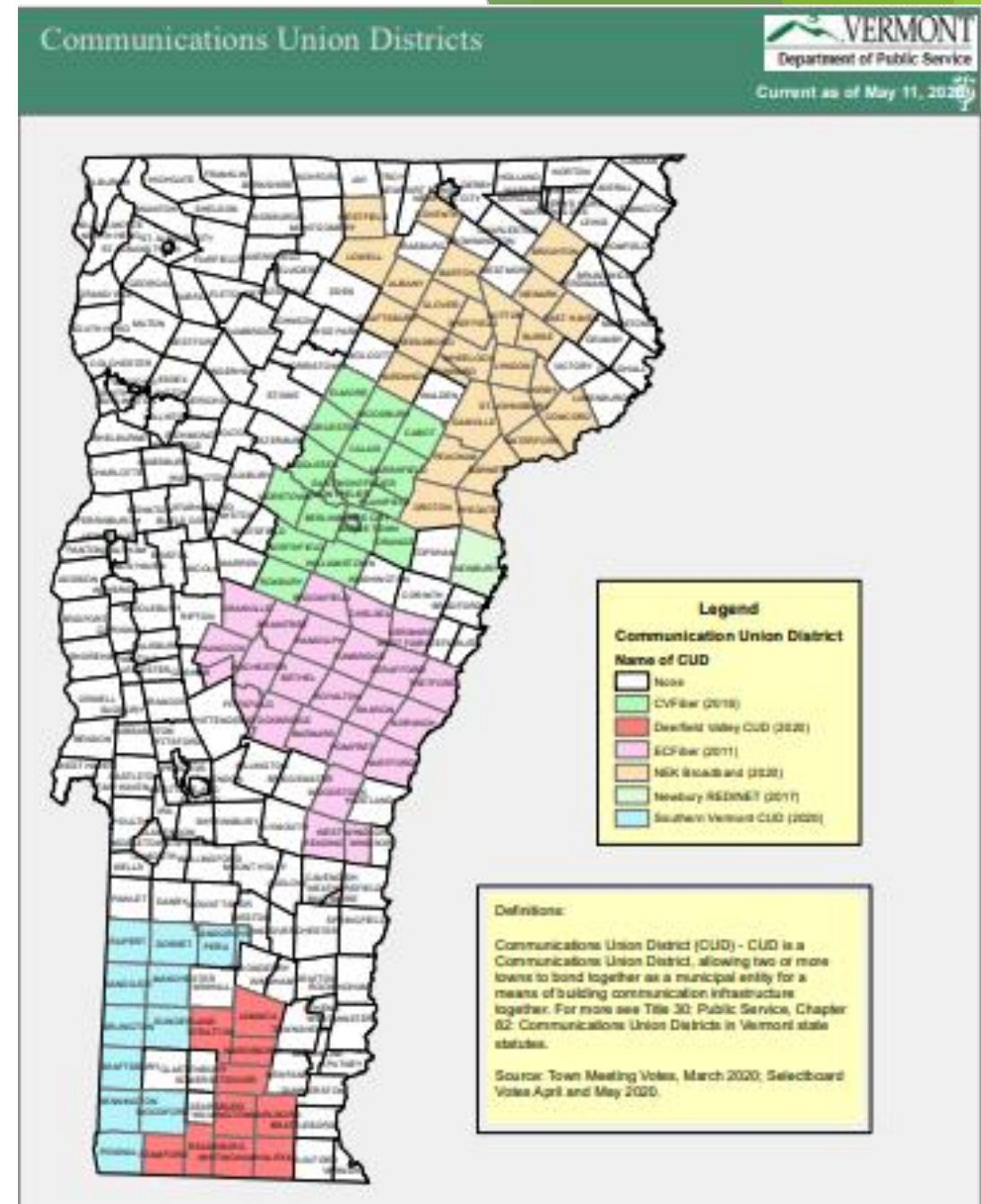
- ▶ Light touch regulation
- ▶ Competition is fierce
- ▶ Private investment business models are focused on return
- ▶ Geography

