



# Northeast Service Cooperative

*Collaborating to meet your changing needs*

March 6, 2014

VIA ECFS

Marlene H. Dortch, Secretary  
Federal Communications Commission  
445 Twelfth Street, S.W.  
Washington, D.C. 20554

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Mt. Iron, MN 55768  
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Re: Expression of Interest – Rural Broadband Experiments  
Connect America Fund, WC Docket No. 10-90

Executive Director:  
Paul Brinkman

Dear Ms. Dortch,

Board Chairperson:  
Tim Riordan,  
Virginia

The Northeast Service Cooperative expresses interest in expanding broadband to rural unserved and underserved areas of northeastern Minnesota under the Commission's Rural Broadband Experiment program.

Board of Directors:

John Berklich, Jr.,  
Hibbing

Walt Hautala,  
Mesabi East

Sue Kaslow,  
Hill City

Julie Peterson,  
Moose Lake

Bob Rahja,  
Chisholm

Arlene Tucker,  
City of Hermantown

Kim Belcastro  
Superintendent  
Wrenshall

John Klarich,  
Superintendent  
Mt. Iron-Buhl

## **Background**

Northeast Service Cooperative (NESC), located in Mountain Iron, Minn., was established by the legislature in 1976 as a nonprofit public corporation. In the State of Minnesota, there are nine educational service cooperatives that work on region wide planning and meeting the needs of its members. For nearly 40 years, NESC has provided regional planning, programs and services to its members. We serve about 32 school districts, 79 cities, counties and other governmental agencies throughout the region. Services provided include: Academic Programming, Special Education, Online Learning, Health and Safety, Group Insurance Pools, Cooperative Purchasing, Training and Staff Development, Telecommunications and IT Networking. NESC collaborates to meet the changing needs of members.

The Northeast Service Cooperative operates Minnesota Telecommunications, which serves critical service sites throughout the Arrowhead Region of northeastern Minnesota. NESC has more than a decade of experience in the telecommunications industry and has been innovative in its development of technology initiatives. In 2000, NESC launched Northeast NET, a collaborative wide area network. Within four years, NESC received a top award for technology innovation from the National Association of Development Organizations. The Minnesota Public Utilities Commission granted NESC status as a competitive local exchange carrier in 2006. By 2008, NESC received the first of two distance learning grants totaling \$1.3 million through the Rural Utilities Service (RUS) at the United States Department of Agriculture (USDA). This initiative expanded and upgraded the existing distance learning in school districts across the region, which provided increased learning opportunities for students in rural areas.

In 2010, the Northeast Service Cooperative was awarded \$43.5 million in federal funding by RUS at USDA to build a fiber optic backbone in eight counties of northeast Minnesota including St. Louis, Lake, Cook, Koochiching, Carlton, Pine, Aitkin and Itasca. The broadband infrastructure project called the Northeast Minnesota Middle Mile Fiber Project expands broadband service with more than 915 miles of fiber optic.

An Equal Opportunity Employer

This Project provides high-speed connectivity to anchor sites throughout a service area that comprises of approximately 22% of the land area in the State of Minnesota. The Northeast region ranks one of highest in unserved and underserved areas within Minnesota. While recently funded projects are having an impact in two of our eight county service area, there are still large gaps of unserved households.

The Project has enabled nearly 300 critical service sites including schools, libraries, higher education, health care organizations, tribal government, state, cities and county sites access to high-speed broadband. A significant aspect of this project has been connecting schools and libraries throughout the region to broadband. This makes possible increased opportunities in the classroom and enhanced learning for students. The Project has enabled schools 10 to 100 times the speed at cost levels paid previously for a lower level of service that didn't enable growth or access to evolving technologies. It decreases deployment costs, updates interconnection networks and enables high-speed, high-capacity broadband connections across great distances to support the real-time exchange of data across a secure infrastructure.

In 2013, NESC received the Brian L. Talbott Award for its contribution and support to local school district and education service agencies. This national award recognized the leadership and staff of NESC for their role in the area of technology innovation in education. Being innovative and finding ways to expand connectivity to served and underserved areas has been one area of focus for NESC. That's why NESC recognizes the importance of the Rural Broadband Experiments and for FCC's funding to expand access.

Other focus areas for NESC are completing construction of the network; addressing immediate requests by current members for network expansion; and network service and support. Secondary, NESC will focus on LAN consulting, design and engineering including cabling integration and deployment and mobile/wireless solution design and deployment; equipment inventory for purchase, lease, service and support beyond the core; identifying shared resources, best practices and economies of scale in technology among all members of the regional network ; identifying and serving new members in the regional network. Other goals include virtualization deployment and management; data, server and application hosting, storage, transport, licensing and security; integration of communications at the site, in the community and across the region (distance learning, virtual assistance, community TV, etc.); education technology and integration. Having a trained and diverse staff under support of leadership and the Board of Directors makes an impact when achieving goals and setting forth initiatives.

NESC works with existing service provider and carriers to increase capacity to last-mile services to businesses and residents. NESC has many strategic partnerships including the State of Minnesota; St. Louis County; Iron Range Resources & Rehabilitation Board; Cities, Townships and Emergency Services; Health Care including St. Luke's, Fairview and SISU; Tribal Entities of Fond Du Lac Reservation, Bois Forte Reservation and Grand Portage Reservation; Regional School Districts and Arrowhead Library Association. NESC will look to these partners that have supported the broadband expansion and development in the region for continued support in the Rural Broadband Experiment. NESC will also work closely with sovereign nations to develop and expand fiber optic and provide access to consumers in underserved areas.

