
FERRY COUNTY & THE COLVILLE
CONFEDERATED TRIBES BAT

Broadband Strategic Plan



Contents

I. Executive Summary	4
II. Introduction	7
III. Broadband Market Analysis and Needs Assessment	12
A. Demand for Broadband in Ferry County	12
B. Analysis of the Broadband Supply	18
C. Network Infrastructure	26
D. Other Assets for Broadband Development.....	28
E. Conclusions about Broadband Needs in Ferry County	29
IV. Broadband Development Strategy	30
A. Best Practices	31
B. Business Model Options	36
C. Prospective Partners.....	39
V. Broadband Business Case Evaluation.....	46
A. Network Reach.....	47
B. Network Components and Costs	48
C. Potential Impacts.....	54
D. Funding Options and Programs.....	56
E. Conclusions About the Business Case	63
VI. Action Plan and Next Steps	64
A. Recommendations and Next Steps	65
Appendix A. Funding Source Details	67
A. Federal Funding Sources	67
B. State Funding Sources.....	79

Table of Figures

Figure 1-1. Ferry County Backbone Network	5
Figure 2-1. Physical Bandwidth Capacity Comparisons	8
Figure 2-2. Growth in Application Bandwidth Demand.....	9
Figure 3-1. Percentage of 464 Respondents per Community	13
Figure 3-2. Percentage of 444 Respondents WITHOUT Connected Devices.....	13
Figure 3-3. Reasons for Not Having Internet by Percentage of 76 Responses.....	14
Figure 3-4. Willingness to Pay for Internet by Percentage of 386 Respondents.....	15
Figure 3-5. Levels of Satisfaction with Various Aspects of Internet Service by Percentage of (n) Responses	16
Figure 3-6. Current and Expected Benefits/Uses of Internet by Percentage of (n) Responses	17
Figure 3-7. Major Sites for Connectivity Requirements Identified by BAT Members	18
Figure 3-8. Internet Service Providers by Percentage of 349 Respondents	19
Figure 3-9. AT&T and Verizon coverage for Ferry County compared.....	26
Figure 3-10. NoaNet’s Fiber Route Through Ferry County.....	27
Figure 3-11. Long-haul Network Infrastructure in Northeast Washington State.....	27
Figure 3-12. Vertical Assets in Ferry County	28
Figure 4-1. Ferry County Network Vision Overview.....	30
Figure 4-2. The Public-Private Partnership Continuum for Broadband Development.....	36
Figure 5-1. End-user Sites in Relation to the Envisioned Fiber Backbone Routes	47
Figure 5-2. The Conceptual Structure of Fiber-Wireless Network Infrastructure for Ferry County	50
Figure 5-3. Components of a Radio Site	51
Figure 5-4. Potential Network Support Assets in Ferry County	52
Figure 5-5. RDOF Eligible Areas, Northern Ferry County	58
Figure 5-6. RDOF Eligible Areas, southern Ferry County, including Colville Reservation.....	59
Figure 5-7. Grant and Funding Opportunities Gantt Chart	61

I. Executive Summary

Ferry County, WA, including the eastern portion of the Confederated Colville Tribes Reservation, appears to be woefully under-served with broadband. While multiple private companies are interested in serving portions of the area, there is no clear market solution for getting everyone connected. Providers face challenges with all portions of network infrastructure. The remote, rural nature of the area makes per subscriber costs for deploying access infrastructure relatively high. There is almost no distribution network infrastructure to connect access network aggregation points to backhaul networks. Options for backhaul to the core internet are limited. Lack of access appears to be profoundly limiting benefits of online education, health, and work for residents of the area.

To resolve the fundamental question of what the Confederated Colville Tribes (CCT) and Ferry County leadership can do about the situation, a Broadband Action Team (BAT) was formed. The BAT, which includes a variety of other area stakeholders, released an RFP for development of this Broadband Action Plan. Magellan Advisors was selected to lay out the options, along with high-level costs and benefits, and to identify key next steps and major activities that must occur to provide broadband throughout the area.

While we do not see any real prospects for a public sector entity to directly provide internet services in Ferry County, there are several actions that the BAT members can take to improve the state of broadband for its communities. Primarily, this action plan focuses on getting more investment by more providers in more areas. The CCT and Ferry County can develop broadband by reducing barriers and costs for providers and by encouraging residents and businesses to subscribe to services. Implementing broadband-friendly policies will also be key. Additionally, this Action Plan encourages CCT and Ferry County to consider partnering with various providers in the development of a regional backbone network.

A regional backbone network, along with locations for access infrastructure, is the key to getting more bandwidth to more places in Ferry County. The backbone network could be built and owned by the BAT's member agencies (CCT and/or Ferry County) and act as shared distribution network infrastructure for all or any internet service provider. CCT is particularly well positioned to expand its existing fiber network, creating a backbone in the south of the County that would be used by one or several internet service providers to connect residents and businesses.

Access network infrastructure, which makes the "last mile" connections between businesses and residences and the network, is essential, but is almost always owned by the internet service providers. They need places to put that infrastructure, which we recommend the CCT and County focus on in conjunction with the backbone. Providers also need backhaul to the core internet, which is available in Republic and could be made available in other locations on existing fiber routes. The backbone network would provide the critical infrastructure between access points and interconnection with backhaul.

Based upon the locations of sites prioritized by the BAT, existing assets, major arterials, and population centers, Magellan created a high-level backbone network that would be instrumental in addressing many of the broadband needs throughout the County. A map of this backbone network vision is shown in the figure below.

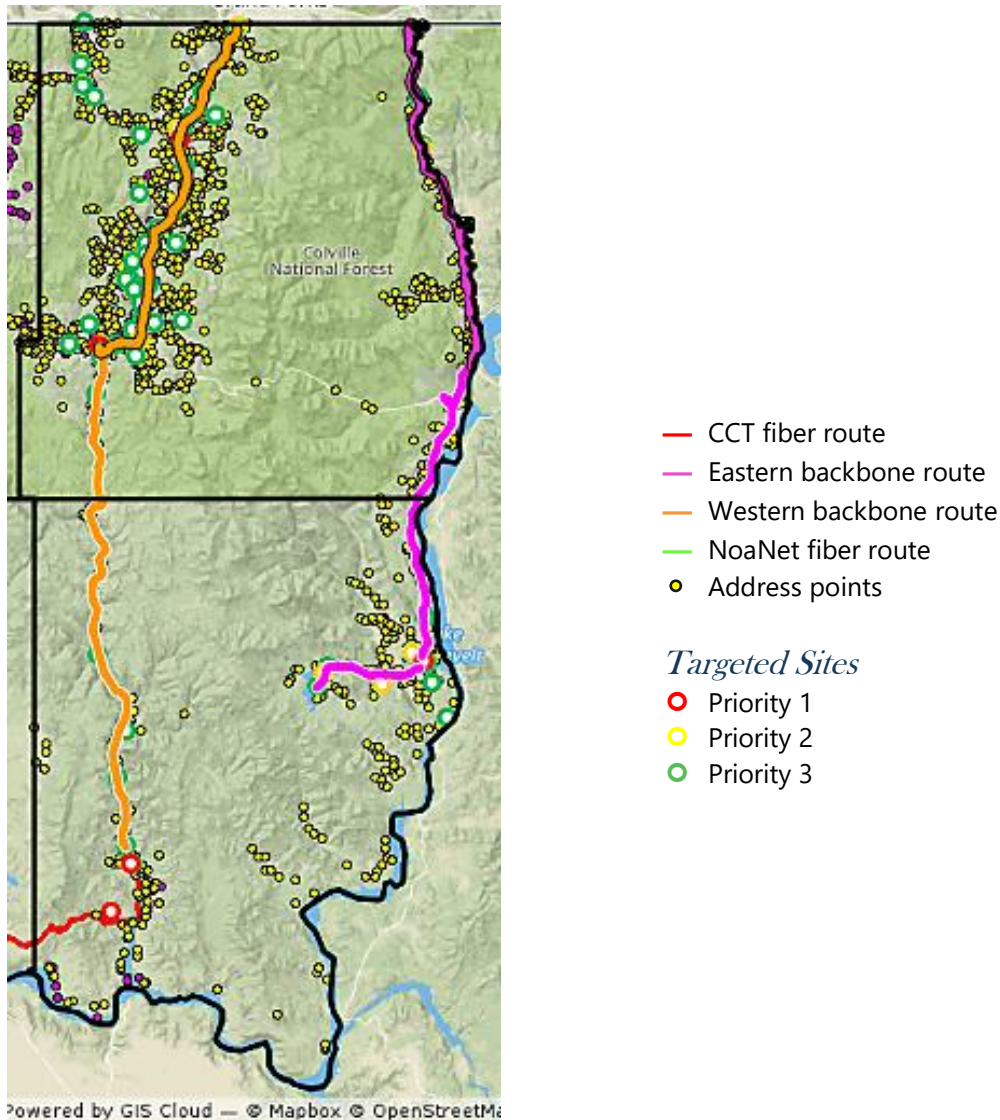


Figure 1-1. Ferry County Backbone Network

Under this model, internet service providers would need to build out access infrastructure and network equipment for interconnecting. The public sector agencies and CCT would provide sites for access points all infrastructure necessary to get from the access points to the interconnection sites. Providers would then be responsible for acquiring backhaul. It is not clear who would maintain the backbone, which is a critical issue to address. Exactly how much costs for backbone infrastructure could be recovered from providers would need to be negotiated. A provider may be willing to maintain the backbone in return for rights to use some portion of it.

Magellan spoke with several providers in the region who expressed interest in working with the BAT to expand access throughout the County including Avista Edge, Inland Cellular, NoaNet, TV Association of Republic, and others. In the south of the County, Avista Edge, NoaNet, and Inland Cellular are well positioned to partner with CCT; in the north County, partnership options are less clearly defined, but organizations such as TV Association of Republic would be key partners that bring experience, capital, organizational capacity, and existing assets.

Partnerships with other jurisdictions to create a regional approach should also be considered. Regional efforts allow for economies of scale, adding financial and organizational resources, and building greater political will to achieve a bigger impact across more communities. Because CCT's lands stretch into Okanogan County, it should certainly take a holistic approach, which requires coordination between the counties and their respective BATs. The BAT should also explore regional partnerships with other entities including Stevens County, Lincoln County, the Spokane Tribe, Spokane County, and Grant County. Partnerships may range from coordinating funding activities to build a regional network spanning across several counties to simply opening dialogue for exchange of ideas.

There are multiple options and resources for CCT, Ferry County, and selected partners to finance a regional backbone. Between the state and federal governments, there are numerous public grants and loans available for broadband development. The Tribes have access to additional resources for broadband. Importantly, many of these programs have funds available NOW on a first-come, first-served basis, including the Economic Development Agency's CARES Act funding, which was allocated an additional \$1.5 billion for economic recovery due to the COVID-19 pandemic. We strongly recommend that the BAT, CCT, and Ferry County mobilize to apply for funding as soon as possible. Other funding opportunities include the Rural Digital Opportunity Fund (for CCT and the south County) and Washington's Public Works Board Broadband Grant and Loan Program. We anticipate additional public resources in response to the COVID-19 pandemic to support economic recovery and we anticipate increased support for broadband development due to the crisis starkly demonstrating the essential role of internet access in modern life.

There is clear need for better broadband on the Colville Reservation and across Ferry County. Increased connectivity could profoundly benefit residents, improving economic opportunities, educational outcomes, health and wellness, and overall resilience. It is simply too costly for private sector providers to serve much of the area. This report lays out an action plan for public leaders to partner with private enterprise to bring internet access to all. Many details have yet to be worked out regarding exactly what infrastructure will be deployed, where, for whom, and how it will all be maintained, operated, and paid for. The critical next steps are for a few local leaders to determine what role they wish to play, and begin detailed planning in earnest:

1. Address the issue of who will own publicly funded network assets and how they will be maintained and managed (Discussions between the Confederated Colville Tribes and Ferry County were on-going as this report was finalized.)
2. Apply for public funding and develop other financing
3. Conduct a detailed feasibility study for regions with clear opportunity for public investment, especially the Confederated Colville Tribal area
4. Consider a regional approach by coordinating with entities outside of Ferry County, which may include Okanogan County, Stevens County, and Lincoln County
5. Develop high-level design, fully estimate costs in detail, study the full range of benefits and prospective sources of funding
6. Establish agreements with partners for use of supporting infrastructure, interconnection to regional networks, and deployment of access infrastructure
7. Identify radio access network antenna sites
8. Specify aggregation and interconnection sites
9. Plan for operations, marketing and promotions
10. Create low-level design and build network

II. Introduction

Ferry County (WA) covers 2,257 square miles, approximately half of which—the southern portion—is part of the Colville Reservation of the Consolidated Colville Tribes (CCT). As of July 2019, the Census Bureau estimates Ferry County’s total population to be approximately 7,627 across approximately 3,097 households. Median income in the County is \$41,924 with a poverty rate of approximately 17.8%. Ferry County has a relatively older population, with approximately 27.2% of residents over the age of 65 compared to a statewide average of 15.4%.¹

The region’s economy, historically bolstered by a mining sector centralized in Republic, has experienced slow growth, largely due to the remote location of the County. As of 2017 Census data, the County housed 147 total employer establishments. Top industries are Health Care & Social Assistance (16%), Public Administration (12.7%), and Retail Trade (12.5%).² Over the last several years, County and Tribal leaders have sought to attract new industries to the area to boost its economic outlook.

As in most other counties in the state, the Washington State University (WSU) Extension Service organized a *Broadband Action Team* (BAT) in Ferry County. The Ferry County BAT has over 60 members, including network service providers as well as local- and state-level stakeholders, some of whom wear multiple hats (see Table 2-1.)

Table 2-1. Number of BAT Participants by Affiliation

Type of Participant	Number
CCT	3
City (Republic)	3
County	17
Elected official	2
Emergency Services and Public Safety	7
Health	2
Economic Development	4
Libraries	2
Local Industry	3
Network Service Providers	13
Public Schools	2
State	21
Elected official	5
Higher Education	11
WSU Extension Service	8
Unaffiliated	2

Criticality of Fiber Networks for Municipal Infrastructure

Broadband infrastructure, including conduit, towers, antennas, vaults, splice boxes, handhelds, and data

¹ Source: US Census Bureau Quick Facts

² Source: Data USA: Ferry County, WA

centers is the framework that is used to deliver broadband, high-speed internet access. Fiber optics enables broadband by transmitting large amounts of data securely over long distance and with high reliability, is considered the gold standard for municipal and business communications, broadband services, and internet access (see Figure 2-1, below, for bandwidth capacity comparisons of several technologies). It supports a wide range of applications and is scalable to support nearly unlimited data capacity. Local and regional governments that own fiber consider it a capital infrastructure asset similar to water, gas, roadway, and electric infrastructure that has a lifespan of up to 40 years.

Dial-Up – 56Kbps

- Legacy Technology
- Shared Technology

ADSL – 10Mbps

- First Generation of DSL
- Shared Technology

ADSL2 – 24Mbps

- Second Generation DSL
- Shared Technology

Cable – 150Mbps

- Data Over Cable (DOCSIS 3.0)
- Shared Technology

Next Generation Fiber – 1Gbps

- Passive Optical, Active Ethernet
- Shared and Dedicated Technology

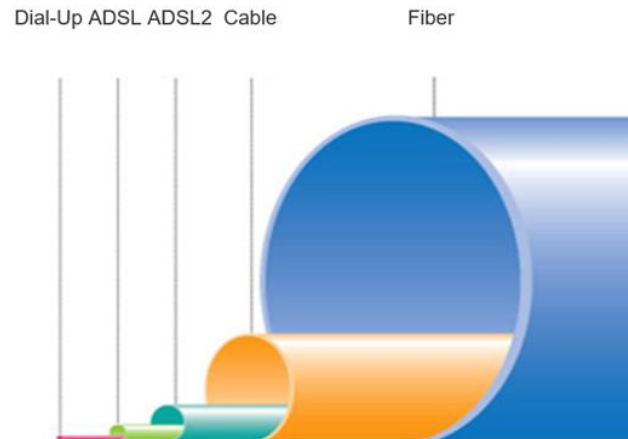


Figure 2-1. Physical Bandwidth Capacity Comparisons

The benefits of such infrastructure are extensive. These networks are becoming increasingly important to cope with the rapid growth in connected devices, from utility assets, to streetlights, to traffic signals, to surveillance cameras, combining “Smart City” technologies composed of interconnected infrastructure that allow governments to be more efficient, reducing costs and increasing the value they deliver to their constituents. Therefore, many local governments have embarked on planning for and investing in broadband infrastructure to provide greater community benefits and to lower telecommunications expenditures by owning valuable assets.

Broadband infrastructure is also a key to economic development. A competitive environment for affordable, reliable, redundant broadband services must be readily available in areas where office, technology, and industrial parks and other major commercial developments exist today or are being planned and built. In some cases, local governments and tribal organizations have taken it upon themselves to ensure that this infrastructure exists so they can continue to drive economic investment in their regions. This includes working with residential developers for the delivery of fiber-to-the-home for support of home-based businesses, telemedicine, aging in place, public safety, and emergency response. Other benefits include managing the energy grid and increasing housing and property values for the high-tech jobs needed to support economic growth supported by the internet.

Although it would be misleading to imply that the availability (or lack thereof) of broadband is the only factor by which businesses decide their locations, many companies do consider a lack of affordable, reliable broadband a major barrier to entry. In locations such as Santa Monica, California, major employers have been dissuaded from relocating because the local government was able to offer an alternative cost-

efficient broadband service. Following in this effort, cities and counties across the country are implementing fiber and wireless networks for economic development and quality of life. These include Fort Collins, CO, Centennial, CO, Inglewood, CA, Culver City, CA, Santa Clarita, CA, Oxnard, CA, Ventura, CA, Paso Robles, CA, San Luis Obispo, CA, San Leandro, CA, Carlsbad, CA, Chattanooga, TN and hundreds more throughout the country.

In addition to private and public organizations, residents also have a need for broadband. Much like businesses and governments, many of the daily functions that citizens perform rely on internet connections. When deciding to purchase a home or relocate, most people would not consider moving to a community that does not offer internet connectivity, a fact that Magellan has confirmed many times through anecdotal evidence from around the country. Although the amount of data for residential use may not reach the levels needed for commercial or municipal use, broadband enables entertainment, healthcare, smart home applications, and telecommuting in homes around the US. Figure 2-2 illustrates the bandwidth needs for classes of applications.

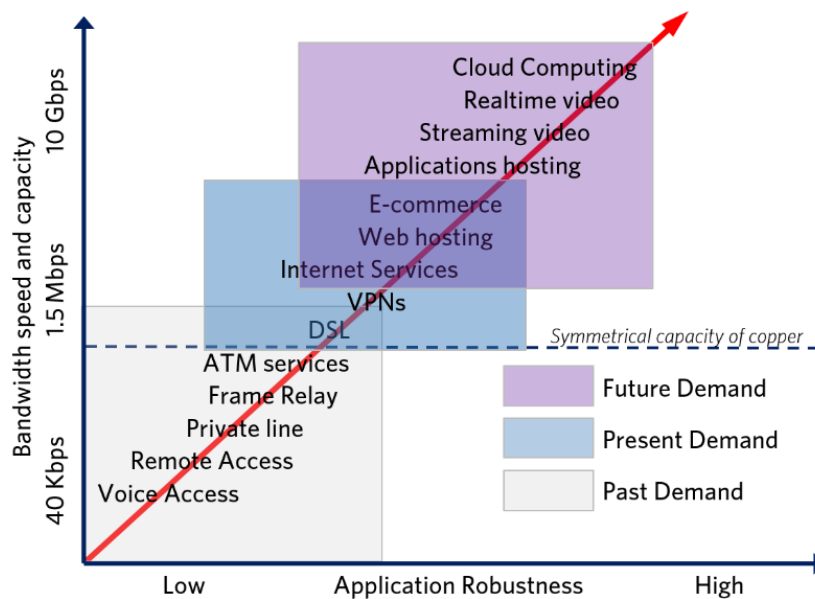


Figure 2-2. Growth in Application Bandwidth Demand

Although we are still early in the evolution of internet video applications, needs are expected to grow significantly over the next ten years as more users opt for video-based information over traditional text-based content. Cloud computing has also driven the need for more symmetrical³ broadband as real-time, and cloud applications require additional bandwidth, both in download speed and upload speed. As these applications continue to proliferate, reliable high-speed internet connections will become an even bigger necessity in daily life.

³ Symmetrical broadband connections provide equal download and upload speeds, such as 10 Mbps down, 10 Mbps up, instead of traditional asymmetrical broadband services that provide unequal speeds, such as 10 Mbps down and 2 Mbps up.

A 2017 study revealed that individuals are spending an average of five hours a day across all devices for personal use, a 20% increase from the fourth quarter in 2015.⁴ Outside of personal use, many more devices are now connected to the internet to automate a variety of daily functions. Multimedia entertainment systems, thermostats, irrigation systems, food storage and preparation areas, and home security and monitoring systems are just some of the “smart home” innovations that have entered the scene. Each of these requires high speed connectivity to function, further increasing demand for broadband inside the home.

Telemedicine

Telemedicine is a growing field and application as health care providers look to technology to empower healthcare through technology. Health care providers are implementing more telemedicine routines, for not only treatment, but for continued health and well-being ongoing care as well. Elderly patients can be significant telemedicine beneficiaries, given they do not always have transportation available to get to a clinic.

Many clinics use online teleconferencing platforms for discussions between doctors for consults, including specialists not actually employed by the clinics. Smaller clinics often cannot afford to have every specialist on staff, so they rely on a network of specialists, sometimes out of the state, to join them, and their patients, in joint video conference calls. Home health monitoring devices are also becoming more and more common place (such as glucose monitors, blood pressure monitors, etc.), but they too need broadband to function.

Other examples of the need for broadband to support medical care include:

- Electronic medical records and billing data is often off-site, which is a big driver for bandwidth needs. Health care providers and practitioners require reliable connectivity to the cloud to perform their jobs. Clinics and providers enter the data, then it goes to a remote clearing house, from which the bills are sent, mostly electronically.
- Trauma centers share records including MRI, CT scan, X-Ray, etc., via electronic means. Medical practitioners especially need to do this at the more remote clinics, requiring bandwidth to do it in real-time.
- Doctors and employees use laptops to record patient information and access EMR. Tablets are also used.
- Paramedics and EMT’s use tablets to record first responder information in the field. Without broadband or cellular connectivity, the transmitting of information is delayed until returning to an area where WiFi or cell service is available.
- Voice-to-text applications for recording patient information
- Scribing services
- Medical imaging is shared and used via broadband between sites and for access to specialists in other parts of the state.

⁴ “U.S. Customers Time-Spent on Mobile Crosses 5 Hours a Day” Flurry Analytics, 2017.
<https://www.flurry.com/post/157921590345/us-consumers-time-spent-on-mobile-crosses-5>

- Video chats made accessible via specialized portable carts that have screen, WiFi connections, cameras, software etc. The video chats provide access to specialists such as Infection Specialists, Psychology, and Stroke Specialists.
- Continuing Education facilitated via web training and web conferences. This is extremely valuable, especially for busy doctors.
- Healthcare home visit services, where the practitioners visit patients using laptops equipped with WiFi cards to access patient information.

Aging in Place

More frequently today, the aging population is desiring to age in place, in their home, instead of moving into nursing/assistance facilities or burdening family or loved ones by moving in with them. Some studies have begun to demonstrate that a person using aging in place applications and services, in some cases, may spend less per month than what they would spend on assisted living facilities per month, all while being safe and comfortable in their home. Supporting an aging population means that safety should always be a concern. There are organizations that provide the service of retrofitting the home for aging in place, using technology that is aiding in this movement through security systems, online services, telehealth and telemedicine, and an ever-expanding array of online services.

Distance Learning

Many school districts around the country are already providing tablets or laptops to students so teachers can assign homework online and to enable students to access the internet for further research. Parents are also increasingly encouraged to track grades and progress reports via online portals. Without the availability of broadband, however, these students are put at a disadvantage in comparison to peers who have robust internet connections, placing them in what has become known as the Digital Divide.

Colleges and adult education programs also now have online components. Distance learning has made higher education and job skills training more attainable for many adults by providing convenient, flexible options for non-traditional students. Hybrid courses are offered at most schools, as are fully online programs that allow students to watch lectures, read course materials, and take tests through portals such as Canvas.

Digital Equity

High-speed internet has a net positive social impact on communities by enhancing opportunities for education, workforce development, and training. The availability of affordable, reliable broadband has become an important factor for ensuring equity across all communities. Access to broadband brings additional benefits to students and adults, including online learning platforms, resources for college applications and funding, and general availability of information.

The Digital Divide is most pronounced in areas that are rural or economically disadvantaged and puts already vulnerable communities at further risk of falling behind. Therefore, when considering the role of broadband in Ferry County, special attention should be paid to these unserved and underserved areas, including, and perhaps especially, the Confederate Colville Tribal lands.

III. Broadband Market Analysis and Needs Assessment

Needs can be defined as what one requires to achieve overall fulfillment and specific goals, minus what one has. Another way to look at this is the fit between the demand side of the local broadband market—what consumers do with and are willing to pay for—and the supply side—what is provided. To understand the broadband market in Ferry County we analyze information from the Ferry County BAT’s Community Broadband Survey and compare it to an analysis of internet services based on survey results and information from various sources: the FCC, BroadbandNow, providers’ websites and FiberLocator. We also spoke with key stakeholders, including provider representatives, to understand their interest and needs related to broadband in Ferry County.

A. Demand for Broadband in Ferry County

The broadband demand assessment for Ferry County consists of two components. The first is results of a survey conducted on behalf of the Ferry County Broadband Action Team (BAT). This section summarizes the results of those two components.

Demand for broadband is assessed from results of the BAT’s Community Broadband Survey. It used a convenience sample,⁵ which resulted in 465 responses, 74 of which were online, which means 87% of responses were via paper. Ninety-five percent of the surveys were completed but not all respondents answered all questions, and some responses included multiple answers to a single question. This analysis includes all responses to any question.

Survey Respondents

85% (362) of the 426 respondents who provided information about their ethnic background indicated having “white” background. 16.7% (71) of respondents had American Indian background. “Other” background was reported by 8% of respondents. Twelve point seven percent (12.7% or 54) of respondents reported multiple ethnicities. About 30% of respondents were veterans. There were 1.9 adults on average in respondents’ households, 21.1% of which had an average of 2.6 youths in them. As illustrated in Figure 3-1., Republic had the most responses, followed by Inchelium and Curlew. 8% of 464 respondents indicated being in some other location than the included communities or no community (blank response).

⁵ Statistics reported here are for survey respondents. Responses are not necessarily representative of the population.

