



IRON RANGE
COMMUNITIES,
BROADBAND,
EXECUTIVE SUMMARY,
CHERRY TOWNSHIP

September, 2018

Abstract

Local governments are taking a more active role in ensuring their communities have reliable, abundant and affordable broadband services for their citizens. This report discusses the findings, survey results, capital costs and financial models and approaches for the Iron Range Communities to consider.

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EXECUTIVE SUMMARY, BROADBAND ROADMAP, CHERRY

Background

The Iron Range communities of Chisholm/Balkan Township, Hibbing, Mt. Iron/Buhl, and Cherry Township have formed a working group – the Iron Range Broadband Committee – and have hired NEO Connect to provide strategic planning for facilitation of better broadband services for the communities within the study area. Having access to very high-speed broadband and Internet services has become one of the most critical components for education, government services, economic development, healthcare, utility operations, first responders and business operations.

As part of the study, citizens were surveyed regarding their existing services, existing fiber assets were identified and mapped, and a thorough needs assessment was completed. NEO's team put together preliminary design, engineering and capital cost estimates and engaged with service providers regarding potential partnerships for solving the Iron Range's broadband challenges. A detailed report of the NEO Connect study is available along with this Executive Summary.

The Need for Better Broadband Services

The MN Employment and Economic Development Office of Broadband Development defines “served” as having access to 25 Mbps in download speeds and 3 Mbps in upload speeds, matching the FCC's definition of broadband. This is a very low bar. A Fiber to the Premise network design is capable of delivering 1000 Mbps in download and 1000 Mbps in upload speeds.

According to the data provided by the MN DEED Office, in St. Louis County, only 5.87% of the 84,783 households have access to 1,000 Mbps or Gigabit services. These households are most likely within the Duluth area. 82.33% of the County has access to 25/3 Mbps and 38.4% have access to 100/20 Mbps.

The Opportunity and the Ask

The USDA has several current programs to improve broadband services, offering more than \$700 million per year for modern broadband e-Connectivity in rural communities. In the coming months, USDA will almost double these longstanding programs with at least \$600 million of additional funds for expanding rural broadband infrastructure in unserved rural areas and tribal lands. The funds available will be in the form of grants, loans and a combination of the two.

This new funding option was created by the United States Congress in the Consolidated Appropriations Act of 2018, as an ambitious initiative to rebuild America’s infrastructure. The details of the program have not yet been released; however, with the NEO study, executable broadband plans have been developed for the Iron Range Communities that could potentially leverage the new USDA grant program.

The grant programs will most likely require a community match. Although it has not yet been announced, the percentage match requirement will be in the 15 – 50% range. Several service providers would be willing to partner with the Iron Range Communities to apply for grant funding and they are willing to contribute some capital towards the match in partnership with the communities.

Key stakeholders and local governments need to determine whether or not they would like to participate in the grant opportunity, the amount of match moneys that could be set aside for the application and the priority areas of the community that should be targeted for broadband connectivity.

With the commitment and direction from the communities, the Iron Range Broadband Committee and NEO Connect will further develop the potential projects to be targeted for grant funding.

Eligible Areas

According to the FCC’s National Broadband Map, the following areas shown in red and yellow lack broadband service of 10 Mbps in download speeds and 1 Mbps in upload speeds for the entire Iron Range region. These areas are eligible for the new grant program available through the USDA.

The number of households that would be eligible for funding, according to the FCC, are:

