

Broadband USA Applications Database

Applicant Name: Northern Community Development Corporation

Project Title: Wireless LINC of VT

Project Type: Last Mile Remote

Executive Summary

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.) Caledonia County, Essex County, and Orleans County in all comprising 31 communities. Namely the communities of Barnet, Peacham, Waterford, Saint Johnsbury, Danville, Stannard, Wheelock, Sutton, Sheffield, Glover, Newport, Coventry, Brownington, Holland, Norton, Canaan, Lemington, Bloomfield, Guildhall, Lunenburg, Concord, Kirby, Victory, Granby, East Haven, Newark, Westmore, Charleston, Burke, Lyndon and Morgan. c) Number of households and businesses passed. The proposed ARRA expansion of the system would pass 4,392 households and 570 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.). The area served includes approximately 155 anchor institutions: 20 Schools: Barnet School, Danville High School, Lyndon Institute, Lyndon State College, Lyndon Town School, Concord High School, Gilman Elementary, Lunenburg Elementary, Guildhall Elementary, Charleston, Newport High School, Newport Elementary, Saint Johnsbury Academy, Saint Johnsbury School, Stevens School, Riverside School, Cornerstone School, Springfield College Extension, University of VT Extension (2), Brighton School Approximately 31 Town Halls, 31 Fire Departments, 18 Libraries, 9 Ambulance bases, 5 Local and 2 State Police Barracks, 6 state DOT yards and 31 town road maintenance centers. Health Care: 2 hospitals: Northern Vermont Regional Hospital and North Country Hospital along with a number of 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 Development Corporation (NCDC) is a wholly owned by Northern Community Investment Corporation (NCIC). NCIC is a 501c3 non-profit community based corporation established in 1991 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 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. NCDC has raised \$435,000 across 3 grants for the development of broadband in Vermont. NCIC, our parent organization partnered with Littleton Industrial Development Corporation (LIDC) in 2006 to initiate the Wireless LINC of NH program. To date NCIC has 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. Together 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. 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 implementing 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. - 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. \$9,071,010 j) Overall expected subscriber projections for the project. The proposed system is conservatively projected to initially serve 1,408 households and businesses out of a potential customer base of 4,962. 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> This region employs approximately 12,000 people, therefore we project approximately 190 more jobs as a result of the use of this system.