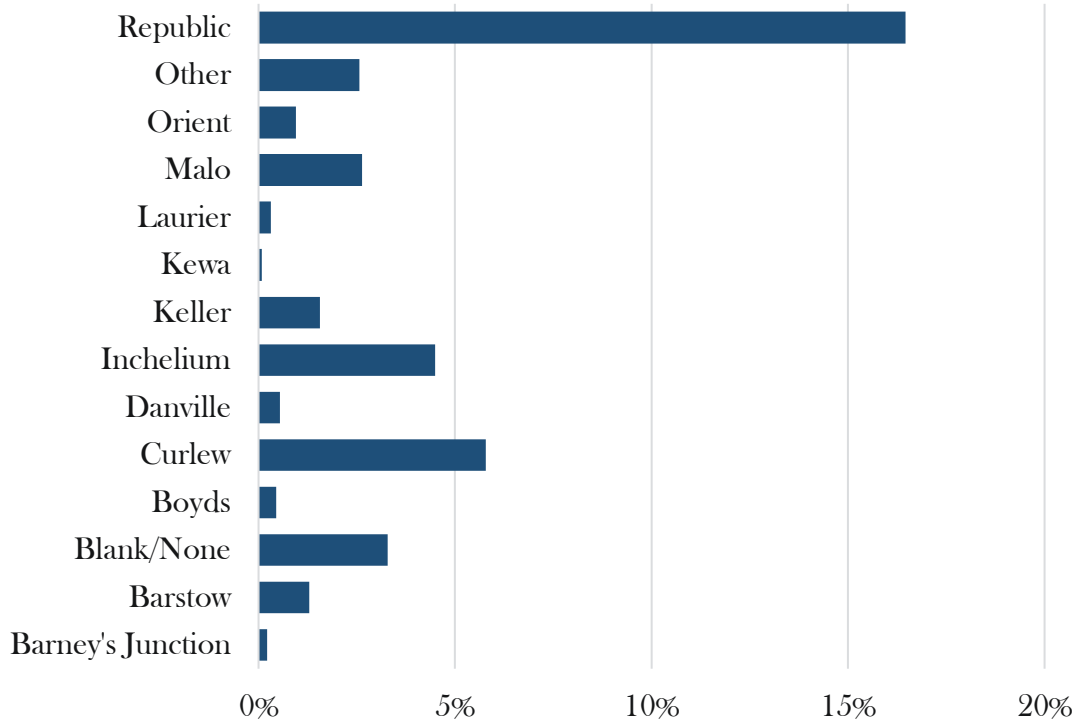


Figure 3-1. Percentage of 464 Respondents per Community

Of the 444 respondents who indicated how many connected devices they had, 72% indicated having some type of computer, including laptops, 62% had cell phones, and 51% had a tablet of some sort. Figure 3-1 illustrates the percentage of respondents who indicated they did NOT have various types of connected devices.

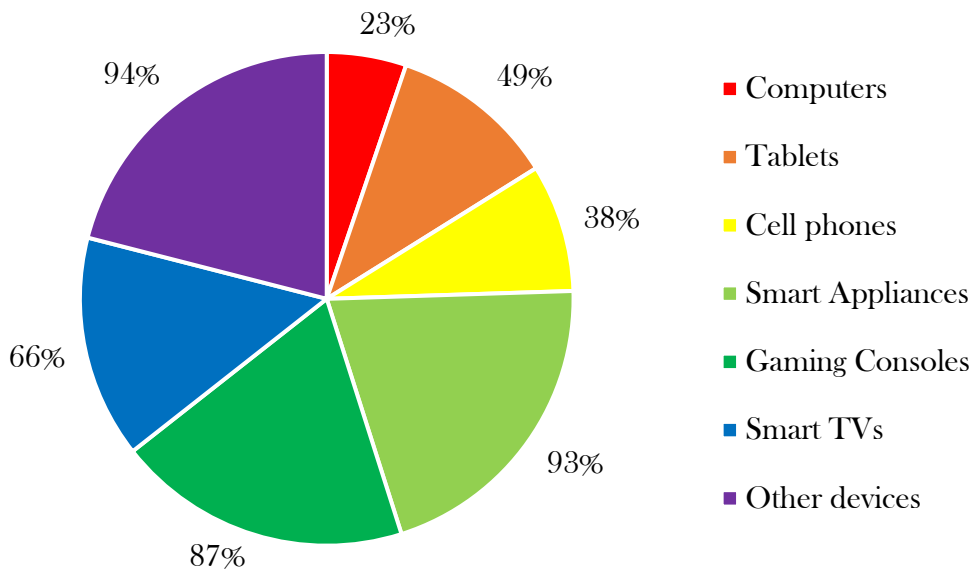


Figure 3-1. Percentage of 444 Respondents WITHOUT Connected Devices

Reasons for Not Having and Willingness to Pay for Internet

76 respondents indicated not having internet service. Of those, the majority (59.2%) indicated that expense as a reason. 44.7% indicated that they did not have internet access because the service was not available in their area. 15.8% responded that they did not need or were not interested in internet access. See Figure 3-3.

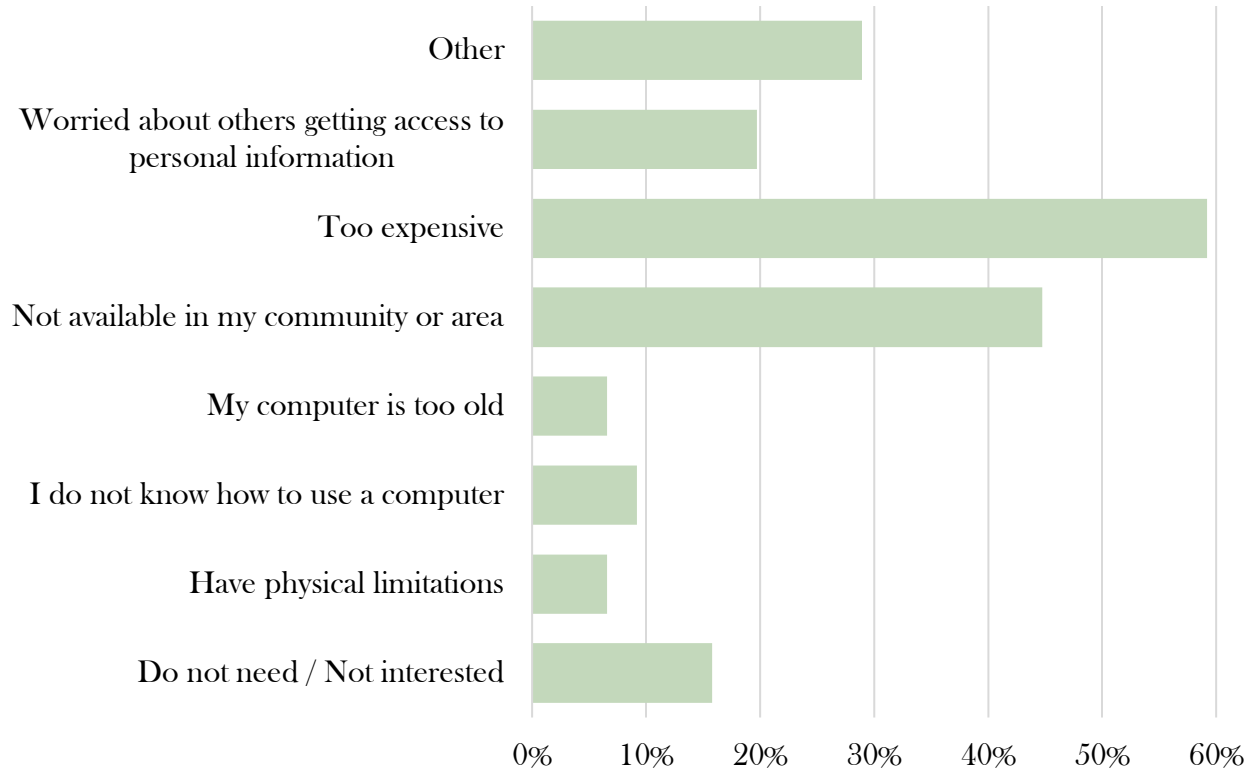


Figure 3-3. Reasons for Not Having Internet by Percentage of 76 Responses

Figure -4 shows the percentage of respondents willing to pay various ranges of costs of per month for internet service. The largest percentages were for \$30-39, \$40-49, and \$50-59, which accounted for a total of 50.3% of respondents. Effectively a quarter (24.4%) of respondents indicated being will to pay between

\$60 and \$79 per month for internet. The average amount of the 13% of respondents that indicated willingness to pay more was \$105.13, with a maximum of \$200 and a median of \$100.

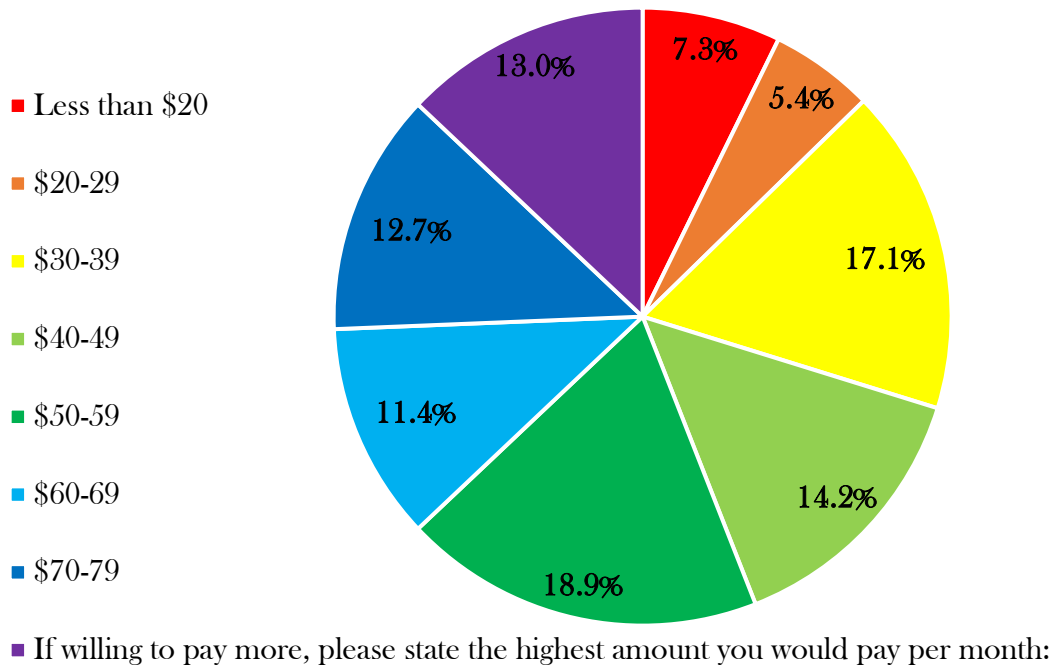


Figure 3-4. Willingness to Pay for Internet by Percentage of 386 Respondents

Perceived Quality and Uses of Internet Access

As shown in Figure 3-5, over a third (38.4% of 341) of respondents were dissatisfied overall with their internet service. The majority of respondents (53.7% of 341) were dissatisfied with connection speed. Price and data caps were also leading sources of dissatisfaction with 45.0% of 338 and 42.6% of 284 respondents, respectively. Respondents were relatively satisfied with customer service and technical support.

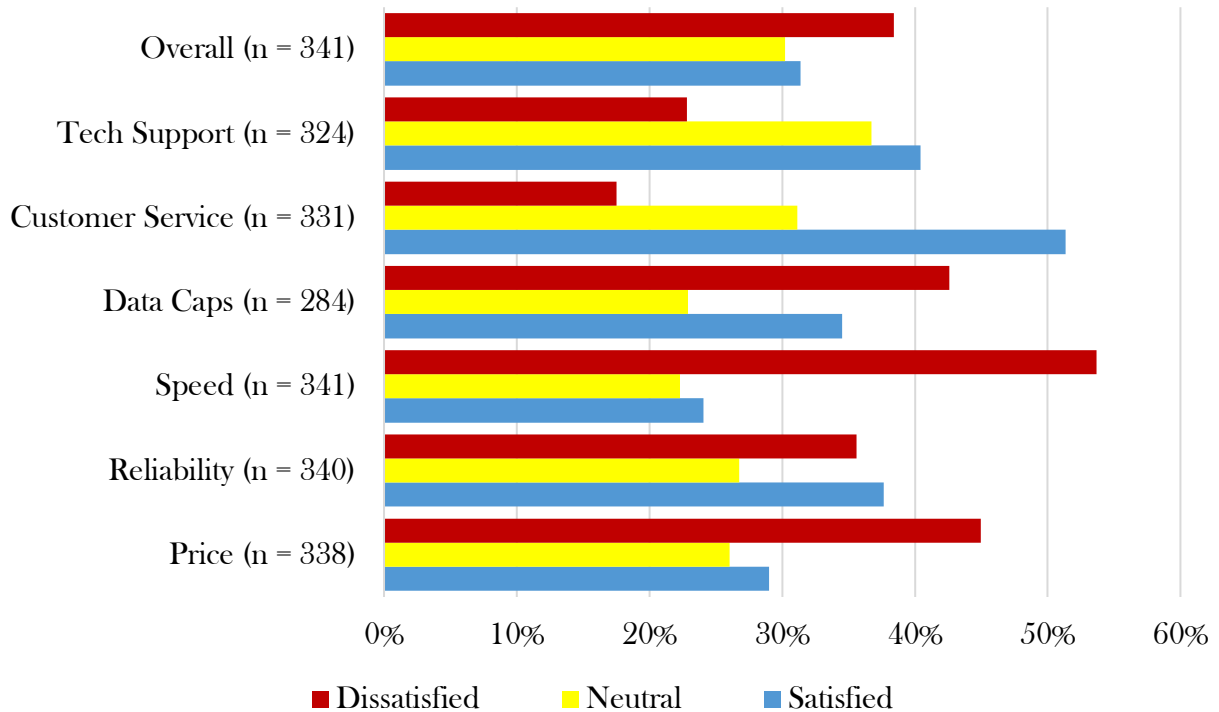


Figure 3-5. Levels of Satisfaction with Various Aspects of Internet Service by Percentage of (n) Responses

Respondents most frequently indicated dissatisfaction with HughesNet satellite and Verizon cellular internet services. Speed, data caps, and cost were the major issues with HughesNet, while reliability and speed were respondents’ major issues with Verizon. The TVAR had the least reports of dissatisfaction, and speed was the most common issue with 31% of the 113 respondents reporting that they were dissatisfied with this aspect of TVAR internet service. In comparison, only 11.5% of these respondents reported being dissatisfied overall with TVAR.

The most common current uses were general communication (via email and messaging) and accessing essential information, as shown in Figure 3-6. These uses had the largest number of responses overall, and the largest percentage of respondents. Other general uses—downloading and updating software, pastime, and social media) were also prominent current uses. The strongest interest in new uses appeared to be for streaming media and web conferencing. The least popular uses, current or expected, were online gaming, content creation (blog, web, etc.), and school work.

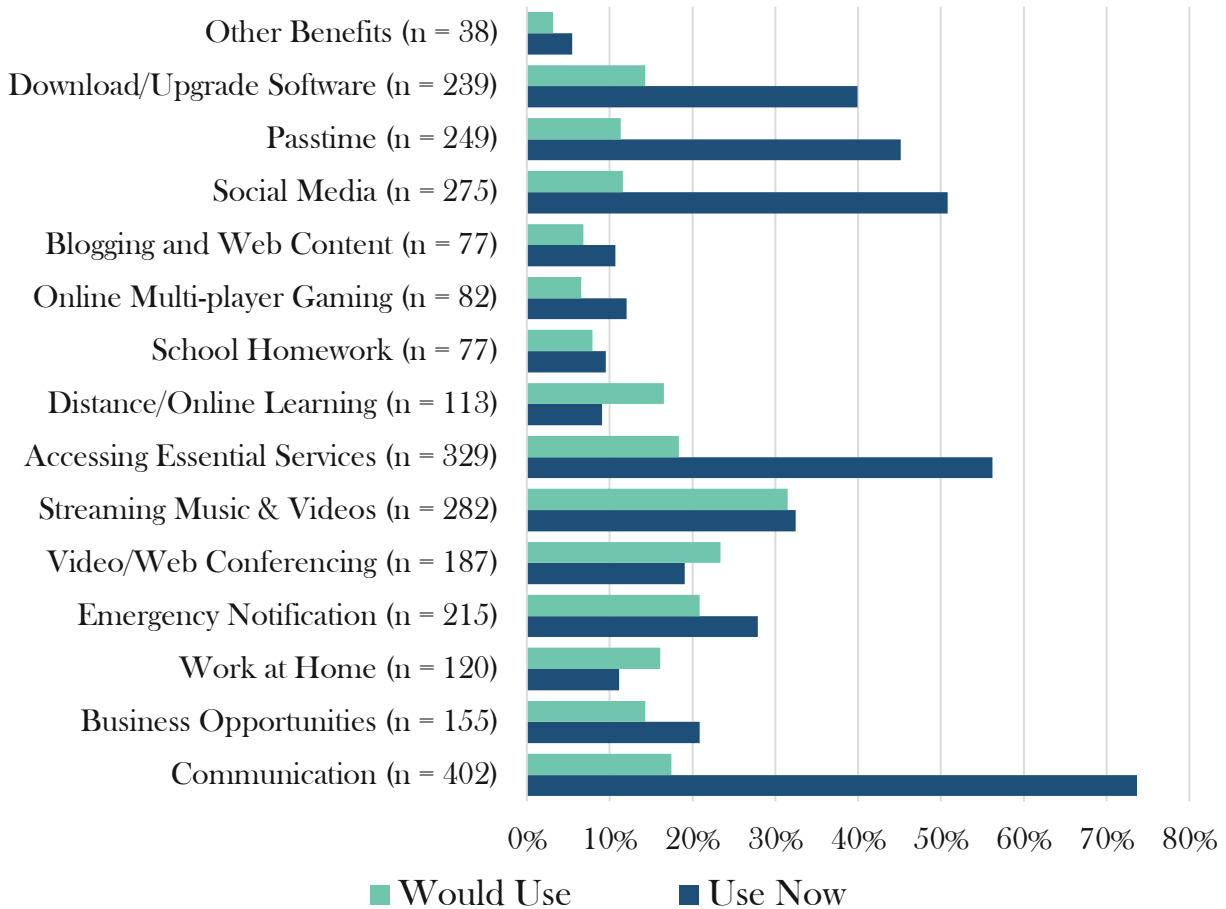


Figure 3-6. Current and Expected Benefits/Uses of Internet by Percentage of (n) Responses

Conclusions from Survey Results

The results of the BAT’s survey suggests that Ferry County effectively has no broadband services. While it is unclear how much people are paying, survey results and service offerings (see 3-7, below) suggests costs are at least \$30 per month, and more likely in the \$45 to \$60 range. While results show dissatisfaction with costs, it may be that dissatisfaction with performance characteristics—speed, reliability, and data caps—directly impact feelings about the costs. Results suggest respondents were not strongly oriented toward technology, based on the numbers and types of devices and uses of internet access, and generally did not use the internet for school, work, or other productive purposes. Respondents generally indicated benefits related to personal communication and information access.

Prioritized Master Site List

The second component of the demand analysis is a prioritized master site list for the network provided by members of the BAT. The CCT/Ferry County BAT identified a total of 245 sites in eight towns. Illustrated in Figure 3-7, members of the BAT provided a subjective prioritization of the sites, with “1” being most important and “3” being least. Inchelium and Keller had the most top priority sites, with eight and five, respectively. Curlew and Republic each had one. Republic had the most sites at 153 total, 13 of which were priority two and 139 were priority three.

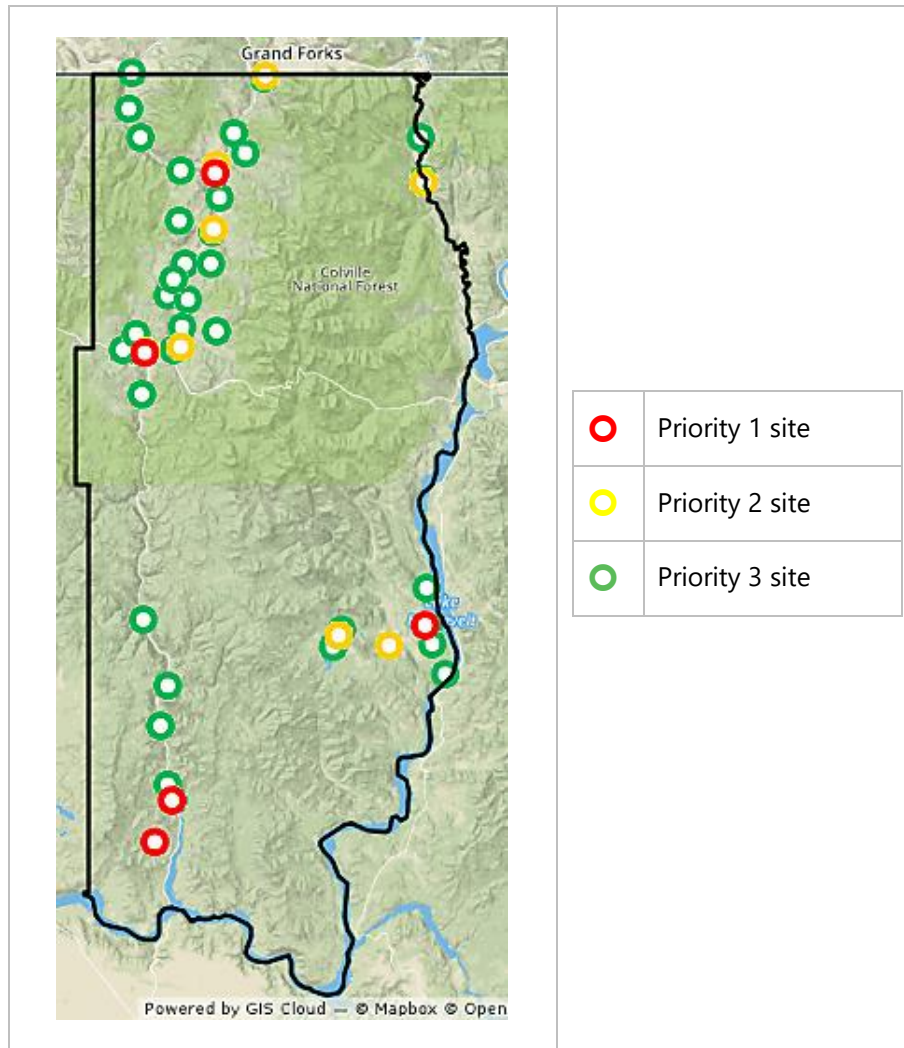


Figure 3-7. Major Sites for Connectivity Requirements Identified by BAT Members

B. Analysis of the Broadband Supply

Internet Service Supply Based on Survey Responses

About 50% of the 349 respondents who indicated having some kind of internet access appeared to be served with what might be considered broadband connections. Other means of access included cellular and satellite. The data did not clearly distinguish the type of connection, so this information was surmised from the service provider. 192 respondents reported a download speed for their connection and 190 reported an upload speed. The average download/upload speeds reported by respondents were 9.73/2.35 Mbps,⁶ far short of the minimum 25/3 standard. The median speed was 4.76/1.16, indicating that most

⁶ Mbps stands for “megabits per second.” Throughout this report connection speeds are indicated by download over upload (download/upload). All speeds are in measured in Mbps even where not explicitly stated.

responses were below average. The maximum reported speed was 100/100 and the minimum was 0.12/0.01. The most common (mode) speed was 4.75/0.93.

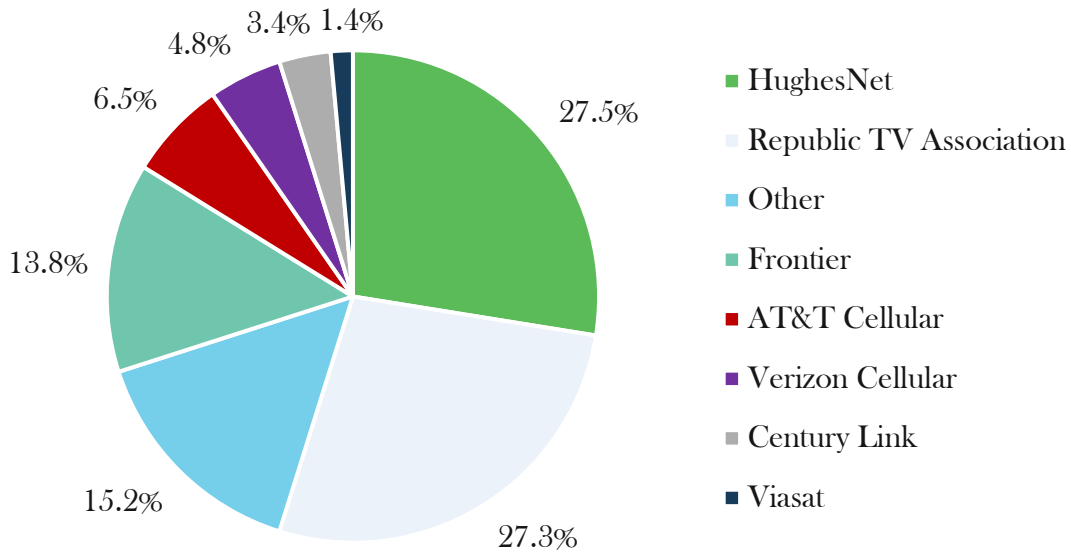


Figure 3-8. Internet Service Providers by Percentage of 349 Respondents⁷

HughesNet and the TV Association of Republic (TVAR) were the major suppliers of internet service, according to survey respondents, as shown in Figure 3-8. 28% of 349 respondents had internet service from TVAR and another 28% had HughesNet. More respondents identified “other” as their provider than Frontier, and relatively few said they had CenturyLink. Cellular services have a substantial portion of the Ferry County internet service market.

Table 3-1. Average Tested Download and Upload Speeds

PROVIDER	AVERAGE SPEED	
	<i>Download</i>	<i>Upload</i>
Other	9.79	1.08
Verizon Cellular	9.39	1.28
AT&T Cellular	6.68	1.42
Republic TV Association	6.08	1.66
Frontier	5.47	1.26
HughesNet ⁸	5.16	0.80
Viasat ⁴	1.97	1.06
Century Link	NA	NA
Overall	6.36	1.22

Table 3-1 compares the actual, tested speeds for ISPs in Ferry County. It is presumed that the TVAR services were either cable-TV based wired or wireless broadband connections but the average reported

⁷ Includes only providers with over 1% of response. Some responses included multiple providers.

⁸ Technical issues with satellite cause vastly inflated speed-test results. Data presented here are discounted by 60% to estimate actual speed.

speeds for this provider were 6.08/1.66. Frontier, the third most commonly reported provider, had average speeds 5.47/1.26. It is presumed that these connections used digital subscriber line (DSL) technology. Cellular internet services from AT&T and Verizon had average speeds of 6.68/1.42 and 9.39/1.28, respectively.