0-10 Mbps

Hibbing: 1022

Cherry: 8

Mtn Iron: 169

Chisolm: 154

Buhl: 40

No Broadband Service

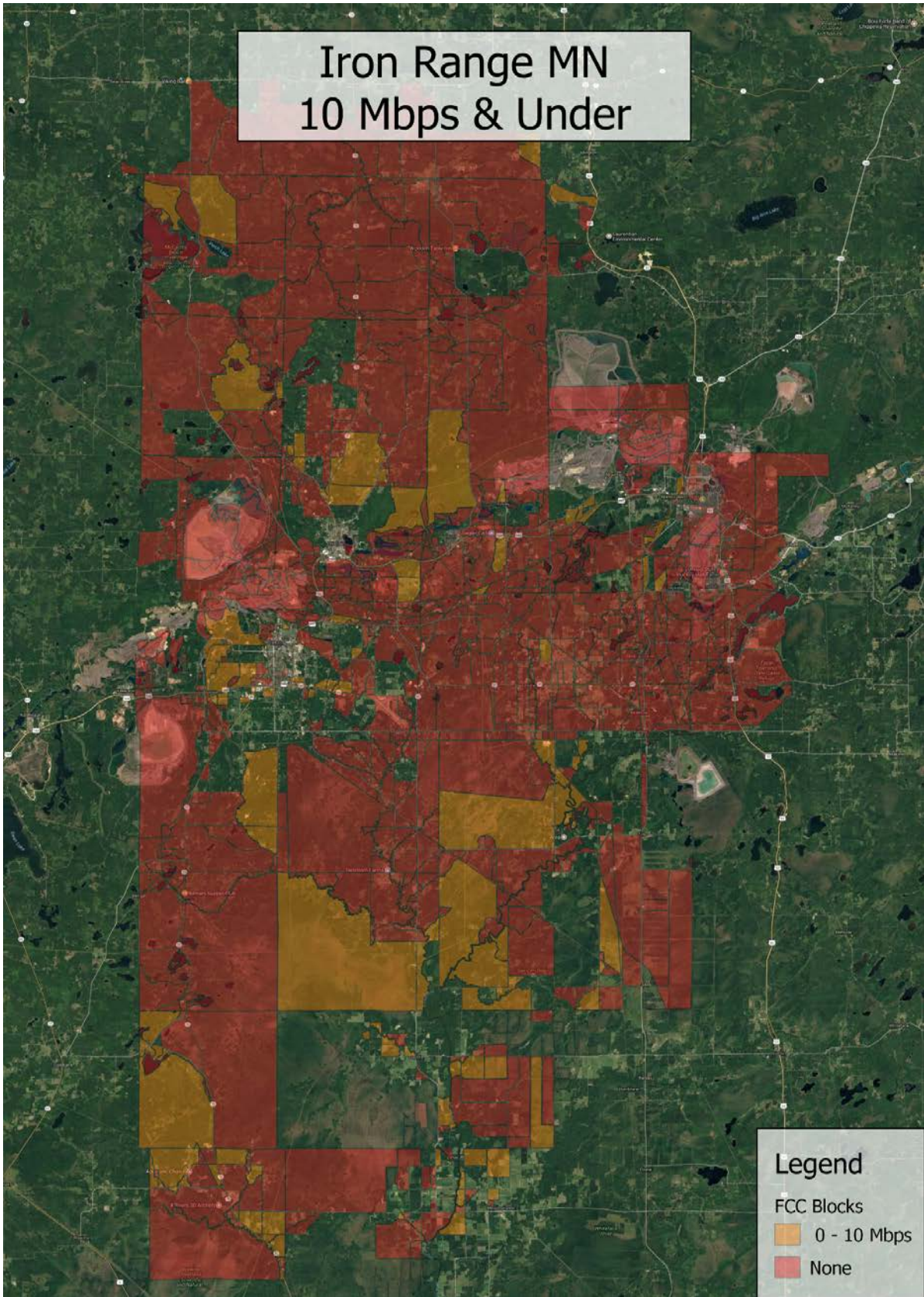
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Cherry: 446

