

Broadband USA Applications Database

Applicant Name: Internet Colorado, LLC

Project Title: Advanced Wireless Mesh Network For Gunnison, CO

Project Type: Last Mile Remote

Executive Summary

A. Opportunity In Gunnison, CO Internet Colorado (ICO) seeks to construct an advanced fiber optic and wireless mesh network to provide low-cost, high quality high speed Internet access to all areas of the City of Gunnison, CO. The project will create a state-of-the-art multi-agency fiber-optic communications network to deliver secure broadband access and coordinated county-wide emergency response; connect the business district to the citywide fiber backbone; provide free fiber-based Internet access to all city-owned buildings and schools; connect the Gunnison Valley Health System to Gunnison County's first responders and open telemedicine opportunities for Gunnison's health care providers; provide free public Internet access at the Library and Community Center; and deliver competent, low-cost broadband Internet service to residents and visitors. Coordinated emergency response is critical for the permanent residents of Gunnison, ski-season tourists and summer visitors to Gunnison County's extensive system of national parks and forests. Special in-vehicle terminals and IP-to-cellular bridges will provide highly available mobile broadband service to all emergency response vehicles in the City of Gunnison. ICO will construct a citywide fiber optic network on single-mode fiber, and give the city four dedicated strands to replace its 20-year-old multi-mode fiber optic network. The new network will support direct attachments to the strategic institutions and provide a free 6Mb/s Internet connection for each school building, enabling districtwide improvement of classroom instruction. The new network connections will ensure adequate, cost-effective Internet connectivity for Gunnison's schools. The proposed network will also extend fiber optic connections to every location in Gunnison's business district. Business owners may have fiber based Internet connections, enabling them to open new markets, employ telecommuting where possible, make a highly educated, well-trained workforce virtually available to the rest of the state, provide innovative wireless-oriented services to consumers, encourage walk-in traffic to shops and restaurants, and create a technologically advanced business environment. Ubiquitous Internet connectivity will also help Gunnison attract conferences and events. The Community Center and the Ann Zugelder Branch of the Gunnison Library District will receive a 6 Mb/s connection to the Internet at no additional cost to the city or county. The Community Center will also receive 6 public computer terminals for its computer lab. The Gunnison Advanced Wireless Mesh Network will provide low-cost, high quality Internet Access to nearly 40 percent of Gunnison County's residents immediately. Under the ICO plan, unlimited 1 Mb/s Internet access would be available anywhere within the City of Gunnison starting at less than \$18 per month. Each home will have access to a reliable, affordable Internet connection. These connections will enable residential users to participate in employment, education and leisure opportunities that have been frustrated by the lack of reliable Internet access. As an added benefit, the proposed wireless network will enable the Gunnison Valley Health System to eliminate

cellular broadband cards currently used by 15 of its home health providers. The hospital pays for cellular service for each laptop at a cost of \$60 per month. Ubiquitous broadband access would save the Health System approximately \$11,000 annually in cellular costs.

B. Description Of Gunnison The proposed funded service area includes the city boundaries of Gunnison, a small municipality located in southern central Colorado. The City of Gunnison is the seat of Gunnison County and has a population of 5,409. Gunnison is also home to Western State College, one of Colorado's state universities. The project will not initially cover undeveloped areas of the city or the Western State College campus.

C. Gunnison Households And Businesses The City of Gunnison provides metered electrical service to 2,478 households in Gunnison and 633 businesses. Gunnison's population at the 2000 Census was 5,409 persons.

D. Gunnison's Community Anchor Institutions Gunnison's anchor institutions include the City of Gunnison, the City of Gunnison Community Center, Gunnison County, Gunnison Valley Health System, Mountain Home Health, Gunnison Watershed School District, Gunnison District Library, Gunnison Chamber of Commerce, Six Points Training and the Gunnison Small Business Development Center. In addition, the following institutions, state and federal agencies have a presence in Gunnison: the Gunnison-Crested Butte Regional Airport (GUC), Colorado Department of Public Safety, Colorado Department of Transportation, Colorado Department of Workforce Development, Colorado Division of Wildlife, Colorado State Forest Service, Colorado State University Extension Office, The Bureau of Land Management, The Department of the Interior, The US Department of Energy, Western Area Power Administration, the National Parks Service, the United States Forest Service and the United States Postal Service.

