



Pend Oreille PUD Community Network System Feasibility Study

Finley Engineering and CCG Consulting
September 15, 2020





Basic Study Parameters

- We quantified the cost of building fiber to the northern county that doesn't have PUD fiber today.
- The study uses the same technology used to provide broadband in the south county today, with the newer version of the technology capable of faster broadband speeds.
- Extend the current open access business model where the PUD owns the fiber network and sells access to retail service providers (RSPs).



State of Broadband in the Northern County

- The northern county has some of the worst broadband we've seen in studying rural areas across the country.
- We consider the northern county to be unserved.
- Many rural households have no option other than underperforming satellite broadband or cellular hotspots.
- There are a handful of customers connected to existing PUD fiber. A few customers have fixed wireless broadband speeds faster than 25 Mbps.
- A large number of households and businesses have broadband download speeds under 10 Mbps.
- Considering the slow speeds, we judge the exiting broadband prices in the county to be high.



Residential Survey

- Online survey. We got 848 responses (25% of all potential customers).
- 58% of homes have a broadband connection of some type today. (50% RTI, 18% fixed wireless, 17% satellite, 13% use cellular).
- Low satisfaction with current RSPs (only 15% happy with download speeds, 33% happy with customer service, and 14% happy with the value they get compared to the price they pay)
- Customers buying standalone broadband average \$105 per month. That's one of the highest numbers we've ever seen.
- 64% of respondents work at home at least part time. 59% would work from home more with better broadband.



Residential Survey (page 2)

- 25% of respondents have school age children. 69% of them said the broadband was inadequate for doing schoolwork from home.
- 84% of respondents favored the idea of expanding fiber into the northern county. Most of the rest said they needed more information.
- 61% of households said they would switch to fiber and pay the same fees they pay today.
- 42% of respondents said they would pay the connection fee to get added to the network.



Other Market Research

Business Interviews and Questionnaire

- The schools are connected to PUD fiber and have great broadband. But half of students have to drive to find WiFi to complete schoolwork from home.
- Every business except one said they are struggling with broadband issues.

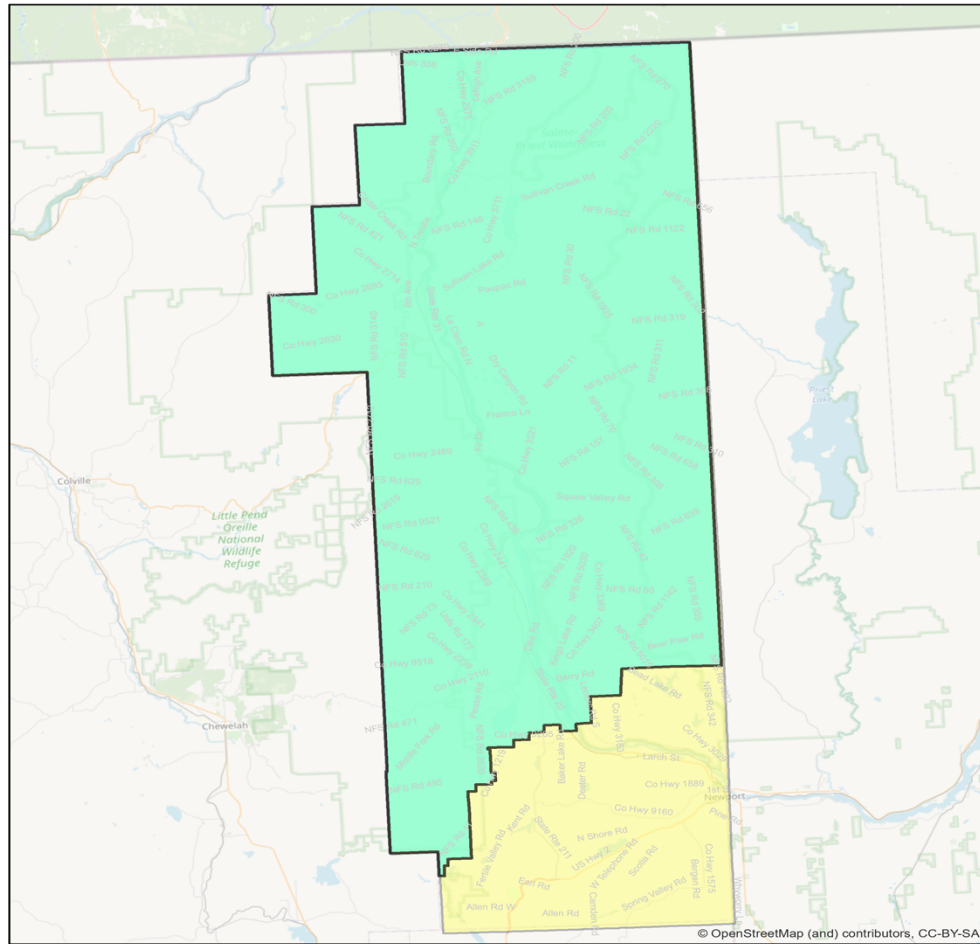
Speed Tests – Average broadband speeds:

- RTI - 3.9 Mbps download. 0.7 Mbps upload.
- Fixed wireless – 10 Mbps download, 7 Mbps upload.
- Satellite – 12 Mbps download. 708 ms latency.
- On all of these technologies there were many customers with speeds under 5 Mbps download.



