



Board of Commissioners
Lake County Courthouse
601 Third Avenue
Two Harbors, MN 55616
Phone: 218-834-8320 Fax: 218-834-8360
Website: co.lake.mn.us

First District - Peter Walsh
Second District - Derrick Goutermont
Third District - Brad Jones
Fourth District - Jeremy Hurd
Fifth District - Rich Sve

DATE: March 6, 2014
FROM: Lake County Minnesota and Lake Communications
TO: Federal Communications Commission (FCC) Staff
SUBJECT: Expression of Interest - Rural Trials Docket No. 10-90

Background

Lake County is one of the largest geographic counties in the State of Minnesota, at about 2,132 square miles, 118,000 acres are covered by water and the remaining are primarily forested. The County is bordered by Lake Superior to the south and the Boundary Waters Canoe Area Wilderness to the north. Because of the remote nature and geographic characteristics of the area, corporate communications companies were unable or unwilling to improve or extend their services to reach all the citizens of Lake County, despite the State of Minnesota's statutory goal that all state residents and businesses should have access to high-speed broadband that provides minimum download speeds of 10 to 20 megabits per second and minimum upload speeds of five to 10 megabits per second, by the end of 2015. So Lake County, a political subdivision of the State of Minnesota, in order to introduce and improve high speed internet to all its citizens, is currently building a municipal fiber optic FTTH broadband network, "Lake Connections", through a 85/15 Loan/Grant agreement with Rural Utilities Service (RUS), under the Broadband Initiatives Program (BIP). Lake Communications is a private CLEC, who will provide telephony on the Lake Connections network.

Project Description

Lake County is currently building a Passive Optic Network (PON) to as many as 18,000 homes and businesses, within the County and an adjoining portion of eastern Saint Louis County. Most of those customers are unserved or underserved according to the FCC standards. In 2010 Lake County entered into a joint powers agreement with St. Louis County, 7 municipalities and 12 townships to construct and operate the network. The headquarters for the network is located in Two Harbors, MN, where the network's electronics are housed. A fiber ring is being built to circle Lake County and connect with providers in Duluth, MN, while passing through St. Louis County. The FTTH is being constructed by an aerial and buried application.

The BIP funds do not cover the cost of the build. While the estimated average cost to build to each customer was approximately \$3500, the RUS grant amounts to about \$585 per customer. In addition, Lake County experienced significant increases in costs. Aside from the geological challenges of building in the area, one cause of cost increase is a result of attempting to hang fiber on utility poles owned by electric cooperatives and municipalities, which the FCC does not regulate. These cooperatives required a level of utility pole make readies that have effectively driven the project from an aerial build to the more expensive buried. The lack of a required timeline for these entities has been a significant detriment as well. In addition the loan/grant does not fund 40% of the drops to residences on the power grid. There was no money in the BIP award to construct drops to residences off the power grid, despite a number of requests for services. Also the loan/grant does not cover any operational/capital costs, such as dark fiber leases/IRU purchases. So where another provider's fiber may be the most cost effective solution, the terms of the RUS funding require the County to over-build existing fiber facilities.

Technology to be Deployed

Lake County is deploying FTTH technology. The network includes fiber cable which typically has a 30-35 year life. The network architecture is Gigabit Passive Optical Network (GPON) based, which is capable of downstream speeds of 2.5 Gbps and upstream speeds of 1.25 Gbps split up by 64 customers per PON. Due to the demands of IP video bandwidth, Lake County will only split to a maximum of 32 customers and in some cases will split less as it extends its network farther. GPON is specified to go to 60 KM, but, due to limitations with lasers and the cost of the equipment, the County's system is designed for 40 KM with an 8-way split depending on cable loss. Unlike with DSL or wireless technologies, with GPON and Active Ethernet even the subscribers farthest out enjoy the same bandwidth and performance as the subscribers close to the electronics, meaning no limitations as distance increases.

Laurel D. Buchanan
Administrative Clerk of the Board

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Locations to be Served

Lake Connections will pass a total of 18,000 premises in the cities of Two Harbors, Silver Bay, Beaver Bay, Aurora, Hoyt Lakes, Babbitt, Ely and Winton, in addition to the organized townships of Bassett, Beaver Bay, Colvin, Crystal Bay, Duluth, Embarrass, Fall Lake, Morse, Silver Creek, Stony River, Waasa and White. The census blocks listed in the section below include currently unserved areas. Attached is a map of the areas to be served.

Census Blocks

Serving approximately 3,100 high-cost locations

27075370100
27075370300
27137010500
27137011400
27137013900
27137014000
27137014100
27137015400

Services to be offered

Lake Connections will offer broadband and video services over the proposed broadband network. Lake Communications will offer telephone services. Pricing will be competitive with services currently provided in Lake and St. Louis Counties. Representative pricing is as follows:

Service	Residence Business	
Voice Service	\$29.99	\$49.99

Data Services

30 Mbps/ 10 Mbps	\$59.99	\$79.99
50 Mbps/ 50 Mbps	\$109.99	\$139.99

Video Services

Basic (TBD channels) \$TBD

Residential Bundle: \$79.98

Voice Local telephone with, Caller ID, Call Waiting, Call Forwarding and 8 other features plus unlimited domestic long distance

Data 30 Mbps/10 Mbps

(Pricing for bundles with video has not been set)

Funding

Lake County seeks \$17,500,000 in one time funding for electronics, fiber and construction to complete the build out,

Lake County seeks \$3,000,000 in on-going operating funding for the next three years to maintain this project.

