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**NATIONAL TELECOMMUNICATIONS
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STATE OF NEW MEXICO)
DIGITAL STATEWIDE INTEROPERABLE)
RADIO COMMUNICATION INTERNET) Award No. NTIOBIX5570097
TRANSPORT SYSTEM (SIRCITS))
MIDDLE MILE PROJECT)

ENVIRONMENTAL ASSESSMENT

BROADBAND TECHNOLOGY OPPORTUNITIES PROGRAM

--VOLUME I--

DISCUSSION

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EXECUTIVE SUMMARY

A. Overview. This Environmental Assessment (“EA”) is being submitted by the New Mexico Department of Information Technology (“NM DoIT” or “DoIT”) in compliance with National Environmental Policy Act (NEPA) and NTIA requirements under the NTIA-administered Broadband Technology Opportunities Program (“BTOP”) to support a significant upgrade to the statewide 99-tower Public Safety communications system in the State of New Mexico pursuant to the New Mexico Statewide Interoperable Radio Communications Internet Transport System (SIRCITS) program. The program funds will be employed to upgrade and retrofit the existing legacy analog Public Safety point-to-point microwave system that traverses the entire state of New Mexico, replacing it with up-to-date high-capacity broadband digital microwave technology. In addition, a 4G 700 MHz LTE wireless mobile communications system dedicated to Public Safety use will be implemented in New Mexico’s two major cities, Albuquerque and Santa Fe, and will be interconnected using the upgraded digital microwave to backhaul, enabling broadband interoperability between state, county and local Public Safety entities. The upgraded digital microwave system will also accommodate links with “last mile” systems throughout the state, with the potential of making broadband communications and Internet available for the first time to many rural, sparsely-populated and remote locations that otherwise could not be served.

As part of this EA, a total of 70 sites were evaluated. The proposed project ranges from minor equipment upgrades to replacement of existing towers with new facilities (a site-by-site listing of the work being done at each site is set forth at **Table 1** herein). The Environmental Assessment (EA) adheres to the August 2010 EA Guidance for Broadband Technology Opportunities Program Award Recipients. Extensive site reports included in Appendices 1-72 of the EA provide a detailed presentation of the effected environment and analysis of environmental impacts for each of the 70 sites, including site-specific maps and photographs and detailed discussions for each of the considered environmental criteria. The results of these analyses are summarized in tables included in the body of the Environmental Assessment. Given the number of sites (70 total different sites) and the sheer volume of the individual site reports (totaling several thousand pages), it is not practicable to include all information on every site in the body of the EA. Accordingly the EA functions as an overview and summary of the information contained in detail in the individual site reports, and comprehensive biological and archaeological reports included in the appendices. Tables included in Chapters 3 and 4 provide site-by-site summaries of the effected environment and analysis of environmental impact, with additional detail for each site set forth in the separate site reports appearing in the appendices.

Two separate consulting firms, Crestino Telecommunications Solutions and Towner Services Incorporated, were retained by the State of New Mexico to study the sites, and to prepare detailed and inclusive site reports (collectively, the “**Comprehensive Site Reports**”) for each site, as well as omnibus biological reports and omnibus cultural reports. These firms subcontracted with, respectively, SWCA Environmental Consultants (“SWCA”) and Parametrix, who prepared the required reports. Those reports, which are annexed as Appendices A and B, and 1-72 to this EA, contain all the site-specific details, showings and conclusions resulting from the investigations relevant to each site that are required for purposes of this EA. The reports remain the same as submitted with the Draft EA, except as follows: SWCA has updated the site reports for Alamogordo SP (site no. 1), Gallinas (site no. 25), Gila Regional Medical Center (site no. 26), and Las Vegas SP (site no. 33); these revised reports are included in the Appendices hereto.

In order to facilitate completing this EA, a Programmatic Agreement (“PA”) was entered among NM DoIT, NTIA, United States Forest Service (USFS), and New Mexico State Historic Preservation Officer (SHPO) at the end of October 2011, regarding Section 106 compliance for this project. The PA provides for the grant of a FONSI with a condition that DoIT will complete Section 106 review with appropriate federal agencies prior to initiating construction or ground disturbance at any given site.

Following submission of a draft EA during July 2011, NTIA provided a comments matrix to New Mexico during August 2011 setting forth comments on the draft EA and requesting certain additional information. This final environmental assessment addresses and responds to those comments and provides the additional information requested. The Draft EA was submitted in seven bound volumes, Volume I being the EA itself, and Volumes II through VII being the Appendices A – G and 1 – 72. Submitted herewith is a revised Volume I, constituting the Final EA, and a new Volume VIII, constituting additional appendices, including the PA referenced in the preceding paragraph, and the four revised site reports.

B. Scope of Work. There are two major components for the SIRCITS project. The first component is to complete the analog-to-digital transition of the State of New Mexico’s existing public safety microwave middle-mile communications network. The second component is to build out a 700 MHz LTE public safety broadband network in Albuquerque and Santa Fe that will be part of the national public safety broadband network. The two components of this project will function in a complementary fashion as the middle mile digital microwave network will be used to backhaul broadband traffic. As part of the Proposed Action, work will be done at a total of 70 different existing communications sites as follows: fifty-nine (59) existing analog point-to-point microwave communications sites will be upgraded/retrofitted to feature high-capacity digital microwave radios and antennas, and thirteen (13) sites will be equipped to provide

700 MHz LTE mobile wireless communications. A total of 29 sites will receive replacement towers; all of these sites are part of the digital microwave system. Two (2) of the thirteen 700 MHz sites will be collocated with microwave sites (both of which are among the 29 sites receiving new towers), resulting in seventy (70) discrete sites where work is to be performed. One of the 700 MHz LTE sites proposed in the original proposal to NTIA has been deleted due to inability to obtain the necessary backhaul to support the project.

