The Opportunity. The State of New Mexico (SoNM) faces huge hurdles in bringing broadband to local communities and anchor institutions. Due to very low population density it is not economically feasible to deploy broadband through much of the State. Large geographic areas, including tribal lands are unserved or underserved, in part, due to the lack of middle-mile architecture. Of particular concern is the need for deploying 700 MHz public safety broadband for use by police, fire, EMS, and other first responders and government agency personnel. Given the lack of economic viability for system deployment throughout much of New Mexico, it is expected that New Mexico would be one of the last areas to receive such service without Federal Government participation. Accordingly, New Mexico sought and obtained a waiver from the FCC allowing the State to build a 700 MHz public safety broadband network. This 700 MHz deployment will allow wireless broadband communications interoperability among state, county, local, and EMS responders. Anchor institutions will be able to utilize the network for primary public safety applications as well as providing a backbone for tele-health, video conferencing, and data applications. Reciprocal agreements will be executed with local providers covering emergency backup for public safety uses. The SIRCITS II project, together with SoNM's earlier-submitted Round 2 BTOP grant application (Easygrants ID 6832, hereinafter 'SIRCITS I'), will enable the State to deploy its 700 MHz public safety system. Under SIRCITS I, SoNM/DoIT will complete the upgrade of DoIT's statewide 99-tower microwave communications system from analog to digital and concurrently expand the capacity of the statewide backbone to 155 Mb. This pipeline will form the backhaul component of the State's 700 MHz deployment. SIRCITS I included a 700 MHz deployment in Albuquerque and Santa Fe and SIRCITS II extends the system to four additional less populated areas: Grants, Las Vegas, Espanola and Socorro. This system will become part of the future nationwide 700MHz public safety broadband network. PFSA. SIRCITS II contemplates a single statewide service area, spanned by the SoNM/DoIT digital microwave system and served by the 700 MHz broadband network. All public safety users in the state and state agency personnel will have access to the 700 MHz system, as will all eligible users pursuant to FCC rules. Ultimately, the State will complete a state-wide 700 MHz public safety broadband deployment, however this statewide PFSA is underserved since the rate of subscribership to broadband services statewide is below 40%. The State's average population density is 16 per mile, with about one-third of its 2.009M people living in the Rio Grande corridor. The State has 741,000 households and over 54,000 businesses. One in six New Mexicans are below the poverty line and one in four children live in poverty. 28% of New Mexicans speak Spanish at home; 9.2% are Native American. 22% of New Mexicans do not have a high school degree. Given these demographics, the State
faces significant hurdles in overcoming the shortfall in broadband usage. By deploying a middle mile broadband and 700 MHz backbone throughout the State, SIRCITS will enable broadband access directly to 151 community anchor institutions, and indirectly (with partners) to 1127 anchor institutions, 135 local communities and tribal areas. The backbone will also provide backhaul for the State’s planned 700MHz public safety LTE system. The 700 MHz LTE deployment will provide reliable public safety grade communications at affordable rates to public safety entities, critical infrastructure, and other governmental users and their partners. This LTE deployment is the first stages of a planned statewide public safety grade LTE network. Non-discrimination/interconnection. As a government, SONM’s mission is to provide for its citizens and constituents on a non-discriminatory basis. The State will actively partner through sharing agreements with existing/future last mile providers to bring broadband services to unserved or underserved areas over the statewide DMW system. SoNM will not discriminate against any provider. The State will manage traffic on the network so that public safety traffic that is deemed critical to the life and safety of citizens or first responders will be separate from commercial traffic. The Last Mile 700 MHz LTE network will provide public safety grade services on a non-discriminatory basis to eligible users in accordance with FCC rules governing public safety spectrum. Type of broadband system. SoNM/DoIT operates a fiber-optic and point-to-point microwave public safety network providing coverage across New Mexico. Network assets include the operations center, fiber-optic cables, towers, roads, rights-of-way, real estate and buildings. By upgrading this infrastructure to support broadband, the State is providing the most cost-effective and shovel ready approach to expedite broadband proliferation in unserved and underserved areas, while also improving communications for community anchor institutions and establishing the needed statewide backbone for the 700 MHz public safety LTE deployment. The network will be upgraded from analog to digital microwave to support throughput at 155 Mb. Upgrades will rely heavily on the existing towers, transmission lines, shelters and antennas minimizing the required changes to sites. DMW technology provides an easy upgrade path for increasing capacity in increments of 150 Mbps while providing redundancy by using additional microwave frequencies. The Middle Mile DMW network is complemented by a Last Mile wireless broadband network based on LTE operating on the 10 MHz of 700 MHz public safety broadband spectrum allocated for that purpose by Congress and the FCC. The system will utilize LTE equipment with a core placed in Santa Fe and traffic from other areas carried over the DMW network. This system will be open to all public safety users and will become part of the planned nationwide interoperable 700 MHz public safety broadband network. Qualifications. SoNM is well equipped to complete this project. It operates a state-wide radio system on 99 tower sites dating back 50 years. Over the years, the state has gained tremendous expertise in planning, operating, and improving this critical communication network. Staff has extensive experience in-house and working with contractors to resolve network issues due to the topography, terrain, and natural disasters that can impair system functionality. The state has used a sustainable business model of calculating operating expenses and depreciation and then establishing customer rates based upon federally audited formulas. This model is carried forward to the existing project. DoIT has proven to be a valuable asset to the State of New Mexico and with the successful funding of this grant request, our team of experts for network, radio, broadband, and public safety stand ready to deliver. Cost and matching funds. The total project cost is $55.7 million under SIRCITS I and $20 million under SIRCITS II. These budgeted costs are for a turnkey system, including equipment, installation, engineering, project management and implementation. The State of New Mexico is
providing cash and in-kind contributions totaling $17 million under SIRCITS I and an additional $6 million under SIRCITS II, for a 30% non-federal match in each case. Under SIRCITS I, $5.4 million is in cash and $11.6 million is an in-kind contribution leveraging assets of the State; SIRCITS II adds an additional $6 million in-kind contribution. Subscriber projections. The SIRCITS I / SIRCITS II project connects the entire state (121,356 sq.mi.) with 155Mb broadband middle mile that forms the backhaul pipeline for the 700 MHz public safety broadband network, and deploys last mile 700 MHz public safety interoperable two-way communications for voice, video, and data to half of the state with service available to all eligible users. As a service provider of a sustainable communications network, the state has projected that by year eight (8) of the project’s timeline, total revenues will be 7.8 million dollars and that 5 megs of middle mile bandwidth will cost $386 per month. This is truly a fantastic price for delivery of this capacity especially for rural New Mexico and will substantially reduce the cost of delivering service over the 700 MHz system. Jobs created or saved. As a result of SIRCITS I, a total of 420 job years will be created or saved through the construction and deployment of the project; of this total there will be 178 direct jobs, 91 indirect jobs and 151 induced jobs. Under SIRCITS II, a total of 152 job years will be created or saved; of this total there will be 65 direct jobs, 33 indirect jobs and 54 induced jobs.