

Broadband USA Applications Database

Applicant Name: Northern Community Investment Corporation

Project Title: Wireless LINC of NH

Project Type: Last Mile Remote

Executive Summary

Executive Summary of Project for BIP and BTOP a) Opportunity the proposed system seeks to address. To deliver high speed, state-of-the-art broadband services to connect outlying end users who have no broadband connectivity to create economic, social, educational, telehealth and public safety opportunities. b) A general description of the proposed funded service areas (location, number of communities, etc.) Coos County, Northern Carroll County and Northern Grafton County of NH in all comprising 42 communities. Namely the communities of Pittsburg, Clarksville, Stewartstown, Colebrook, Columbia, Dixville, Millsfield, Errol, Cambridge, Dummer, Milan, Stark, Berlin, Shelburne, Gorham, Randolph, Carroll, Lisbon, Lyman, Lyme, Easton, Landaff, Bath, Haverhill, Piedmont, Orford, Warren, Wentworth, Ellsworth, Rumney, Thornton, Campton, Waterville, Sandwich, Albany, Tamworth, Freedom, Madison, Eaton, Bartlette, Jackson and Woodstock. These communities join our previously funded communities of: Stratford, Northumberland, Lancaster, Jefferson, Whitefield, Dalton, Littleton, Bethlehem, Franconia, Benton and a portion of Easton and Lincoln. c) Number of households and businesses passed. The proposed ARRA expansion of the system would pass 10,198 households and 1,800 businesses. d) Number of community anchor institutions, public safety entities, and critical community organizations passed and/or involved with project (e.g., health care, education, libraries, etc.). In total, there are 183 Anchor Institutions, consisting of: 29 Schools: White Mountains Community College, Littleton Area Learning Center, White Mountain Regional High School, Groveton High School, Stratford High School, Colebrook Academy, Berlin High School, Gorham High School, Littleton High School, Profile High School, White Mountain School, Lancaster Elementary, Whitefield Elementary, Jefferson Elementary, Groveton Elementary, Stratford Elementary, Colebrook Elementary, Pittsburg Elementary, Berlin Elementary, Randolph Elementary, Lisbon Elementary, Littleton Elementary, Sugar Hill Elementary, Haverhill Elementary, Orford Elementary, Piedmont Elementary, Tamworth Elementary, Lincoln Elementary and Woodstock Elementary. Approximately 40 Town Halls, 32 Fire Departments, 18 Libraries, 20 Ambulance bases, 10 Local and 3 State Police Barracks, 4 state DOT yards and 20 town road maintenance centers. Health Care: 7 hospitals: Cottage, Littleton, Weeks, Upper Connecticut Valley, Androscoggin Valley, Memorial, Speare Memorial Hospitals, many of whom have medical centers and home nursing programs. e) Proposed services and applications for the proposed funded service areas and users. Wireless LINC is a service network for business and residential end user broadband access, virtual private networks for community anchor institutions and businesses, hot spots for tourism and general access throughout the region. f) Approach to addressing the non-discrimination and interconnection obligations Wireless LINC is an open access service network. We agree to adhere to the principles contained in the FCC's Internet Policy Statement (FCC 05-151 adopted August 5, 2005). We do

