Opportunity: As the state's largest four-year university, with four branches in rural and underserved areas, the University of New Mexico is proposing for funds to enhance and upgrade central New Mexico's public exchange point, the UNM Albuquerque GigaPoP, to receive fiber connectivity from: ENMR'Plateau (Easy Grants No. 587) whose communities include Clovis, Las Vegas, Raton, Roswell, Springer, and Tucumcari, New Mexico; and REDI Net (Easy Grants No. 5745) whose communities include Rio Arriba County and Los Alamos County. The University believes that by upgrading the UNM Albuquerque GigaPoP to receive fiber connectivity from these sites is to serve underserved areas of the state and also to upgrade and enhance access to rural communities, American Indian populations within the state, healthcare clinics, libraries, and other secondary and post-secondary institutions within the state. This aggregation point upgrade will further support areas of education, telehealth, security, economic development, government services and research in the state. The University further understands that through a middle mile aggregation upgrade the following opportunities exist for rural New Mexico via ENMR and REDI: 1. Establish peering and partnering agreements between the private and public sector networks that promote shared investment, capacity and a common pursuit of secure and end to end manageable for public sector mission critical functions. 2. The Albuquerque GigaPop will provide opportunities for public and private entities to connect through our core network with speeds of 10 Mbps, 100 Mbps, 1 Gbps, and 10 Gbps. 3. ENMR'Plateau, REDI and UNM will save money through peering and routing at UNM's Point of Presence thus reducing the overall cost to New Mexicans. 4. The UNM Albuquerque GigaPoP will provide ENMR'Plateau and REDI Open Networks' service areas a 'one-stop shopping' connection point that provides cost effective access to the major national commodity Internet Service Providers (ISPs), as well as to 'aggregation pools' and mechanism that ensure alternate data paths, data paths with especially high quality end-to-end performance for specific applications, and links to partners. 5. The PoP will provide the state's rural communities with access to a secure, high bandwidth, and managed optical network, which will provide local opportunistic peering of exchange traffic between each other therefore reducing costs. 6. The PoP will provide access to high-bandwidth, next-generation Internet networks including Internet2, National Lambda Rail, and Rio Grande Optical Network. Finally, by providing access to this aggregation point, rural New Mexico will benefit from regional, national and international access to digital literacy, world markets, world educational environments, world healthcare practices and world work base opportunities, which in turn improves the quality of life for rural New Mexico. Service Area: The first service area includes Albuquerque, Carlsbad, Clayton, Clovis, Fort Sumner, House, Las Cruces, Las Vegas, Raton, Roswell, San Jon, Santa Fe, Socorro, Springer, and Tucumcari, NM, totaling 15 communities in the ENMR'Plateau area. The second
service area includes Espanola, Los Alamos, Hernandez, Alcalde, Velarde, Embudo and Dixon, NM, five federally recognized tribes (Pojoaque, San Ildefonso, Ohkay Owingeh, Santa Clara, and Tesuque Pueblos) totaling 12 communities in the REDI Open Network area. Households and Businesses Passed: The first service area (ENMR'Plateau) totals 695,696 households and 36,141 businesses. The second service area (REDI Open Networks) totals 19,227 households and 1,332 businesses. Community Anchor Institutions: The first service area (ENMR'Plateau) totals 263 anchor institutions. The second service area (REDI Open Networks) totals 123 anchor institutions, including two of UNM's Branch Campus. Proposed Services and Applications: Basic services include high speed access to multiple carrier options, peering, cross connecting, point to point VLANs, in addition to multiple data centers for business continuity, voice, video and data. The network will support advanced applications not currently available including distance learning, telemedicine, patient monitoring, EMS/public safety, green grid and smart grid. Non-discrimination and Interconnection Obligation: This project fully adheres to the non-discrimination and interconnection obligations required by BTOP. The Albuquerque GigaPop is an 'open access' network, in that the infrastructure is publically owned and available for use by any qualifying service provider on an equal and fair basis. Type of Broadband: The technology standard for this project is fiber-optic cable, with a combination of Ethernet/IP for the 10 gigabit metropolitan area core ring and business/institutional services. Integral to this proposal is the assertion that public and private sector traffic will be managed in virtual overlays on a shared fiber transport mechanism. Each network can be managed independently, but can also be coordinated. Traffic can thus be managed end-to-end for mission critical public sector operations requiring compliance with HIPAA, FERPA, and other regulations. ABQG will also add capacity for roof-top reception of wireless equipment. Qualifications of the Applicant: The UNM Albuquerque GigaPop is fully managed by a UNM Associate Director in IT Infrastructure, 1 Network Specialist/Tactical Planner, 1 Manager of IT Technical Support, and 2 Optical Network Engineers. All BioSketches and Curriculum Vitae are attached along with the organizational structure Overall Cost: The total cost for the New Mexico Middle Mile Aggregation Project is $1,223,320.42 and included in this cost is the $244,664.08 cost sharing match from the University of New Mexico. Subscriber Projections: Expected subscriber projections for this project from the REDI Net is estimated to be 40% or 7,690 of the 19,227 homes in the service area and 50% or 1,332 businesses in the service area estimated our requirement of a 10GE connection. ABQ-G anticipates the same bandwidth requirement from the ENMR'Plateau Networks. We've already demonstrated this type of connection within ABQ-G via a preexisting 10GE pipe. Jobs Created: Indirectly this project will expand 4 jobs to complete this project: Network Specialist/Tactical Planner, GigaPoP Operations Manager, and 2 Optical Network Engineers. Directly this project will create 10 jobs to complete this project: 3 Electricians, 4 Construction workers, 3 HVAC technicians.