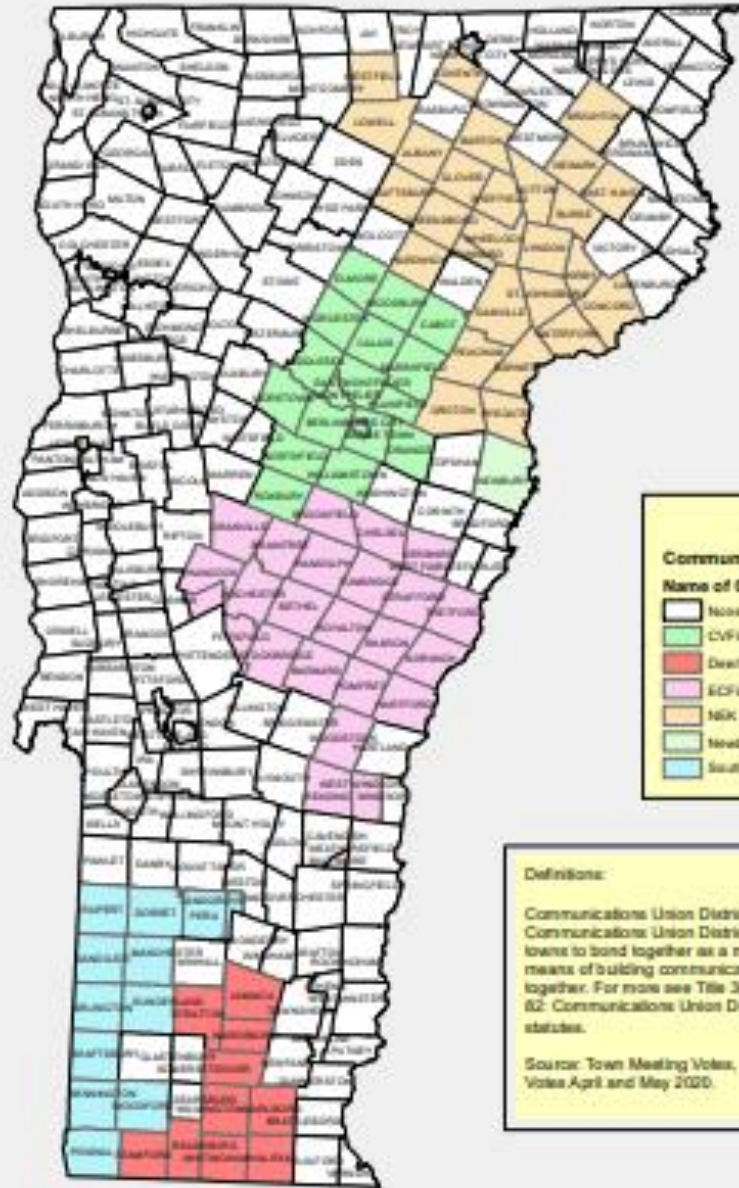




# Communications Union Districts

- ▶ **Communications Union District**
  - ▶ Legal entity for municipalities to start telecom planning
  - ▶ Provides structure and governance
  - ▶ Towns work together on a regional issue.
  - ▶ Insulates member towns from financial risks
  - ▶ Decision making power over Emergency Broadband Fund (Potential)
  - ▶ **MUST** be approved by voters -- Town Meeting - BUT Emergency Legislation may be enacted.
  - ▶ New towns can join by selectboard vote.