## **Geographic Profile**

The following census tracts would be served in whole or part under this proposed project:

1125T00200 (Fond Du Lac Tribal Reservation Tract) including parts of;  
27137011200  
27017940000

## **Service Offerings**

“Triple Play” services would be offered within the proposed project service area. Proposed rates range based on package levels;

Broadband Service Plans (up to 100Mbps) – \$25-\$140 per month

Voice Service - \$16 per month

Video Service Plans- \$31-\$116 per month

In addition, due to the flexibility of the “Home Run” fiber design, unbundled fiber loop elements may also be offered to entice private provider interest and investment. This would recapture the public/private business investment.

## **Eligible Telecommunications Carrier (ETC) Status.**

NESC has operated as a competitive local exchange carrier since 2006 after being granted this status by the Minnesota Public Utilities Commission. NESC has operated a successful collaborative wide area network since 2000. This network includes critical service sites across eight counties in northeastern Minnesota.

## **List of Anchor Institutions**

Most anchor institutions are already connected under the NESC Middle Mile Fiber Project (MN1111-A40). This project will connect the balance of unserved remote fire halls, town halls and other critical access facilities within the census tract or census block areas.

## **Proposed technology**

FTTH - Home Run Fiber, 100% underground

Due to the nature of the geographic area, being heavily wooded and rocky terrain, WIFI is not a suitable technology to reach 100% of the homes. It has been tried in the past, with only limited success.

Direct Subscriber Line (DSL) is a workable technology, however it would not provide a highly scalable broadband solution without a large deployment of Fiber to the Node (FTTN) design, which in and of itself would require a sizable investment due to the high cost of labor involved. The project would be built underground as our experience has determined that the initial cost of “Make Ready” and long term ongoing poles lease is not as cost effective.

## **State and/or Local or Tribal Government Participation in and/or Support for Project**

As outlined above, NESC is working with Tribal governments to prepare and implement a Rural Broadband Experiment. Fond Du Lac Tribal Government has expressed interest in the FCC Experimental Pilot Program. They have voiced their struggles in having access to adequate services to support the Band’s current infrastructure. Fond Du Lac Reservation supports NESC’s application to this project. They have also experienced limited access to high speed broadband across the Reservation. They have noted that they are chronically underserved. NESC’s will look to its other partners, as indicated above, for support in its efforts to expand broadband which will provide access to those living in rural areas.

NESC has been successful working with various entities with its Northeast Minnesota Middle Mile Fiber Project to obtain necessary rights of way and permits. Trained staff would continue following the process currently used to ensure necessary environmental clearances and permits for construction of a project are obtained. NESC understands the requirements that are needed to move forward with construction.

### **Project Timeline**

This project could be built in as little as 1 year however, due to our short 6 to 8 month construction season, a 2-3 year period would be a preferred time frame.

**Time to Completion: 1-3 years.**

### **Design and Scalability**

Proper design and scalability ensures that limited, if any, ongoing additional federal ongoing investment is required into the future. The design is a “Home Run” design allowing for dedicated fibers from the home to the central office. This will allow for future growth in households along any single route or tap. Initial design calls for central office deployed GPON to keep initial deployment costs low and provide for up to 125Mbps to the subscriber. Due to the “Home Run” design, active Ethernet could be deployed at any time and provide for cost effective Gigabit to the Home (GTTH) services when the need arises. This design provides for best long term cost effective solution for the geography. Deployment of “Smart Grid” and other future technologies will be well within the capabilities of the design.

### **Total Business Investment**

A total public and tribal investment of up to:

**\$3,447,814**

### **Investment Needed**

NESC would seek from the FCC experimental project, a one-time investment of up to;

**\$7,948,392**

To be received over a one to three year period and would coincide with completion of project time tables.

### **Leveraging**

Leverages the nearly complete NESC Middle Mile Project (MN1111-A40) that was funded via 50/50 combination USDA grant and loan. Robust middle mile infrastructure is critical and required to be able to successfully deploy broadband services into unserved rural areas.

While it is still too early to determine where additional match leveraging funds would become available. NESC anticipates that leverage funds would become available from other local, regional and state level resources.

### **Total Project Cost**

A full engineering design is complete and ready for a bid process, when project funds become available.

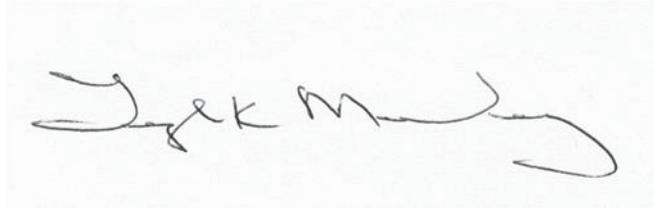
This project will require a total investment of:

**\$ 11,396,206**

We appreciate the FCC’s commitment to providing resources and its effort to bring much-needed high-speed connectivity to rural regions. Thank you for your consideration of our Expression of Interest. We

look forward to making a difference in the lives of people who live and work in our communities. NESC recognizes the significance of such initiatives and shares a passion for creating a better tomorrow and providing digital access and opportunity for all Americans.

Sincerely,

A handwritten signature in black ink on a light-colored background. The signature is written in a cursive style and appears to read "Lyle K MacVey".

Lyle K MacVey  
Chief Technology Officer  
Northeast Service Cooperative