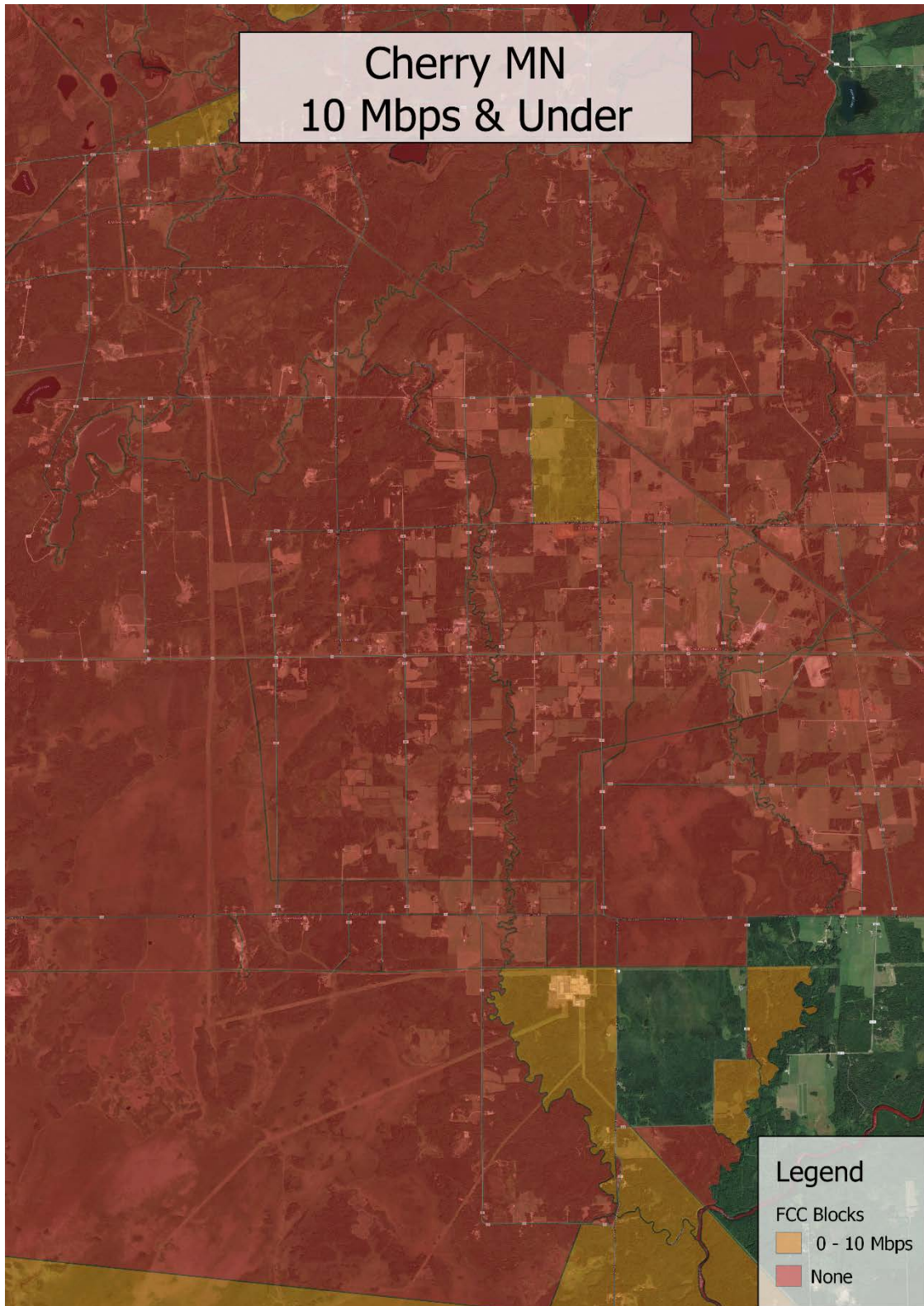
Mtn Iron: 180

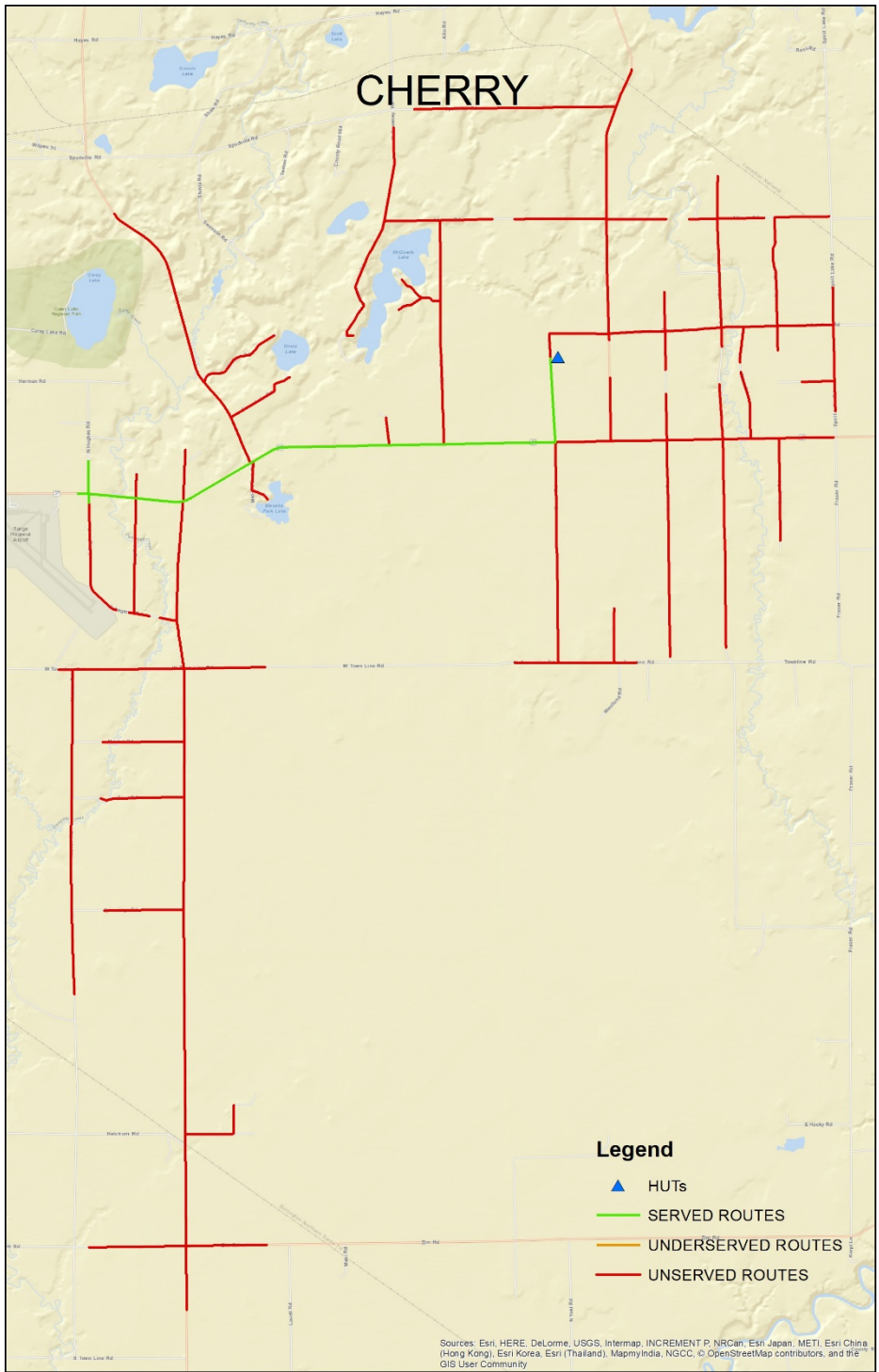
Chisolm: 527

Buhl: 558



Below is the map of the Cherry area, showing eligible areas for broadband funding in red and yellow:





Estimated Costs per Home for Fiber

NEO performed a preliminary design and capital cost estimate to build fiber to homes and businesses within the Cherry Township. In the commercial business district area, or the areas shown in green on the Cherry route map to the left, show approximately 13 homes/businesses are “served.”

The average cost per home/business in unserved areas, or areas depicted in red, is \$12,359.

If all of the Cherry area is built with fiber, the total estimated capital costs are projected to be \$6.155 Million. (See chart on the next page.)

Depending upon Cherry’s priorities and funding capacity, a grant

could be targeted to build to the eligible areas within these communities.

For example, if community leaders targeted grant funding for the 446 homes in Cherry that have no broadband service, using the average projected capital costs of \$12,359 per home, the total grant application would be \$5,512,114.

Depending upon the grant match requirements, the communities and the service provider would fund a portion of that total.