HughesNet had nominally the fastest speeds, but technical issue related to the way satellite service units buffered data cause inflated test results for satellite, so these results should be heavily discounted. Therefore, those results have been discounted by 60% to estimate actual performance. "Other," which likely included providers included here that respondents were unable to specify, had the second fastest average speeds. Even with these providers included, the average speed of Ferry County internet access is about one-quarter the national benchmark for broadband.

It is unclear how much respondents paid for service because nearly 30% reported multiple amount ranges. 27.9% of the 340 responses included "\$20-40" and 25.6% included "\$40-60". 10.3% contained "\$100-150+". Therefore, we surmise that over half of respondents paid between \$20 and \$60 per month for service, while about a tenth paid more than \$100. Due to issues with multiple items per response, it is not possible to estimate respondents' monthly recurring costs per provider.

Internet Service Providers and Offerings

We were able to identify four companies that provide broadband services—not including cellular and satellite services—in Ferry County. These four companies have a total of 19 service offerings, as listed in the tables below. The average monthly cost for all of these offerings was \$74.95 and the median was \$60, so most offerings were more affordable. That said, the average monthly cost per Mbps per month was \$3.40, which is a good bit higher than reasonable costs of \$1.50 to \$2.00. High-speed, fiber-based broadband commonly provides a Mbps for less than \$0.30 per month.

TVAR had the most offerings, four of which were fiber-based services only available in downtown Republic. TVAR also offers cable- and wireless-based services, of which the cable services are available in a limited area while the wireless services are positioned for more remote customers. Regardless, TVAR's services are only available in the northwest corner of the County. Frontier also services this portion of the County, with three offerings that are similar but somewhat less costly than TVAR's offerings.

CenturyLink serves the eastern portion of the County, including Boyles, Inchelium, and Orient. It had only two offerings, one 140 Mbps for business and another 100 Mbps "basic" service for residents, both of which were priced quite reasonably considering the nominal speeds. Frontier and CenturyLink provide DSL services over telephone lines, which typically fails meet the FCC definition of broadband speeds (25Mbps download/3Mbps upload).

Table 3-2. Published Broadband Internet Service Offerings in Ferry County

Package	Speed ⁹	MRC ¹⁰	MRC per Mbps ¹¹	Notes
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⁹ Speeds are in megabits per second (Mbps) download over megabits per second upload. cited in this section are those advertised by providers and should be considered maximum possible speeds. Actual speeds are likely to be lower.

¹⁰ MRC is "monthly recurring cost."

¹¹ This metric is the MRC divided by the total aggregate throughput, downstream plus upstream.

FRONTIER				
FRONTIER INTERNET	6/1	\$27.99	\$4	2-year promo rate
FRONTIER PREFERRED INTERNET	25/3	\$34.99	\$1.25	2-year promo rate
FRONTIER PREMIUM INTERNET	45/5	\$44.99	\$0.9	2-year promo rate
CENTURYLINK				
CENTURYLINK BASIC INTERNET	100/? ¹²	\$49.99	\$4	
CENTURYLINK BUSINESS INTERNET	140/?	\$65.99	\$1.25	2-year promo rate
TV ASSOCIATION OF REPUBLIC (AVAILABLE IN REPUBLIC & SURROUNDING AREAS)				
TVAR CABLE INTERNET 5	5/1	\$35.00	\$5.83	\$155 Installation
TVAR CABLE INTERNET 10	10/2	\$60.00	\$5	\$155 Installation
TVAR CABLE INTERNET 25	25/3	\$100.00	\$3.57	\$155 Installation
TVAR WIRELESS INTERNET 5	5/1	\$35.00	\$5.83	\$155 Installation
TVAR WIRELESS INTERNET 10	10/2	\$60.00	\$5	\$155 Installation
TV ASSOCIATION OF REPUBLIC (AVAILABLE IN DOWNTOWN REPUBLIC)				
WIRELESS INTERNET 25	25/3	\$100.00	\$3.57	\$155 Installation
FIBER INTERNET 5	5/5	\$35.00	\$3.5	\$155 Installation
FIBER INTERNET 10	10/10	\$60.00	\$3	\$155 Installation
FIBER INTERNET 25	25/25	\$100.00	\$2	\$155 Installation
FIBER INTERNET 100	100/100	\$400.00	\$2	\$155 Installation
NCI DATACOM				
NCI SWIFT-STREAM WIRELESS 5	5/1.5	\$35.00	\$5.38	
NCI SWIFT-STREAM WIRELESS 7	7/2	\$45.00	\$5	
NCI SWIFT-STREAM WIRELESS 10	10/3	\$60.00	\$4.62	

¹² CenturyLink only publishes download speeds for these offerings.

NCI SWIFT-STREAM WIRELESS 20

20/4

\$75.00

\$3.13



Frontier Communications is the incumbent service provider. Frontier Communications provides wireline retail and wholesale services in 28 states, including former Verizon operations in many states According to BroadbandNow in Ferry County, Frontier provides services in the towns of Danville, Republic, Malo and Curlew. These services are available to varying addresses and percentages of households and businesses across the towns, and at speeds up to 24Mbps. Advertised packages are detailed in the chart above.



CenturyLink, Inc. is a global technology company headquartered in Monroe, Louisiana that offers communications, network services, security, cloud solutions, voice and managed services. The company is a member of the S&P 500 index and the Fortune 500. CenturyLink provides DSL Services in Ferry County. Although packages above indicate higher speeds are available, data from multiple sources indicates that CenturyLink is unable to meet speeds past 80Mbps throughout Ferry County, and that its services are limited to only a few select areas.



The TV Association of the Republic (TVAR) is a cooperative telecommunications provider locally owned by the citizens of Ferry County. The TV association provides cable television and high-speed Internet to locations across Ferry County. The TV association provides high-speed Internet over cable, wireless and fiber-optics. Services vary by locations across Ferry County. Advertised packages are detailed in the chart above.



NCI Datacom offers internet services over wireless for residents and businesses across rural Washington including in Ferry and adjacent counties.¹³ Swift-Stream Wireless Internet utilizes a wireless connection between homes or business in Ferry County. NCI does provide fiber-optic services but not in Ferry county at this time. Advertised packages are detailed in the chart above. Pricing and packages are consistent for both residential and businesses.

Satellite Service Providers

Satellite internet services are not typically considered for broadband planning because of their slow speeds and effectively universal availability. We include them here for comparison purposes, and because they are the only option for many residents of Ferry County.

Table 3-3. Satellite Providers' Public Internet Service Offerings

Package	Speed	MRC	MRC per Mbps	Notes
HughesNet				
Light User	25/3	\$39.99	\$1.43	Data Caps at 10GB
Average User	25/3	\$49.99	\$1.79	Data Caps at 20GB

¹³ NCI Datacom was included as a provider in 0.07% of survey responses.

Families	25/3	\$79.99	\$2.86	Data Caps at 30GB
Heavy Users	25/3	\$129.99	\$4.64	Data Caps at 50GB
VIASAT				
Unlimited bronze 12	12/3	\$100 per month	\$6.67	Data Caps at 35GB
Unlimited silver 12	12/3	\$150 per month	\$10	Data Caps at 45GB
Unlimited Gold 12	12/3	\$200 per month	\$13.33	Data Caps at 65GB



Hughes Communications is headquartered in Germantown, Maryland and provides a high-speed satellite internet service, HughesNet, which is the largest service of its kind with more than 1.3 million subscribers in the Americas. In Ferry County HughesNet provides satellite internet services at speeds “up to” 25Mbps/3Mbps. These services come with data caps and have latency issues: Connections start fast but then slow to a crawl as data is buffered for transmission to/from the satellite. Subscribers who exceed their monthly data cap will experience reduced data speeds. Advertised packages are detailed in the chart above.



Viasat Inc. is an American communications company based in Carlsbad, California, with additional operations across the United States and worldwide. Viasat is a provider of high-speed satellite broadband services. Viasat provides satellite internet services in Ferry County with packages and pricing that depend heavily upon the data caps chosen making it a very expensive alternative to wired broadband. Per Mbps pricing even at its lowest tier is higher than any other provider in Ferry. Advertised packages are detailed in the chart above.



DishNet is a certified retailer of services for various partners. In combination with its Dish TV packages customers are able to bundle internet from a variety of wired and satellite providers depending on their service address. Dish maintains partnerships with HughesNet, Viasat, Frontier and CenturyLink.

Cellular Services

Cellular is not considered broadband, although 4G LTE can achieve broadband speeds. AT&T and Verizon are the dominant cellular service providers in Ferry County, having been cited as providers in 6.5% and 4.8% of survey responses. Both companies offer nominally “unlimited” cellular data connections¹⁴ for internet access, summarized in Table 3-4. Neither company commits to particular connections speeds, which vary greatly based on device, location, and other factors. Verizon does state that it’s 4G LTE service, which is the basis for its “unlimited” plans, has “download speeds between 5 and 12 Mbps (Megabits per

¹⁴ This is generally provided via fourth generation (4G) Long-Term Evolution (LTE) based connections, they often fall back to third generation (3G) CDMA2000 connections, or even second generation (2G) General Packet Data Services (GPRS), each of which is substantially slower than later generations.

second) and upload speeds between 2 and 5 Mbps, with peak download speeds approaching 50 Mbps.”¹⁵ We were not able to find similar statements from AT&T but third party analyses tend to rate it between 25% to 30% slower than Verizon.¹⁶

¹⁵ Source: <https://www.verizon.com/articles/4g-lte-speeds-vs-your-home-network/>

¹⁶ Source: <https://www.tomsguide.com/us/best-mobile-network,review-2942.html>. This analysis ranked Verizon and AT&T first and second in speeds. Services using the Sprint/T-Mobile network were only marginally slower than AT&T.

Table 3-4. Major Cellular Telephone Plans That Include Internet Access

PROVIDER	PLAN	MRC	NOTES
AT&T	<i>Unlimited Elite</i>	\$85	Data slows after 100GB/30GB in hotspot mode
AT&T	<i>Unlimited Extra</i>	\$75	Data slows after 50GB/15GB in hotspot mode
AT&T	<i>Unlimited Starter</i>	\$65	Data speeds slow when network is busy. Roaming may be at 2G speed.
VERIZON	<i>Start Unlimited</i>	\$70	Data may slow when network is busy
VERIZON	<i>Play More Unlimited</i>	\$80	Data may slow when network is busy after 25GB/15GB in hotspot mode
VERIZON	<i>Do More Unlimited</i>	\$80	Data may slow when network is busy after 50GB/30GB in hotspot mode
VERIZON	<i>Get More Unlimited</i>	\$90	Data may slow when network is busy after 75GB/30GB in hotspot mode

While AT&T, Verizon, and T-Mobile¹⁷ all nominally have “nationwide” coverage, actual 4G coverage is somewhat less. According to one industry watchdog, Verizon leads with 70% coverage, followed by AT&T with 68% coverage, and T-Mobile wasn’t far behind with 62% coverage.¹⁸ Not surprisingly, the areas not covered tend to be rural, like Ferry County. As illustrated in Figure 3-9, AT&T appears to have better coverage in Ferry County.

¹⁷ Cellular service provider Sprint merged with T-Mobile as of April 1, 2020.

¹⁸ Source: <https://www.whistleout.com/CellPhones/Guides/att-coverage-map>

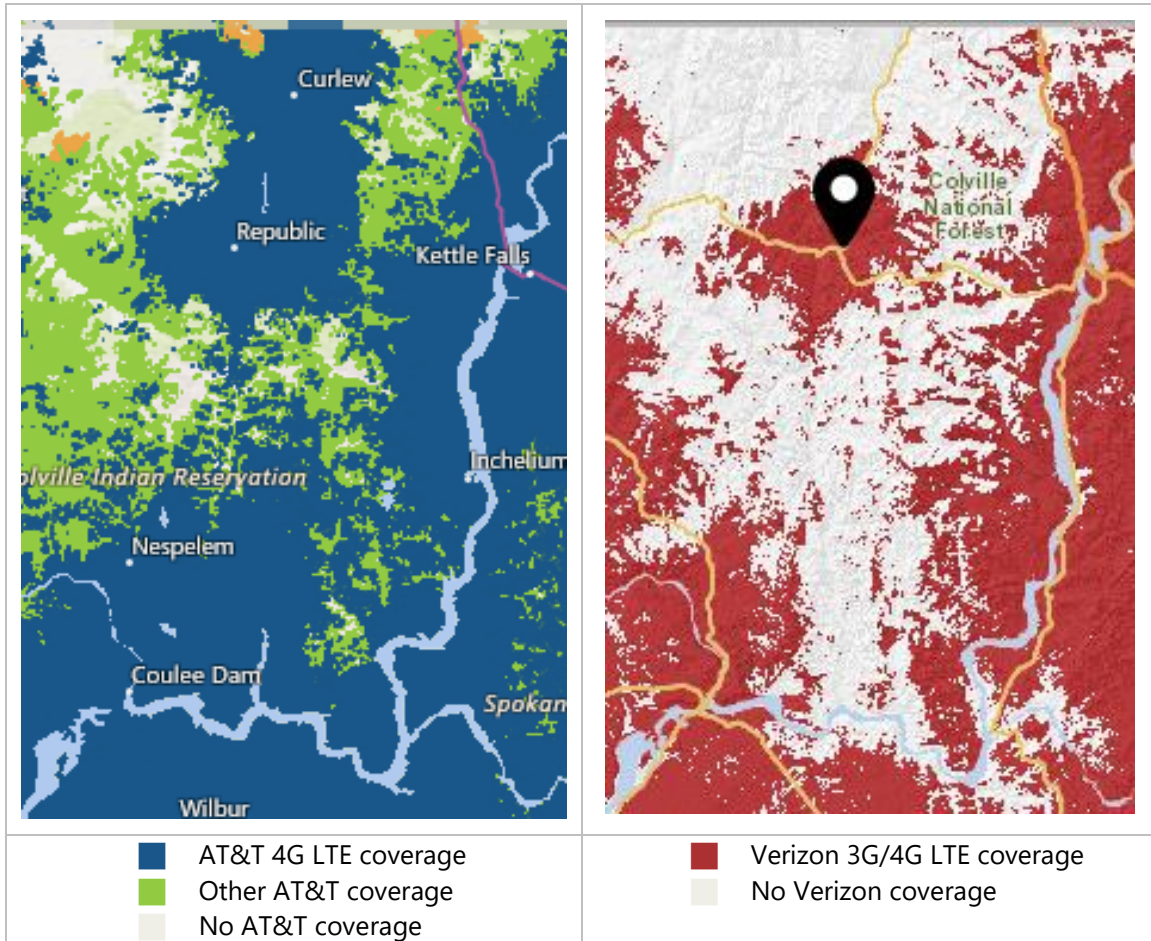


Figure 3-9. AT&T¹⁹ and Verizon²⁰ coverage for Ferry County compared

C. Network Infrastructure

The major network infrastructure in Ferry County consists of fiber optic cable and radio towers, particularly cellular and microwave towers. Most network service providers, including ISPs, were unwilling to publicly share information about their infrastructure. We have been able to identify some of assets via other sources. NoaNet has a fiber route through Ferry County. Originally constructed to interconnect PUDs to the east and west of the County, it stretches from Seattle to Spokane and other regional hubs. This is an important asset because, as shown in Figure 3-2, it provides not just one but two, diverse paths out of the county.

¹⁹ Source: <https://www.att.com/maps/wireless-coverage.html>

²⁰ Source: <https://www.verizonwireless.com/reusable-content/landing-page/>

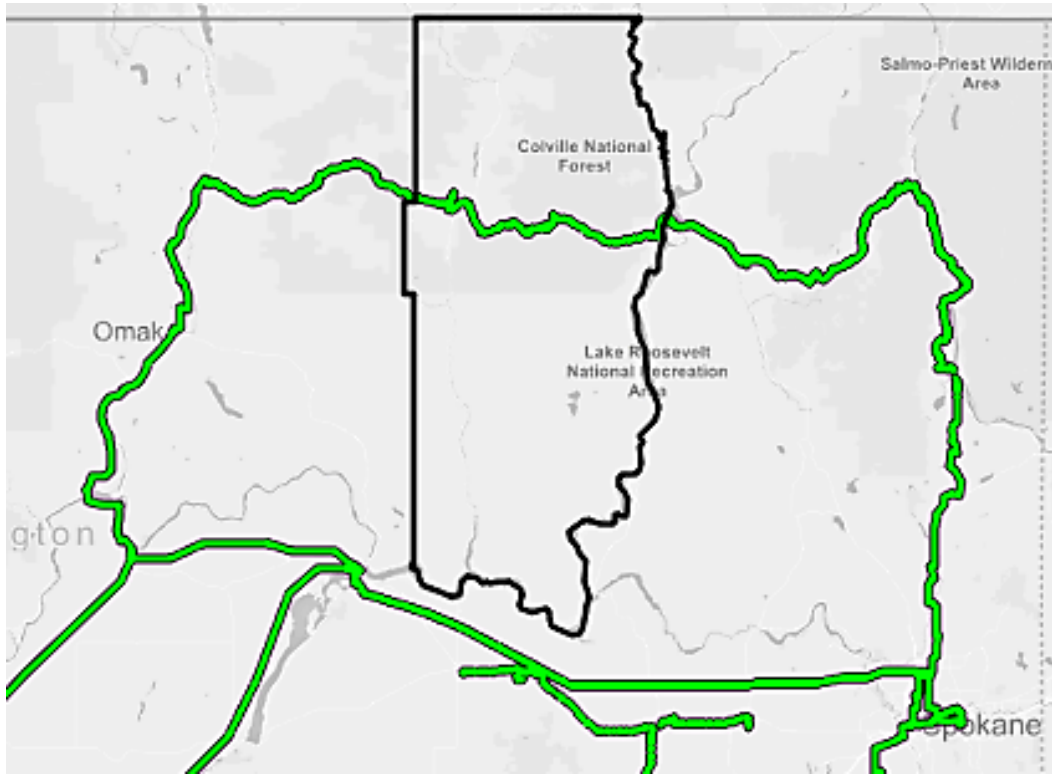


Figure 3-2. NoaNet's Fiber Route Through Ferry County

There appears to be no other fiber infrastructure through the County. We believe that CenturyLink has fiber network infrastructure into Inchelium via Kettle Falls, but we have not been able to confirm this. The other network infrastructure in the region is to the south—on the other side of the river, running into Spokane—and west of Ferry County. As shown in Figure 3-3, these are long haul networks that have very limited access options.

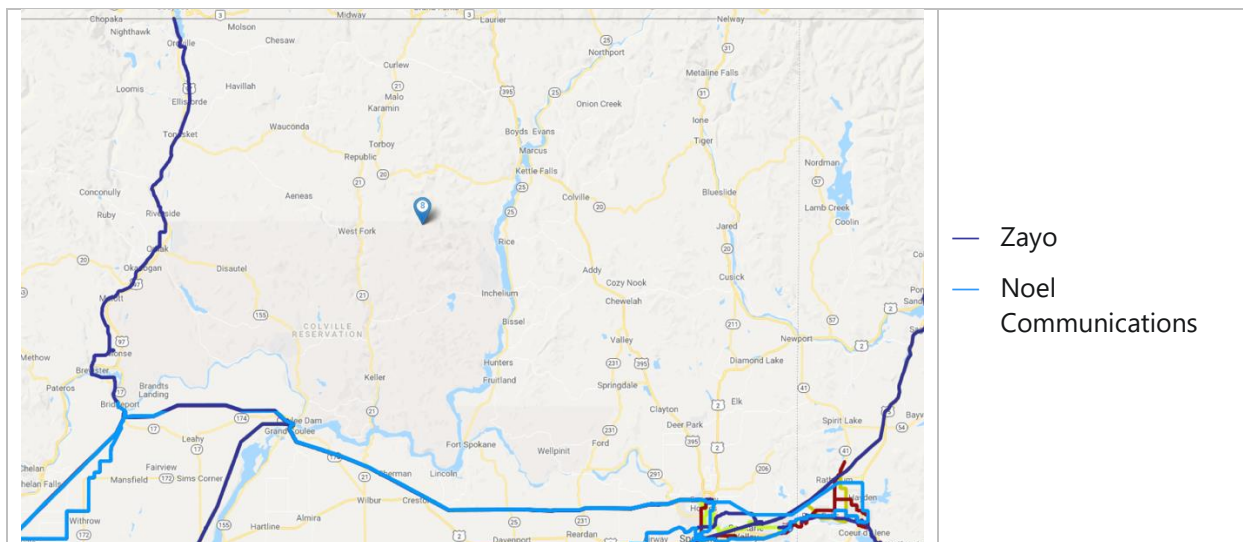


Figure 3-3. Long-haul Network Infrastructure in Northeast Washington State

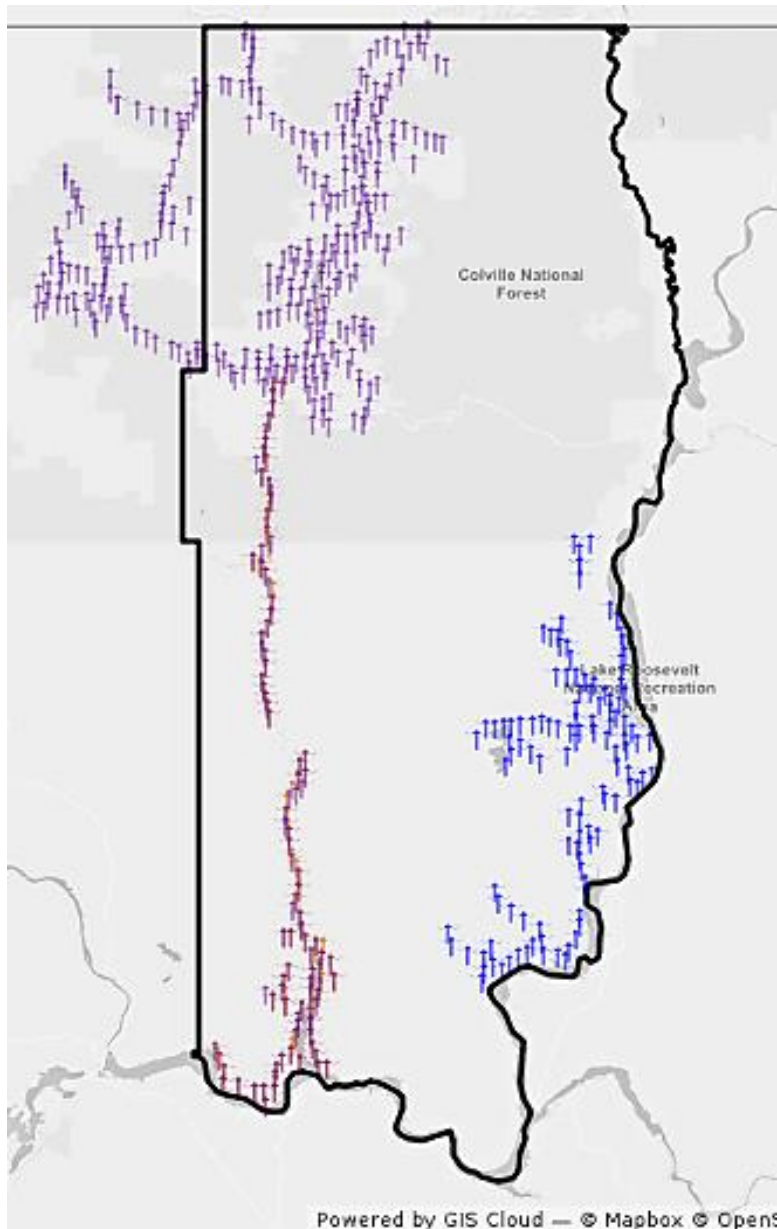


Figure 3-4. Vertical Assets in Ferry County

D. Other Assets for Broadband Development

The other major set of assets for broadband development are “vertical” assets: poles and towers. Real estate on which to place these assets also fits in this category. As shown in Figure 3-4, Avista Power owns over 1,500 utility poles in the eastern portion of the County and Ferry County PUD owns over 13,500 poles to the west. Avista’s assets are concentrated in the southeastern portion of the County, around Inchelium. We presume they have poles to the north, along the Hwy 395 corridor, through Boyles and Orient, but we do not have data on those assets. Note that Ferry County PUD has a substantial gap in its poles—and its grid—midway between Republic and Keller along Hwy 21.

There are at least 46 tower sites in Ferry County, most of which (23) are owned by the Consolidated Colville Tribes. There are eleven microwave towers, seven cell towers, and five other large (over 200') antenna structures in the County. It is not clear how many of these sites, particularly the CCT's towers and the microwave towers have power to them. We assume that all of the antenna and cell sites have power.

E. Conclusions about Broadband Needs in Ferry County

While the data provided by the BAT are not conclusive, there appears to be substantial need for better, cheaper, faster internet access in Ferry County. The data suggest that residents, particularly those outside Republic, simply don't have broadband. Based on survey results, true broadband appears to only be available in the center of Republic and possibly in Inchelium. Even in those areas where broadband is nominally available, consumers really only have one option because Frontier is insolvent. Actual performance falls far short of providers' offerings, particularly for CenturyLink and Frontier. Those services were used by fewer survey respondents, and were much slower, than one would expect. Most of the offered services did not meet the standard 25/3 definition of broadband, and actual performance fell far short. Indeed, it seems that CenturyLink's offerings are not actually available in Ferry County.

Consumers' perceptions and uses seem to align with—and are constrained by—the performance of internet access supply. Survey respondents' levels of overall satisfaction/dissatisfaction were clearly correlated with their feelings about price and speed. More importantly, productive use of internet access among survey respondents appeared to be minimal. Respondents indicated high levels of use for general communication and information seeking. Beyond that, use seemed to focus on non-productive uses such as "pastime" and "social media." Survey results showed low levels of use for education, health, work, or productive purpose. Ferry County needs better reasons to use the internet and uses that draw resources and wealth into the area, as well as better internet access.

As assessment of network assets suggests an underlying issue: Lack of backhaul and distribution infrastructure. Backhaul is needed to interconnect providers' local networks to the core internet; it is the source of internet access. Backhaul facilities appear to be limited and disconnected. Distribution asset make up providers' local core network, between their head-end facilities or points-of-presence and the customers' premises. There appear to be bottlenecks and gaps in distribution infrastructure. Supporting facilities, including poles, sites, and towers for deploying network assets seem to be available; they just don't have many network assets on them.

Access infrastructure, which spans the "last mile" into homes and businesses, is undoubtedly lacking, particularly outside the County's population centers. But, it is lack of capacity between access infrastructure and the internet core that limits speeds and drives up costs. It is also clear that Ferry County lacks market depth: there is a small number of companies and households, many of which have limited financial resources, spread over a large area. This makes it imperative for providers to minimize costs and charge a premium if they are to get a reasonable return on their investments. Consequently, a fundamental need is to reduce providers' cost of doing business in Ferry County.