**Legend**

**Communication Union District**

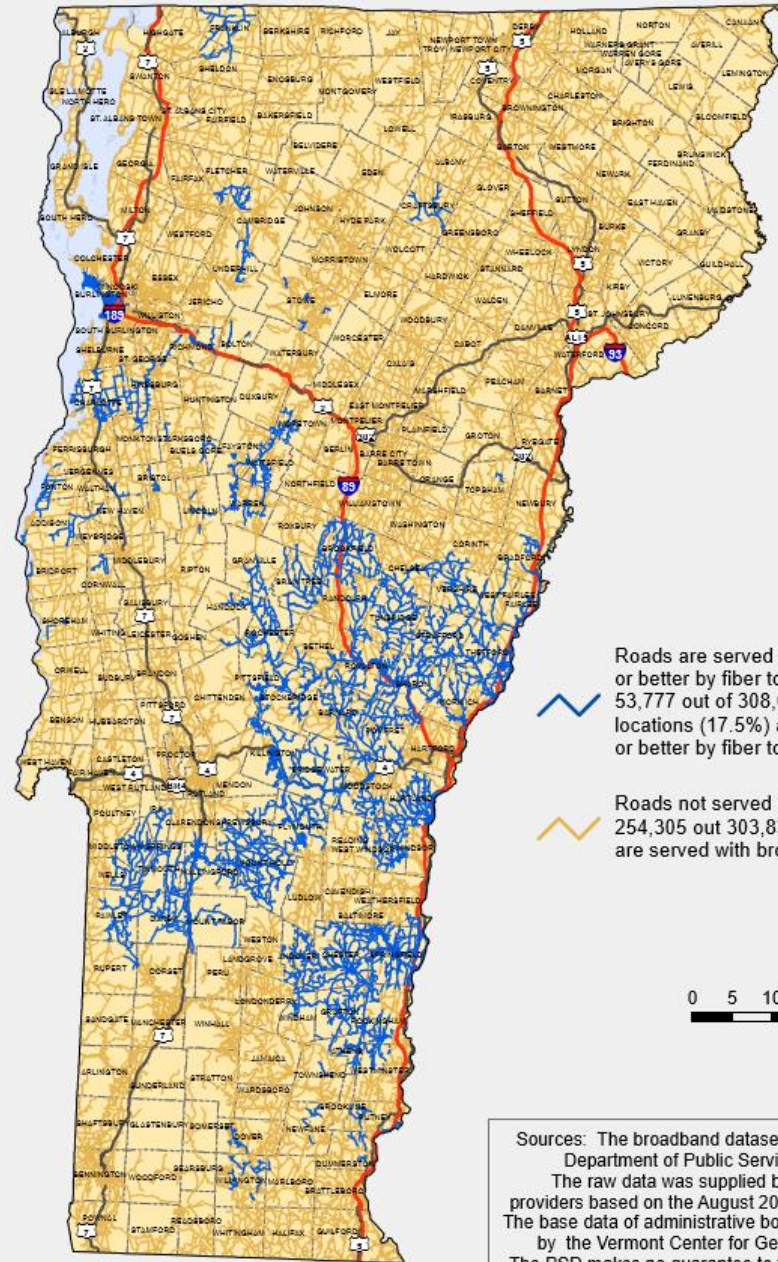
**Name of CUD**

- None
- CVFiber (2018)
- Deerfield Valley CUD (2020)
- ECFiber (2011)
- NEX Broadband (2020)
- Newbury RSDNet (2017)
- Southern Vermont CUD (2020)

**Definitions:**

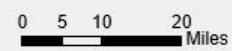
Communications Union District (CUD) - CUD is a Communications Union District, allowing two or more towns to bond together as a municipal entity for a means of building communication infrastructure together. For more see Title 30: Public Service, Chapter 82: Communications Union Districts in Vermont state statutes.

Source: Town Meeting Votes, March 2020; Selectboard Votes April and May 2020.



— Roads are served at 100/100 Mbps or better by fiber to the premises or cable. 53,777 out of 308,082 building locations (17.5%) are served at 100/100 Mbps or better by fiber to the premises or cable.

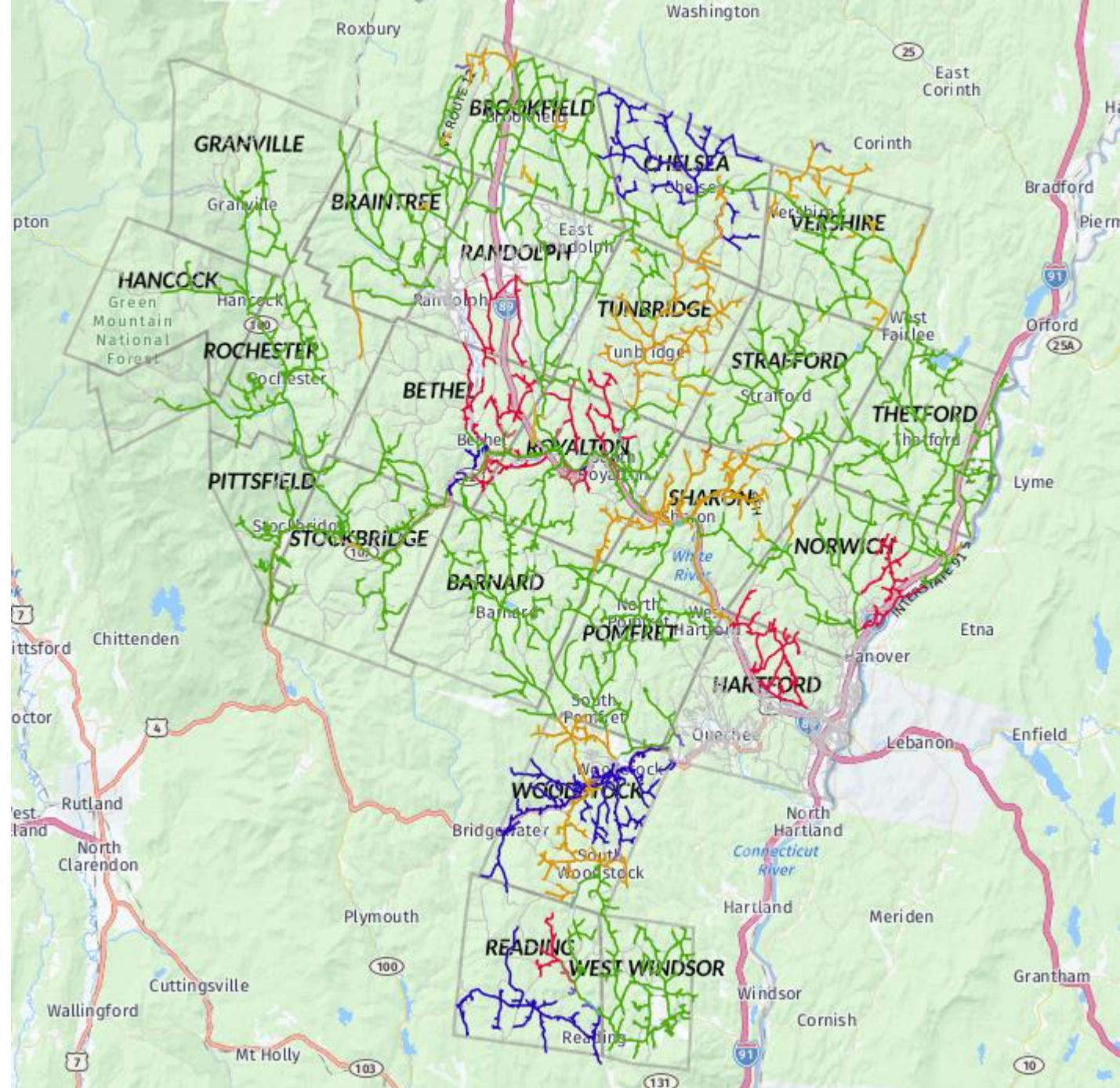
— Roads not served at 100/100 Mbps or better. 254,305 out 303,835 building locations (82.5%) are served with broadband less than 100/100.



