Nevada County Connected, is a model project for the deployment of broadband Internet access in a geographically diverse and low-density rural area. Using a scalable and sustainable wireless broadband ecosystem, the infrastructure will provide robust and comprehensive services today, continuing into the foreseeable future. The project is a wise and prudent investment of Federal stimulus funds for a project that dovetails perfectly into both the objectives and goals of ARRA and the FCC’s National Broadband Plan. Nevada County Connected is a primarily middle-mile project that will also provide last-mile services directly to community anchor institutions having limited access to bandwidth. It will be overseen, implemented and managed by the Nevada County Economic Resource Council (NCERC) -- a 501 (c) 6 non-profit formed by local government and private partnership in 1995. The project will be built in collaboration with CONXX -- the developer of a carrier-grade wireless network built on a microwave/fiber SONET backbone whose system has been deployed in numerous eastern state municipalities; and Spiral Internet -- a local ISP that continues to provide service for the customers of the Nevada County Community Network, a non-profit which was formed in 1995 and one of the first to provide local Internet service to residents and businesses in the area. Nevada County Connected will be a California corporation wholly owned and operated by the NCERC with a Board dedicated to the network’s oversight and continuance. Board members will be culled from both the public and private sectors. NCERC is contracting with a local ISP to manage, run, and provide technical support for the network and its wholesale customers. Nevada County, California bridges the western foothills of the Sierra Nevada mountains with its eastern peaks as they drop toward the state of Nevada. The geography ranges from an elevation of 1,400 feet in Penn Valley to 7,085 feet at Donner Pass, with tree heights surpassing 100 feet in many areas. This diverse terrain creates a difficult scenario for standard wired broadband deployment. Although Level 3 fiber is available at the county's southern border along Interstate 80, backhaul is not readily nor affordably accessible in most areas of the County due to lack of competition. During the Gold Rush, the population and economic boom in the area was second only to San Francisco's -- the first commercial long distance call was made here, and the first multi-telephone (5 phone) network operated in Nevada City. But, the 20th century offered a steady decline as mines and lumber mills closed, and other resource-based industries floundered. The beginning of the 21st century puts Nevada County on a fiscal precipice. Economically the County's current 12.1% unemployment rate, coupled with lack of broadband infrastructure, creates a double bind as new businesses are reluctant to locate here because of lack of Internet access in residential areas, plus insufficient access and redundancy at business locations. The geographic diversity coupled with the original and antiquated build-out of the copper-wire telephone system in all areas of Nevada County has led to spotty and
inconsistent access to broadband Internet services. No one enterprise has taken on the full scope of the problem; leading to major gaps in some areas "officially" identified as served, complete lack of access in other areas identified as underserved, and only dial-up service in the financially unsustainable unserved areas. As a result, students at the local community college reliant on Internet speed for homework and research; home-based businesses requiring broadband access as a necessity; organizations and County agencies serving disadvantaged individuals in the more remote areas; and libraries and community centers in Nevada County who serve a large number of constituents, all find themselves without reliable affordable solutions to connectivity. County public safety and emergency services operate within an outdated system that puts them behind current first-responder standards. Simple telemedicine applications, and effective access for remote college-level learning are nonexistent; exacerbating the digital divide with our urban cousins. Nevada County Connected will meet the objectives of ARRA including job preservation and creation during the project build out, and as local WISPs train and employ members of the out-of-work construction trade in the installation of last mile equipment to premises upon the project's deployment. Additionally, the frequency- and technology-independent CONXX open network architecture, coupled with a robust management system, allows public safety plus emergency services applications to operate simultaneously and effectively alongside commercial deployment without interference. Sixty jobs will be created during the build-out phase, and twenty jobs will be created during the installation phase. These are modest gains in the overall economy, but significant in our rural area. The project specifically brings applicable broadband connectivity into unserved and underserved areas in the eastern and western portions of Nevada County, and -- by proximity -- into Colfax in northern Placer County, located just to the south. Within the proposed funded service areas the project will pass 7,141 businesses, 40,665 households, and 1,179 community anchor and public safety institutions. It is projected that 20,000 users will be served by the project, based on Nevada and Placer County provided data, and U.S. Census Bureau (2000). The technology proposed for Nevada County Connected is designed and built by CONXX in collaboration with wireless technology vendors including Alacatel Lucent, Nera and Alvarion. The system has been effectively tested and actively deployed in Cambria County, Pennsylvania and Allegheny County, Maryland. The network features a carrier-class backbone ring of towers that will create a redundant middle-mile network throughout the coverage area with scalable bandwidth. The network will support prioritization of end users and applications to ensure that critical data gets through -- for example, in natural disasters -- when required. At each of the tower sites, wireless last-mile technologies will be deployed by local WISPs, enabling endpoints throughout the service area to be connected into the high-performance backbone with speeds ranging from 3Mbps down/up to 10Mbps down/up; exceeding speeds currently available. Dedicated bandwidth speeds of up to 35Mbps down/up will be available for both community anchor institutions and small businesses. The frequency- and technology-independent infrastructure will allow the system to be upgraded as new technologies/frequencies become available. During the first year after launch, it is projected that 1,610 households or home-based businesses will adopt broadband access on the system, 30 businesses will adopt dedicated broadband access, 14 community anchor institutions will adopt dedicated broadband access, and 5 public safety entities will utilize the network for dispatch. It is projected that the infrastructure will provide broadband Internet access to 10,000 households, 200 businesses, and 25 community anchor institutions. The Nevada County Connected project will create 67 direct job years, 11 indirect job years, and 43 induced job years during the 24-
month construction phase; 30 jobs during the launch phase for system management and last mile provider installation and servicing; and 300 jobs created due to increased availability of broadband Internet access. Of those, over 100 telecommuter jobs would be created in the first two years, thus saving 72,000 driving hours annually plus over 130,000 gallons of gas. Government funding is essential to build a carrier-grade system that is sustainable in a low-density area such as ours. The Telecommunications Committee of the Nevada County Economic Resource Council cited this over eight years ago. The availability of Federal stimulus funds made it viable. The project will cost $11,094,398 to complete. Nevada County Connected is requesting 69.27% grant funding from the BTOP program, 10% of additional grant funds have been approved (Resolution T-17197) by the California Public Utilities Commission under the California Advanced Services Fund grant program, and 20.73% will be funding by private investment, loans, and in-kind services. As a model project, other rural communities will benefit from the deployment of Nevada County Connected -- a comprehensive carrier-grade solution to bring broadband connectivity into areas with geographical diversity, low population density, and which are economically distressed.