IV. Broadband Development Strategy

The purpose of this Broadband Action Plan is to increase the availability and capacity/speed of internet access across Ferry County, while keeping the recurring costs for services reasonably low. It must be understood that, while quite modest compared to road and water infrastructure, network infrastructure requires substantial capital. For profit businesses invest their capital in anticipation of return: The greater

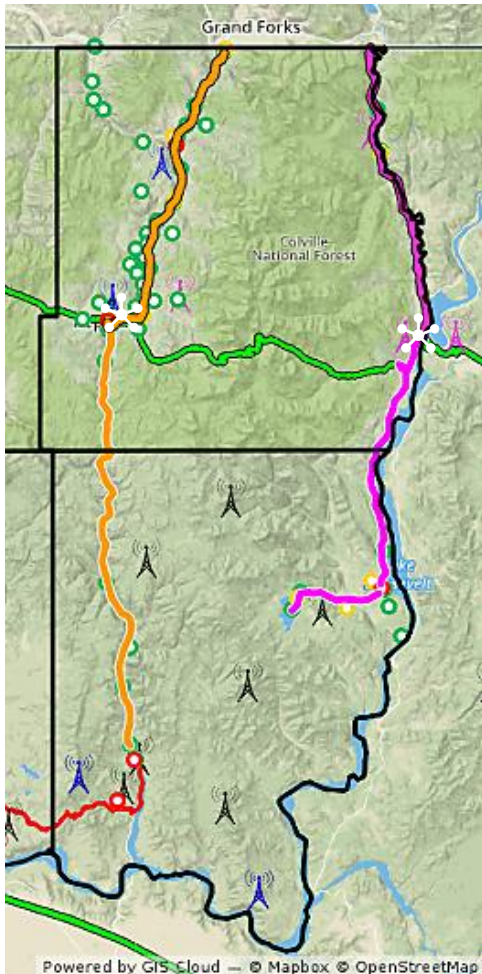
the prospective return, the greater propensity to invest. Consequently, a broadband development strategy for Ferry County must balance recurring service costs with development goals.

The general strategy for keeping consumers' costs low is to minimize investment requirements of providers. This can be difficult when the goal is to provide connections into remote, rural areas. The two common tactics are direct public investment, or by some other "anchor tenant," and minimal technology. On-going technological advances make the goal more practical but minimal technology generally means lower capacity/speed and reliability. Cost to consumers depends on distance between them and the speed of the connection. The basic equation is simple:

$$Cost = Distance \times (Reliability + Speed)$$

Direct public investment in network assets can change this equation by reducing providers' costs. These assets aren't necessarily network infrastructure, per se: They can be supporting facilities such as conduit, poles, towers, or just easements and real property on which to put network infrastructure. Use of wireless technologies for connections can also reduce the cost, although such connections are less reliable and slower than fiber or even many copper wire connections. A hybrid fiber-wireless network infrastructure that capitalizes on public assets generally provides optimal balance of cost and performance.

Magellan Advisors' analysis suggests that dual, interconnected north-south fiber backbone routes, illustrated in Figure 4-1, as distribution and limited access infrastructure for primarily wireless radio access network infrastructure is the most economical solution for reasonably high reliability and speeds. The backbone would have to be built with public financing/fund, although it is quite possible to defray or repay this with private capital, as discussed below (Section V). Private companies would provide the radio access network infrastructure, operate and maintain the network, and operate the network business.



<i>Fiber Routes</i>	<i>Targeted Sites</i>
— West	● Priority 1
— East	● Priority 2
— NoaNet	● Priority 3
— CCT	
✂ Interconnection points	📶 Tower Sites

Figure 4-1. Ferry County Network Vision Overview

A. Best Practices

Adopt Broadband-Friendly Policies

“Dig Once” or the similar concept of joint trench, refers to policies and/or practices that foster cooperation among entities (especially utilities) that occupy public rights-of-way, to minimize the number and scale of excavations when installing infrastructure (especially telecommunications²¹) in public rights-of-way. Dig Once has numerous substantial benefits, including promoting and supporting the placement of broadband infrastructure (e.g., fiber-optic cable and conduit), reducing the consequences and disruptions of repeated excavations (traffic disruption, road deterioration, service outages, and wasted resources), and enhancing service reliability and aesthetics.

Dig Once accomplishes the goal of minimizing costs of constructing separate trenches and facilities – via shared costs of construction. The cost savings are significant. The Federal Highway Administration estimates it is ten times more expensive to dig up and then repair an existing road to lay fiber, than to dig support structure for fiber (e.g., conduit) when the road is being fixed or built. According to a study by the Government Accountability Office, “dig once” policies can save from 25-33% in construction costs in urban areas and approximately 16% in rural areas.²² In addition, development of Dig Once standards and guidelines for deployment of conduit and fiber will facilitate economic development and growth, as it enables cost-effective staged or gradual deployment of broadband infrastructure by local authorities.

Dig Once implementation requires revision to the planning and coordination process for construction projects in the public rights-of-way. When subsurface utility work occurs, it presents telecommunications providers, other utilities, and the Tribes or the County itself to install new fiber in the right-of-way at reduced costs via coordination of work. This enables both private and public organizations to expand their ownership of fiber anytime subsurface utility work occurs, at preferential costs to new construction.

The concept can also extend to required placement of conduit whenever the ground is opened, as expressed in recent Congressional legislation. This concept was embodied in the Broadband Conduit Deployment Act of 2018, which required the inclusion of broadband conduit during construction of any road receiving federal funding.

Directly analogous benefits from Dig Once will also accrue to Ferry County and the Colville Tribes. Magellan Advisors recommends further exploration by the BAT and its members of implementation of Dig Once policies and practices which could include processes for noticing the intent to work on streets, practices for coordination of work in public rights-of-way when any occupant plans to open the ground for their purposes, regular (e.g., quarterly) mandatory meetings of occupants of the public rights-of-way to share plans and coordinate work, and implementation of moratoria on street work (e.g., 3-5 years after street work) to incent and enforce coordination among occupants of the rights of way, and to protect investments in paving the streets.

BAT member agencies could also consider making placement of conduit a requirement for development agreements to ensure that new buildings have the makings of communications infrastructure before they are completed.

²¹ Many utilities are “monopolistic” providers (such as gas, water/sewer and electric) but there are a number of telecommunications providers that seek permission to encroach on public rights-of-way, including cable TV companies, competitive telecommunications companies, and wireless communications companies.

²² <https://eshoo.house.gov/issues/economy/eshoo-walden-introduce-dig-once-broadband-deployment-bill>

BAT member agencies should also evaluate permitting processes for telecommunications providers seeking to work in the public right-of-way. Consideration of lowered permitting fees, in-kind asset exchanges, and other considerations could be made to lower barriers to entry and to become a partner, rather than simply a regulator, with private organizations that are attempting to improve the broadband environment. In particular, at least one provider cited a Colville Tribes ordinance that limits the ability to place wireless antennas for the use of unlicensed spectrum throughout tribal lands. Magellan recommends considering revisiting these details in coordination with providers to bring more broadband options to residents and businesses.

Develop a Governance Structure

A policy and regulatory framework specifies governance structure and processes to ensure maximum public benefit from network infrastructure, whether by fostering competition, meeting public sector requirements, or minimizing negative impacts of development. Governance ensures investments are aligned with goals and priorities. Policy guides development, laying out what can be built and how. Political will is the starting point for the governance and policies simply because without it there is nothing to govern and no possibility for policy. The BAT and its members have demonstrated strong political will already by undertaking this planning effort.

Political Will

Most public sector undertakings require some political will, and new undertakings can be especially demanding. Generally, public innovations require more support and stronger rationales to succeed politically than common practices, programs, projects, or procedures. As described elsewhere in this report, broadband infrastructure is becoming more important for municipal operations and local economies.

Therefore, it is important for the BAT to continue to assess and build political will, which means providing a strong rationale for the importance of broadband infrastructure to influential people, including appointed and elected officials, executives with major employers and prospective investors, and those citizens who are well-connected to others. Rationale for broadband can be based on risk of loss—such as poor economic competitiveness—but the strongest rationale is built on the potential benefits. As summarized throughout this Plan, broadband can be used to improve operations, increase impacts, reduce costs, and transform economies.

The process of building political will is as important as the individuals involved and the rationale for action. Indeed, all three work together: the process must be tailored to the individuals and rationale. For broadband, the rationale revolves around uses and impacts as well as availability, costs, and performance. Support from business executives and technologists reinforces this rationale. These stakeholders are most likely to respond to peers, particularly personal outreach from top public officials. Generally, the process involves:

- Clearly articulate project goals and objectives in public documents
- Identify, educate, and mobilize internal champions to garner support from stakeholders
- Reach out to and inform councils, commissions, and community stakeholders
- Organize a task force of diverse advocates

Local Governance and Ownership

Owners incur the cost of building or buying, maintaining, and operating an asset. They also control how it is used and, depending on business arrangements and economic circumstances, get the bulk of benefits or profits from those uses. These facts apply to fiber-optic cables in much the same way as to real estate.

An optical fiber is simply a real asset that can be used for moving information between two or more locations. To-date, most fiber network assets have been privately owned developed for private interests.

If the BAT or its members pursue the deployment of publicly-owned or even partially publicly-funded network assets through a partnership, built with tax-payer funds, governance must ensure the network meets the interests of its owners - the public. Therefore, ownership and governance of network assets should remain under local government control. Even when private organizations are brought in as partners, the governance and ownership structure of the partnership should be developed to benefit the community, allowing it flexibility and oversight if the partnership does not meet the needs of the community it serves.

The only way to accomplish this is by directly involving members of the public. We recommend the BAT continue to provide input and to engage and inform other members of the public. As the infrastructure is deployed, the jurisdiction involved in the partnership should develop a governance board to oversee the initiation and ongoing performance of public-private partnerships.

Internal Cooperation, Communication, and Alignment

A key function of governance is to reduce internal "silos." By including top level representatives from all agencies along with community and private-sector representatives, the BAT can break down silos and ensure that every dollar spent on technology benefits as many members of the community as possible. Indeed, we recommend the BAT continue to build partnerships between communities on a department-to-department level to achieve particular goals. Specifically, the BAT should ensure value for each community and investor, as well as facilitating information about planned and ongoing efforts.

Internal best practices and workflow for these purposes include:

- Document and share information about municipal, state, utility, and private sector assets
- Invite private sector participation in public works projects
- Trade and lease public and private assets for network expansion
- Utilize region-wide GIS asset tracking for management and expansion
- Streamline excavation and pole permitting processes
- Streamline wireless permitting processes
- Combine public works schedules for lowering construction costs
- Build on demand and for savings
- Bid multi-year infrastructure design and construction contracts

Capitalize on Existing Fiber and Other Network Assets

Local governments that consider investing in broadband infrastructure begin by leveraging assets that already exist. In some cases, this includes fiber that has been installed as a part of traffic signal system upgrades, while in others cases, it may simply be a matter of working with private providers to use publicly-owned spaces such as hilltops and tall buildings to house their technology. In all cases, it is a best practice to begin by inventorying what exists and use that inventory to develop a strategy for filling in the gaps.

These assets include existing fiber, conduit, vertical assets such as poles and towers, and sites for possible placement of antennas (hilltops, etc.). Additionally, easements and access to public rights-of-way, while not assets, are important elements for building partnership opportunities and should be considered when planning a network deployment. Any planned capital projects such as major roadwork and new developments also provide opportunities for cost savings and, in some cases, additional funding sources.

In Ferry County, there are several entities, both public and private, that have valuable assets for building a network. The Colville Confederated Tribes has already invested in fiber throughout its lands, including some routes that run through southern Ferry County and many more fiber miles in Okanogan County. As seen in the Broadband Market Analysis and Needs Assessment, private companies such as NoaNet also have fiber in the area. Additionally, the Ferry County PUD owns poles in many key locations, including up and down the Highway 21 alignment, that could be beneficial for deploying fiber. Both the Tribes and the County, as well as municipal agencies, also have existing assets such as hilltops and possibly conduit, which will be integral to deploying both wired and wireless infrastructure.

Build Opportunistically and Incrementally

Many local governments develop broadband assets incrementally over time by implementing policies and program to install other needed infrastructure as part of other capital improvements. Similar networks have been built and subsidized or financed incremental and on-demand strategies. However, careful planning and vision is still required to facilitate an appropriate network over time. This requires collaboration and partnership across the entire organization, as well as with external agencies and the private sector.

The general approach is to leverage public investments as opportunities present themselves to target investments in network infrastructure to generate revenue and spur development. As mentioned above, the cost of building the network can be greatly reduced by joint trenching, use of existing assets, or opportunistic builds as they present themselves. Such broadband strategies are often implemented in an incremental, but not ad hoc fashion, identifying opportunities to build in conjunction with other capital projects such as road construction, connecting traffic signals or when replacing water mains. This is a practice that has been successfully implemented by cities throughout the country; however, to do so, each opportunity must be evaluated on a case-by-case basis.

Target Unserved and Underserved Communities

Many of the most successful and impactful broadband strategies focus on meeting demand in unserved and underserved communities. Because of the current lack of investment in such areas, it is critical to provide access to such populations in order to bridge the digital divide. In many cases, the communities with the most need are rural or remote, which is why many of the federal broadband funding programs have focused on such locations. Tribal lands, in particular, often have insufficient access to broadband.

To make the most meaningful impact on the community, it makes sense for the BAT to focus its efforts on locations where the need is most pressing, including the Colville Tribes' land. In the case of Ferry County, most of the population is unserved or underserved at present, so there are vast swaths of the community that will benefit from broadband investment.

Take Advantage of State and Federal Grants to Offset Network Costs

A major barrier to broadband investment by private providers for underserved or unserved rural communities is making a business case that justifies investment in the infrastructure needed to expand service territories to reach these communities. In rural or remote locations where demand is much less aggregated than in urban or suburban environments, creating that business case is challenging. Recognizing these issues, federal and state governments have developed grant opportunities, many of which prioritize funding for rural areas in order to offset the costs of deploying network infrastructure.

Rural and Tribal lands, as defined by federal and state statutes, are often given preference when applying for grants to build and deploy broadband infrastructure. Therefore, in communities like Ferry County and the Colville Tribes, it is imperative to take advantage of funding opportunities such as Reconnect, CERB,

and National Tribal Broadband Grants. Many of these opportunities allow for (and in some cases require) partnership opportunities between local or tribal government and the private sector, providing matching funds for the expansion of broadband networks. Such grant opportunities that the BAT should consider will be explored in detail later in this report.

Use Wired and Wireless as Complementary Technologies

While fiber is the gold standard for delivery of broadband, rural communities such as Ferry County often find the cost of deploying fiber networks to many areas too expensive or simply too difficult to reach. Many of these communities and their private-sector partners have instead opted for wireless solutions to reach the last mile. These wireless antennas must be connected to and backhauled via fiber due to the vast amounts of data being transmitted and the high speed required to provide low latency and reliability. Therefore, we consider wireless and fiber optics to be complementary, rather than competing technologies. The BAT should consider using both wired and wireless technologies as solutions for providing connectivity to businesses, residents, and anchor institutions.

Wireless broadband can operate as mobile wireless or microwave fixed. Fixed wireless can be used to connect remote locations or sparsely populated areas, where DSL or cable service would not be economically feasible, via long-range directional microwave antenna.

Fixed wireless services allow consumers to access the internet from a fixed point while stationary, and typically requires an external antenna with direct line-of-sight between the distant wireless transmitter and the customer building-mounted receiver. Speeds are generally comparable to DSL and cable modem. These services have been offered using both licensed spectrum and unlicensed devices. To deliver a fixed wireless solution, providers need to consider a few things:

- Available and appropriate spectrum – not all spectrum is created equal
- Tower locations and siting
- Terrain and form of interference
- Backhaul options
- Bandwidth requirements

There are already several providers in the area deploying wireless technologies, many of which are open to considering a partnership with the Tribes, the County, or other members of the BAT to expand service areas.

Consider a Regional Approach

Rather than simply going it alone, many local governments build coalitions with surrounding municipalities, counties, or other jurisdictions to coordinate a more far-reaching effort across many communities. Such an approach has a slew of benefits including economies of scale, diversifying resources, building greater political will, and expanding partnership opportunities. The need for robust broadband does not stop at jurisdictional boundaries and, in general, the more agencies working together to achieve common goals, the more impact can be made to improve connectivity for entire regions.

The CCT's lands extend into Okanogan County, making the Okanogan County BAT a logical first choice for regional outreach. Much of CCT's existing fiber assets are in Okanogan County, as is much of the Tribes' population. Therefore, CCT should certainly take a holistic approach, which requires coordination between Ferry and Okanogan Counties. Additionally, Ferry County PUD also has vertical assets in the far eastern portion of Okanogan County, where it serves some locations. Ferry County PUD and Okanogan County PUD could entertain conversations about how to leverage their collective assets to deploy more broadband across the region.

In addition to Okanogan County, the BAT should explore regional partnerships with other jurisdictions including Stevens County, Lincoln County, and Spokane County. Grant County, southwest of Ferry County, is currently exploring deployment of fiber-to-the-home and other Tribal entities such as the Spokane Tribe are also deciding how to proceed with broadband planning. Ferry County and the CCT could benefit from partnerships with any or all of these organizations, which may range from coordinating funding activities to build a regional fiber network spanning across several counties to simply opening dialogue for exchange of ideas. Taking on the issue of broadband collectively rather than individually is often the key to resolving broadband issues, especially in rural communities.

B. Business Model Options

Local governments have multiple options for broadband business models, from passive, policy-only approaches through actually becoming a network service provider. There are a number of factors that determine the best option. Local market competition is a primary consideration along with how well available services meet community needs. The financial capacity and operational capabilities of the local government interact with leaders' tolerance for risk and interest in real return (i.e., revenue).

The commonly implemented business models fall on a continuum that ranges from low risk, low investment options to higher risk, high investment options. Figure 4-2 illustrates this continuum. As a local government evaluates the various business model options along the continuum, it will encounter greater degrees of risk and reward. Risks include financial, operational, and regulatory challenges. The potential rewards are community benefits, economic development, and revenue generation, including both indirect revenue effects via an expanding tax base and direct revenue from lease payments and service fees.

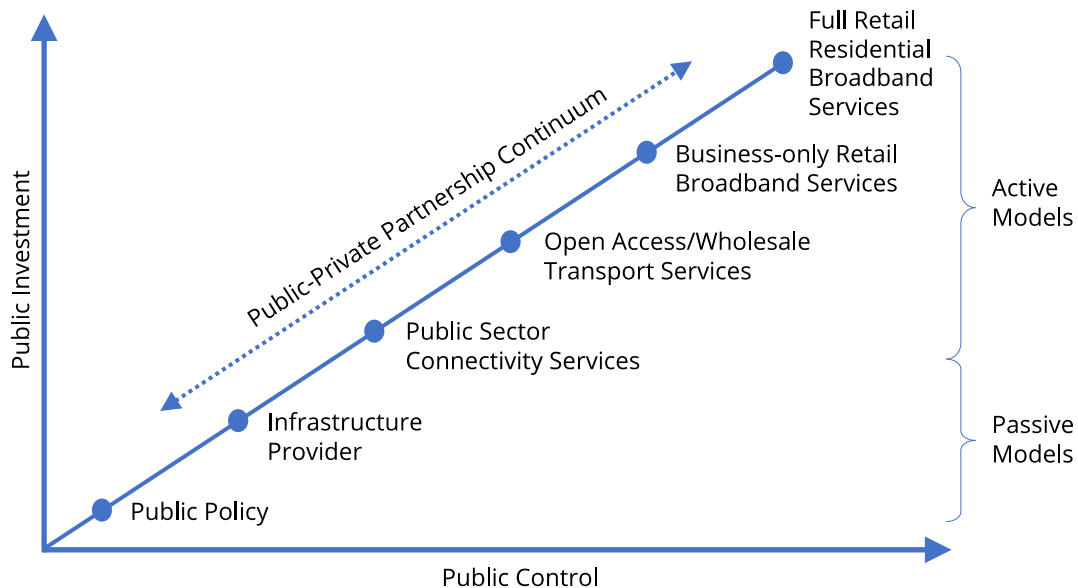


Figure 4-2. The Public-Private Partnership Continuum for Broadband Development

Moving “up” the continuum also implies greater local government participation in the delivery of broadband services. Public policy and infrastructure only options are considered “passive” business models. Public Sector Connectivity Provider, Open Access or Wholesale Transport Provider, and Retail Broadband Provider models involve the government operating a network. Public-private partnerships can take many forms. Local governments must determine which business models meet their organization’s risk/reward tolerance to achieve the community’s broadband goals.

A local government may use multiple business models over time. It should be noted that some broadband business models can conflict with others. For example, local policies generally complement all of the other business model options. A local government would not use a retail model as part of a public-private partnerships as that would lead to competition between the local government and one or more private partners.

Policy Participation Only

Public policy tools influence how broadband services are likely to develop in the community. This includes permitting, right of way access, construction, fees, and franchises that regulate the cost of constructing and maintaining broadband infrastructure within its jurisdiction. This option is not considered a true business model, but does significantly affect the local broadband environment and is therefore included as one option. Municipalities that do not wish to take a more active role in broadband development often utilize policy participation to positively impact the local broadband environment.

Infrastructure Provider

Municipalities lease and/or sell physical infrastructure, such as conduit, dark fiber, poles, tower space, and property to broadband service providers that need access within the community. These providers are often challenged with the capital costs required to construct this infrastructure, particularly in high cost urbanized environments. The utility infrastructure provides a cost effective alternative to providers constructing the infrastructure themselves. In these cases, municipalities generally use a utility model or enterprise fund model to develop programs to manage these infrastructure systems, and offer them to broadband service providers using standardized rate structures.

Public Sector Connectivity Services Provider

Local governments that become a public sector connectivity provider will utilize a fiber-optic network to interconnect multiple public organizations with fiber-optic or wireless connectivity. These organizations are generally limited to the community anchors that fall within their jurisdiction, including local governments, school districts, higher educational organizations, public safety organizations, utilities, and occasionally healthcare providers. The majority of these anchors require connectivity and often, the municipal network provides higher capacity at lower costs than these organizations are able to obtain commercially.

Municipal and utility networks across the country have been built to interconnect cities, counties, school districts, and utilities to one another at lower costs and with long-term growth capabilities that support these organizations' future needs and protect them from rising costs. In these cases, government service providers may be cities, counties, or consortia that build and maintain the network. The providers utilize inter-local agreements between public agencies to establish connectivity, rates, and the terms and conditions of service.

Open-access or Wholesale Transport Provider

Municipalities that adopt open-access generally own a substantial fiber-optic network in their communities. Open-access allows these municipalities to "light" the fiber and equip the network with the electronics necessary to establish a "transport service" or "circuit" to service providers interconnecting with the local network. Service providers are connected from a common interconnection point with the open-access network and have access to all customers connected to that network.

Open-access refers to a network that is available for any qualified service providers to utilize in order to connect their customers. Thus, it is basically a "wholesale" business. It allows municipalities to provide an

aggregation of local customers on a single network that they are able to compete for and provide services. The concept of open-access is designed to enable competition among service providers across an open network that is owned by the municipality. The municipality retains neutrality and non-discriminatory practices with the providers who operate on the network. The municipality establishes a standard rate structure and terms of service for use by all participating service providers.

Retail Broadband Provider – Business Only

Municipalities that provide end users services to business customers are considered retail service providers. Most commonly, municipalities provide voice and Internet services to local businesses. In many cases, a municipality may have built a fiber network for the purposes of connecting the city's primary sites that has been expanded to connect local businesses, in effort to support local economic development needs for recruitment and retention of businesses in the city. Municipalities that provide these services are responsible for managing customers at a retail level. They manage all operational functions necessary to connect customers to the network and providing Internet and voice services. Municipalities compete directly with service providers in the local business market, which requires the municipality to manage an effective sales and marketing function in order to gain sufficient market share to operate at a break-even or better.

Retail Broadband Provider – Business & Residential

Municipalities that provide end user services to businesses and residential customers are considered retail service providers. Most commonly, municipalities provide voice, television, and Internet services to their businesses and residents through a municipally owned public utility or enterprise fund of the city. As a retail service provider that serves businesses and residents, the municipality is responsible for a significant number of operational functions, including management of its retail voice, television and Internet offerings, network operations, billing, provisioning, network construction, installation, general operations, and maintenance.

In this model, the municipality competes with service providers in the business and residential markets and must be effective in its sales and marketing program to gain sufficient market share to support the operation. Many municipalities that have implemented these services are electric utilities that serve small to midsize markets. Many of these markets are rural or underserved in areas that have not received significant investments by broadband service providers. Retail service providers must comply with state and federal statutes for any regulated telecommunications services. These organizations must also comply with state statutes concerning municipal and public utility broadband providers; a set of rules has been developed in most states that govern the financing, provision, and deployment of these enterprises.

Public-Private Partnership

A broadband public-private partnership is a negotiated contract between a public and private entity to fulfill certain obligations to expand broadband services in a given area. In recent years, PPPs have been increasingly implemented as more municipalities employ public broadband and utility infrastructure in conjunction with private broadband providers. PPPs leverage public broadband assets, such as fiber, conduit, poles, facilities with private broadband provider assets, and expertise to increase the availability and access to broadband services.

Local governments forgo the “getting into the business” of providing retail services and instead, make targeted investments in their broadband infrastructure, and make it available to private broadband providers with the goal of enhancing their communities. In this type of model, the Town would be considered an Infrastructure Provider who maintains permanent ownership interest in the broadband

infrastructure (e.g., conduit and perhaps dark fiber) that is funded by the Town for a “piece of the action”, generally a negotiated revenue share paid by the provider.

C. Prospective Partners

Magellan recommends that Ferry County and the CCT pursue public-private partnership options for obtaining backhaul and access infrastructure. We spoke with ten (10) organizations with a presence in Ferry County to assess their assets, financial and human capital, and interest in partnering with the County and Tribes to improve broadband in the area. Findings about partnership opportunities for each organization are summarized below.

Avista

Investor-owned Avista Utilities, which serves the eastern part of Ferry County along the 395 corridor, serves eastern Washington, northern Idaho, western Montana, and Oregon. Although it is regulated in five states, 90% of Avista’s business is in eastern Washington and northern Idaho.

The structure of Avista includes an unregulated division called Avista Development, which has allowed it to enter the broadband business under a new, independent entity called Avista Edge. While Avista Edge doesn’t currently have any customers, it does have several letters of intent. Its customers are electric utilities, whose meter infrastructure it will support. The company plans to pilot the program late this year in two communities, one Idaho and one in the town of Cheney, Washington. It will support CBRS to start, with aspirations to apply spectrum to mid band.

Avista Utilities typically builds network for utility use only; there are currently no plans for joint use. Avista Edge will have to apply for pole access just like any other provider. The model is to have the utilities Avista Edge supports act as the ISP. Avista will own the technology that allows for wireless spectrum to be deployed, manage the network for fiber-to-the-home, and meter infrastructure at the residence. Avista Edge is not interested in owning assets; its primary interest is in selling the technology for last mile connectivity.

