Expanding Broadband in the Addison County

Presented by Robert Fish, Rural Broadband Technical Assistance Specialist
Remote- May 13, 2020

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Department of Public Service Resources

- **Rural Broadband Technical Assistance Specialist**
  - Dedicated staff assisting communities with broadband visioning
  - Connection to other resources
  - Education and outreach

- **Broadband mapping**
  - Helping stakeholders make informed decisions using availability data
  - Wireless mapping continues with the help of volunteers

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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

<table>
<thead>
<tr>
<th>Speed Tier</th>
<th>Served</th>
<th>Not Served</th>
</tr>
</thead>
<tbody>
<tr>
<td>100/100 Mbps</td>
<td>53,777</td>
<td>254,305</td>
</tr>
<tr>
<td>25/3 Mbps</td>
<td>238,183</td>
<td>69,899</td>
</tr>
<tr>
<td>4/1 Mbps</td>
<td>287,104</td>
<td>20,978</td>
</tr>
</tbody>
</table>

**Notes**

- 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 data includes administrative boundaries and roads supplied by the Vermont Center for Geographic Information (VCGI).
- The PSD makes no guarantee to the accuracy of this information.
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

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

• Public Hearing - Thursday, May 21
• 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

COVID-19 Response
Broadband Market Challenges

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

What is a 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 information see Title 30: Public Service, Chapter 82: Communications Union Districts in Vermont state statutes.

Other types of Municipal Districts:

- Solid Waste Districts
- Consolidated Sewer Districts
- Emergency Medical Service Districts
- Natural Resources Conservation Districts
- Consolidated Water Districts
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.
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 time at town 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 awarded.
  - **RFP -** [https://publicservice.vermont.gov/content/broadband-innovation-grant-program](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