Broadband USA Applications Database

Applicant Name: Lake Region Electric Cooperative

Project Title: Lake Region WiMAX Project

Project Type: Last Mile Non-Remote

_____**Executive Summary**_____

Lake Region Electric Cooperative (LREC) seeks funding to bring next generation, affordable, wireless broadband services to northeast Oklahoma. Due to terrain challenges and low population density, current broadband Internet access methods are overpriced and under-delivered. The proposed service will provide broadband service in unserved and underserved areas in northeast Oklahoma and bring broadband to the highest percentage of rural residents that currently lack access to broadband. Through WiMAX (Worldwide Interoperability for Microwave Access), LREC will deliver affordable, reliable broadband service with 2 Mbps speeds within 12 months of funding. Through its membership in the National Rural Telecommunications Cooperative (NRTC), LREC will work with NRTC and DigitalBridge Communications Corp. (DigitalBridge or DBC) on this project. For over 20 years, NRTC and its members have provided advanced telecommunications services to rural communities. Today, NRTC has nearly 1,500 members in rural America, including LREC. DBC already has successfully delivered WiMAX technology to 15 rural and underserved communities across the country and will provide LREC with the technology and ongoing support to replicate this success in LREC's service territories. When deployed, LREC's WiMAX system will enable residents, businesses, schools, healthcare providers and emergency responders to have a complete and affordable broadband solution. Stimulus funds will ensure LREC is able to continue supporting local entities with free broadband access, such as to fire and rescue stations in the region. General Description of the Proposed Funded Service Area: The proposed funded service area is located in Oklahoma, and encompasses all of Cherokee and Wagoner Counties along with parts of Muskogee, Delaware, Mayes and Rogers Counties. The area's total population is estimated to be approximately 134,810. This is based on detailed mapping we performed at the census block-level and is reflected in the Last Mile Service Details. The USDA online mapping, which is less precise, indicates a population of 114,000. The proposed service area is 100% rural. The service area encompasses 59 census designated communities and 10 other areas. Of the census designated communities, 38 communities are unserved. More than 74% of the households in the proposed service area do not have access to facilities-based, terrestrial broadband service at greater than the minimum transmission speed. With stimulus funding, the project will be fully funded, shovel ready and capable of providing broadband to all homes and businesses within the service footprint. Number of Households and Businesses Passed: According to our detailed mapping, the wireless network for the proposed funded service area will cover 57,366 households and 6,299 businesses. Number of Community Anchor Institutions, Public Safety Entities, and Critical Community Organizations Passed and/or Involved with the Project: The project plan includes broadband access, education, awareness, training and equipment at 30 anchor institutions located throughout the service area, including administrative offices,

courthouse, law enforcement, five community centers, 15 first responder locations for fire and rescue and 14 schools (all levels) in our service area. Proposed Services and Applications for the Proposed Funded Service Areas and Users: LREC will offer last-mile broadband access through WiMAX technology, which will initially be deployed in a fixed architecture, but is expected to migrate to a mobile architecture within five years. At community centers and schools, we will distribute 20 next-generation "4G" devices (i.e., including USB adapters and WiMAX enabled notebooks/laptops). Critical community facilities, including 15 first responders/public safety officials will receive discounted (at least 25% lower than advertised rates) broadband Internet access. We will comply with the principles of the FCC Internet Policy (FCC 05-151). Customers will be entitled to access lawful Internet content of their choice and LREC will not favor any lawful Internet applications or content over others. Furthermore, customers will be allowed to run applications and services of their choice, subject to the needs of law enforcement and reasonable network management, and to connect their choice of legal devices that do not harm the network. Where feasible, LREC will offer a wholesale program to resellers to connect to the Lake Region network and provide service to customers. In the event towers are built with grant funding, we also will make affordable access available to other operators who wish to bring wireless broadband services to the area. We will display our network management policies on our Web page and will provide notice to customers of changes to these policies. Customers will connect to the public Internet directly and we will not operate a private closed network. Finally, where it is technically feasible without exceeding current or reasonably anticipated capacity limitations, LREC will offer interconnection on reasonable rates and terms to be negotiated with requesting parties. Type of Broadband System that Will Be Deployed: WiMAX is an established international standard for wireless telecommunications that operates on licensed frequencies of radio spectrum to deliver high-bandwidth data services using all-Internet Protocol architecture. WiMAX delivers the high speeds of cable and Digital Subscriber Line (DSL) landline broadband, only wirelessly, without the high deployment costs. It also has the added feature of mobile capability. While a Wi-Fi hotspot can provide wireless connectivity to a small area, a WiMAX network can blanket an entire service area with high-speed, wireless Internet connectivity at very low costs relative to wireline services. No other technology offers such a full set of differentiated voice, data and premium video services in a variety of wireless fashions - fixed, portable and mobile. WiMAX technology uses licensed spectrum, which translates into a reliable, sustainable, high-quality, wireless broadband service with 2 Mbps speeds. Wireless broadband solutions can be readily upgraded to include mobility or additional system capacity, enhancing performance of the system without the need to dig up streets and upset the environment. In fact, DBC already has upgraded some of its wireless systems to the newest generation of the WiMAX platform, without having to change or remove any hardware. The standards-setting community anticipates that the WiMAX infrastructure deployed today, with modest network improvements, will be capable of reaching speeds exceeding 10 Mbps and system capacity that is fourfold, without any stranded capital investment. LREC has extensive experience delivering high-speed Internet access through WildBlue. We began offering WildBlue satellite Internet in 2005 and currently have over 800 customers. WildBlue offers high-speed Internet access via satellite to homes, home offices, and small businesses that generally do not have access to other broadband technologies. While LREC is proud of its history providing broadband through WildBlue, we believe that WiMAX is the best and most cost-effective solution to meet the needs of our consumers. Overall Infrastructure Cost of the Broadband System: The overall infrastructure cost of the WiMAX system will

be $3,044,315. This includes a network build-out of $2,089,205 and $955,110 for the consumer premise equipment and installation necessary to connect the first three years' projected subscribers to the wireless network. Again, this is significantly more efficient on a cost-per-household and cost-per-subscriber basis than other delivery methods. With stimulus funding, cumulative cash flows from operations are positive over the term of the project and we attain cumulative profitability within eight years – ensuring project sustainability. Overall Expected Subscriber Projections for the Project: We project deployment will attract 2,711 residential subscribers and 200 business subscribers over the initial five-year period 2010-2014. Number of Jobs Estimated to be Created or Saved as a Result of This Project: We estimate that a total of 10 new jobs will be created to install, sell and service the WiMAX system. The social benefits to the region by having a high speed affordable Internet service cannot be quantified – but it will be substantial. The inability of many parents and students to utilize the online services of the school districts will be enhanced over the existing slow dial-up connections. Students will be able to access and use the Internet to its full potential for learning because of the current bandwidth limitations with dial-up. Broadband Internet service will allow these users to access government services online including searching for jobs in a distressed economy. Broadband Internet service would afford some of users in the service area the opportunity to telecommute or consider starting or expanding a home-based business.