Avista Edge could partner with the BAT as a last-mile solution. In particular, if the Colville Tribes consider deploying fiber-to-the-home, Avista could partner with them. Avista does not currently have a solution for single remote locations; rather, it is interested in rural communities where there is some density. Avista Edge is looking at pole toppers and water towers, which could enable more remote use cases if they’re 6-8 miles out. A representative of the company points out that Tribal lands such as those of the Colville Tribes might be an ideal location to consider piloting the technology.

Confederated Colville Tribes

The Confederated Colville Tribes’ key role as a partner would be that of an asset owner. The Tribes already own some broadband infrastructure in the region, including several miles of fiber, most of which is in southern Okanogan County, and some of which is in southern Ferry County. The state of the existing fiber is unclear, but the Tribes indicate a desire to own more broadband assets on tribal lands.

With the availability of federal grant opportunities, the Tribes are the best positioned local entity to be awarded grant funding that would allow additional buildout. Additionally, the Tribes maintain control over several sites that could allow wireless service providers to place antennas. As discussed elsewhere in this Plan, the Tribes should review their local ordinances to promote investment in such infrastructure as a means of partnering with private providers to ensure better access to broadband throughout tribal lands.

In its current state, the Tribes' organization has some capacity for maintaining and operating a network, although leaders have indicated a preference for partnering with an organization that would assist with these efforts rather than maintaining all capabilities in-house. There are real opportunities for the Tribes to work with ISPs that have experience with operating networks and are willing to create training programs and jobs for members of the tribal community to keep a network locally managed. Such a partnership in which the Tribes own assets and partner with a network operator to gradually take control of maintenance and operations could bring additional revenues to the Tribes, allow it to maintain ownership of assets (and thus, authority over how where and how they are deployed), and create new employment opportunities.

Coulee Internet

Coulee Internet Services is based in the Grand Coulee Dam area and was founded in 2013 by using existing infrastructure to bring high-speed internet to previously unserved locations. 70% of the network is wireless and Coulee Internet also partners with entities such as Grant County PUD and local provider Spectrum to use their fiber infrastructure. Coulee is a small company with only 4 employees and does not house a lot of resources in terms of grant planning for funding opportunities.

Coulee Internet serves the southern side of the Columbia River and would like to bring connectivity to areas of Ferry County including Nespelem and Keller. However, they've struggled with the high cost of application fees (which they quote at \$30-40k) and site Section 4-22 as a barrier to entry. The company already had some tower locations in the area prior to 4-22, but has not been able to add any additional locations since it went into effect. To allow them entry, they would like to see the law change so that it does not apply to unlicensed spectrum.

Declaration Network Group / Microsoft Airband

Declaration Networks Group (DNG) started its efforts to serve rural areas in Virginia and Maryland and has since expanded its market to include several other markets. DNG does fixed wireless deployment using private investment and federal grant and loan programs including USDA and CAF funding. DNG's goal is to pursue partnership relationships with other already established regional players that allow it to provide services through the use of existing tower space and backhaul infrastructure. Its relationship with Microsoft Airband has recently allowed it to expand its footprint to the eastern part of Washington, including Stevens and Ferry Counties. The group bid on additional funding in Ferry County but was not successful due to the low bids in the final rounds of CAF II's reverse auction during the last funding cycle.

DNG's focus over the last year has been establishing service areas in Stevens County north of Colville. They recently build a network in the Kettle Falls/Colville area that casts a service footprint into the eastern side of Ferry County as far as Boyds, deployed with a tower on Colville Mountain and a rooftop in Colville. DNG's solution is a combination of fiber connections, often in partnership with entities such as NoaNet, and microwave shots. As NoaNet expands its footprint in Ferry County, DNG would like to take advantage of the expansions to grow its own service area, including to locations such as Orient.

DNG sees an opportunity for partnerships that make use of existing assets. The company previously considered bringing service into the Republic area, but after engaging with some local stakeholders, felt that it needed to strengthen its relationships locally before doing so. Its leadership recognizes that there are ownership and control issues to work through and has proven successful in building partnerships and overcoming these obstacles in other markets. Microsoft Airband, who works closely with DNG within Washington, emphasizes its support for BAT initiatives in Ferry County and offers its resources in landing state funding for the area. Both DNG and Microsoft Airband stress that any partnerships that they enter would have a goal driving a healthy broadband ecosystem. The companies could be partners for both the

County and the Tribes, contributing grant funding support, human capital, and the knowledge and experience of deploying networks in rural communities.

Ferry County PUD

Ferry County Public Utility District (PUD) is a customer-owned electric utility that serves approximately 3400 customers in Ferry and eastern Okanogan Counties from the Columbia River to the Canadian border. The PUD operates electrical infrastructure only (no water) and does not currently have a SCADA system, although it is gradually upgrading some of its locations on an ad-hoc basis.

Ferry County PUD owns vertical infrastructure (poles) throughout Ferry County. It has two points of delivery from Bonneville Power Administration (BPA), one in the south of the County and one in the north, with a 2 to 3 mile gap along the Highway 21 corridor due to dense vegetation. The PUD's power infrastructure is not redundant, which PUD sees as an issue in terms of reliability and recruiting businesses to the area. The issue could be alleviated, possibly with funds that may contribute to communications infrastructure as well, but cost estimates are high at around \$30-40 million for 3500 customers.

The PUD also owns some communication sites; it leases one near Republic to AT&T and T-Mobile and has another site on the north end of the County on Franson Peak. Some providers (such as AT&T) have their own towers. There are some opportunities for other parties to sublease space from them or from the PUD itself.

In terms of a partnership, Ferry County PUD is not interested in owning a fiber backbone infrastructure to be made accessible to ISPs. The PUD does not currently have any RUS debt and its board likely wouldn't be interested in borrowing any money. However, it is open to providing assets for pole attachments throughout the County. Make ready is not needed in most places and the PUD states that rates are relatively low. These vertical assets could be leased by a third party to run fiber throughout a large portion of the County, with other in-kind considerations negotiated as part of a larger partnership.

Inland Cellular

Inland Cellular is a mobile carrier that has operated in eastern Washington and Idaho for 30 years. Inland currently has approximately 40,000 subscribers, mostly in western Idaho and southeastern Washington. The company has specialized in carving out areas not served by major carriers like Verizon and AT&T and has been successful in roaming, staying focused on rural coverage.

Inland Cellular has been operating on CBRS for the last 2.5 years and has sites at Lake Republic, Gold Hill, Curlew Lake, Curlew (Franson), and close to the border in the east (Orient). All of these are microwave backhaul with a connection to a minimum of two PoPs. It also has a 10GB port in Curlew. Construction is ongoing in Inchelium, where Inland hopes to have mobile service up and running by June 2020, with internet services added as needed. The Mud Lake area on the east side of the river is already being served and a microwave connection to Kettle Falls is being completed. The minimum service is 25/3 mbps, but Inland Cellular intends to improve upon that.

Inland Cellular is looking for site locations in the south and central parts of Ferry County, along Hwy 21 corridor and to the west towards Tonasket. It is also considering fiber on the north side of the County, where the backhaul would help extend and improve services. It could partner with the County and/or the Colville Tribes to serve some of these locations.

NoaNet

NoaNet, which has been operating for about twenty years, is middle mile network infrastructure owner that supports public utility districts (PUDs) across the state of Washington. PUDs that were looking to take

advantage of wholesale broadband formed and own NoaNet and leverage local ISPs or regional/national carriers to resell broadband services to the consumer in a model that NoaNet describes as a “public benefit network.” The ability to leverage debt service enabled NoaNet to build out across the state, supporting several counties in various areas. NoaNet’s operation center in Spokane manages and maintains the network on behalf of the PUDs, all of which subscribe to this service. PUDs that partner with NoaNet can be wholesale providers. They have the option to either work within NoaNet’s teamwork model or go it alone. In either scenario, the PUD would need to invest in infrastructure.

This network connecting Ferry County was built with the intent of connecting Okanagan PUD to the west and to the east to have diversity. As soon as the route between the two counties was built, Okanagan experienced fires that were bad for the County, but there was a diverse connection back to Spokane. NoaNet is a joint user of Ferry County PUD’s poles and has been talking to Ferry County PUD about backhaul, although nothing strategic has been discussed at this point. Republic TVA buys backhaul from NoaNet, which it sells to the community.

NoaNet’s role in a network for Ferry County would be to serve as a backhaul provider. They report that they have more than enough capacity for this, as long as there is a distribution network in place.

In addition to providing backhaul, NoaNet could be a partner with the organizational capacity and know-how to manage and maintain, develop, and design a network. The role of the County and Tribe in such a partnership would be to provide funding for the network build and access to the right-of-way. The partnership also requires local champions to validate the approach and drive subscription to the services. As NoaNet points out, the local support and validation from Broadband Action Teams on a local level is absolutely critical.

Norwest Networks

Norwest Networks, based in Lynden, Washington, started doing business as Wi-Fi-Tech in 2008. It provides residential and small business connectivity in focused areas including business parks, gated communities, hotels, and multi-dwelling unit housing (MDUs), and has recently begun to build fiber networks that connect rural communities. Norwest Networks works with these communities to design, build, and manage fiber networks and the ownership of the assets depends on the funding source. They have partnerships with StarTouch and other upstream providers as well as Dish Networks, allowing them to offer double and triple play service options.

Norwest Networks is interested in helping build and manage networks. Generally, the communities they work with fund the networks and own most of the network plant. Norwest offers products to help set up the network and to perform backend management.

Norwest is specifically interested in working with the Colville Tribes, should they decide to design and build a network. Their goal would be to hire from local colleges to support and maintain local networks, possibly looking for local members to act in that capacity. They expressed a willingness to assist with training for local presence if the Tribes desire such a partnership. Norwest could be a valuable partner for assisting the BAT with operating a network, allowing the County and Tribes to retain ownership of the assets without a demand for increased organizational capacity that comes with maintaining a network.

Republic TV Association

The Republic TV Association (TVA) is a community owned non-profit co-op that has been around for about 60 years. Their service area includes the north western part of Ferry County, except for the Highway 395 corridor along the river, which they don’t serve because there is a mountain pass that separates it

from the rest of the County. TVA finds that there is not enough demand there to justify building and supporting additional infrastructure.

TVA serves mostly commercial locations, although it does have some residential subscribers. Cable modem, fiber, and wireless are available in various areas within the service area and TVA offers cable TV and internet packages. Wireless is used in the areas where construction costs are prohibitive and TVA works with approximately a half dozen wireless vendors. Although TVA states that they can serve more homes via fiber drops, they have not seen demand for higher speeds in places like Republic and have concluded that residents there have all the bandwidth they need. High transport costs are a barrier to providing “super high speeds at super low prices,” but TVA has not seen residential demand for speeds up to 300 mbps.

TVA has two fiber routes up to Curlew Lake from Republic, with plans to create a redundant loop. It serves less populated places such as Danville and Kettle River toward Toroda via microwave connections. TVA owns some cells sites with fiber connections and provides backhaul for cellular carriers in some locations.

They also have two fiber builds slated to kickoff in May 2020, one of which will run west of Republic and another up highway 20 toward Curlew due to constraints on the current backhaul. TVA has engineered a complete build for the whole north part of the County and is considering applying for grant money to fund additional builds, but states that they have the funds to construct even without grants being awarded. All TVA fiber is aerial due to cost and terrain.

TVA has expressed a willingness to collaborate with the County and Tribe to either form a partnership, or, at the very least, to ensure that service areas and grant funding opportunities are coordinated so that they are not competing with the BAT for grant funding. They already have partnerships in place with both the PUD and NoaNet and expressed that if they were approached to connect the tribal areas in the south of the County, they would be willing to bring both the infrastructure and jobs to the area. TVA has a local presence and maintains its own fiber plant, which could be a major benefit. They also state that because they are a not-for-profit, they keep their rates as low as possible. The barrier would be the distribution; the cost to build out drops is going to be large because of the size of properties on tribal land.

StarTouch

StarTouch Microwave Communications is based in northwestern Washington and serves municipalities, government agency, major cellular providers, land-based carriers, and corporations. It connects to an internet point of presence (PoP) in the US Bank building in Spokane, as well as one in western Washington at the Westin facility in Seattle. The company has fiber and microwave infrastructure throughout Washington, although it does not own any fiber. StarTouch’s main line of business is providing direct internet access (DIA) for business, usually 100 mbps or above, although it can also service smaller connections. It also connects several schools and provides backhaul for cellular providers.

StarTouch leases dark fiber from a variety of partners including CenturyLink. Fiber leases are typically between 5 and 7 years, depending on needs of end users. If the fiber goes down due to unexpected issues such as fires or freezes, the networks can completely switch over to microwave to keep things moving. Star Touch also connects rural towers to provide up to 10GB of backhaul for mobile carriers. It provides for connectivity in a lot of tribal areas, including the Spokane Tribe.

In Ferry County, StarTouch serves some tribal areas, Forest Service locations, and forest product locations. It has quite a few assets in Ferry County, including in Curlew, Republic, Keller, Orient, Kettle Falls, Rice, Inchelium, and Gifford, although the specific deployment locations and plans are proprietary. A representative expressed interest in expanding connectivity in the area through partnerships, potentially bringing in fiber assets owned by Norwest Networks, CenturyLink, or Frontier to serve areas that need

better connectivity. If there are locations that are off existing fiber (up and down the river valley where there are a lot of salmon hatcheries, for instance), Star Touch would be willing to partner with the owner of the fiber to provide last-mile connectivity.

Zayo

Zayo Group owns an array of metro and long-haul fiber assets throughout the US, providing dark and lit services to markets in many major markets. However, Zayo does not have assets in Ferry County, although it does own some long-haul routes to the south and west, going through Coulee Dam.

Others Providers

Magellan reached out to the following providers and received no response. One provider responded stating that they did not wish to participate.

- Desert Wind – Did not respond
- Frontier – Did not respond
- Silver Star – Did not respond
- Native Networks – Did not respond
- NCI Datacom – Did not respond
- CenturyLink – Did not wish to participate

Table 4-1. Summary of Prospective Partners with Key Characteristics

PROSPECTIVE PARTNER	GEOGRAPHIC AREA	FOCUS	FIBER ASSETS?	MAINTENANCE OF ASSETS	ABILITY TO PARTNER	BARRIERS
AVISTA EDGE	Eastern County	Access	No; sister company	Internal (including sister company)	Medium	Lack of antenna backhaul and sites, local ordinances. Not yet a provider; pilot only
CONFEDERATED COLVILLE TRIBES	Southern County	Backbone/distribution	Yes	Flexible	High	Need a partner to build, manage, and operate access network
COULEE INTERNET	Grand Coulee area	Access	No	Internal	Medium	Lack of antenna backhaul and sites, local ordinances; small organization, no grant resources
DECLARATION NETWORK GROUP	Boys-Kettle Falls; northeast County	Access	No	Flexible	Medium	Lack of antenna backhaul and sites, local ordinances
FERRY COUNTY PUD	Western County	N/A – Poles only	No	Internal	Low	Does not want to maintain or build new assets
INLAND CELLULAR	Republic area; multistate region	Access	No	Flexible	Medium	Lack of antenna backhaul and sites, local ordinances
NOANET	Backbone along Rt. 20	Backhaul	Owned by PUDs	Internal	High	Local PUD support
NORWEST NETWORKS	Various	Access	No	Internal	Medium	Customers (builds to suit)
REPUBLIC TVA	Republic area, north to Danville, west to Toroda	Access	Yes	Internal	Medium	Limited geographical area; cost of drops to remote locations
STARTOUCH	Multistate region	Backhaul	Leased	External	Low	Customers (leases to suit)

V. Broadband Business Case Evaluation

Community anchor institutions, including the CCT, Ferry County government, and Ferry County PUD, are not currently in a position to provide broadband services directly to consumers. These organizations do not have the capacity to act as internet service providers and expressed some well-founded hesitations about providing service directly. At the same time, these institutions see a need for better broadband and more options for internet access.

Therefore, the business model Magellan recommends for the CCT and Ferry County is a public-private partnership (P3). The public sector role would be to facilitate investment by the private sector, reducing costs of deploying infrastructure, promoting access, and directly investing in network assets, particularly supporting facilities. Private partners would be the service providers. They would own, operate, and maintain at least the access network infrastructure and, depending on the partner, perhaps some backhaul and backbone infrastructure, as well as manage customer access, accounts, and services.

The providers would either lease facilities or be given use of those facilities in exchange for service commitments. It may also be possible for the partners to share revenue, particularly where the public partner is actively promoting the services. A core issue to address is the exclusive nature of these partnerships. Are they limited to a single private provider, or can any number of providers participate? While Ferry County is a relatively small but geographically dispersed market, and private companies generally do not want competition, Magellan Advisors recommends a provider-neutral non-exclusive approach to create a competitive market in which prices are low and customers have multiple choices for providers.

Internet service providers are investors; they invest in communities to generate profitable revenue. The more profitable they can be, the more they will invest. Our business case evaluation starts with a preliminary analysis of barriers and costs providers might face in realizing the Ferry County network vision. Community organizations and local governments have four levers to increase investment:

1. Adopt broadband-friendly policies to make it easier and less costly to deploy network infrastructure.
2. Directly invest public funds, particularly from grants, into network assets, or identify partners to invest with. Allow providers to use public assets or facilities to deploy network infrastructure either at no or very low cost.
3. Cultivate demand by promoting internet services and getting pre-subscription commitments, particularly in high-cost areas. Establish local vendor preference criteria for procuring telecom and related services.
4. Seek out public funding and/or provide public financing for network infrastructure.

This business case evaluation considers all four of these tactics in relation to consumers, major prospective public partners—the CCT, Ferry County government including public school districts, and Ferry County PUD—and providers. The business case(s) could be extended to community organizations and their members. For example, a chamber of commerce might contribute to the business case by working with a provider to give a discount, introductory pricing, or special features or services to members. In turn, members would have to sign a long-term contract, allow use of facilities, or other concessions.

A. Network Reach

The envisioned network consists of fiber backbone routes along SR 21, from Keller through Republic to Danville, and along US Hwy 395 and Inchelium Hwy, from Inchelium to the Canadian border. These two backbones interconnect via NoaNet in Barney's Junction and Republic and with the CCT fiber backbone in Keller. The CCT fiber in Inchelium also connects with the new backbones.

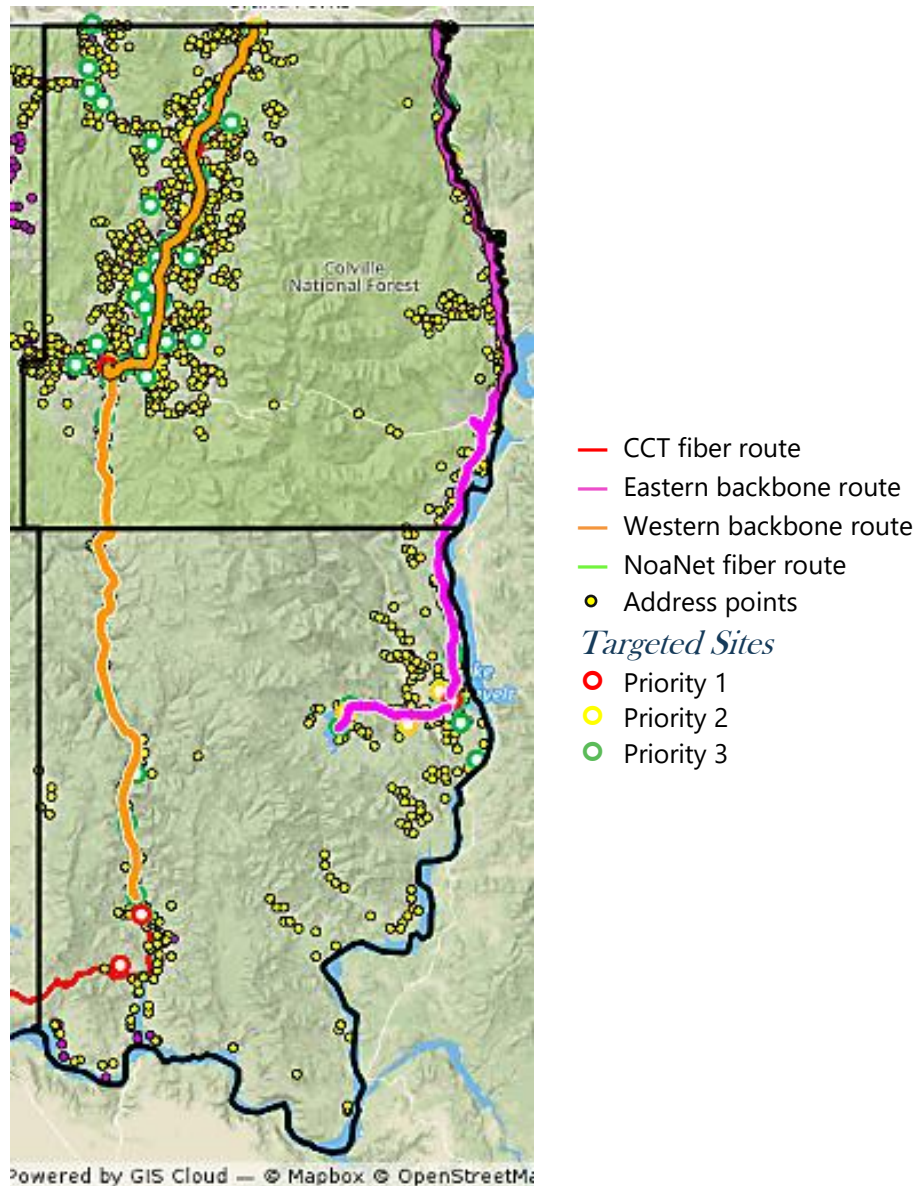


Figure 5-15. End-user Sites in Relation to the Envisioned Fiber Backbone Routes

The network backbones envisioned here will stretch for a total of 127 miles, 54 miles for the eastern route and 73 for the western, illustrated in Figure 5-1 and detailed in Table 5-1. The proposed routes put fiber

within 500 feet²³ of about 24% (1,444) of the nearly 6,000 address points in the County. Radio access could reach many more addresses but it is not possible to estimate that coverage at this point. About a third of the address points adjacent to the backbone are in the northwest quadrant, including the Republic area. Of the 245 sites targeted by BAT members, 92 are within 500 ft of the backbone. By connecting with the CCT fiber, the network comes within 500 feet of an additional 264 address points, and 28 more targeted sites. Altogether, the envisioned network can connect all 13 top priority sites to fiber, 10 of the 25 middle priority sites, and 97 of the 205 low priority sites.

Table 5-1. Length and Reach the Envisioned Network Infrastructure

Backbone Route	Locations/sites within 500 ft. of Fiber Backbone					Address Points
	Miles		Priority 1	Priority 2	Priority 3	
Northeast	28	0	1	2	233	
Northwest	31	1	5	71	526	
Southeast	35	0	0	0	272	
Southwest	42	0	0	12	149	
CCT Fiber		12	4	12	264	
Totals	13				1,44	
	6	13	10	97	4	

It may be desirable to extend both southern portions to fiber backbones to connect additional sites. Seven more miles of fiber would connect the Twin Lakes area to Inchelium. Over 30 miles of fiber would be necessary to reach addresses along Silver Creek Rd south of Inchelium. About 13.5 miles of fiber would be needed to reach the “Hideout Ranch” area, east of the Grand Coulee Dam. A 5-mile branch off the backbone would provide access to the areas along Deadman Creek, west of Boyds. While these extensions would bring fiber to many more address points, the fiber would reach only a few middle and low priority sites in the Twin Lakes area.

B. Network Components and Costs

Service Provisioning, Network Operations, and Governance

Network infrastructure is necessary but not sufficient for connectivity. Consumers must have means to use the network, including devices and equipment. Services must be provisioned, which involves establishing subscriber accounts, linking technical details to subscriber details, deploying network assets, and actually configuring network equipment to create connections. Beyond that, services must be promoted to consumers, network assets and systems must be maintained, and financial and operational data must be acquired and analyzed. Decisions about how to achieve—and set—business goals will need to be made on a regular basis.

Approximately one-half to two-thirds of a broadband business plan focuses on these issues. They are beyond the scope of this action plan, in part because numerous issues upon which a business plan depends have simply not been resolved. Service provisioning and network operations are envisioned as

²³ This is used as a reasonable approximation of an acceptable fiber “drop” length from a fiber access site for a rural area.

the responsibility of private partners, yet there clear public priorities for broadband services. Presuming the public sector invests in network infrastructure to facilitate private network service offerings, how and to what extent can the public expect private companies to operate in the public interest?

It will be necessary to develop a partnership framework under which private partners may use public assets. Governance is the act and process of establishing this framework and enforcing compliance. Essentially, it ensures that returns on public investment align with public priorities. As key functions are ceded to private companies using public assets, so it becomes critical for public officials to monitor the companies' behaviors. There is a very real, if "soft," cost associated with governance.

First, public institutions, particularly local governments, must invest their human and political capital in governance. Public officials must put their time and integrity into the process. There is a substantial startup cost to this that includes adopting or changing policies and organizing governing bodies. Second, the governing body must have authority to enter into and enforce agreements with private companies. It must have capacity and means to recommend infrastructure expansion. Third, top officials must support the governance process and structure, including prioritizing public investments. This also means including network infrastructure and technology into all public plans. Lastly, all of the above must be done in an open, transparent, and even-handed manner, based on well-defined and consistently applied criteria.

Network Sites

There are four types of network sites, each with different roles and types of equipment, as diagramed in Figure 5-2. The first type (A) consists of the interconnection sites in Barney's Junction, Keller, and Republic. They route traffic between the backbones and the global internet via NoaNet. These sites feature very high capacity switches with redundant fiber interfaces.