**Sources:** The broadband dataset was prepared by the Vermont Department of Public Service (PSD) on 2/21/2020. The raw data was supplied by Vermont internet service providers based on the August 2019 PSD request for information. The base data of administrative boundaries and roads are supplied by the Vermont Center for Geographic Information (VCGI). The PSD makes no guarantee to the accuracy of this information.

# Case Study: EC Fiber

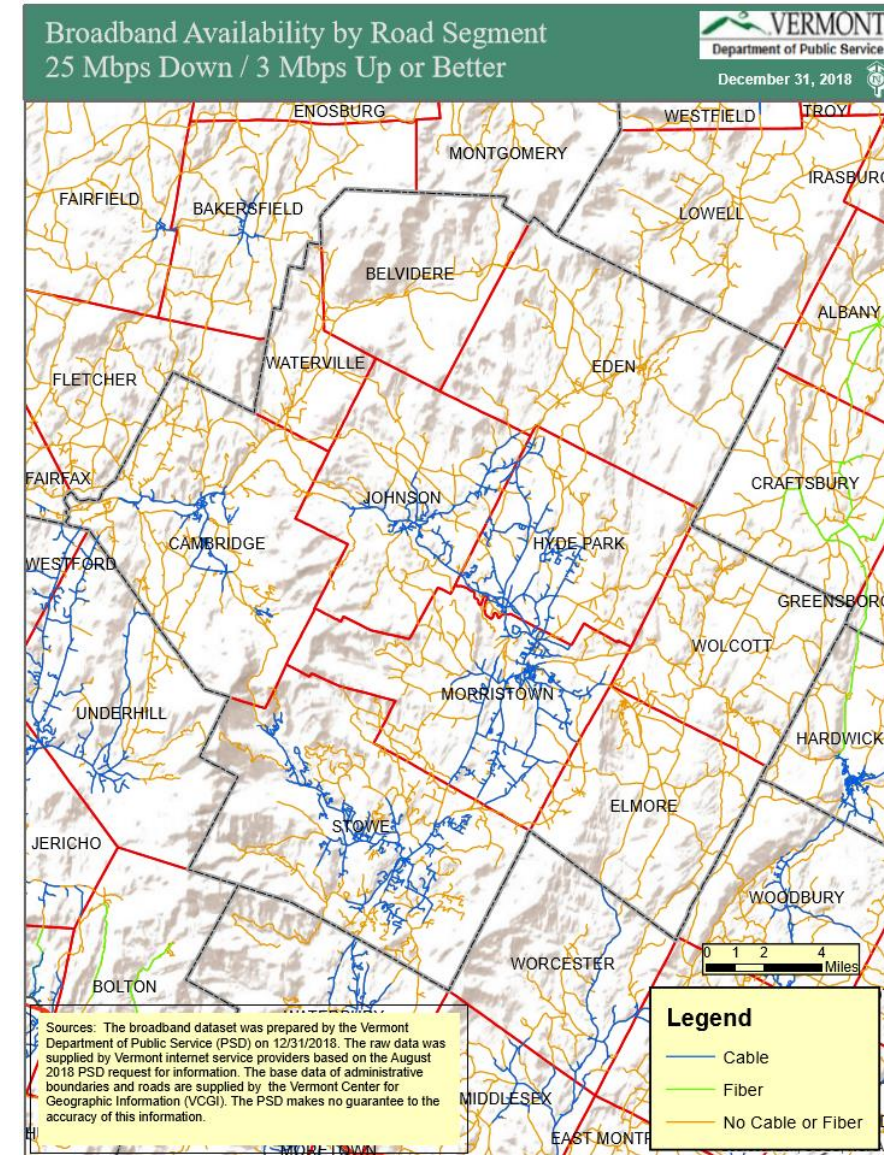
- ▶ State's first Communication Union District -24 towns.
- ▶ As of October 2019, ECFiber has more than 4000 customers connected.
- ▶ Full coverage in 8 towns/majority of roads additional 5 towns. By the end of 2019, the District hopes to have an additional 4 fully covered towns.
- ▶ State Law Prohibits Municipal Funding of Broadband.
- ▶ Acts as a municipality = No taxpayers funds for individual towns used/at risk → Revenue Bonds
- ▶ All volunteer; operated by ValleyNet



