Broadband USA Applications Database

Applicant Name: Last Mile, Inc.

Project Title: Pennsylvania Broadband Middle Mile Rural Consortium

Project Type: Middle Mile

_____**Executive Summary**_____

Q8. Executive Summary Sting Communications is proud to submit the Recovery Act Broadband Technology Opportunities (BTOP) Broadband Infrastructure grant for the Pennsylvania Broadband Middle Mile Rural Consortium (PBMMRC) project. The PBMMRC project seeks middle mile funding to build connections to and between specific community anchors, state and county governments and local service providers. The project includes connections to University of Pittsburgh Medical Center (UPMC), 13 rural Pennsylvania Mountains Healthcare Alliance (PMHA) member hospitals, Venango County, Jefferson County and Forest County government public safety, public school districts, last mile local service providers and three critical locations in Pennsylvania's statewide Emergency Management StarNet system. Pennsylvania is one of the most rural states in the nation with 72% of its counties located in areas classified as rural by the Center for Rural Pennsylvania. In 2000, the rural population was 3.39 million, 27 % of the state's population. The PBMMRC project is targeted at some of the most rural counties in the state: Forest County (population density 12 persons per square mile) and Venango County (population density 85 persons per square mile.) The PBMMRC project proposes to serve 17 funded service areas across a 14 county region of rural northwestern Pennsylvania. Common characteristics of participating service areas include; 10% or greater poverty, vulnerable populations of medically underserved and uninsured individuals, limited to non-existent public transportation, mountainous terrain and harsh winter weather. Travel to urban hospitals in good weather can take 2 – 3 hours. Limited availability of healthcare professionals, growing personnel shortages, rising insurance costs and rising unemployment creates a cumulative effect on economic stability for rural Pennsylvanians. In the past, Sting has leveraged federal funding investments to deploy advanced, middle mile, fiber networks to rural, underserved anchor institutions. Sting has enabled over 12 local Internet Service Providers (ISPs) to provide last mile service to customers. With dual-homed, dual-provider connections to Tier 1 ISPs in Pittsburgh and Philadelphia, Sting enables local providers to offer inexpensive broadband Internet and VoIP services to previously underserved and unserved households. Our PBMMRC project will expand upon this success to reach another 20 ISPs, 158 anchor institutions, 3659 businesses and 41,361households in 17 targeted service areas. The PBMMRC project goals are: 1. Increase availability of broadband access to underserved, rural western Pennsylvania communities in partnership with the Technology Council of Northwest Pennsylvania, Northwest PA Broadband Network project to deliver last mile broadband service to 7,252 households in an 8 county region; 2. Support the delivery of telehealth services for vulnerable populations across rural Pennsylvania and Northern Ohio through access to telemedicine solutions, in partnership with University of Pittsburgh Medical Center's (UPMC) Connected Medicine Telehealth Network, and One Community's ARRA proposal, "The Rural =