E. Services and Applications For Gunnison And Its Users The proposed network will provide 1 Mb/s symmetrical wireless access to all locations in the City of Gunnison for less than \$18/month. Additional service levels will be offered at a higher cost. Business district users will be connected to the network via fiber optic cable that can be provisioned at speeds of up to 1 Gb/s. City and county buildings, including the schools, library and community center will receive 6 Mb/s Internet service at each location at no cost. The Community Center will also receive 6 brand new public terminal workstations for use in the Community Center's computing lab. The Gunnison Valley Health System will be connected to the fiber optic network and will receive a 6 Mb/s connection, also at no cost.

F. ICO's Plan To Address Non-Discrimination And Interconnection ICO does not filter Internet content to any subscriber, restrict or favor any lawful content or applications over others. ICO offers optional spam-filtering services only at the request of the subscriber. ICO will post prominently on its Web site all network management policies, including a description of the business practices and technical mechanisms employed to allocate capacity, differentiate among applications, providers or sources, limit usage and manage illegal or harmful content. ICO will maintain a direct connection to the public Internet supported by appropriate backhaul capacities to one or more Tier 1 or Tier 2 Internet Service Providers and will offer interconnection where technically feasible at reasonable rates and terms that are negotiated with all parties for both direct connection to the Internet and traffic exchange.

G. Gunnison's Advanced Wireless Mesh Network The citywide single-mode fiber optic network will connect seventeen (17) root nodes to 100 wireless access points and place fiber "drops" at all city-owned and county-owned facilities, all school district buildings, the library, and the Gunnison Valley Health System. Root access nodes will provide a minimum of 200 Mb/s and a maximum of 1 Gb/s; wireless access points will provide 200 Mb/s each. All businesses located between New York Avenue and Ohio Avenue on Main Street in Gunnison will receive a free fiber "drop" to a demarcation point at their premises. Business

owners will provide only a fiber optic jumper cable to activate their connection, and pay for all service costs. ICO will purchase all root node and access point equipment from Cisco Systems. The network will support 802.11 a/b/g/n type network adapters, commonly found in computing and handheld wireless devices. Subscribers will provide or purchase their own wireless network adapters when necessary. ICO will also install and maintain a Verizon cellular bridge to connect first responders to the network when they leave the network's wireless coverage area. H. ICO's Qualifications Jason Swenson founded ICO in 1994. In 1998, ICO began delivering Internet access via wireless networking to unserved areas of the community. In 2004, ICO partnered with Qwest to offer DSL services to select areas within the cities of Gunnison and Crested Butte. In 2005, ICO introduced its Voice-over-Internet Protocol (VoIP) services to the Western Slope. Our eleven years of experience in delivering reliable wireless networking uniquely qualifies ICO to build and manage this advanced network. I. Overall Infrastructure Cost of Gunnison's Advanced Wireless Mesh Network The budget for the overall project is approximately \$1.5 million. The infrastructure portion of this budget is \$1,277,572. J. ICO projects an initial residential subscription rate of approximately 550 users in the first year. We anticipate a subscriber growth rate of about 200% per year through 2014 for most service offerings. K. Number of jobs estimated to be saved or created in Gunnison Building and operating the mesh network will create six permanent full-time positions. The network also offers a pole-lease revenue stream of 5% for the City and will help offset a 9% decline in tax revenues that will otherwise be addressed with layoffs and job eliminations. The network will create Internet-related self-employment opportunities for residents who provide freelance or contract services. Businesses can supply and receive new contract services. Ubiquitous broadband network services will increase Gunnison's attractiveness as a tourist and convention location, and we anticipate an increase in both seasonal and permanent employment as the result of increased tourism. We believe the network may indirectly generate or save as many as 75 full-time positions over five years.