Broadband USA Applications Database

Applicant Name: Live Wire Networks

Project Title: LiveWire MountainNet Fiber Optic Network

Project Type: Middle Mile

Executive Summary

Opportunity Live Wire Networks (LiveWire) proposes an infrastructure investment to build a middle mile fiber optic network in the mountains of Colorado West and North of Denver. This Middle Mile / Backhaul network will provide broadband service in unserved and underserved rural communities and underserved suburban neighborhoods and business parks. While the distance from the metro area is not great, the geography and terrain in the proposed service area has proven to be a difficult and expensive area to build broadband facilities. LiveWire's 'Mountain-Net' network will bring reliable high capacity broadband services to this area and deliver the promise of telecommuting, distance learning, better access to health care information, broadband support services for police-fire & rescue teams, cost effective IP phone service, and better access to a wealth of information and entertainment options for residents in the area. Service Area The communities that will be served by the proposed network are as follows: Allens Park Arvada Berthoud Black Hawk Boulder Broomfield Conifer Coal Creek Canyon Edgewater Estes Park Evergreen Ft Collins Genessee Park Golden Gunbarrel Bergen Park/Hidden Valley Hygiene Indian Hills Lafeyette Lakeside Lakewood Longmont Louisville Loveland Lyons Marshdale Miramonte Morrison Meeker Park Nederland Niwot Peaceful Valley Pinecliffe Pinewood Springs Raymond Rollinsville Superior Twin Forks Ward Westminster Wheat Ridge Wondervu The communities in the proposed service areas range from suburban metropolitan cities to rural mountain towns. The mountain areas are the most challenged with Broadband access. Some have Cable and DSL services but many of these areas can only acquire service through satellite providers. Project Statistics Homes Passed 504,377 Businesses Passed 135,504 Community Anchor Institutions Passed 9847 Capital Expense $21,314,759 Network Construction Cost Per Unit Passed $32.80 Jobs Created during Construction 613 1. Services & Applications This network will provide direct fiber optic connections based on standard Ethernet technology for extremely fast and highly reliable Broadband connections. These basic IP connections will start at 10Mbps and extend to 1Gbps and can be used for any application that requires high bandwidth and low latency transmission. Some of the applications that apply include high resolution image transfer, real time high definition video and audio, large file transfer, consistent connections to corporate and institutional servers, on-line web based work via Customer Relationship Management/CRM and Enterprise Resource Planning/ERP applications, Voice over IP phone service, web hosting, Email hosting, real time information and multimedia to fire and rescue crews, on line educational curriculum, IP television and multimedia, and emerging tele-presence technologies. Dedicated Internet connectivity will be the most common service type provided along with VLAN connections for specific private network connections. Subscriber Projections Live Wire networks will provide direct fiber connections to various facilities that are along the proposed network. It is estimated
that businesses and critical facilities that are within two miles of an access point can be connected with moderate cost and minimal delay. Based on this criteria the subscriber projections for the network for wholesale and retail are as follows. Subscriber Forecast 2010 2011 2012 2013 2014 Fiber Pops Launched 0 20 30 30 30 Retail Accounts 0 51 121 210 273 Wholesale Accounts 0 27 109 177 278 Total Accounts 0 78 230 387 551 Non Discrimination & Interconnection Plans The ethernet services briefly described above will be provided on a retail and wholesale basis. All service providers will have equal access to establishing an interconnect agreement to access the network. In fact the business model associated with the project is planning on very active involvement with a variety of other providers throughout the network. Two basic wholesale models will be employed that include: 1. Collocation: Service providers will have the ability to collocate their equipment in one of the data centers or huts that will be constructed into the network. This collocation can be used to interconnect their network with the LiveWire MountainNet system to access other terminating points on the network. 2. Wholesale Services: LiveWire will offer wholesale services and rates to qualified resellers who have the need to connect their end users via the MountainNet system. This wholesale arrangement could include a direct collocation or could be provided without a collocation. The interconnection and wholesale programs will be listed on the company web site and will be available for all qualified service providers. These service providers may use LiveWire as their upstream Internet provider or they may choose to connect to another upstream provider of their choice. LiveWire has contacted many of the service providers throughout the proposed service areas and has received a warm and welcoming response to the project. Many are on board with the project and interested in connecting to the network. Technology & Network Type The fiber optic design will be a redundant ring topology using resilient Ethernet ring technology. An initial backhaul data rate of 10 GB/s will provide plenty of capacity as the network grows. This resilient ring design will maintain connectivity in the event of a fiber cut or switch failure. QOS / Quality of Service is built into the system to prioritize applications such as VOIP, VPNs, and IPTV that require low latency real time throughputs. This network will provide backhaul to a pair of Tier-I Internet nodes which will located in two different locations to provide redundancy for the upstream Internet connections. Standard IEEE 802.3 Ethernet will provide the end user connection over the fiber optic extensions to the customers. The service rates to the end users will range from 10Mbps to 1Gbps. Access nodes will be placed at various locations throughout the network to provide convenient connecting points to the network. Each of these access nodes will have backup power to maintain service in the event of a utility power interruption. Company Profile & Qualifications LiveWire is a facilities based CLEC / Competitive Local Exchange Carrier in Colorado that uses it's interconnect agreement with the incumbent phone company along with it's own facilities to provide Broadband services in Colorado. The company has an active operating authority and certificate of public convenience and necessity with the Colorado Public Utilities Commission. The company started in 1990 as a cabling and installation company and became a service provider in 1996. LiveWire was one of the first DSL providers in Denver and has focused on providing cost effective Broadband service from the start. Live Wire Networks, Inc was incorporated in 1999 and is in it's tenth year of providing service to homes and businesses. LiveWire is privately held and currently serves approximately 500 accounts in the Denver-Boulder area. LiveWire has provided Internet and related IP based services since 1996 and has the existing network infrastructure to support many times the current number of subscribers. The IP based servers and associated support systems have been built and improved upon over thirteen years yielding a stable network platform to build upon. The
IP based phone service started in 2004 and provides land line equivalent service quality and reliability. LiveWire's VOIP service is fully E911 compliant and has all of the state of the art features available with current IP phone technology. The company works through the NPAC Number Portability Administration Center to port numbers to and from other phone companies and has all of the back office database and network resources required to do this quickly. Infrastructure History & Experience LiveWire's roots as a network infrastructure company will be very beneficial in building the proposed network. The company has engineered, designed and built many fiber optic installations and telco plant projects including telecommunications, water and energy pipeline, enterprise business and cable TV plant. These projects range from underground construction, fiber optic placement and termination for long haul networks, DC power plant installation, carrier level multiplexer and switching equipment installation, and Operations & Management monitoring and support systems. A few of these projects are listed below. Exxon Mobile Piceance Creek Fiber Optic Project 2008 – 17.5 Mile Fiber Optic network along the Piceance Creek Development Pipeline in Western Colorado. This project involved LiveWire placing, splicing, and testing the installed fiber plant. Boulder County Lakewood Watershed Pipeline Project 2004 – 80,000 Feet of Fiber Optic along water pipeline project in the mountains West of Boulder. LiveWire placed, terminated, and tested the fiber optic cable. City of Aspen / Pitkin County Castle Creek Fiber Add 2004 - Placed, terminated, and tested fiber optic add to existing city/county network. Mapleton Public Schools Fiber Entrance 2004 – LiveWire completed the directional boring and conduit construction for the new fiber optic entrance into the Mapleton Schools administration building. Kroenke Sports Pepsi Center Fiber Optic & Phone Cable 2001 – This project included directional boring, fiber optic and copper 100 Pair phone cable placement, termination, and testing.