Projected Capital Costs of Fiber to each Home

	Green "Served" Routes	Orange "Underserved" or Middle Mile Routes	Red "Unserved" Routes	Total Capital Costs, All Homes	50% Match
Mt. Iron, Buhl					
Capital Costs	\$ 5,700,000	\$ 3,300,000	\$ 7,200,000	\$ 16,200,000	\$ 8,100,000
# of Homes	1665	212	751	2628	
Cost per Home Passed	\$ 3,430	\$ 15,600	\$ 9,690	\$ 6,164	
Cherry					
Capital Costs	\$ 555,000	\$ -	\$ 5,600,000	\$ 6,155,000	\$ 3,077,500
# of Homes	13	0	485	498	
Cost per Home Passed	\$ 42,701	\$ -	\$ 11,592	\$ 12,359	
Chisholm					
Capital Costs	\$ 4,100,000	\$ 945,000	\$ 10,900,000	\$ 15,945,000	\$ 7,972,500
# of Homes	2200	30	688	2918	
Cost per Home Passed	\$ 1,890	\$ 32,520	\$ 15,866	\$ 5,464	
Hibbing					
Capital Costs	\$ 16,300,000	\$ 658,000	\$ 12,600,000	\$ 29,558,000	\$ 14,779,000
# of Homes	6343	34	1190	7567	
Cost per Home Passed	\$ 2,573	\$ 19,371	\$ 10,656	\$ 3,906	
Totals					
Capital Costs	\$ 26,655,000	\$ 4,903,000	\$ 36,300,000	\$ 67,858,000	\$ 33,929,000
# of Homes	10221	276	3114	13611	
Cost per Home Passed	\$ 2,608	\$ 17,764	\$ 11,657	\$ 4,986	

Public Private Partnerships

Direction from the Iron Range Broadband Committee has been to investigate potential public-private partnership models with service providers such that the local governments do not need to become an Internet Service Provider. If a public-private partnership can be negotiated, a service provider would most likely absorb some of the capital costs of the FTTP build. For example, the local government might build and own the fiber network, paying for the Engineering Labor, Aerial Labor, Underground Labor (UG), the Outside Plant Materials (OSP), and the Technical Services Labor. The service provider would potentially pay for the Customer

Premise Labor and Installation and the Electronics or the equipment to light the network. A revenue share from the Service Provider would be paid to the local government to cover debt for the fiber.

CTC is willing to work in partnership with the local governments or local partners on a potential public private partnership. The municipalities and various entities should determine what amount of capital could be invested in broadband. Grant funding available through the USDA RUS program could then be sought, in partnership with CTC.

Below is a further breakdown of the total capital costs to build fiber to each home in Cherry, with an assumption of 40% market share or take rate percentage. The projected capital costs below total \$6,155,000 per the summary chart on the previous page.

Cherry		Served	Underserved	Unserved
Total Project Costs	Take Rate	40%	40%	40%
	Project Cost	\$ 555,113		\$ 5,622,402
	Cost per HHP	\$ 42,701		\$ 11,593
	Cost per HHS	\$ 106,753		\$ 28,981
	Cost per MI	\$ 100,201		\$ 98,122
Cost Allocation				
Engr. Labor		\$ 3,216		\$ 52,019
Aerial Labor		\$ -		\$ -
UG Labor		\$ 424,134		\$ 4,400,698
Tech Services Labor		\$ 1,107		\$ 35,583
OSP Materials		\$ 88,196		\$ 936,685
Local Govt Total		\$ 516,653	\$ -	\$ 5,424,985
Electronics		\$ 32,450		\$ -
Customer Premise Labor and Install Materials		\$ 6,010		\$ 197,417
Service Provider Total		\$ 38,460	\$ -	\$ 197,417

Per the preliminary discussions with CTC, as the service provider, they may pay the capital costs for the Electronic and the Customer Premise Labor and Install Materials, while the local government and key stakeholder pay the capital costs for the Engineering Labor, Aerial Labor, Underground (UG) Labor, Tech Services Labor and the Outside Plant (OSP) Materials.

In Conclusion

With the USDA broadband grant, there is an opportunity to leverage the work of the Iron Range Broadband Committee and NEO Connect to improve broadband services in the region. Key stakeholders and local governments need to determine whether or not they would like to participate in the grant opportunity, the amount of match moneys that could be set aside for the application and the priority areas of the community that should be targeted for broadband connectivity.

With the commitment and direction from the communities, the Iron Range Broadband Committee and NEO Connect will further develop the potential projects to be targeted for grant funding.