

Methow Valley Broadband Position Paper
Authored by TwispWorks

Broadband Access in the Methow Valley

As a rural, mountainous, and remote community, the Methow Valley has limitations to broadband access. Not all residences have access to broadband, service provision is not consistent and the infrastructure to support broadband is not in place in all areas. However, because of technological innovation, a change in the political climate advocating greater broadband access in rural areas, incentives to broadband providers to expand their coverage and an interest from key stakeholders in our local community, *we believe now is an opportune time to work to improve broadband access in the Methow Valley.*

Improving Access to Broadband Access in the Methow Valley

Led by TwispWorks, in 2018 the Methow Valley Broadband Action Team (BAT) was created. Members of the BAT include Andy Hover, Okanogan County Commissioner, Soo Ing Moody, Mayor of Twisp, Sally Ranzau, Mayor of Winthrop, Don Linnertz, Executive Director of TwispWorks, Don Rudolph, Senior Consultant, Network Computing Architects and Harry Grant, Methow Valley resident.

The vision of the BAT is to increase the accessibility, reliability and quality of broadband in unserved or underserved communities in the Methow Valley.

There are three phases to the work the BAT is driving:

- Phase I (2018): Identify stakeholders, obtain community input and create a broadband work plan
- Phase II (2019): Conduct a technical assessment and create a technical implementation plan
- Phase III (2020): Execute the technical implementation, promoting improved broadband as noted in our vision statement

Phase I: The BAT has met regularly and identified the following components of the first phase of our work plan to include:

- Assess community opinion on the quality of current broadband service
- Identify how current broadband service is being delivered (who are the service providers, what are their service areas and what technologies are being used for the provision of their services?)
- Identify the areas that are currently underserved or unserved
- Determine how various stakeholders could help to meet the goal of improving broadband service in the Methow Valley

The BAT's focus is on the geographic area within the Methow Valley School District boundaries.

The BAT has completed Phase I by taking the following Steps:

- Contracted with Partners for Rural Washington to conduct an initial assessment and workplan that was delivered January 2019

- On October 10, 2018, held a community-wide meeting with approximately 40 attendees and conducted a community online survey, securing responses from 268 residents to receive community input on the current state of broadband access in the Methow Valley
- On October 4, 2018, met local Internet Service Providers (ISP's) including the public backbone provider Okanogan County PUD to assess current broadband capabilities and needed infrastructure. In addition to Okanogan County PUD, ISP providers and other stakeholders in attendance included NCI Datacom, The Colville Confederated Tribes, Noel Communications, Okanogan County Electrical Co-op, Okanogan County, TwispWorks, the Towns of Twisp and Winthrop and citizens.

With phase I complete, in early 2019, the BAT has moved to phase II.

Phase II: The second phase is conducting a technical and infrastructure assessment and will include the following items:

- Identify and pursue funding for a technical assessment to fully understand our current infrastructure capabilities and future needs
- Conduct a second online community survey to gather additional information about ISP's used by customers, levels of internet speed and exact addresses/locations of those indicating a desire/need for better service, and possibly other relevant data. This will help with future broadband network mapping and design, cost estimating for improvements and with evaluating how best to structure permanent financing for needed improvements and the subsequent cost impacts on ratepayers.
- Create an Advisory Committee that will include representatives from local businesses, internet service providers, healthcare providers, the school district and the community at-large

Securing funding for a technical and infrastructure assessment, advancing our discussion with ISPs and the community and creating an advisory council made up of a cross section of our community will improve our ability to define specific goals for Methow Valley broadband, based on an analysis of what current broadband service delivery is in terms of speed, placement and reliability. We also want to understand where and why the areas of poorer service exist and what the community would like to see Methow Valley broadband look like in the future.

Our goal is to complete the technical assessment phase in 2019.

Phase III: Once the technical assessment phase is complete, we will move to the final phase: the execution of a technical implementation plan for improving access and reliability of broadband to the Methow Valley in 2020.

The role of Internet in Modern Life

Over the past 30 years, the Internet has revolutionized virtually every aspect of modern life. It has created new industries, redefined jobs and changed how business is conducted. It has changed how people connect and communicate with one another. From staying up to date on current affairs, consuming information, pursuing advanced education, helping young people study, facilitating rural healthcare, enjoying all forms of entertainment and creating and extending social networks, the Internet touches every aspect of our lives. ***The pervasiveness of the Internet has created an environment where***

access to it has become a requirement of modern life, and those who lack reliable, high quality Internet suffer economic, educational, health and societal disadvantages.