Project Timeline

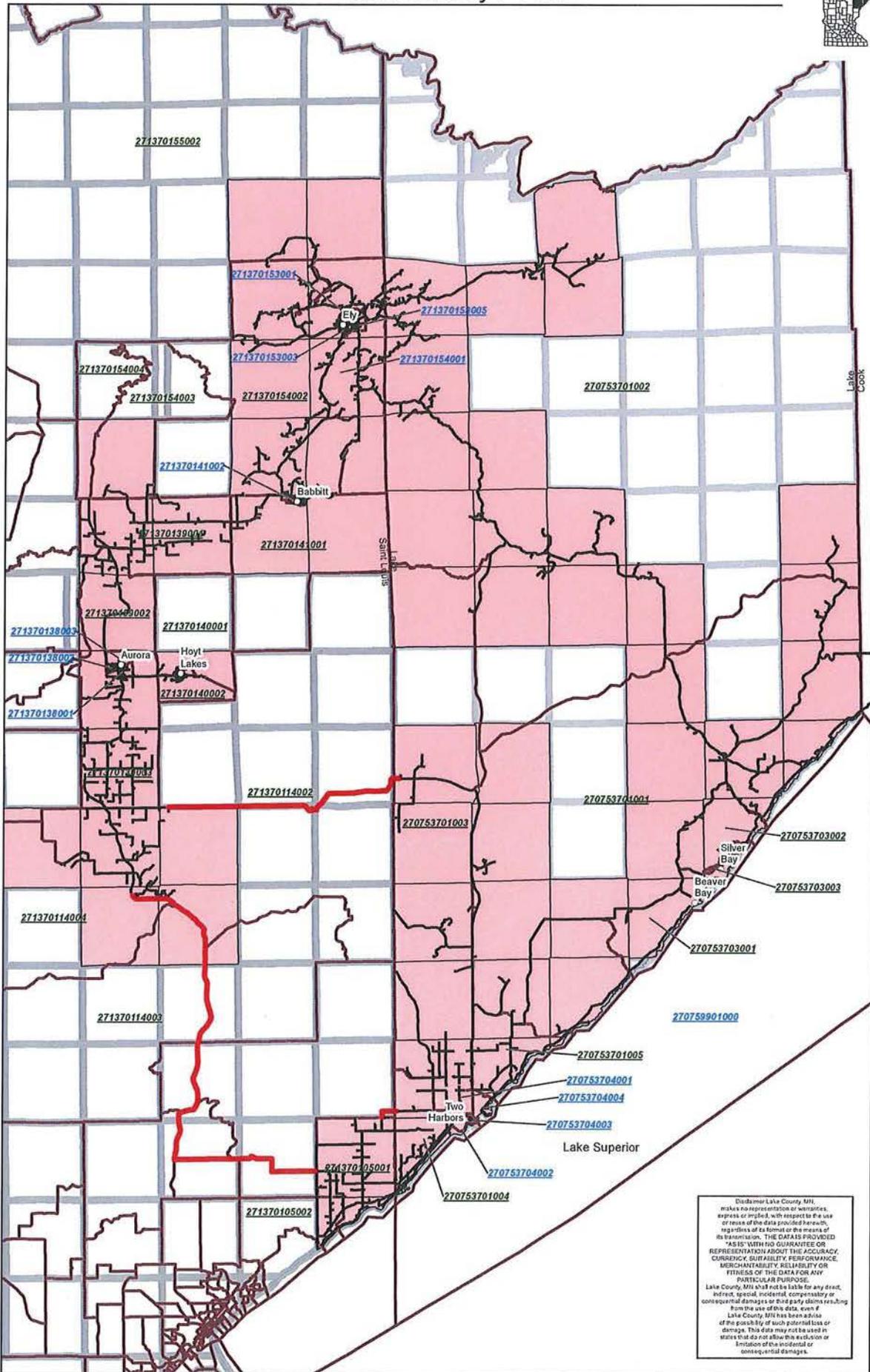
Lake County is currently building the final phases of the project, which is scheduled to be completed September 30, 2015. With the additional FCC funding, Lake County would complete the additional build out by 2016.

Sincerely,



Rich Sve
Chairperson, Lake County Board of Commissioners

Lake County FTTH



Legend

- FTTH Transmission Line
- Census Blocks
- High Cost Build Area
- FTTH Network Build Out
- FTTH Service Area
- Low Cost Build Area

0 3.5 7 14 Miles

Lake County GIS Map last updated:
3/7/2014 7:41:08 AM
Author: Ryan Stovren, GISP