not favor any lawful Internet applications and content over others. We will display any network management policies in a prominent location on our web page and provide notice to customers of changes to these policies. We connect to the public Internet directly and or indirectly. We offer interconnection, where technically feasible without exceeding current or reasonably anticipated capacity limitations, on reasonable rates and terms to be negotiated with requesting parties. g) Type of broadband system that will be deployed (network type and technology standard). Fixed wireless, open access network with a combination of licensed and unlicensed mid-mile point to point transmission along with last-mile connectivity to replace dial up services. h) Qualifications of the applicant that demonstrate the ability to implement and operate a broadband infrastructure, and/or be a sustainable broadband services provider. Northern Community Investment Corporation (NCIC) is a 501c3 non-profit community based corporation established in 1975 to promote sound development in the Northeastern Vermont and the North Country of New Hampshire, engaging in a variety of economic and community development activities with a focus on job creation and retention. NCIC has proven to be innovative having a unique and exceptional management team and staff with backgrounds and/or education in banking, lending, architecture, business management, engineering, manufacturing, telecommunications and financial management. The NCIC team has exhibited an ability to maintain a high operational quality of work across a diverse set of responsibilities while responding to and tackling the changing needs of the region. In 2006 NCIC partnered with Littleton Industrial Development Corporation (LIDC), a successful economic development agency in itself to initiate the Wireless LINC of NH program. To date we have raised approximately \$4,700,000 across 15 grants. We have designed and tested the technology and system being utilized including mid-mile broadband delivery, last-mile connectivity and an open access software management solution. We presently have seven sites constructed and are in process of developing 18 more sites of both mid-mile and last-mile. We are completing end user testing and are scheduled to be delivering services through content providers in the fall of 2009. NCIC's advanced operating software is innovative and has been custom designed to support and manage the operation of an open access, multi vendor solution. Features include: - A 'heartbeat' monitoring of all components of the system, generates alarms when connections fail and escalates the alarm based on time of response to the layers of management - A ticketing system to record corrective actions and customer requests. This tracking prevents lost information and is used to inform the technicians and management team of steps taken, time statistics and current status while building a history by component - Network Management that defines serial numbers of each electronic piece by location, its warranty period, performance history and installation date. - Tracking of bandwidth usage to assist in decision making to adjust purchases, defining excessive bandwidth users and allowing the system manager to trim down excessive users from hurting other users - Vendor Administration and Vendor Subscription Management - Automatic payment system - Services Network Provision to allow for end users to identify regional opportunities - Menu of services for end users - Management of the Internet Protocol address assignments and subscriptions We have designed this to be a sustainable system that can expand rapidly when called for. Our Project Manager, Tom Joyce served as lead manager in all facets of planning and implementation for several telecommunications companies and projects. In previous years Tom designed and implemented business strategies for recruiting projects in the wireless industry in large market trade areas such as Boston, Philadelphia, Baltimore and Washington, D.C. He has many years of experience identifying appropriate wireless transmission systems and sites, in negotiating

leases and achieving permits from town and state agencies and has continued that work for the Wireless LINC project. NCIC has utilized a bid system to select our system engineering company, C Squared Systems and Tom has led the design process for all aspects of the system. C Squared Systems Radio Frequency engineering team is experienced in the technology and industry requirements for successful network deployment and optimization. From initial network design, zoning and permitting through activation and system performance, C Squared engineers are successful in delivering wireless solutions for: CDMA, GSM, iDEN, TDMA, AMPS, GPRS, Edge, Fixed Wireless Technology, 1xEV-DO, Macro & In-building networks. i) Overall infrastructure cost of the broadband system. \$11,858,528 for the ARRA funded additional coverage region. j) Overall expected subscriber projections for the project. The proposed system is conservatively projected to initially serve 3,840 households and businesses out of a potential customer base of 12,700. We anticipate that level growing as penetration percentages increase over time. k) Number of jobs estimated to be created or saved as result of this project. Numerous studies indicate a growth in jobs of 1.5% of the total job base as a result of adding such broadband infrastructures. Those studies are: **“Measuring Broadband’s Economic Impact”* by William H. Lehr, Carlos A. Osorio, Sharon E. Gillett, Marvin A. Sirbu – Faculty of MIT and Carnegie Mellon University http://cfp.mit.edu/groups/broadband/docs/2005/MeasuringBB_EconImpact ***“Building a Nationwide Broadband Network: Speeding Job Growth”* by Stephen B. Pociask, TeleNomic Research, LLC <http://www.newmillenniumresearch.org/event-02-25-2002/jobspaper.pdf> ****“A Study of the Economic and Community Benefits of Cedar Falls, Iowa’s Municipal Telecommunications Network”* By Doris J. Kelley <http://www.iprovo.net/projectInfoDocs/economicAndCommunityBenefitsStudy.pdf> This region employs approximately 25,000 people, therefore we project approximately 375 more jobs as a result of the use of this system.