Miles of Fiber Construction

	<u>Everywhere</u>	<u>Populated Areas</u>
Aerial Fiber	228 miles	40 miles
Buried Fiber	<u>103 miles</u>	<u>27 miles</u>
Total	331 miles	67 miles
Passings	3,451	1,751





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Pend Oreille
PUBLIC UTILITY DISTRICT

**Pend Oreille PUD
CNS Feasibility Study**

STUDY AREA

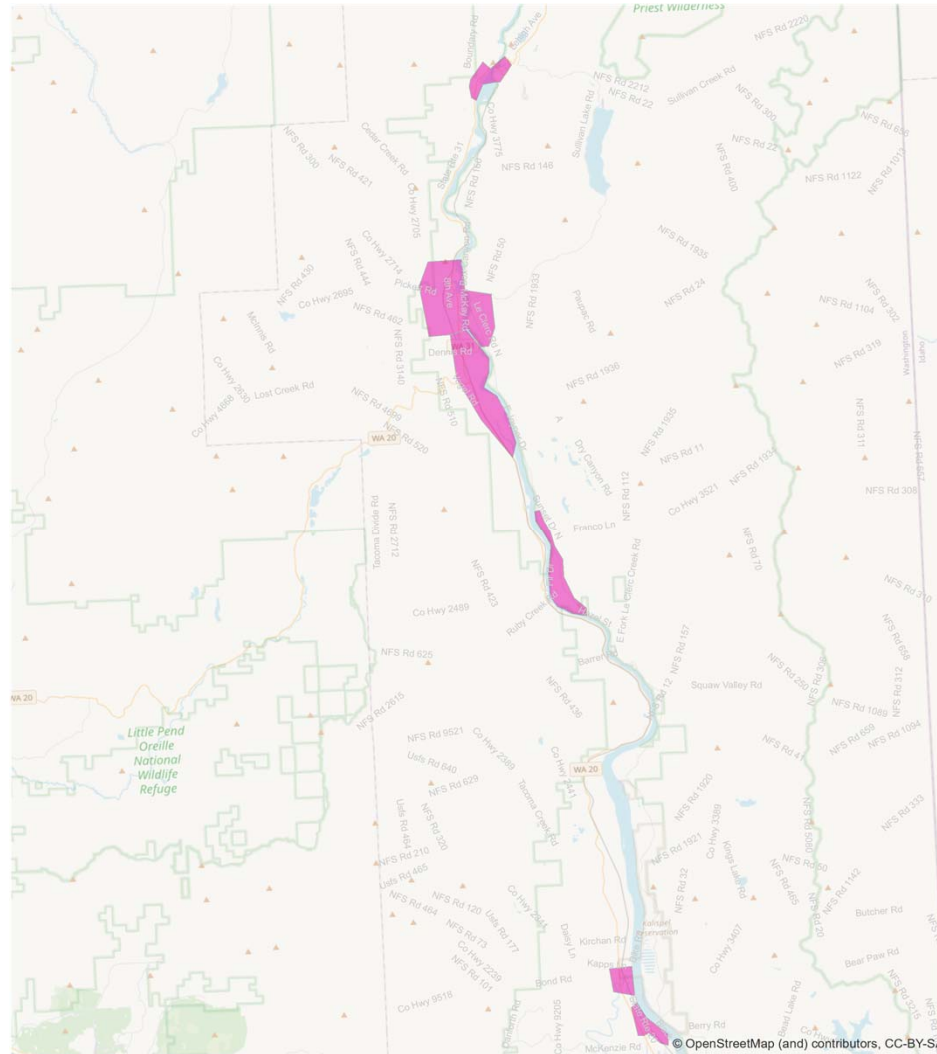
EXISTING FTTP AREA

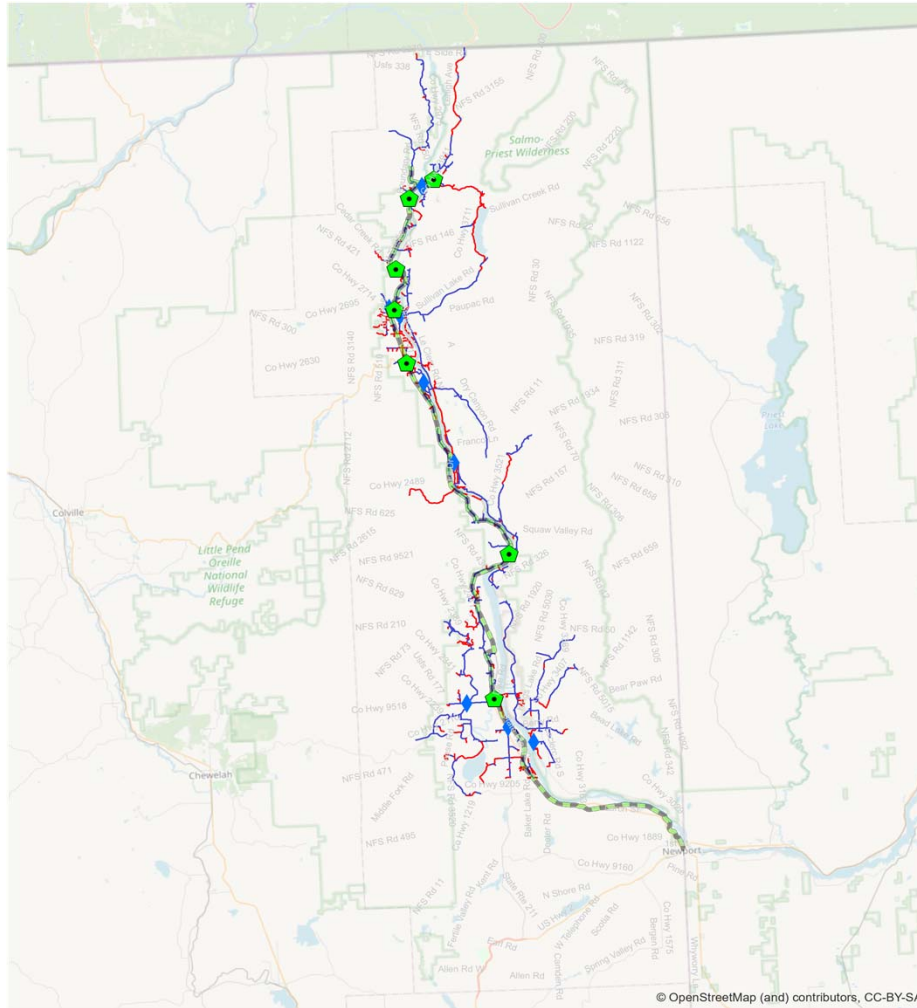


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Network Costs

To Cover 100% of Customers

	Total <u>North County</u>	Populated <u>Areas</u>
Fiber & Drops	\$14,209,465	\$3,734,748
Electronics	\$ 5,021,348	\$2,554,206
Huts/Land	\$ 738,840	\$ 691,310
Operational Assets	<u>\$ 214,500</u>	<u>\$ 214,500</u>
Total	\$20,229,153	\$7,184,764
Cost per Passing	\$ 5,862	\$4,103





Financial Results – Total North County

100% Grant Funding

- Grant to Build Everything \$20 million
- Grant to build 70% of customers \$18.7 Million
- Grant to build 50% of customers \$17.7 million

With \$5 Million Internal Loans

- Grant to Build Everything \$14.9 million
- Grant to build 70% of customers \$13.5 Million
- Grant to build 50% of customers \$12.8 million



Financial Results – Populated Areas

100% Grant Funding

- Grant to Build Everything \$6.6 million
- Grant to build 70% of customers \$5.8 Million
- Grant to build 50% of customers \$5.5 million

With \$2.5 Million Internal Loans

- Grant to Build Everything \$4.2 million
- Grant to build 70% of customers \$3.6 Million
- Grant to build 50% of customers \$3.2 million