How We Get Connected

While the earliest forms of the Internet have been in existence since the 1960s, the Internet did not expand outside of government and higher-ed institutions until the 1980s and didn't become widely used until the 1990s. In the 1990s and early 2000s, people typically accessed the Internet through dial-up—the process of creating a semi-permanent link to the Internet through a modem and a telephone line. When in use, dial-up Internet monopolized the land line and allowed for very low-speed Internet access. Dial-up speed typically did not exceed 56 kilobytes per second. Because it required no infrastructure, dial-up was particularly popular in rural areas. In the mid-2000s, as technology advanced, dial-up became obsolete and was replaced by broadband Internet access.¹

Broadband access includes a wide range of speeds and technologies, all of which provide much faster access to the Internet than dial-up. The term broadband once had a technical meaning, but today simply means “faster.” Broadband connections are continuous or “always on” connections, without the need to dial and hang-up and they do not monopolize phone lines. Common types of broadband access include DSL (digital subscriber lines), cable Internet access, satellite Internet access and mobile broadband via cell phones and other mobile devices among many others. In 2015, the United States Federal Communications Commission (FCC) defined broadband as any connection with a download speed of at least 25 Megabytes per second and an upload speed of at least 3 Megabits per second.²

Prevalence of Broadband in the United States

Today, approximately 41% of the global population has some form of Internet access. In the United States, 312 million people—92% of the population—have access to broadband Internet. While a high percentage of Americans have broadband access, the data show that many people in the US do not, and therefore miss many of the benefits associated with reliable access to the Internet. According to the most recent statistics from the Federal Communications Commission (FCC), 25 million Americans do not have access to a broadband-speed connection to the Internet.³ The vast majority—more than 19 million of these people—live in rural areas. ***This means nearly 31% of rural residents in the United States are unable to take advantage of digital services and capabilities that are an everyday part of life for many urban residents.***⁴ Further, this number is likely dramatically higher because of the way the FCC calculates broadband access. Under current rules, Internet service providers report their broadband service information twice per year based on the Census blocks they serve. There are 11,078,297 Census blocks nationwide, and if one household on the block is reported as “served,” the whole block is reported as having access to broadband—even if their neighbors have no hope of connecting. In rural areas, Census blocks can span many square miles. There are more than 3,200 census blocks that are larger than the District of Columbia and 8 are larger than the state of Connecticut. If a household miles

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https://en.wikipedia.org/wiki/Internet_in_the_United_States#Rural_broadband_and_advanced_telecommunications

² <https://www.fcc.gov/reports-research/guides/broadband-speed-guide>

³ FCC's 2018 Broadband Deployment Report

⁴ https://blogs.microsoft.com/uploads/prod/sites/5/2018/12/MSFT-Airband_InteractivePDF_Final_12.3.18.pdf

away has access to broadband, it makes no difference to their rural neighbors who have no broadband access—they are counted as “served” if they are on the same Census block.⁵

Financial Impact of Broadband Access

Broadband access has a clear, positive impact on economic development and job creation. For more than a decade, leading universities and research institutions have been working to understand how broadband access influences economic performance. The results show a correlation between expansion of broadband and higher economic growth rates.

Map to Prosperity, a report from the Nebraska-based Center for Rural Affairs, found that 80 new jobs are created for every 1,000 new broadband subscribers, that a 4 Mbps increase in residential broadband speed translates to an annual increase in household income of \$2,100, and that job seekers find employment 25% more quickly through online searches than more traditional approaches. Another study concluded that every dollar spent on expanding broadband generates \$4 in economic benefits.⁶

Impact of Broadband to Rural Businesses

The positive impact of broadband comes in many forms. For rural small businesses, it means improved access to new markets, the ability to compete with larger-sized companies, the potential to hire skilled remote workers, and the option to reduce costs and improve efficiency by utilizing Internet-based services. By providing the infrastructure for greater competitiveness, broadband increases the potential for rural businesses to attract and retain skilled workers who might otherwise look for opportunities in larger communities.

