

Broadband USA Applications Database

Applicant Name: Ohtep LLC

Project Title: Southeastern Arizona Rural Link

Project Type: Last Mile Non-Remote

Executive Summary

According to Arizona's Communications Infrastructure Advisory Committee, 50% of Arizona citizens living in Arizona's rural areas do not have access to broadband connections. This digital divide is exacerbated by the population shift from "rust-belt" states to "sun-belt" states. Between 2005 and 2006, Arizona's population grew by 3.6 percent, surpassing Nevada's 3.5 percent population growth to take the number 1 position in population growth. Since 1992, Arizona's population has nearly doubled, growing from 3.8 million to 6.5 million in 2008. The Arizona Broadband Initiative Framework estimates that much of this population growth is occurring in rural areas; however, private sector investment in rural broadband infrastructure has not kept up with the growth since it is difficult to ensure an adequate return on investment. In a predictable but unfortunate cycle, the telecommunications industry invests based on its calculation of consumer demand; consumer demand is driven by the availability of compelling content and services; and the content creators' hedge their bets based on perceived consumer demand and availability of advanced network services. A catalyst is needed to break the cycle of waiting and, by default, that catalytic agent is government.-Arizona Broadband Initiative Framework, p.7 Rural communities present distinct disadvantages to building a financially self-sustaining wire line based service, namely, small population, and low home density. Since the capital investment in wire line services is proportional to the number of homes passed, the revenue potential per unit of capital investment shrinks as home density declines. OHTEP, LLC proposes the Southeastern Arizona Rural Link (SARL) project to create a standards-based wireless broadband network in Southeastern Arizona. When compared with wire line alternatives, the open-standard hardware implemented will be relatively inexpensive to build out and efficient for serving the low density geographies of Southeastern Arizona. SARL plans to serve an area of approximately 12,145 square miles in the southeast corner of Arizona. The service area includes rural census blocks within the counties of Cochise, Graham, Pima, Pinal, and Santa Cruz Arizona. The Census Designated Communities served within the service area The communities served includes the rural areas surrounding Nogales, Rio Rico, Tubac, Sasabe, Green Valley, Sahuarita, Vail, Sierra Vista, Tombstone, Douglas, Pierce, Benson, Three Points, Huachuca City, Willcox, Oracle, Florence, Coolidge, Maricopa, Marana, and Eloy. The service area includes approximately 27,016 households and 3,000 businesses. The service area includes 34736 contiguous census blocks which contain at least 12 hospitals, 21 public health clinics, 14 libraries, 165 schools, 55 fire departments or districts, and 21 public safety offices for a total of at least 280 community anchor organizations. SARL will include a Rural Community Access element which will survey the needs of each of these community anchor organizations and coordinate the installation of a basic no-cost broadband service to each organization. Additional low-cost consulting services will be provided to community anchor

organizations needing integration services, such as multi-site wide-area-network connectivity or integration with existing communications systems. SARL proposes to deliver an average of 4 megabit download, 500 kilobit upload broadband Internet access service to residences in the proposed funded service areas for a cost of \$44.95 per month. Low income households may qualify for a 25% reduction in the monthly service cost. Each 4 megabit broadband account will include up to 5 complimentary email addresses. Businesses in the proposed funded service areas will be qualified for up to a 5 megabit download/ 2 megabit upload broadband Internet service with up to 10 complimentary email addresses for \$99.00 per month. Both residential and business customers may also qualify for a flat-rate digital voice service at \$24.99 per line that includes unlimited bundled local and domestic long-distance calling. SARL is committed to exceed the Interconnection and Non-Discrimination obligations specified in the BIP/BTOP NOFA wherever possible. Namely: 1. FCC's Broadband Policy Statement (FCC 05-151) and the "Not favor" obligation: a. SARL will enhance the open and interconnected nature of the public Internet by not restricting or favoring any lawful data transmissions whatsoever. Furthermore, SARL will seek multiple Tier-1 Internet peers in the event that one peer blocks lawful content. b. SARL will facilitate the use of lawful customer applications and services of their choice with the only exception being law enforcement/CALEA requirements. c. SARL will provide an industry standard Ethernet connection to each customer, allowing them to connect an unlimited number of legal client devices in their home or business to the SARL network. d. SARL will facilitate third-party interconnection by providing peering and transit services at industry standard costs to other parties desiring to service customers in the proposed funded service area. 2. Website: a. SARL will develop a web portal specifically for the prominent display of network management policies, with a link on the SARL main web page. Each end-user that subscribes for the broadband service will retain a paper copy for their reference at the time of the order which contains web links to updated content on the web site. The broadband installer will be instructed to educate the end-user of the importance of the network management policies. 3. Public Internet connection a. The SARL network will be interconnected to one or more public Tier-1 Internet peers. All customer end-points on the SARL network will have access to all lawful Internet content available on the Tier-1 providers' network. 4. Third-party interconnection a. SARL will proactively develop a wholesale strategy, based on competitive transit rates, allowing third-parties to interconnect client devices with the SARL network and empowering the greatest possible expansion of the proposed funded service area. The SARL network design is based on industry standard WiMAX microwave technology operating in the FCC endorsed 3.65 GHz band. WiMAX technology has already been successfully deployed around the world and the technology is proven from a performance and reliability standpoint. In 2004 the FCC proposed the operation of wireless devices in the 3.65 GHz band, stating that the band would foster the introduction of new and advanced service to the American public, especially in rural areas. The FCC adopted a non-exclusive licensing scheme, enabling a cooperative and shared use of the band. The WiMAX network strategy is the best fit for the SARL project as WiMAX does not have an incremental cost per residence or business passed, unlike wire line technologies. Arizona's rural communities present challenges to building a self-sustaining broadband infrastructure; the small population and low home density discourages traditional wire line providers whose capital investment is proportional to the geography covered. The SARL WiMAX strategy represents the most efficient and promising means for providing financially self sustaining broadband Internet services for the proposed funded area. The SARL management team is uniquely qualified to deploy and support the broadband

network in the proposed funded area. The management team brings 15 years of designing and deploying broadband microwave networks for multiple wireless service providers, 10 years of telecommunications financial management, and a combined 30 years experience in managing Internet Service Provider networks. The management team resides and lives in Southern Arizona, bringing an intimate familiarity of the area and its unique demographic and geographical challenges to the SARL project. The overall infrastructure cost of the proposed SARL broadband-only system if funded by BTOP is \$5,022,568. If funded by BIP, the total infrastructure cost is \$5,637,031 for a broadband and voice services system. This cost includes the construction of 33 WiMAX tower facilities, the customer premise equipment and installation labor for approximately 7,680 combined households and businesses assuming a 25% penetration ratio of households and businesses in the funded service area. The infrastructure costs also include the underlying routing and switching components necessary to interconnect to the public Internet. Our estimates suggest that at least 25% of the service area households and businesses will be early adopters of the technology. The SARL project will immediately create 5 full-time jobs to deploy and manage the subscriber base and network infrastructure, growing to 18 in five years. In a January 2009 study released by the Information Technology and Innovation Foundation, it is estimated that 498,000 direct and indirect new jobs will be created or retained by a \$10 billion investment in broadband network infrastructure at a cost of \$20,080 per job. If we apply that factor to the SARL project's \$3,989,536 infrastructure cost, 198 jobs will be directly or indirectly created or retained as a product of the investment.