# Communications Union Districts:

## ► Why create a CUD?

- **Aggregate Demand** - Mixing dense and less dense towns makes the project more attractive to providers/ AND MORE NEGOTIATING POWER.
- **Entire region can benefit** - If carriers pick off one town at a time leads → digital divide.
- **Funders are familiar with Municipal Districts**
- **Efficiency** - Network design, construction, and operation can all be more efficient when planned from the onset.
- **Town boundaries are irrelevant** - Roads, topography, and settlement patterns are more important.
- **Risk Mitigation** - Individual towns are not on the hook
- **Additional Funding Opportunities** - Easier access to federal state grants and loans that require providing services to those least served. VEDA Loan Program.
- **Don't reinvent the wheel** - Share resources, lessons



# Town-by-Town Approach

## ▶ Town Owned or Operated Infrastructure

- ▶ Municipalities cannot use general obligation bonds to finance operations of or capital improvements
- ▶ Limits the financing of any capital improvements related to a municipally owned and operated communications plant to revenue-backed bonds
- ▶ Prohibits losses from being borne by the municipality's taxpayers

## ▶ Contracting for Service

- ▶ These restrictions do not apply when a town is contracting for service with an existing or new provider and does not own the infrastructure.

# Broadband Innovation Grant (BIG)

- ▶ **Three Rounds** (August 2019, February 2020, April 2020)
- ▶ **Funds feasibility studies related to deployment of broadband**
  - ▶ \$700,000 total funding (up to \$60,000 per grantee)
  - ▶ Open to CUDs, municipalities, non-profit, for profit - Basically anyone
- ▶ **Third Round - Spring 2020:**
  - ▶ Up to seven additional grants will be award.
  - ▶ RFP - <https://publicservice.vermont.gov/content/broadband-innovation-grant-program>

# Broadband Innovation Grant (BIG)

- ▶ **Explore a diversity of solutions**
  - ▶ Leveraging public-private partnership to expand an existing providers network
  - ▶ Expanding and strengthening an existing Communication Union District
  - ▶ Creating a new Communication Union District.
- ▶ **Each grant has two parts:**
  - ▶ Investigate feasibility of doing a project
  - ▶ Creation of a business plan if proposal is deemed feasible

# Broadband Innovation Grant (BIG) Continued

## ▶ Feasibility

- ▶ Survey-informed estimated “take rates” for new service
- ▶ Inventory of vertical assets
- ▶ Analysis of alternative deployment routes
- ▶ The presence or lack of commercial areas such as town centers, retail locations, manufacturing facilities, clinics, and whether they are adequately served.
- ▶ Bandwidth needs
- ▶ A proposed project service area

## ▶ Business Plan

- ▶ High level Engineering and design plans
- ▶ Market Analysis
- ▶ Financing models, pro forma financial projections
- ▶ Estimated construction costs
- ▶ Ideal operational models
- ▶ Risk Management Plan accounting for all risks identified in Feasibility Study

# Questions?

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Additional Resources:

<https://publicservice.vermont.gov/content/broadband-resources-towns>