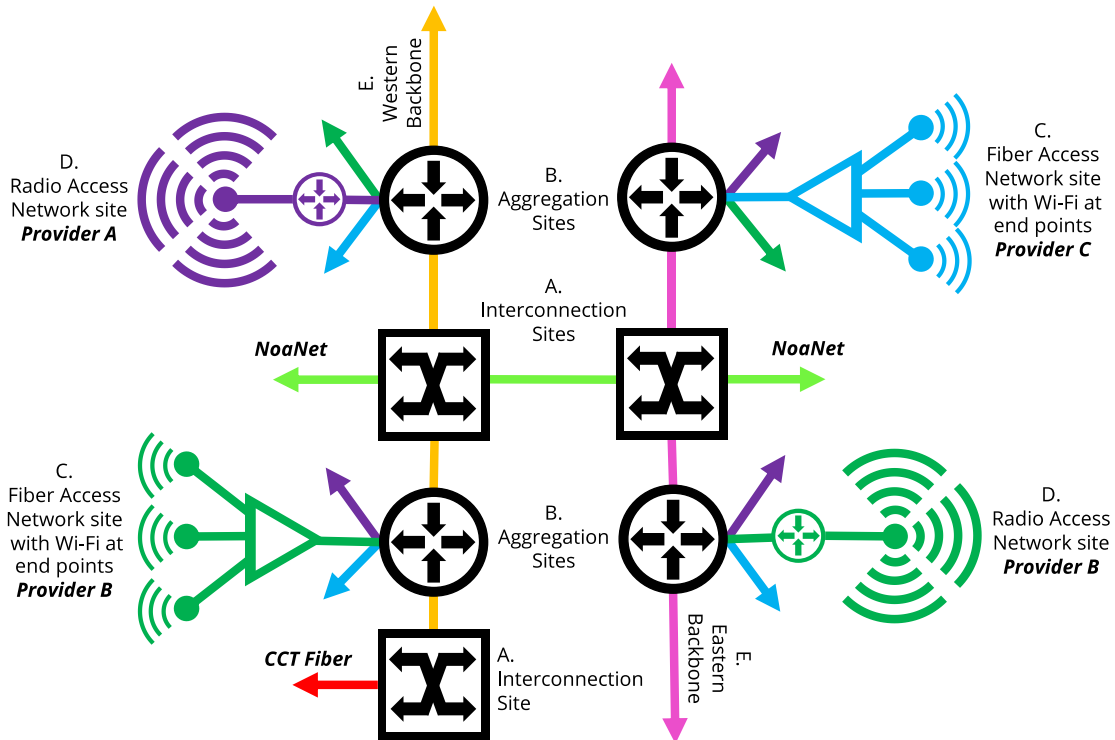


Figure 5-2. The Conceptual Structure of Fiber-Wireless Network Infrastructure for Ferry County

Aggregation sites (B) are the second type. They move traffic between access networks and the interconnection sites via distribution networks that operate over a few fiber strands within each backbone. Each aggregation site can connect to numerous access sites operated by different providers (as indicated by the different colored arrows from aggregation sites in Figure 5-2), and can connect to multiple interconnection sites to increase reliability. Aggregation sites require high-performance routers capable of handling the appropriate number of access networks.

Fiber and radio access networks connect end users to the aggregation sites via access sites, the third and fourth type of site. Fiber access sites (C) combine traffic from multiple fiber strands that connect to end-user sites (customer premises) onto a couple shared strands, which then connect to aggregation sites. Some of these "lateral" strands to fiber-connected sites could be in the backbone but most would involve running additional fiber to customer premises. Fiber access sites require optical multiplexers, fiber patch bays, and related components that need to be in a secure location.

Radio access sites (D) have a similar function but they connect end-user sites via radio antenna. Antenna at each radio access site send and receive signals from antenna located at the customer premises. The antenna at the radio access sites need to be on tall poles or towers for the signals to reach as many end-user sites as possible. A specialized radio sits between the antenna and a router that connects to the backbone. Additional equipment, including back-up power, is required for radio sites, which need to be secure. It is possible for fiber access sites to also function as radio access sites.

Of course, there is a fifth type of site: End-user sites connect via fiber or radio (wireless) access networks that extend out from the access sites. End-users connect computers, smart phones, and other devices to the network via Wi-Fi wireless or wired connections. Fiber and radio access sites are located along the backbones (E) where needed to reach end-users. End-user sites may need additional equipment, including

an antenna, router, tower, etc., to connect to the network. The exact location of fiber and radio access sites are to be determined during network design.

Supporting Infrastructure

Network assets, including antenna and fiber cables, must be deployed on and supported by additional infrastructure. Antenna must be mounted on poles or towers—often referred to as “vertical assets”—for their signals to reach end-user sites. Radio sites such as shown in Figure 5-3, also require equipment huts, back-up power systems, and controlled physical access, as well as the actual radio base station. They also have to be connected to the network via fiber, so it is best for radio sites to be located near either the backbone or fiber access sites. It bears noting that these sites require land, the use of which may be a component provided by public entities in partnership arrangements. Beyond that, 16% of survey respondents said they would be willing to provide land for a tower.



Figure 5-3. Components of a Radio Site

Fiber cable can be deployed in buried conduit, direct buried, or deployed on poles. Aerial placement on poles requires the least upfront capital, although make ready costs for heavily used or older poles can be substantial. Underground deployment can be very expensive, particularly where the ground is composed of rock, as in the mountains of eastern Washington. Hand holes, vaults, or other physical access points for fiber splicing must be incorporated into any underground deployment. Aerial deployment requires similar assets (splice cases), as well as support cable to which the fiber is lashed between poles.

There are substantial assets in place that could potentially support the envisioned network, as shown in Figure 5-4. Regardless, it will be necessary to develop supporting infrastructure for the network. Multiple radio sites will be required to reach beyond the backbone. Fiber sites can be placed in existing buildings, presuming there is ready access and reliable power, or they can be placed in standalone equipment huts. Several portions of the backbone routes do not appear to have poles, so those will need to be added or the fiber will need to be buried.

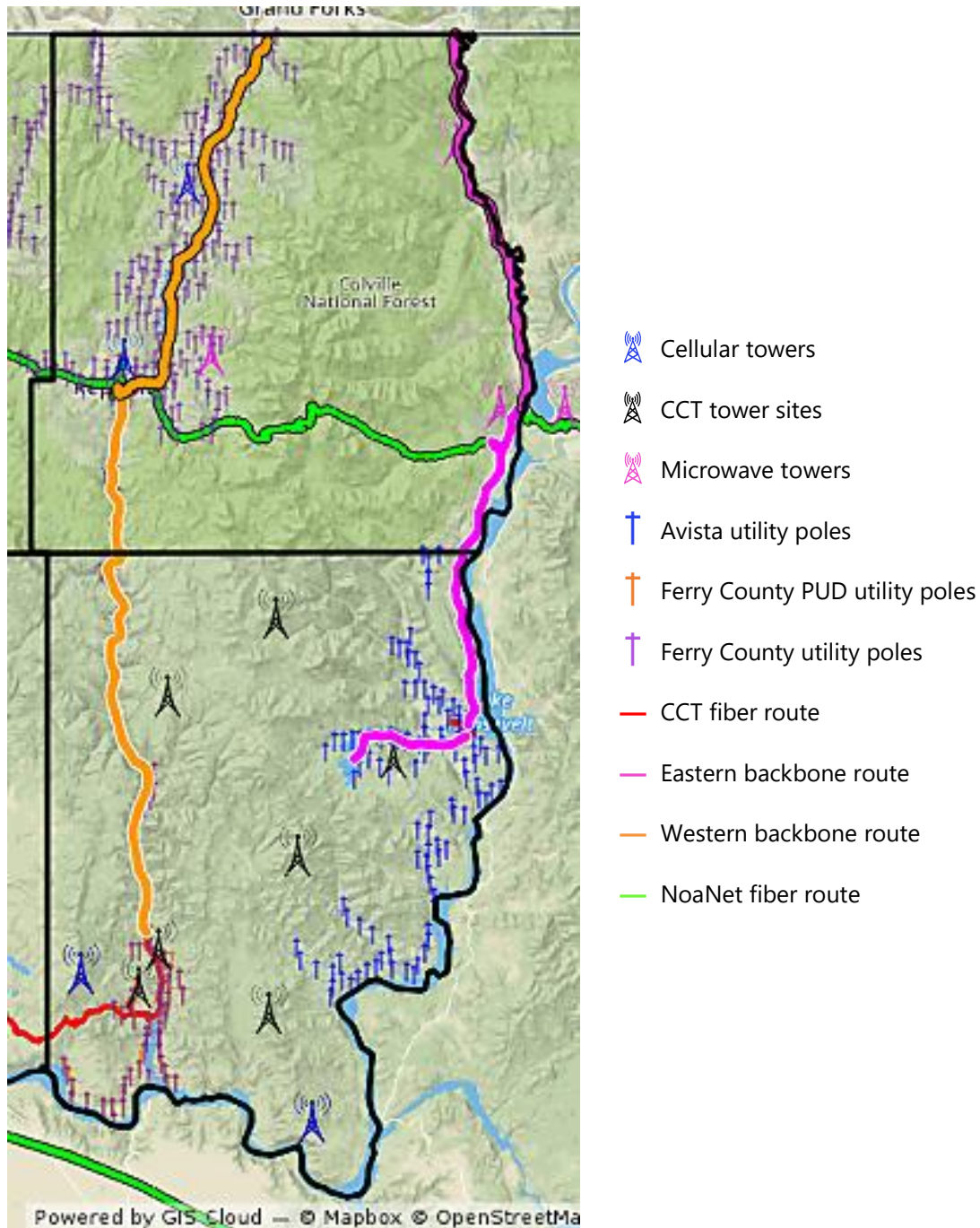


Figure 5-4. Potential Network Support Assets in Ferry County

Network Costs

A site such as that depicted in Figure 5-4 will cost \$150K to \$200K to develop, not including the radio and network equipment. Costs for equipment to connect the radio access network to the backbone are in the \$1,000 to \$5,000 range, depending on capacity and reliability requirements. The radio access network equipment for point-to-multipoint connections can easily be \$8,000 to \$10,000, depending on capacity, protocols, and spectrum.

Radio spectrum can be unlicensed or licensed. Licensing protects against interference from other uses but also comes with costs, and it must be purchased in large chunks, most of which are already owned by cellular and similar companies. Most wireless internet service providers (WISPs) use unlicensed spectrum to avoid licensing costs—and the equipment is a fraction of the cost, too. New spectrum bands are being made available that allow for “lightly licensed” or shared use.

The costs of fiber access, aggregation, and interconnection sites vary greatly. A fully-equipped carrier-class interconnection site can easily cost \$300K to equip. Equipment for aggregations sites can be as much as \$100K, although smaller, lower capacity sites with lower reliability can be equipped for a third of that cost. Fiber access equipment is approximately \$2,000 to \$4,000. These costs are in addition to facilities to house the equipment. Interconnection sites will have multiple fiber entrances. Aggregation sites will have two entrances. Sites can be as minimal as an equipment pedestal adjacent to the backbone in the public right-of-way. A stand-alone interconnection site at Barney’s Junction in an outdoor cabinet with power and basic network equipment will cost a minimum of \$25K.

Backhaul connections will likely be arranged and paid for by providers, but there may be needs or opportunities for shared backhaul to the internet. Depending on the contract terms, NoaNet’s monthly recurring charges for a 1 Gbps dedicated access are about \$1,000, and a 10 Gbps connection is almost \$5,000. This service is built on diverse ring routes out of Republic. One route heads west to Tonasket, the other east towards Colville and to Spokane. They have multiple routes to and from the Seattle Westin Building internet exchange point where NoaNet connects with Tier 1 providers, as well as a direct connection to the Seattle Internet Exchange. NoaNet also has multiple routes to Pittcock internet exchange in Portland, as well as a direct connection to NWAX internet exchange, also in Portland.

Estimated costs to build envisioned network backbone

We estimate that the total cost to build the envisioned backbone network, not including costs for network equipment or costs related to partners (access sites and supporting infrastructure), is \$12.2M, including 10% contingency, as summarized in Table 5-2.

Table 5-2. Summary of Estimated Costs to build CCT-Ferry County Backbone

Backbone Design	\$1,046,651.00
Backbone Construction (Labor and Material)	\$9,997,764.50
Contingency (10%)	\$1,104,441.56
Estimated total	\$12,148,857.06

These costs assume that the northeast route would be 100% underground, directionally bored at a minimum depth of 24 inches with two (2) 2-inch conduits, hand holes every 600 feet, and 20% requiring rock adder. We know this route includes at least two at-grade railroad crossings but we have not included those costs because they would need to be negotiated with the railroad and paid on a recurring basis. The costing for the northeast route also includes the cost for the two interconnection sites.

All routes include 144 count fiber cable with straight splice every 5,000 feet. The northwest, southeast, and southwest routes are assumed to be 100% aerial, deployed in the communication space on poles an average of 180 feet apart, with slack coils every 1,000 feet. The estimated costs include surface restoration and traffic management but do not include permit fees or pole attachments, which must be negotiated with pole owners and paid on an recurring basis. The costs for each segment are broken out, including estimated distance in feet and average cost per foot, in Table 5-3 (not including contingency fees).

Table 5-3. Breakdown of Estimated Costs to Build Each Backbone Route

DESCRIPTION	FEET	DESIGN	LABOR	MATERIAL	SUBTOTAL	COST PER FOOT
NORTHEAST	149,524	\$186,905	\$3,720,532	\$898,859	\$4,806,296	\$32.14
NORTHWEST	164,585	\$246,878	\$1,055,237	\$489,518	\$1,791,633	\$10.89
SOUTHEAST	187,389	\$281,084	\$1,201,098	\$557,343	\$2,039,525	\$10.88
SOUTHWEST	221,190	\$331,785	\$1,417,300	\$657,876	\$2,406,961	\$10.88
TOTAL	722,688	\$1,046,651	\$7,394,168	\$2,603,597	\$11,044,415	

Note that the cost per foot for the northeast route is approximately three times the costs for the other three routes. This is almost entirely due cost of underground construction. While we believe that some portions of the northeast route could be aerial, and portions of the southeast route may need to be underground, we do not know how much. Therefore, we have priced construction in this manner to clearly show the difference in costs without complicating the cost assumptions. A portion of the southwest route between Keller and Republic does not have poles in place. The cost of deploying new poles has not been included in our cost estimates.

C. Potential Impacts

The economic and social impacts of the envisioned network depend on complementary investments in hardware, software, and talent. The network does nothing on its own. People must have the skills and tools to use it for meaningful purposes. A critical issue for local leadership is whether the network is a platform for buying and consuming, which means users are spending their money (and time) outside the area, or a means to produce and sell. This determines whether the network is a means to transfer wealth out of the area or bring it in.

The practical implications for businesses and residents of Ferry County, including portions of the Colville Reservation, are that they must have some commitment to pay for and use the network. This commitment must include investing in new skills and technologies, and making some fundamental changes in operations. A specific example of this is Microsoft’s corporate interest in digital transformation and its work to close the rural broadband gap. The company is investing in broadband projects, specifically involving DNG, one of Ferry County’s prospective provider partners. How does this investment make sense if local governments, healthcare providers, and schools aren’t transforming their operations to be more effective and efficient via broadband?

Potential impacts for providers are somewhat easier to project, if still unclear. Table 5-6 provides approximate revenue projections for fiber connected customers, using the address points within reasonable distance of the backbone as a starting point. This data provides a sense of what the revenue potential might be for a provider. Considering that take rate is directly correlated with costs, the highlighted diagonal section suggests the monthly revenue for these sites is between \$30K and \$65K.

Table 5-61. Monthly Revenue Projections for Consumer-class Broadband for 1,300 End-user Sites within 500 Feet of Network Backbone

Take Rate	Monthly Recurring Cost for Broadband				
	\$30	\$50	\$70	\$90	\$110
20%	\$8,664	\$14,440	\$20,216	\$25,992	\$31,768
30%	\$12,996	\$21,660	\$30,324	\$38,988	\$47,652

Monthly Recurring Cost for Broadband

Take Rate	\$30	\$50	\$70	\$90	\$110
40%	\$17,328	\$28,880	\$40,432	\$51,984	\$63,536
50%	\$21,660	\$36,100	\$50,540	\$64,980	\$79,420
60%	\$25,992	\$43,320	\$60,648	\$77,976	\$95,304
70%	\$30,324	\$50,540	\$70,756	\$90,972	\$111,188
80%	\$34,656	\$57,760	\$80,864	\$103,968	\$127,072
90%	\$38,988	\$64,980	\$90,972	\$116,964	\$142,956

The data may be more useful for pointing out its limitations, though, than making meaningful projections. The first limitation is that the data from the BAT survey regarding what people currently pay is not sufficient for drawing any real conclusions about take rates (percentage of prospective customers who will subscribe). The monthly recurring costs in Table 5-6 reflect what survey respondents said they were willing to pay, but current payment is a better indicator. Also, since the survey did not collect addresses, we don't know where connections are available or physically where infrastructure is needed.

Another limitation has to do with the service itself: It doesn't make sense to provision fiber broadband at less than 100 Mbps because the provider's cost is effectively the same as a 1 Gbps connection. Do consumers value ultra-fast connections enough to pay for them? We don't have enough data to answer this question. Backhaul is a related limitation: If a provider can't get backhaul, it doesn't make sense to sell gigabit broadband because it would almost surely result in oversubscription, which means subscribers would not get nearly the bandwidth they expect.

We cannot say from the current data how many customers would demand full throughput. Many consumers may be quite content with sub 100 Mbps speeds that can be delivered via wireless radio access networks. The revenue analysis above could be extended to all of the address points in the County by assuming they could be reached via wireless, but that's a big assumption. Any complete feasibility study will need to identify antenna sites based on consumers' locations and signal propagation, as well as willingness to pay.

This highlights a final limitation: We do not know if these are actual prospective customers. An "address points" could be an uninhabited structure or even a vacant lot. No customer will pay for a connection to somewhere they will not use. This brings us back to the initial point about impacts: Digital transformation can change connectivity requirements. For example, if outdoor recreation and cultural experiences are important sources of value for CCT and Ferry County stakeholders, they should be a priority for digitalization. As Microsoft says:

The purpose of digital transformation is very simply a process to help your organization find new ways of generating value.²⁴

This process could profoundly expand and redefine stakeholders' connectivity requirements. Generating wealth and improving well-being for community members will almost surely involve new ways of connecting via and using technology. Another way of thinking about this is to ask, "How can we double or triple the return businesses and residents realize on their investment in internet access?"

²⁴ Source: <https://www.microsoft.com/en-us/industry/digital-transformation>

D. Funding Options and Programs

Ferry County is poised for a variety of funding opportunities through state and federal agencies. The following action plan is an outline of funding opportunities including high level tasking for funding opportunities that are available through 2020. Funding opportunities can be updated at any point and the County and CCT should continue to monitor the state and Federal opportunities and adjust their strategy accordingly. In particular, Congress released appropriations for CARES funding for the recent COVID-19 pandemic. Although appropriations were released, not all funding rules have been written. It is important for CCT and Ferry to continue to work on strategic business plans that will allow the County or Tribes to be poised and ready for new opportunities that align with your goals. More information can be found in the detailed funding opportunities write up in Appendix A.

State of Washington Community Economic Revitalization Board (CERB) Rural Broadband Loan/Grant

The County and BAT have been working alongside the state to prepare for a submittal to the states CERB Rural Broadband Loan. The states opportunity has a rolling deadline which allows the County to apply in coordination with the CERB's schedule. Upcoming dates include May 27th and July 15th.

CERB provides low-interest loan/grant packages to local governments and federally-recognized Indian tribes, financing the cost to build infrastructure to provide high-speed, open-access broadband service, to rural underserved communities, for the purpose of community economic development.

CERB offers loans at \$2 million maximum per project. Grants are available up to 50% of the total award, determined by the underwriting process and debt service coverage ratio (DSCR).

Ferry County should review all funding guidelines and action items and complete the following tasks prior to an application including:

- Identify the total project cost:
- Identify the Private Partner
- Identify and secure the Cash Match:(Applicants must Provide a cash match of 25% of the total project cost); and,
- Complete and Submit the Application.

State of Washington Public Works Board Broadband Grants and Loans

The state's Public Works Board (PWB) distributes grants and loans from Washington's Statewide Broadband Account, which received a \$21.5 million transfer from the Public Works Assistance Account (PWAA) for broadband capital projects, less operating costs to staff the program. Grants were available in 2019 for broadband feasibility and planning studies, for which \$450,000 was distributed across the state in 2019; no entities in Ferry County received funding through that round.

The current cycle has \$50,000 in grant money available for outreach and feasibility studies, emphasizing the importance of gathering community support for broadband initiatives. Each applicant is eligible for up to \$10,000 with a 10% match requirement. Applicants are required to show proof that they have contacted "local internet service providers near the proposed project area to request their plan to upgrade broadband service in the project area to speeds that meet or exceed the state's definition of

broadband service within the time frame of the proposed project” a minimum of six weeks prior to submitting the application.²⁵

This funding window is open February 14 – June 1, 2020 and could help fund a feasibility study, particularly for the Colville Tribes. To apply for this opportunity, the Tribes should:

- Identify the specific area to be covered in the feasibility study;
- Prepare the narrative enumerating goals of the project;
- Collect documentation of community support;
- Submit documentation showing that local ISPs have been contacted about their plans;
- Identify the Scope to be completed; and
- Complete and Submit the Application

A Broadband Construction Loan and Grant cycle is also coming soon, which could support many of the recommendations of this study. Details of the requirements, available funds, and dates are not yet published in the PWB’s website, but the BAT and Tribes should continue conversations with Shelley Westall, PWB’s Program Director, for information about this opportunity.

Indian Energy and Economic Development: National Tribal Broadband Grant

As the Colville tribes wrap up their study with the County as well as the parallel study with Okanogan County, they should consider applying for funding to support a solo feasibility study that will specifically drive the strategy and investment for the Colville tribes. The Indian and Energy and Economic Development Agency, is soliciting proposals from Indian Tribes, as defined at 25 U.S.C. § 5304(e), for grant funding to hire consultants to perform feasibility studies for deployment or expansion of high-speed internet (broadband) transmitted, variously, through digital subscriber line (DSL), cable modem, fiber, wireless, satellite and broadband over power lines (BPL).

Grants are funded to Tribal agencies in amounts ranging from \$40,000 - \$50,000. The tribes should review all funding guidelines and action items detailed in the FOA and complete the following tasks prior to an application including:

- Identify the specific area to be covered in the feasibility study;
- Prepare the Narrative surrounding why the study is necessary;
- Identify the consultant to be hired by the tribes;
- Identify the Scope to be completed by the consultant; and
- Complete and Submit the Application

FCC Rural Digital Opportunity Fund - Auction 904

To follow up with the FCC’s Connect America Fund, the FCC has launched a new opportunity to bridge the digital divide. The reverse auction 904 or Rural Digital Opportunity Fund (RDOF) is a \$20B fund aimed at servicing unserved and underserved census blocks with less than 25Mbps/3Mbps broadband services available. Census blocks and groups have been identified by the FCC. Funding is done by two phases a short form and long form. Short forms are expected to be submitted summer of 2020 and long form deadline will be completed by the deadline of October 22,2020.

As shown on the maps below, there are few areas outside of Colville Tribal lands that are eligible for RDOF in Ferry County (eligible areas are shaded in blue). No locations in the northern part of the County are

²⁵ <https://www.commerce.wa.gov/building-infrastructure/pwb-broadband/>

eligible. Therefore, the Tribes are the most likely entity to receive this funding, possibly in partnership with a service provider that intends to serve these areas. The County could also consider applying for small eligible areas outside of Tribal lands in the south of the County.

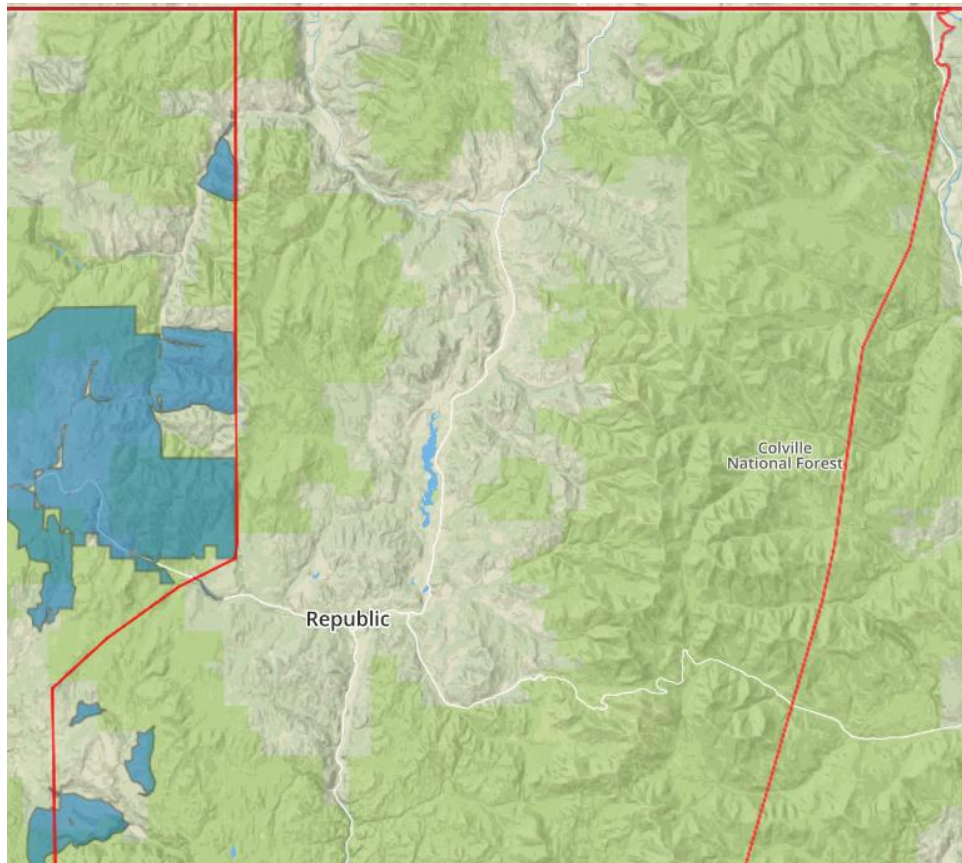


Figure 5-5. RDOF Eligible Areas, Northern Ferry County

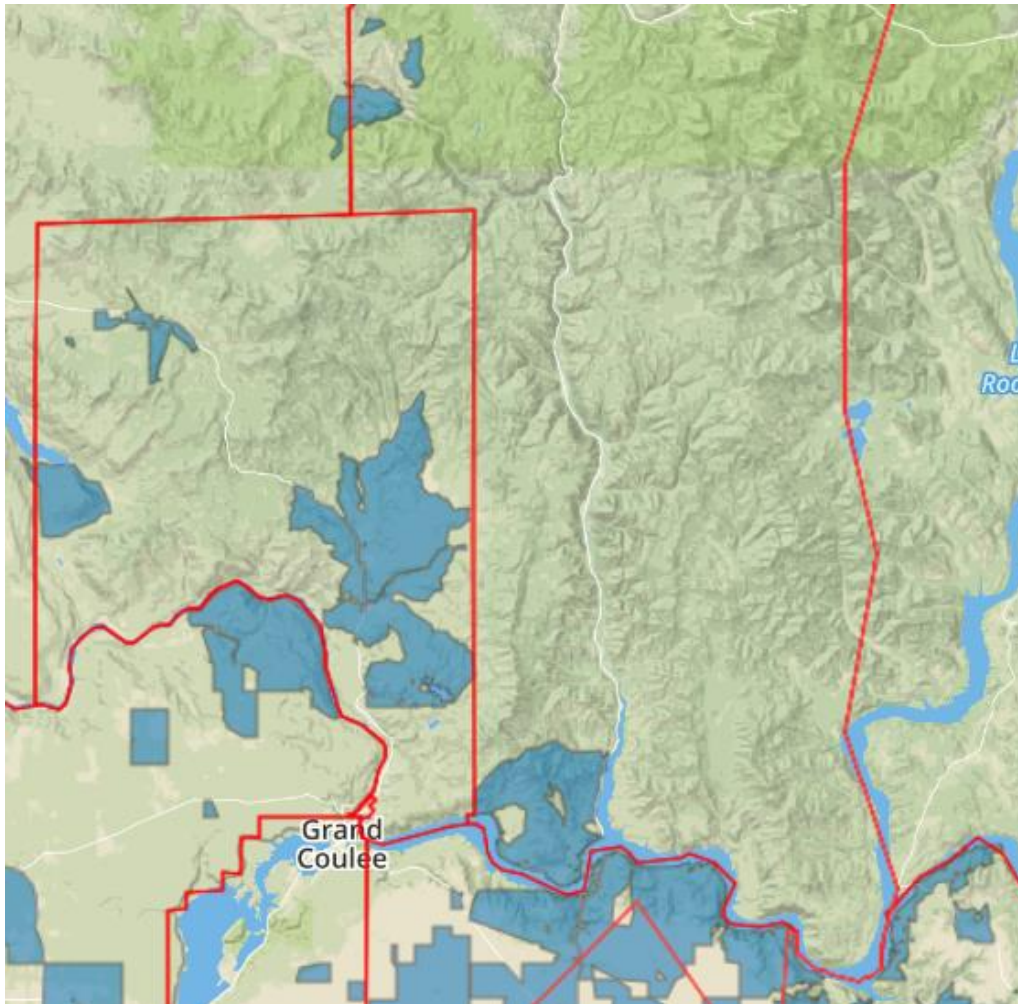


Figure 5-6. RDOF Eligible Areas, southern Ferry County, including Colville Reservation

The BAT should review all funding guidelines and action items detailed in the FOA and complete the following tasks prior to an application including:

- Review Eligible Census Blocks in County and Tribal Territory;
- Identify reimbursement amounts for census blocks;
- Identify service provider to go after funding;
- Submit short form application; and
- Complete and Submit long form application

USDA - RUS ReConnect

ReConnect offers three types of funding options for broadband infrastructure – grants, grant and loan combinations, and low interest federal loans – to connect rural families, businesses, farms, ranches, schools, libraries, and public safety facilities to modern, high-speed internet.