FCC Mapping Issue

FCC Mapping Issue

- FCC maintains database of the available broadband in every Census block in the country.
- RSPs provide the broadband coverage and speed data.
- The FCC uses this data to decide which areas are eligible for grant funding (such as the current \$16.4 billion RDOF grant).
- The FCC database for Pend Oreille County shows 100% coverage of 100/100 Mbps broadband.
- Consequence – the county was offered no RDOF grant funding.



Eligible Telecommunications Carrier Issue

- Some federal grants are only awarded to retail service providers who can get Eligible Telecommunications Carrier (ETC) status.
- As a wholesale provider of fiber connections the PUD cannot get ETC status.
- The RSPs could get the status and the grant funding, but the RSPs in the county don't have the financial strength to qualify for the grants.
- This is a problem for all of the PUDs and for other open access networks.
- This is an unnecessary rule and should be changed.



Recommendations

- Work to correct the FCC databases to become eligible for FCC grants.
- Lobby for PUDs to be able to get ETC status or otherwise be eligible for grants that require it.
- Lobby for a better funding for Washington broadband grant program. Get rid of requirement that awards include loans.
- Consider building incrementally.
- Formalize contributions from customers.
- Consider a fiber marketing program.
- Make it easier for customers to pay connection fees.
- Evaluate construction methods and network topology.
- Be persistent!



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