Lack of broadband access is one reason only 6% of US jobs in the information, professional, scientific, and technical services sectors are in rural areas even though 19 percent of Americans live in rural communities.⁷ And a study by the Bureau of Business Research at the University of Nebraska found that access to broadband has a significant positive influence on the likelihood that a new company will locate in a rural area.⁸

For farmers with broadband access, the ability to search for new customers, find buyers in more lucrative markets, and identify the most affordable sources of seeds, fertilizers, and farm equipment can increase their income. Broadband access is also essential for farmers to take advantage of a new generation of agricultural technologies built on sensors, data, and artificial intelligence that can help them conserve resources and increase yields. Having access to these new capabilities will improve rural prosperity and enable farmers to produce more food for a world that will add more than 2 billion people by 2050.⁹

Impact of Broadband to Rural Students

⁵ FCC’s 2018 Broadband Deployment Report

⁶ <https://www.cfra.org/publications/MapToProsperity>

⁷ https://blogs.microsoft.com/uploads/prod/sites/5/2018/12/MSFT-Airband_InteractivePDF_Final_12.3.18.pdf

⁸ <https://business.unl.edu/outreach/bureau-of-business-research/academic-research/documents/kim/broadband.pdf>

⁹ https://blogs.microsoft.com/uploads/prod/sites/5/2018/12/MSFT-Airband_InteractivePDF_Final_12.3.18.pdf

High-speed broadband access enables schools to expand learning options, allowing students to create content, participate in online courses that may not be available on their campuses, and to collaborate with experts or other students remotely. For students without broadband access, something as basic and essential as finishing homework assignments can be difficult. A recent study from the Pew Research Center found that nearly one in five American teenagers is often or sometimes unable to complete homework assignments because they do not have reliable access to a computer or internet connection.¹⁰

Impact of Broadband in Rural Healthcare

By providing a way for people to connect quickly and easily with caregivers and access health information, telemedicine is another area where access to broadband can make a difference for rural communities, where the number of physicians per 100,000 people is significantly lower than it is in urban areas and where there may be no local access at all to doctors in specialties like cardiology, psychiatry and oncology. Primary care physicians can more easily share patient information with specialists, and test results can be more quickly shared with patients.¹¹

Broadband Impact on Rural Life

At a time when most people use digital technology to communicate, access information, and stream videos and other entertainment, people without broadband have a much harder time keeping up with family, friends, and the latest news and cultural trends. This hurts us all because it means we lose out on the ideas and talent of millions of rural Americans who are unable to participate fully in today's digital world.

Barriers to Rural Broadband Adoption

There are some barriers to rural broadband usage, however technological innovations can address these barriers:

- **Affordability**—People in rural areas have lower incomes than people living in urban areas and may not be able to afford the monthly cost of broadband service
- **Skills and Awareness**—People who have not experienced broadband Internet service likely have fewer computer skills and less awareness of how broadband access can positively impact their home and work lives
- **Local Adoption and Use**—In rural areas there are fewer applications built for those geographies making broadband potentially less attractive for people in those communities
- **Infrastructure**—Thus far, most US telecom companies have declined to advance a business case for building the infrastructure needed to serve remote and less-densely populated rural areas.¹²

Of these four barriers to usage, the lack of infrastructure is the only issue preventing broadband access for rural communities, and we will focus on that challenge.

¹⁰ <http://www.pewresearch.org/fact-tank/2018/10/26/nearly-one-in-five-teens-cant-always-finish-their-homework-because-of-the-digital-divide/>

¹¹ https://blogs.microsoft.com/uploads/prod/sites/5/2018/12/MSFT-Airband_InteractivePDF_Final_12.3.18.pdf

¹² <https://www.bcg.com/publications/2018/economic-case-bringing-broadband-rural-united-states.aspx>

The Cost of Delivering Broadband to Rural Communities

First and foremost, lower population densities and greater distances between homes and communities makes the cost of installing fiber optic cable—the gold standard of broadband delivery—much more expensive. Installing fiber optic cable can cost up to \$30,000 per mile and the price of connecting every home in America could run as high as \$65 billion.¹³ And while satellite broadband can be an appropriate solution in very sparsely populated areas, it is limited by high latency, lack of significant bandwidth, high data costs, and the inability to penetrate foliage and other obstacles in mountainous terrain.¹⁴

Conclusion

Having access to broadband is quickly becoming an economic imperative in today's 24/7 global economy. Broadband access also is critical for students to fully participate in today's global classroom, to support rural health care and to engage in national and global conversation. Today, broadband should be thought of as a utility and as important to a community's health as electricity, garbage collection or access to potable water. Rural communities that do not have access to reliable broadband are therefore at a distinct disadvantage. Fortunately, advances in technology now afford solutions to more equitably provide access to broadband. Through community investment and collaboration, we can bring greater access to broadband to the communities of the Methow Valley.

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https://en.wikipedia.org/wiki/Internet_in_the_United_States#Rural_broadband_and_advanced_telecommunications

¹⁴

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