Funds can be used to construct, improve, and acquire facilities that provide internet services to customers' premises, with reliable technologies that are suitable for the type of rural community and the type of high-speed internet use.

Eligible applicants include an Indian tribe or tribal organization, a state or local unit of government, or other legal entity, including cooperatives, private corporations or limited liability companies organized on a for profit or not-for profit basis.

- Grant awards capped at \$25 million. Matching contribution required for 25% of project cost. 100% of serving area must be unserved with broadband at the statutory speed.
- Grant/loan awards capped at \$25 million in grant funds, \$25 million in direct federal cost of money loans. No match required. 90% of serving area must be unserved with broadband at the statutory speed.
- Loan awards capped at \$50 million. No match required. Direct federal cost of money loans. 90% of serving area must be unserved with broadband at the statutory speed.

The ReConnect grant is a highly competitive federal opportunity based on scoring points. Funding is appropriated for 2021 at the current amount of \$500M. Rules and application deadlines should be released fall of 2020. The County should review all funding guidelines and action items detailed in the FOA and complete the following tasks prior to an application including:

- Identify PFSA's and Scoring Points;
- Identify Partner;
- Create Business Plan and Financials;
- Identify Project Costs/Cash Match; and
- Develop Application Upon Funding Release

Economic Development Agency, Economic Adjustment Assistance Program, CARES Act

The CARES Act appropriated additional funding to the tune of 1.5B for the Federal Economic Development Agencies Economic Adjustment Assistance Program. The EAA money is broken down for regions with the Seattle region appropriated \$236M. No funding deadline exists, and the funding will be highly competitive to local and tribal governments as well as universities. Thoroughly read the NOFA, contact your regional representative, and be sure:

- Review Regional CEDS or Economic Strategic Plan;
- Identify Partner;
- Create Business Plan and Financials;
- Identify Project Costs/Cash Match; and
- Develop Application Upon Funding Release

Other Funding Opportunities

Several other funding opportunities will be available in 2021 or can be applied for on a revolving basis, as detailed in Appendix A. They include but are not limited to:

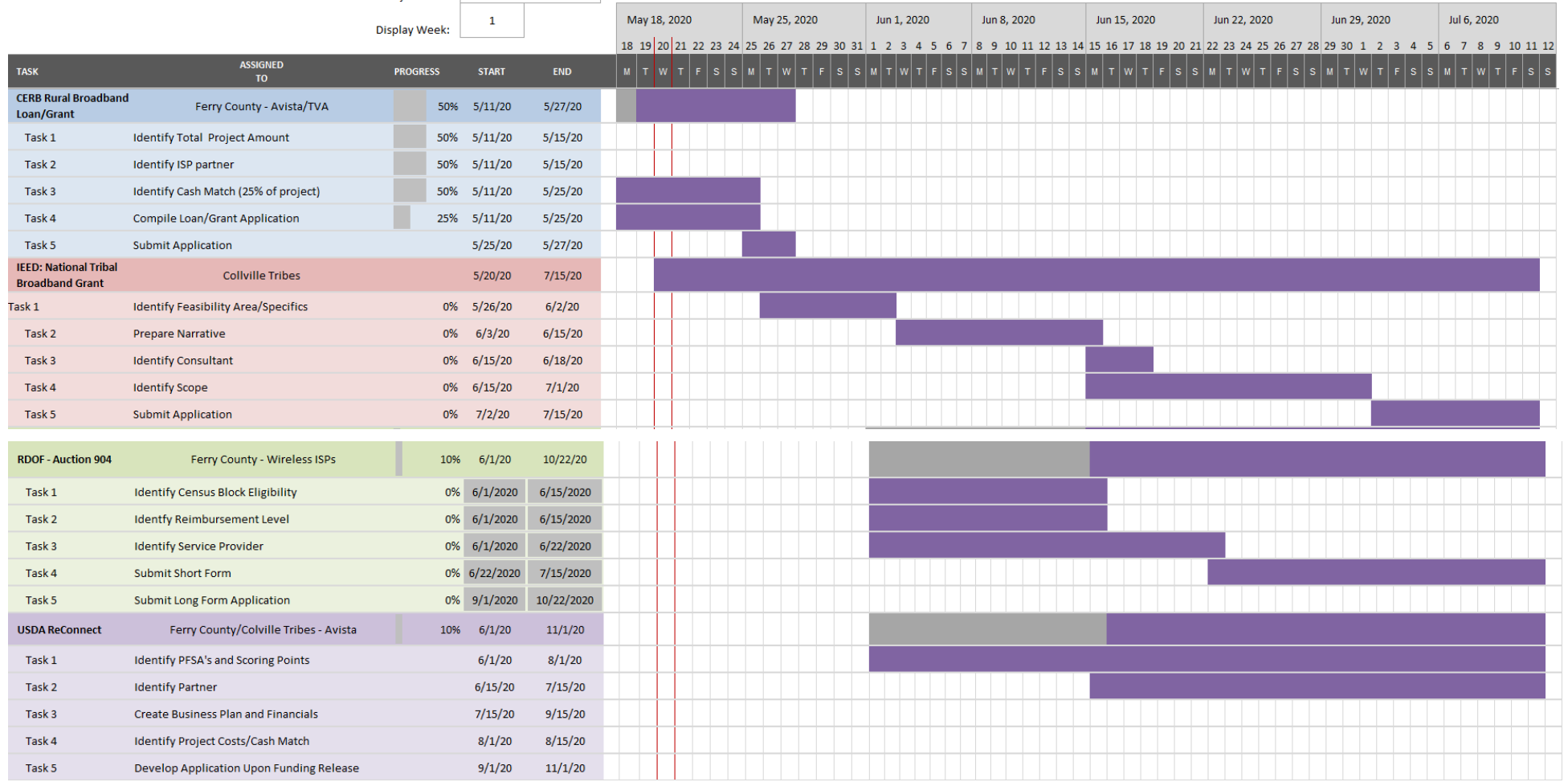
- USDA, RUS – Smart Grid Loan
- USDA RUS – Distance Learning and Telemedicine Grant
- USDA RUS – Future Middle Mile Funding Opportunity (Rules not yet written)
- Economic Development Agency – Rural Development Enterprise Grant

The Gantt chart below displays approximate timelines for each opportunity as well as most probable agencies to win funding.

Figure 5-7. Grant and Funding Opportunities Gantt Chart

Ferry County Grant/Funding Opportunities

Project Start:
 Display Week:



Display Week:

TASK	ASSIGNED TO	PROGRESS	START	END	May 18, 2020							May 25, 2020							Jun 1, 2020							Jun 8, 2020							Jun 15, 2020							Jun 22, 2020							Jun 29, 2020							Jul 6, 2020						
					18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12
					M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S
CARES ACT - EDA Funding	Ferry County & Colville Tribes	%	5/11/20	7/1/20	[Gantt bar from 5/11/20 to 7/1/20]																																																							
Task 1	Reach out to EDA Contact for Washington State	100%	5/11/20	5/15/20	[Gantt bar from 5/11/20 to 5/15/20]																																																							
Task 2	Outline Project and Phases	0%	5/15/20	5/22/20	[Gantt bar from 5/15/20 to 5/22/20]																																																							
Task 3	Apply for funding to cover business and operations plan, design and engineering	0%	5/22/20	5/29/20	[Gantt bar from 5/22/20 to 5/29/20]																																																							
Task 4	Submit Application		5/29/20	5/30/20	[Gantt bar from 5/29/20 to 5/30/20]																																																							
RUS Electric Smart Grid Loan	Avista/Ferry Co PUD																																																											
Task 1	Engage in Discussions with Utilities	50%	5/30/20	6/3/20	[Gantt bar from 5/30/20 to 6/3/20]																																																							
Task 2	Engage in Discussions with RUS	50%	6/1/20	6/6/20	[Gantt bar from 6/1/20 to 6/6/20]																																																							
Task 3	Compile Application Documents		6/6/20	6/3/20																																																								
Task 4	Submit Application																																																											
Future/2021 Funding Opportunities																																																												
Future RUS Middle Mile Funding		0%	6/1/20	10/22/20	[Gantt bar from 6/1/20 to 10/22/20]																																																							
Task 1	Awaiting Funding Rules - Expected late 2020		6/1/2020	6/15/2020	[Gantt bar from 6/1/2020 to 6/15/2020]																																																							
EDA - Rural Developmet Enterprise Grant			2/1/21	4/1/21																																																								
Task 1	Contact EDA Representative for Tentative Funding Information																																																											
Distance Learning & Telemedicine			2/1/21	4/1/21																																																								
Task 1	Contact RUS Representative for Tentative Funding Information																																																											

E. Conclusions About the Business Case

Many details need to be further examined to develop a complete business case. The willingness of private entities to partner with public agencies in Ferry County opens several possibilities for expanding broadband. The largest uncertainty is the public sector's role, particularly in the portions of the County outside the Reservation. Although multiple funding sources exist, there is no clear public entity stepping forward to defray the costs of infrastructure development in these areas. Without a public agency to act as a partner and champion, a private provider would need to cover the entire network cost. Providers could go after some of the grants and low-cost loans discussed above without a public partner but this would (a) reduce their chances of getting the funding and (b) foreclose a provider-neutral approach for access to network infrastructure. In the south of the County, the CCT appears to be a ready public partner for broadband development on the Reservation, providing a solid foundation for a broadband business case there.

The remote, rural nature of the area to be served creates uncertainty for the business case, too. The level of effort necessary to serve customers and the prospective customers' willingness to pay for service are uncertain beyond probability that requirements will be highly varied. This issue interacts with the uncertainty about public sector role, particularly for radio access network sites. The public sector could proactively identify and develop radio sites based on market opportunities, public requirements, and signal propagation, which would reduce providers' barriers to entry. Numerous (84) survey respondents said they would be willing to host antenna sites on their property. Backhaul is the other big issue, and having a public entities as "anchor tenants" to share backhaul costs could strengthen the business case to providers.

From the broader business planning perspective, there are several major gaps. Most of these gaps would be filled in by each provider, presuming they're able to build a stronger business case. Community stakeholders, particularly County and Tribal governments, could help. Executives and management for most providers will likely be located outside the area. Having locally based staff would enable providers to be more responsive and create direct, positive economic impacts for community. Local stakeholders can make the business case stronger cultivating economical facility and workforce options for the providers.

Market uncertainties should also be explored further. Marketing could be a challenge for providers as they decide how internet access services will be positioned and promoted in the community. Consumers may be cynical about telecom companies due to past experience or they may be dubious about the quality and value of the service. Community stakeholders can promote and support broadband, thereby increasing take rate and strengthening the business case for providers.

These uncertainties should be analyzed in a feasibility study, particularly for the CCT, which already owns fiber and is well positioned to receive funding for expansion of its network assets. Such a study would determine what role CCT should pursue in the maintenance and operations of its infrastructure and the provision and marketing of services on the reservation and beyond.

The larger opportunity for local leaders is to recognize that the network is critical for economic development and invest accordingly. On one level, fiber is like the industrial park of the 21st Century: Communities without it readily available simply won't get major business investment. On another level, established local businesses must fully capitalize on network connectivity to survive and prosper, and most don't have the knowledge or resources necessary to do this. The overarching, capstone issue is workforce: Technical skills are essential for businesses to succeed. Proactive investments in workforce skills will boost the impacts and value of network infrastructure, as well as make it more practical for providers to hire local.

VI. Action Plan and Next Steps

The critical question for leaders of the Confederated Colville Tribes and Ferry County is, “What is the public sector’s role in broadband development.” While there are numerous private providers actively planning to serve the area, they will invest based on their business goals and the interests of their owners. Based on the current situation, these goals and interests have not included consistent, reliable access to true broadband throughout the County and Reservation. This action plan has laid out the case and resources for broadband development. The first, critical action is a decision about what local governments are able and willing to do about the situation. As of the completion of this report, the Tribes were planning to lead broadband development on the Reservation and were open to taking a similar role for the entire County. A memorandum of agreement was being actively discussed by the County and the Tribes as this report was finalized.

There are financial resources—public and private—available for broadband development. If the County and Tribes want to tap these resources, they must have organizational capacity to apply for, receive, and disburse funds. Local leaders must establish governance to track resources and activities. Someone has to ensure the resources are used to actually build infrastructure and provide access. Currently, private providers do this for themselves, which generates overhead and results in fragmented investments and uneven availability of sub-par services.

Ferry County’s BAT should also engage with other potential regional partners, especially Okanogan County, about a broader regional plan. A shared, collective vision for how the regional backbone in Ferry County could play into a larger effort across a more expansive geography increases the availability of funding opportunities, financial and organizational resources, and potential partnership options. Conversations with other counties and tribal entities about the roles they are taking to expand broadband could also provide clarity about the roles of public agencies in Ferry County.

Only after these roles and functions have been established with clear leadership support and oversight can broadband development planning begin in earnest. A feasibility study will be necessary to determine exactly where, when, and how private providers will invest and what role public entities should play. To the extent that public funds are required to catalyze deployment of private services, there should be clear public ownership of assets, which means those assets will need to be managed and maintained. If private companies use those assets, that must be tracked. If it is deemed appropriate or necessary to establish some new enterprise to provide services, that organization will need to be financed, managed, and staffed. A feasibility study will detail all of these options, and lead directly to clear understand of who will do what, when and where, to develop broadband for the County and Reservation.

The feasibility study should specify the infrastructure and services to at least 70%, including agreements with partners and local government policy changes as well as finalizing network routes and sites. The study should establish pole attachment agreements with Avista and Ferry County PUD. Backhaul and interconnection services from NoaNet must be fully defined by the feasibility study. Private providers’ access infrastructure should be designed to the point that facility requirements—radio access network antenna sites, fiber backbone access and aggregation sites, pole attachment, and easements for burying fiber—can be described in detail. This level of detail is necessary for proposals to fund the final 30% design, which would include detailed engineering, equipment specifications, and bills of materials, can be completed. The complete design should be incorporated into actual deployment and management plans, which must also be detailed in the feasibility study.

The output of the feasibility study is essentially a broadband business plan (or plans). Ideally, the study process builds local capacity to execute the plan. For this to happen, top local leaders must be actively involved in the study as members of a board, commission, or task force. At the end of the feasibility study, people and resources should be in place to actually build and operate the infrastructure. This would enable local governments to step right into the role(s) defined based on this action plan and effectively tap funding opportunities. Magellan Advisors recommends that the County and Tribes actively explore financing options and pursue grant funding ahead of and parallel to a feasibility study. The study should generate detailed information to apply for, receive, and track these funds but there’s no reason to wait for this work to be complete before actions are taken to acquire financial resources.

Beyond the next steps laid out above, we recommend a number of actions to begin detailing the network infrastructure and services. All of these tasks should be addressed as part of the feasibility study so any work on them in the near future will feed into and support that study. A lot of the work can be done before the study even starts. The key outputs of these next steps are a list of prospective sites for network infrastructure, including general information about easements, poles, towers, and other facilities that might be used for broadband development. The other outputs of next steps, and inputs to the feasibility study, are initial decisions about broadband system(s) operations, market development, and how services will be promoted and supported. These lead directly to the final, big step of creating a detailed, low-level design and actually building the network.

Representatives of the Tribes should begin reviewing their properties and dialoging with residents of the Reservation about where infrastructure might be located. Ferry County personnel should undertake a similar process for areas outside the Reservation. Working relationships should be established between these broadband planners and providers. Generally, these three groups—customers, planners, and providers—need to dialog about what areas and specific customer sites should be connected. It may be counterproductive at this stage to discuss *how* they will be connected. Instead, focus on development goals and service objectives to build these relationships. It is also important to focus on the functional, operational role of various sites on the network rather than the technology that will be deployed at those locations.

Much of the final broadband business plan(s) may be owned by providers, meaning any such plans would be confidential and proprietary. Remember, while communities want more investment by more investors, broadband providers are often head-to-head competitors, fighting for customers, market share, and revenue. The public broadband plans should be to either support all providers equally or identify a limited set of provider partners based on well-defined criteria. The public portion of the broadband business plan—which might be referred to as a “broadband development plan” to differentiate the public sectors role as catalyst and supporter from the private sector’s role serving customers—should be totally open and transparent, and must include governance. So, for example, if public resources are allocated to make sure everyone has access, governance would ensure those resources aren’t concentrated in a particular area or limited to customers of a particular provider.

Magellan Advisors recommends the Confederated Colville Tribes and Ferry County collaborate on these actions wherever possible, and closely coordinate efforts where it makes sense to work separately. Remember, that the larger the market opportunity and lower the barriers to providing services, the greater the investment and better outcomes that will result. We also recommend the County and Tribes approach local broadband development as part of a regional opportunity by collaborating with neighboring jurisdictions. There are abundant resources, including private companies ready to partner, available for broadband development. Close coordination of methodical action by local leaders will ensure the Confederated Colville Tribes and Ferry County get these resources and achieve goals for broadband development throughout the area.

F. Recommendations and Next Steps

1. Address asset ownership
 - a. CCT fiber backbones in southern area
 - b. No clear owner in northern area; possibly CCT (Discussions were on-going as this report was completed).
2. Conduct feasibility study for regions with clear opportunity for public investment, especially the Confederated Colville Tribal area, and develop high-level design
3. Open conversations about a regional approach with Okanogan County and others including Stevens County, Spokane County, the Spokane Tribes, Lincoln County, and Grant County
4. Establish agreements with partners
 - a. Avista and Ferry County PUD poles
 - b. NoaNet backhaul and interconnection
 - c. Providers’ access infrastructure
5. Pursue public funding and develop other financing

6. Identify radio access network antenna sites
7. Specify aggregation and interconnection sites
8. Plan for operations, marketing and promotions
9. Create low-level design and build network

Appendix A. Funding Source Details

With the conclusion of the grant and loan awards established by the American Recovery and Reinvestment Act of 2009 (P.L. 111-5), two primary sources of ongoing federal funding for broadband infrastructure remain:

The Rural Utilities Service (RUS) Telecommunications Program of the U.S. Department of Agriculture for Broadband Network infrastructure and the RUS Electric Program for Electric Smart Grid Networks, and the Universal Service Fund (USF) program under the Federal Communications Commission (FCC).

In addition to regular fiscal year appropriations to USDA-RUS, the Farm Bill appropriates and structures funding for broadband infrastructure and broadband-enabled services for rural areas. The Farm Bill must be reauthorized by Congress approximately every five years.

Other sources of funding may include Congressional appropriations to the U.S. Department of Commerce for Public Works and Economic Adjustment grants to areas impacted by unexpected events, including extreme weather events, military base closings, and closure or downsizing of major employer facilities. The Department of Housing and Urban Development (HUD) may allocate funding from appropriations for support in disaster affected areas to infrastructure resiliency projects to bury electric and communications lines.

Other funding for broadband infrastructure and services may be appropriated to the Institute for Science and Museum Services, the Department of Transportation, the Defense Department, the Department of Military Construction and Veterans Affairs, and the Department of Health and Human Services.

A. Federal Funding Sources

United States Department of Agriculture (USDA) Rural Development

USDA Rural Development is committed to improving the economy and quality of life in Rural America. Rural Development has a multi-billion-dollar loan portfolio and administers billions in loans, loan guarantees, and grants through its programs. Rural Development helps rural individuals, communities and businesses obtain needed financial and technical assistance to address diverse and unique needs through specific programs.

Rural Development programs support such essential public facilities and services as water and wastewater disposal systems, housing, health clinics, emergency service facilities, electric service and telephone/broadband communications service. Rural Development promotes economic development by supporting loans to businesses through banks, credit unions and community-managed lending pools. It offers technical assistance and information to help agricultural producers and cooperatives get started and improve the effectiveness of their operations. In addition, Rural Development provides technical assistance to help communities undertake empowerment programs.

Rural Utilities Service

USDA's Rural Utilities Service (RUS) administers programs that provide much needed infrastructure or infrastructure improvements to rural communities. These include water and waste treatment, electric power and telecommunications and broadband services. All of these services play a critical role in helping to expand economic opportunities and improve the quality of life for rural residents.

Utilities programs connect rural residents to the global economy by:

- Increasing access to broadband and 21st century telecommunications services.
- Funding sustainable renewable energy development and conservation.
- Financing reliable and affordable electric systems.
- Working to integrate electric smart grid technologies.
- Developing reliable and affordable rural water and wastewater systems.

These investments support the nation's long-term prosperity by ensuring that rural communities have the infrastructure to compete in the global economy.

Programs Administered by the Rural Utilities Service (RUS)

1. USDA - Rural Utilities Service - Rural eConnectivity Pilot Program (ReConnect)

Minimum Broadband Service: RUS uses this measurement to determine whether a proposed funded service area is served or unserved. Until otherwise revised in the Federal Register, the minimum data transmission rate that qualifies as Minimum Broadband Service is ten (10) megabits per second (Mbps) downstream and one (1) Mbps upstream (written as "10 Mbps / 1 Mbps") for both fixed and mobile broadband service. RUS will determine that Broadband Service does not exist for areas with no broadband access or where access is less than 10 Mbps / 1 Mbps. (currently 10/1 Mbps but expected to be increased to 25/3 in next funding opportunity).

Use of Funds: ReConnect offers three types of funding options for broadband infrastructure – grants, grant and loan combinations, and low interest federal loans – to connect rural families, businesses, farms, ranches, schools, libraries, and public safety facilities to modern, high-speed internet.

Funds can be used to construct, improve, and acquire facilities that provide internet services to customers' premises, with reliable technologies that are suitable for the type of rural community and the type of high-speed internet use.

Eligible Entities: Eligible applicants include an Indian tribe or tribal organization, a state or local unit of government, or other legal entity, including cooperatives, private corporations or limited liability companies organized on a for profit or not-for profit basis.

- Grant awards capped at \$25 million. Matching contribution required for 25% of project cost. 100% of serving area must be unserved with broadband at the statutory speed.
- Grant/loan awards capped at \$25 million in grant funds, \$25 million in direct federal cost of money loans. No match required. 90% of serving area must be unserved with broadband at the statutory speed.
- Loan awards capped at \$50 million. No match required. Direct federal cost of money loans. 90% of serving area must be unserved with broadband at the statutory speed.

Eligible Areas: Competitive awards based on scoring points. Rural unserved areas with greater numbers of farms, community support organizations and businesses will be ranked higher.

- Will not fund proposals to serve areas currently served by an existing RUS borrower or by a Connect America Fund Phase II Auction winner. A waiver may be requested if the borrower or CAF II auction winner is not meeting statutory requirements for 10/1 Mbps service provision.
- Ninety percent of the households served by any project funded through this program must be unserved or underserved with 10Mbps broadband downstream and 1Mbps upstream.
- Any entity receiving funds from the program is prohibited from overbuilding an existing RUS borrower.
- No more than 4% of funds received through the program can be used towards administrative costs.

Funding Availability: Availability for Funding year 2020: \$550M

Annual Application Window: Applications accepted until April 15, 2020. Appropriations for 2021 include proposed \$500 M plus COVID- 19 Stimulus addition of \$100M.

Maximum Grant/Loan Amount: \$25M. Matching funds of at least 25% from non-federal sources are required for grant applications.

Additional Information: Website: <https://www.usda.gov/reconnect>

2. USDA - Rural Utilities Service Distance Learning Telemedicine (DLT) Grant Program

DLT Program provides financial assistance to enable and improve distance learning and telemedicine services in rural areas. Targets rural communities of 20,000 or less to overcome the effects of remoteness and low population density.

Use of Funds: DLT grant funds support the use of telecommunications-enabled information, audio and video equipment, and related advanced technologies by students, teachers, medical professionals, and rural residents. These grants are intended to increase rural access to education, training, and health care resources that are otherwise unavailable or limited in scope. DLT won't pay for broadband connectivity but will pay for equipment and inside wiring schools and rural hospitals/clinics for broadband service including:

- Acquisition of eligible capital assets, such as:
 - Broadband transmission facilities
 - Audio, video and interactive video equipment
 - Terminal and data terminal equipment
 - Computer hardware, network components and software
 - Inside wiring and similar infrastructure that further DLT services
- Acquisition of instructional programming that is a capital asset
- Acquisition of technical assistance and instruction

Eligible Entities

- Most State and local governmental entities
- Federally-recognized Tribes
- Non-profits
- For-profit businesses
- Consortia of eligible entities

Funding Availability: The Administration's FY2020 \$71.7M

- Highly competitive grant awards.
- Grant Window Opened Feb. 10 2020 Closes April 10 2020
- Awards can range from \$50,000 to \$500,000. A minimum 15 percent match is required and cannot be from another federal source.