Urban: From Rust Belt to Tech Powerhouse". 3. Improve access to, and use of, broadband service for Pennsylvania's statewide emergency management network, Starnet, in partnership with the Commonwealth's Pennsylvania Broadband Middle Mile Project; 4. Stimulate the demand for broadband, economic growth and job creation through our partnership with schools, libraries, healthcare providers and government and economic development organizations. It is Sting's intent to work with current and future ISPs equally, with regard to transport services and pricing, so that these last mile service providers can bring various broadband services to markets covered in the grant. An example of network openness is our service provider relationships with multiple ISPs who deliver Internet, Voice-over-IP and/or Video services locally, leveraging the middle mile backbone to gain access to inexpensive Tier-1 pricing for Internet port. From a technical perspective, the proposed network is completely open, does not provide a differentiated or higher class of service to Sting's traffic versus any other for Internet service, and all service capabilities of the network are available to any/all service providers who wish to use the network. The existing network is comprised of four fiber optic rings, functioning as a primary backbone, stretching across Pennsylvania into a part of northern and eastern Ohio. The primary backbone path connects Philadelphia, Harrisburg, Johnstown, Pittsburgh, and Cleveland. The technologies used are Alcatel-Lucent CWDM and DWDM fiber optic multiplexers in combination with Alcatel-Lucent carrier grade MPLS switches and routers. BIP/BTOP funding will provide for the elements located on the third middle mile optical ring. Components will be those required to increase the capacity on the core backbone between Pittsburgh and Harrisburg to 10Gbps; will support and upgrade from an MPLS Switch to an MPLS Router in Erie; and will include the addition of equipment at University of Pittsburgh Medical Center (UPMC) data center to support connection of the UPMC network to their remote Seneca location, 13 Pennsylvania Mountains Healthcare Alliance (PMHA) locations, additional western Pennsylvania community hospitals (6) and up to 23 FQHCs across 26 rural underserved and unserved counties. As shown in the network diagram, the expansion of the Sting middle mile will: 1) convert microwave middle mile spans to fiber, 2) extend reach and capacity of fiber network to support last mile providers, 3) connecting fiber to three state towers, 4) close a metro fiber ring to provide additional connectivity for last mile providers and greater reliability for a first response provider, 5) close two microwave network rings for increased bandwidth and reliability, 6) connect the UPMC network to the middle mile network, and 7) increase the capacity of a microwave network (Forest County) to support last mile providers. Sting has a demonstrated track record of designing, planning, implementing and operating Carrier Ethernet Broadband networks that span the state, including some of the most rural areas of Pennsylvania. Since 2006, Sting has implemented projects of similar scale, meeting 6 – 9 month implementation schedule. In 2006 – 2007, Sting lit over 1,000 miles of fiber backbone and constructed middle mile solutions in 33 counties and built 200 miles of fiber to extend local and metro service in central and Northwest Pennsylvania. Annually, Sting manages projects encompassing 20 – 60 sites while sustaining business and serving a steady flow of smaller projects. Sting has proven expertise in building strategic partnerships necessary to deliver of extended services into unserved areas. Sting is experienced with each of the major milestones and dependencies necessary to implement projects of this scope and scale. Sting has deployed the process and systems needed to support the design, implementation, and day-to-day operations and billing of carrier services, Internet, and regional WAN services. Most importantly, Sting has the financial resources to fund 24% of the total project cost, of $6,544,138, and support the long-term sustainability and success of this project. This PBMMRC project

anticipates both direct and indirect impacts on job creation and economic development in rural Pennsylvania. Sting anticipates adding as many as 30 new, good paying, technical and customer support jobs during the lifecycle of the project. Many jobs will be in very rural regions of the state where we seek to deliver new broadband services. State and economic development agencies within these communities, have described substantial impact on job creation, estimated in the hundreds, attributed to broadband service availability. The Center for Rural Pennsylvania's 2003 study, Broadband Internet Service in Rural and Urban Pennsylvania: A Common Wealth or Digital Divide?, found "approximately 66% of the rural users and slightly more than 50% of the urban users said that the Internet is critical to their business". It also states the "difference in critical nature between urban and rural users may indicate that accessing the Internet is especially critical to remote rural users. Many rural businesses are using a broadband connection to the Internet, indicating relatively high demand for broadband services among these users. Considering that such services are not available in some rural areas of the state and that quality of service may be an issue in areas where there is only one broadband provider, the results of this pilot study indicate that business demand for broadband is sufficiently high in rural areas to warrant bringing high quality, reasonably priced services to these areas". As the Brookings Institution report concluded, "without substantial investments in more advanced technologies, especially business class broadband, employment opportunities will continue to be lost, population will further decline, and basic services and institutions will deteriorate. Hence, it is essential that we develop strategies to efficiently deliver broadband services to rural Pennsylvania". The Pennsylvania Broadband Middle Mile Rural Consortium project represents a compelling strategy to quickly and cost effectively deliver these essential broadband services to rural Pennsylvania and positively impact employment and economic growth.