3. Electric Program Smart Grid Loan Program

The RUS Electric Program has a \$5.0B annual loan budget for financing electrical infrastructure in rural areas, including Smart Grid networks. The Electric Program makes loans to borrowers for fully integrated “Smart Grid” purposes, including fiber-optic network infrastructure from electrical generation facilities directly to the meters of electric service customers. Smart Grid capabilities can improve reliability, promote energy efficiency, enhance grid security, advance safety, provide security, reduce pollution and restrain consumer electricity costs. It is the policy of RUS to promote smart grid deployment among all electric utilities serving rural consumers.

It is also the policy of RUS to promote the deployment of broadband services in rural areas. The RUS Electric Program and the RUS Telecommunications Program will work together to find innovative ways to facilitate joint efforts between Electric Program and Telecommunications Program borrowers to provide Smart Grid and broadband capabilities in shared service areas.

In areas where the electric utility may also provide broadband service to electric customers, the RUS Electric Program and Telecommunications Program will work together to provide financing for eligible components for both purposes in one concurrent loan.

In areas where the electric utility may not provide retail broadband service to electric customers, a public partnership with a non-profit provider (e.g. cooperative) or a private sector provider should be considered.

Uses of Funds: All facilities receiving federal financing must be used for a public purpose.

Funds may be used to finance:

- Maintenance
- Upgrades
- Expansion
- Replacement of distribution, sub-transmission and headquarters (service, warehouse) facilities
- Energy efficiency
- Renewable energy systems
- Fiber-optic Smart Grid Fiber-to-the-Meter (FTTM) Communications Networks
- Electric Program borrowers seek to enhance the use of fiber-optic networks for Smart Grid deployments to offer their customers additional services such as high-speed consumer broadband service.

Smart grid and broadband services are separate and distinct loan purposes, even though the network components are the same.

RUS will ensure that statutory boundaries between programs are respected, and unnecessary duplication of federal funding avoided, in cases where a converged fiber infrastructure can be used for multiple purposes.

While the Electric Program can fully fund Smart Grid infrastructure, it cannot solely finance the delivery of consumer broadband services. If an Electric borrower (or applicant) were to seek Electric Program funding solely for the purpose of providing broadband services (with no Smart Grid elements); the application would be rejected by the Electric Program because the application seeks to use Electric Program funds to finance an ineligible purpose. In that case, the borrower would be referred to the Telecommunications Program for further consultation.

Similarly, in cases where Electric Program borrowers seek to provide consumer broadband services in addition to Smart Grid capabilities, the borrower cannot use Electric Program funding for the enhancements to the Smart Grid infrastructure necessary only to deliver consumer broadband services. The borrower can self-fund, or use non-Electric Program financing, including RUS Telecommunications Program financing, for the enhancements necessary to provide consumer broadband services but not necessary for Smart Grid capabilities.

- Broadband network elements ineligible for Smart Grid funding include customer premise inside wiring, and gateways, routers and set-top boxes located inside the customer premise. **Elements of network infrastructure from generation facilities to electric customer meters are eligible expenditures.**
- Constraints on Electric Program Smart Grid funding may be necessary for fiber to the meter (premises) Smart Grid projects that propose broadband services in areas where there are existing RUS Telecommunications borrowers providing the services.
- Electric Program and Telecommunications Program borrowers are strongly encouraged to collaborate and cooperate in efforts to deliver Smart Grid and high-speed broadband services to rural consumers within the territories served by both borrowers.
- Electric utilities not prohibited from providing consumer broadband service by state law or corporate charter may provide broadband services to electric customers over Smart Grid network infrastructure funded by the Electric Program. In states with laws restricting electric utilities from providing retail broadband services, a non-profit (e.g. cooperative) or private-sector broadband provider partnership should be considered

Eligible Entities: Most retail distribution or power supply providers serving qualified rural areas, including:

- States, territories, local governments and government agencies
- People's utility districts
- Federally recognized Indian tribes
- Non-profits, including cooperatives and limited dividend or mutual associations
- For-profit businesses (must be a corporation or limited liability company)
- Partnerships with other federal, state, local, private and non-profit entities are encouraged

Borrowers must provide or propose to provide:

- The retail electric service needs of rural areas, or
- The power supply needs of distribution borrowers under the terms of power supply arrangements satisfactory to RUS.

Eligible Area: The law requires consideration of several factors to determine whether an area qualifies as rural for the purposes of this program.

A Rural Determination must be performed by RUS for a potential New Borrower or a Returning Borrower.

- Identifies all areas within a service territory of a borrower or applicant that are rural in comparison to areas that are not rural (i.e., urban).
- Electric facilities to be financed must provide service to Rural Electrification Act Beneficiaries (person, business, or other entity located in a rural area).
- Rural Determination is not an issue for Existing Borrowers (exclusive of certain Acquisitions, Mergers and Consolidations)

Interested electric utilities who are first-time borrowers should contact one of the area General Field Representatives (GFRs) below to request a Rural Determination from RUS.

Contacts for Electric Program State GFRs may be found at the following link:

<https://www.rd.usda.gov/contact-us/electric-gfr>

Funding Availability:

- \$5.5B in FY 2020
- Funding expected to remain level for FY 2021
- Maximum Loan Amount: No stated maximum

Loan Application Process: The Loan application process is paperwork intensive. Loan application preparation, review and approval by RUS can take from 12 months to 18 months for a new borrower.

Rural Determination by RUS is the first step.

4. New USDA RUS Future Middle Mile Funding Opportunity

The 2018 Farm Bill Reauthorization allows USDA RUS to provide grant/loan funding for middle mile infrastructure, only, for the first time. All other RUS programs require retail service provisioning to end user premises.

This program may be a good fit for Ferry County.

The rules are currently under development by the RUS Telecommunications Program, and when completed, funding must still be appropriated.

It may take as long as 12 months before a funding opportunity is announced, but should be a great benefit for rural areas where competition is restricted by control of the middle mile network by the incumbent carrier in a region.

5. Leveraging the Water & Waste Disposal Loan & Grant Program

Purpose: This program provides funding for clean and reliable drinking water systems, sanitary sewage disposal, sanitary solid waste disposal, and storm water drainage to households and businesses in eligible rural areas.

The program helps very small, financially distressed rural communities extend and improve water and waste treatment facilities that serve local households and businesses. Good practices can save tax dollars, improve the natural environment, and help manufacturers and businesses to locate or expand operations.

RUS Water and Wastewater disposal loans and grants may be leveraged to co-locate broadband conduits during trenching. Approximately 80% of the cost of underground network deployment is in the trench. RUS Broadband programs may provide grants for materials and labor to co-locate the conduits during construction.

Eligible Applicants:

- Most state and local governmental entities
- Private non-profits
- Federally-recognized tribes

Eligible Areas:

- Rural areas and towns with populations of 10,000 or less
- Tribal lands in rural areas

Type of Funding:

- Long-term, low-interest loans
- If funds are available, a grant may be combined with a loan if necessary, to keep user costs reasonable.

Contacts:

RUS State Director

A list of RUS State Directors may be found at the following link:

<https://www.rd.usda.gov/about-rd/leadership/state-directors>

Federal Communications Commission

The Federal Communications Commission (FCC) is an independent U.S. government agency. The FCC was established by the Communications Act of 1934 and is charged with regulating interstate and international communications by radio, television, wire, satellite and cable. The FCC's jurisdiction covers the 50 states, the District of Columbia, and U.S. possessions.

The Commission staff is organized by function. There are seven operating Bureaus and ten Staff Offices. The Bureaus' responsibilities include processing applications for licenses and other filings; analyzing complaints; conducting investigations; developing and implementing regulatory programs; and taking part in hearings. Even though the Bureaus and Offices have their individual functions, they regularly join forces and share expertise in addressing Commission issues. Through these offices, funding is specifically designed to meet the needs of each applicant.

Universal Service Fund

In accordance with the Telecommunications Act of 1996, the FCC established the following four programs within the Universal Service Fund, of which the Connect America Fund, Schools and Libraries and Rural Health Care Programs are focused on expanding accessible, affordable, high-speed broadband service:

- Rural Development Opportunity Fund (Formally Connect America Fund (formally known as High-Cost Support) for rural areas
- Lifeline (for low-income consumers), including initiatives to expand phone service for residents of Tribal lands
- Schools and Libraries (E-Rate)
- Rural Health Care

1. Rural Development Opportunity Fund (RDOF)

The Rural Digital Opportunity Fund is the Commission's next step in bridging the digital divide. On August 1, 2019, the Commission adopted a Notice of Proposed Rulemaking (NPRM) proposing to establish the \$20.4 billion Rural Digital Opportunity Fund to bring high speed fixed broadband service to rural homes and small businesses that lack it. On January 30, 2020, the Commission adopted the Rural Digital Opportunity Fund Report and Order, which establishes the framework for the Rural Digital Opportunity Fund, building on the success of the CAF Phase II auction by using reverse auctions in two phases.

Eligible Areas: The Phase I auction, which is scheduled to begin on October 22, 2020, will target over six million homes and businesses in census blocks that are entirely unserved by voice and broadband with download speeds of at least 25 Mbps. Phase II will cover locations in census blocks that are partially served, as well as locations not funded in Phase I. The Rural Digital Opportunity Fund will ensure that networks stand the test of time by prioritizing higher network speeds and lower latency, so that those benefitting from these networks will be able to use tomorrow's Internet applications as well as today's.

Eligibility: Wireline and wireless telephone companies seeking to participate in any of the High Cost Program support components must be designated an "eligible telecommunications carrier" ("ETC") and meet ongoing requirements by the applicable state or, in cases in which the state does not have jurisdiction over a particular type of provider, the Federal Communications Commission.

The FCC provides information about the process to become an eligible telecommunications carrier. Based on currently proposed rules, bidders will have up to 180 days after award to complete the certification process.

Use of Funds: RDOF subsidies are offered to telecommunications companies throughout the U.S. to upgrade and expand their networks as required to provision broadband service at a minimum speed of 25Mbps downstream from the Internet

to the consumer's premise and 3Mbps upstream from the premise to the Internet. Telecommunications companies accepting RDOF subsidies receive the subsidies over a period of six years – 10 years.

Funding \$16B available for Phase 1. Reverse Auction begins 10/22/2020 for eligible census blocks.

Additional Information: Website: <https://www.fcc.gov/auction/904/factsheet#deployment>

2. Universal Service Schools and Libraries Program

This program is also known as the "E-Rate" program and is administered by the Universal Service Administrative Company (USAC) under the direction of the Federal Communications Commission. When E-Rate was established in 1996, only 14 percent of the nation's K-12 classrooms had access to the Internet. Today, virtually all schools and libraries have Internet access. The FCC began updating E-rate in 2010 and in July 2014, and released the E-rate Modernization Order expanding WiFi networks in schools and libraries across America while ensuring support continues to be available for broadband connectivity to schools and libraries.

With new reforms adopted in 2014 aimed at providing tools and competitive options for purchasing fiber broadband connectivity, more schools and libraries are connected to high-speed broadband each year.

Use of Funds: The E-Rate Program provides discounts of up to 90% for broadband connectivity to and within elementary and secondary schools (public and private) and public libraries in rural and non-rural areas. Funding is provided through an annual application process with schools, libraries and consortia of schools and libraries applying for funding. A discount increase of up to 10 percentage points is available for schools and libraries in rural areas depending on the poverty level.

Schools may request funding for wireless or wireline broadband services, as well as for unbundled services including leased fiber, as follows:

- Dark Fiber Leasing
- Lit Fiber Leasing
- Dark and Lit Fiber Leasing
- Self-provisioned Services and Services provided over Third-party Networks
- Transport Only
- Internet Access Only

Schools and libraries have the flexibility to lease dark and provision their own broadband services, allowing for opportunities to share fiber-optic cable with fiber owners in the area.

Eligibility: To be eligible,

- Schools must provide elementary or secondary education as determined under state law.
- Schools may be public or private institutional day or residential schools, or public charter schools.
- Schools must operate as non-profit businesses.
- Schools may not have an endowment exceeding \$50M.
- Libraries must be eligible for assistance from a state library administrative agency.
- Libraries must have budgets completely separate from any schools (including, but not limited to, elementary and secondary schools, colleges and universities).
- Libraries may not operate as for-profit businesses.

Availability of Funding: Applications to receive funding are accepted on an annual basis. In 2015, the FCC voted to raise the E-Rate's annual spending cap from \$2.4B to \$3.9B. In the last two funding years, the E-Rate Program has funded \$5.6B in funding requests for connectivity to and within schools and libraries, including \$2.1B in support for the equipment needed to deploy WiFi to students and library patrons in all 50 states.

Additional Information:

Websites:

FCC E-rate:

<https://www.fcc.gov/general/universal-service-program-schools-and-libraries-e-rate>

USAC:

<http://www.universalservice.org/si/about/getting-started/default.aspx>

[United States Department of Commerce](#)

[Economic Development Administration](#)

Other Sources

Public Works and Economic Adjustment Grants

EDA's Public Works program helps distressed communities revitalize, expand, and upgrade their physical infrastructure. This program enables communities to attract new industry; encourage business expansion; diversify local economies; and generate or retain long-term, private-sector jobs and investment through the acquisition or development of land and infrastructure improvements needed for the successful establishment or expansion of industrial or commercial enterprises.

EDA Public Works program investments help facilitate the transition of communities from being distressed to becoming competitive by developing key public infrastructure, such as technology-based facilities that utilize distance learning networks, smart rooms, and smart buildings; multi-tenant manufacturing and other facilities; business and industrial parks with fiber-optic cable; and telecommunications and development facilities.

In addition, EDA invests in traditional public works projects, including water and sewer systems improvements, industrial parks, business incubator facilities, expansion of port and harbor facilities, skill-training facilities, and brownfields redevelopment.

Criteria for Selection:

- The project's demonstrated alignment with at least one of EDA's current investment priorities as published on EDA's website at www.eda.gov.
- The project's potential to increase the capacity of the community or region to promote job creation and private investment in the regional economy.
- The likelihood that the project will achieve its projected outcomes.
- Ability of the applicant to successfully implement the proposed project, including the applicant's financial and management capacity and the applicant's capacity to secure the support of key public and private sector stakeholders.

Funding Availability: Ongoing

Grants range from \$100,000 to 3M

CARES ACT SUPPLEMENT:

" The CARES Act (P.L. 116-136) provided EDA with \$1,500,000,000, to remain available until September 30, 2022, to "prevent, prepare for, and respond to coronavirus, ... including for necessary expenses for responding to

economic injury as a result of coronavirus.” EDA intends to make these funds available through the EAA program using the existing procedures specified in the FY20 PWEAA NOFO”

The CARES Act adds a supplemental 1.5B in additional funding to the 2020 appropriations for the EDA’s EAA grants. The Rules and regulations from above are the foundation for this funding. The funding will be divided by region:

- Seattle Regional Office – \$266,000,000

Contact: Leonard Smith, Regional Director

Wilfred Marshall

Wmarshall@eda.gov

310-348-5386

Office of Indian Energy and Economic Development: National Tribal Broadband Grant (NTBG) Feasibility Study Funding

Office of Indian Energy and Economic Development: National Tribal Broadband Grant (NTBG) Feasibility Study Funding. Office of the Assistant Secretary—Indian Affairs, is soliciting proposals from Indian Tribes, as defined at 25 U.S.C. § 5304(e), for grant funding to hire consultants to perform feasibility studies for deployment or expansion of high-speed internet (broadband) transmitted, variously, through digital subscriber line (DSL), cable modem, fiber, wireless, satellite and broadband over power lines (BPL).

Eligible Entities

- Indian Tribes, band or nation
- Alaskan Native Village, Community or regional corporation

Use of Funds

- Fund an assessment of current broadband services, if any
- Engineering assessment of new or expanded broadband services
- Estimate of costs of building or expanding
- Determination of transmission mediums
- Identification of potential funding and or financing
- Risks associated with developing a broadband network

Funding Availability: Applications due July 15th 2020, up to \$50,000 available.

Department of Transportation BUILD Program

To better address the needs of rural America, which has historically been neglected, DOT intends to award 50% of BUILD Transportation grant funding to projects located in rural areas that deliver positive benefits for these communities, consistent with the Department’s R.O.U.T.E.S. initiative. For this round of BUILD Transportation grants, the maximum grant award is \$25 million, and no more than \$100 million can be awarded to a single State, as specified in the appropriations act.

This program funds roads but will consider projects that deploy fiber at the same time as road construction. BUILD has had a large amount of funding but it's targeted primarily to roads.

Funding Availability: FY 2020 \$1B, applications due May 18th.

COVID-19 Stimulus Bill – The CARES Act

Through the recent COVID 19 crisis congress passed the CARES act to address economic impacts of the crisis. The funding bill is not an infrastructure bill but includes the following support or additions to funding for broadband, education, telehealth and tribal entities. Details of funding opportunities include:

Additional appropriations to existing broadband support programs:

In addition to regular and supplemental FY 2020 appropriations, the last COVID-19 Stimulus bill that was passed – the CARES Act - included only small incremental appropriations to existing programs, including:

- RUS Distance Learning and Telemedicine (\$25 million),
- Institute for Museum and Library Science (\$50 million),
- and an additional \$100 million for ReConnect.
- Be aware that the additional ReConnect funds prioritizes applicants in previous rounds that were not awarded due to eligibility. It also included additional funds for the CDBG program and for EDA.

Indirect Funding for broadband was included in the following authorizations:

Indirect Broadband Funding for Education:

- **Education Stabilization Fund:**

There was indirect funding that may be used for broadband service and devices for K-12 students, but it has some strings. \$13.5 billion in dedicated funding is set aside for K-12 education through an education stabilization fund, allocated to the states by formula, which may be used to improve the use of technology to support distance education.

The K-12 stabilization money could be used to provide students internet connectivity and internet-connected devices to boost access to distance learning, including for a broad range of education purposes such as special populations - English-language learners and students with disabilities, continuing remote educational programs during long-term closures, and mental-health support for students.

In order to access the state education stabilization fund, states would first have to agree to provide funding to education in fiscal years 2021 and 2022 that's at least the same as the average of their education funding over the three prior fiscal years. However, U.S. Secretary of Education Betsy DeVos could waive that requirement.

The package also requires that any state or school district getting money from the stabilization fund "shall to the greatest extent practicable, continue to pay its employees and contractors during the period of any disruptions or closures related to coronavirus."

- **Governor's Discretionary Funds for K-12 and Higher Education:**

The plan also includes \$3 billion for governors to use at their discretion to assist K-12 and higher education as they deal with the fallout from the virus.

- **Indian Schools funded by the BIA:**

\$69 million is authorized for schools funded by the BIA.

- **Indirect Broadband Funding for Telehealth:**

- Provides the Federal Communications Commission (FCC) with \$200 million to support efforts of health care providers to address COVID-19 by providing telecommunications services, information services, and devices necessary to enable the provision of telehealth services.
- Sets aside \$180 million from the \$127 billion increase in funding for the Department of Health and Human Services' Public Health and Social Services Emergency Fund to expand services and capacity for rural hospitals, including telehealth.
- Provides \$2.15 billion to the Department of Veterans Affairs for information technology uses to support increased telework and telehealth, including the purchasing of devices and enhanced system bandwidth and support.

- **Tribal Support Funds:**

In addition to the \$69 million authorized for BIA-funded schools, \$8 billion will be allocated to Tribal governments with eligible expenses through the Department of the Treasury, in consultation with the Department of the Interior and Tribal governments.

Governors and federal legislators are now in discussions for broadband funding for rural and remote areas in the next COVID-19 Stimulus, but the vehicles are still being worked out. Funding may go to FCC for an additional round of RDOF and lifeline support, and additional funding may go to existing carriers serving with less than 150,000 subscribers to be used to offer free broadband service for a period of time.

B. State Funding Sources

State of Washington Community Economic Revitalization Board (CERB)

The state of Washington Community Economic Revitalization Board (CERB) was formed in 1982 to respond to local economic development in Washington communities. CERB provides funding to local governments and federally-recognized tribes for public infrastructure which supports private business growth and expansion. Eligible projects include telecommunications including broadband.

1. Rural Broadband Program

CERB provides low-interest loan/grant packages to local governments and federally-recognized Indian tribes, financing the cost to build infrastructure to provide high-speed, open-access broadband service, to rural underserved communities, for the purpose of community economic development.

Use of Funds: Financing may be used to fund the costs of construction and planning for rural communities. Networks must be "dark" networks.

Ineligible Activities CERB may not finance projects which:

- Federally Result in retail development
- Facilitate gambling
- Displace jobs from one part of the state to another

- Are outside the applicant’s jurisdiction
- Are for equipment which would enable a public entity to provide retail telecommunications services or services that the entity is not authorized by statute to provide.
- Are for the deployment of publicly-owned telecommunication network infrastructure (“backbone”) solely for the sake of creating competitive, publicly-owned telecommunication network infrastructure.

Eligible Entities: To be eligible for a broadband loan, an applicant may be either a non-profit or for-profit organization, and must take one of the following forms:

- Cities and Towns
- Counties
- Federally Recognized Indian Tribes
- Municipal Corporations
- Quasi-Municipal Corporations
- Public Port Districts
- Special Purpose Districts

Eligible Areas: Rural counties are defined as those with a population density of fewer than 100 persons per square mile or a county smaller than 225 square miles, as determined by the Office of Financial Management (RCW 43.160.020).

Funding Availability: CERB offers loans at \$2 million maximum per project. Grants are available up to 50% of the total award, determined by the underwriting process and debt service coverage ratio (DSCR).

- Applicants must:
 - Provide a cash match of 25% of the total project cost.
 - Demonstrate feasibility with a supporting study.

Ongoing Application Windows: Applications accepted on an ongoing basis for scheduled board meetings:

<u>Tier 1 Application Deadline</u> (Tier 1 Committed Private Partner, Prospective Development)	<u>Planning & Tier 2 Application Deadline</u> (Tier 2 Committed Private Partner, Prospective Development)	<u>Board Meeting</u>
May 13, 2019	May 27, 2019	July 18, 2019
July 15, 2019	July 29, 2019	September 19, 2019
September 16, 2019	September 30, 2019	November 21, 2019
November 18, 2019	December 2, 2019	January 16, 2020
January 13, 2020	January 27, 2020	March 19, 2020
March 16, 2020	March 30, 2020	May 21, 2020
May 18, 2020	June 1, 2020	July 16, 2020
July 13, 2020	July 27, 2020	September 17, 2020
September 14, 2020	September 28, 2020	November 19, 2020
November 16, 2020	November 30, 2020	January 21, 2021
January 18, 2021	February 1, 2021	March 18, 2021
March 15, 2021	March 29, 2021	May 20, 2021

Funding Details

- Interest Rates: 1-3%
- Term: Up to 20 years

Items of Special Emphasis:

- Tier two funding must have a completed feasibility study

- **Additional Information:**

Website: <https://www.commerce.wa.gov/building-infrastructure/community-economic-revitalization-board/rural-broadband/>

State of Washington Public Works Board Broadband Grants and Loans

The state’s Public Works Board (PWB) distributes grants and loans from Washington’s Statewide Broadband Account, which received a \$21.5 million transfer from the Public Works Assistance Account (PWAA) for broadband capital projects, less operating costs to staff the program. Grants were available in 2019 for broadband feasibility and planning studies, for which \$450,000 was distributed across the state in 2019; no entities in Ferry County received funding through that round.

The current cycle has \$50,000 in grant money available for outreach and feasibility studies, emphasizing the importance of gathering community support for broadband initiatives. This funding window is open February 14 – June 1, 2020 and the maximum award per applicant is \$10,000 with a 10% match requirement.

Use of Funds: Capital Planning Budget funds for the current outreach and feasibility studies round may generally be used to pay for Professional Services for the purpose of conducting community outreach and to ascertain the likelihood of developing a plan for the expansion of broadband to the unserved in the proposed project area. Applicants are encouraged to show how they would:

1. Develop a broadband vision
2. Study the current broadband ecosystem
3. Business Planning
4. Seek Community Support or Broadband Planning Team
5. Complete an analysis and map the speeds that users are currently receiving from providers in the proposed project area.

While much of this work has already been performed on behalf of the BAT throughout the course of this study, the Tribes may consider applying for this grant to support conducting a feasibility study specific to Tribal lands.

A Broadband Construction Loan and Grant cycle is also coming soon, which could support many of the recommendations of this study. Details of the requirements, available funds, and dates are not yet published in the PWB's website, but the BAT and Tribes should continue conversations with Shelley Westall, PWB's Program Director, for information about this opportunity.

Ineligible Activities: The following costs are not eligible for reimbursement and cannot be used to match state funds:

- internal administrative activities
- project management (from any sources)
- fundraising activities
- computers or office equipment
- rolling stock (such as vehicles)
- lease payments for rental of equipment or facilities
- mortgages and property leases (including long-term).

Eligible Entities:

- Public Entities:
 - Cities and Towns
 - Counties
 - Public Port Districts
 - Public Utility Districts
 - Other Special Purpose Districts
 - Quasi-Municipal Corporations
 - Tribes
 - Nonprofit Organizations
 - Cooperative Associations
- Private Entities:
 - Limited liability corporations organized for the purpose of expanding broadband access
 - Incorporated businesses or partnerships

Scoring Criteria:

The overall application total is 100, and the minimum score to meet funding threshold is 65 points. The scoring points are divided into the following areas:

- Project overall Need Score a maximum of 65 points
 - Applicant Type of Community – Maximum Score 20 points

- Rural Community 10 points, or
- Rural Tribe 10 points, and/or
- Distressed Area with unemployment greater than or equal to 5.8%*, 10 points
- All other applicant types a total of 10 points
- Goals of Project – Maximum Score 20 points
- Documentation of Community Support – Maximum Score 35 points
- Readiness to Proceed can score a maximum of 25 points

For construction projects, there is an adjustment of 5 points from Documentation of Community Support to Readiness to Proceed. This results in both of those criteria being worth a maximum score of 30 points.

*Distressed Area unemployment requirements adjusted every April.

Funding Availability:

Overall:

- \$2 million per project loan/grant award limit with a 50% match.
- Projects in financially distressed areas and Indian country may receive up to 90% of the total project cost for a total not to exceed \$5 million.

Current Cycle:

- \$50,000 available for outreach and feasibility studies
- Max of \$10,000 aware per applicant
- 10% match requirement

Application Window: Current window is February 14 – June 1, 2020. Application windows for future rounds have not yet been announced.

Items of Special Emphasis: Applicants are required to show documentation that they have contacted “local Internet service providers (ISPs) near the proposed project area to request their plan to upgrade broadband service in the project area to speeds that meet or exceed the state’s definition of broadband service within the time frame of the proposed project. This contact must be made a minimum of six-weeks prior to the submission of an application for funding from the PWB, and documentation of this interaction must be submitted with the application.”²⁶

Additional Information: Website: <https://www.commerce.wa.gov/building-infrastructure/pwb-broadband/>

Contact: Shelly Westall , PWB Program Director – shelley.westall@commerce.wa.gov, 360-725-3162

²⁶ <https://www.commerce.wa.gov/building-infrastructure/pwb-broadband/>