The specific scope of work to be performed at each separate site to achieve the program goals varies from site to site depending on current state and condition of the site and the respective upgrades required to complete the project. 29 of the new digital microwave system installations will require new towers; some sites will require communications shelters and/or generator shelters; nearly all sites require upgraded radios and antennas. For sites receiving towers and/or new shelter installations, construction will require some ground disturbance and will have somewhat greater potential for affecting the environment than in the case of other sites that are not receiving new towers and/or shelters. All of the 700 MHz LTE sites will require the addition of antennas/cables to the tower structure, and the placement of new 700 MHz radios, network equipment and local carrier connections in an existing communications shelter on the site. For these LTE sites, no new towers/shelters/buildings or generators will be required, and there is no ground disturbance planned (except in the case of the two LTE sites co-located with digital microwave sites that are receiving new towers and shelters as part of the digital microwave system upgrades). A complete breakdown on a site-by-site basis of the work being done at each site is provided in **Table 1** set forth at the end of Chapter 2 hereof.

C. Alternatives Considered. The proposed action involves two parts: (i) completing the upgrade from analog to digital technology of NM DoIT's existing 99-tower microwave system that has been in place for 60 years; and (ii) deploying a 700 MHz LTE public safety broadband network covering Santa Fe and Albuquerque. NM DoIT considered the No Action alternative and sought to identify other possible alternatives for completing the project. The No Action Alternative would leave the status quo in place. That would mean that the analog-to-digital upgrade of the State's 99 tower microwave backhaul network would not be completed. This would mean that many parts of the State that currently does not have cost efficient access to broadband service will continue in that situation. Additionally, the no action alternative would mean that the public safety 700 MHz LTE broadband communications network planned for Albuquerque and Santa Fe would not be deployed in the foreseeable future. Accordingly, those cities would continue without effective public safety mobile broadband communications. Additionally the no action alternative would mean that the State's middle mile microwave network would not be fully upgraded from analog to digital

resulting in a lack of capacity needed in much of the State to accommodate backhauling the traffic from a public safety 700 MHz LTE broadband network. Accordingly the No Action alternative is not a reasonable approach since it neither addresses the necessity of upgrading the existing Public Safety network, nor does it bring 700 MHz public safety broadband service to the State.

NM DoIT was not able to identify alternatives that would be viable substitutes for either part of the project. With regard to the digital microwave portion of the project, the work will complete the analog to digital upgrade of the State's *existing* microwave backhaul system. There is no alternative technology, e.g., buried or aerial cable, that would accomplish this goal of upgrading the existing network. While buried cable or fiber could potentially serve in deploying a wholly new substitute network, this would not be an upgrade to the existing network but would, by definition, require deployment of an entirely new network rather than upgrading the existing legacy network. The existing network spans some 626.3 miles of terrain. Deploying an aerial or buried fiber network to replace the existing microwave network would require far greater cost and would involve substantially more disruption than upgrading the existing network. Separate agreements would be required with very large numbers of different land owners to secure rights of way and leases to accommodate deploying an aerial or buried cable. On the other hand, the State currently has legacy sites for the existing microwave network and while upgrades to some of those sites are planned as part of the project, no new microwave sites are required for completing the project. Ultimately, upgrading the legacy network will be far less costly or disruptive than deploying an entirely new network to traverse the 626.3 miles covered by the existing network. With regard to the 700 MHz LTE deployment for public safety broadband communications, there is no viable alternative that would accomplish the project, since the goal of the project is to deploy a mobile communications system using the 700 MHz public safety broadband spectrum that will be interconnected with the national public safety broadband network. The FCC, in granting the State of New Mexico authority to build this network, required the State to utilize LTE technology for the deployment. Accordingly, no viable alternative exists that would satisfy the requirements of the project.

D. Potential Environmental Impact. The Proposed Action is the most conservative approach that addresses the needs for a fully functional Public Safety communications system, and unprecedented broadband access for residents of rural, sparsely populated and remote areas of the state, in part because it is able to accomplish its objectives with only minimal (if any) impact on the relevant resource areas. None of the Comprehensive Site Reports prepared by either consultant identified any meaningful impact on, or other cognizable concern with respect to, noise, air quality, geology and soils, water resources, historic or cultural resources, archaeological resources, architectural resources, Native American resources, aesthetic or visual resources, land use

issues, infrastructure issues, socioeconomic issues or human health and safety issues.

The only area of concern identified by the consultants was raised by SWCA, pertaining to the biological resource area. SWCA notes that three of the communications sites for the digital microwave system (Benson Ridge, Cathey Ridge and La Mosca) are within the critical habitat for the Mexican spotted owl; and three of the sites for the digital microwave system (Sandia Crest, Socorro Forestry and Socorro State Police) are located *near*, but not *within*, designated critical habitat for the Mexican Spotted Owl or the Southwestern Willow Flycatcher. The biological resource concerns with respect to the identified sites will be mitigated with a variety of specific responses, such as limiting the height of the towers to a maximum of 57.9 meters (including any attached antennae), and avoiding the use of guy wires and tower lights to minimize the risk of collision of birds in flight. These mitigation measures were recommended by SWCA. SWCA's ultimate conclusion concerning the actions proposed to be performed at these sites, with the mitigation measures SWCA recommended, was that they are "expected to have no effects on the southwestern willow flycatcher," and "*may affect, but are not likely to adversely affect* the Mexican spotted owl." (Emphasis in original.) The US Fish and Wildlife Service ("USFWS") expressly concurred in this conclusion by letter dated January 22, 2011, additionally observing that "we find that your proposed action will have insignificant and discountable effects to the Mexican spotted owl".

SWCA concluded that the proposed actions for the other twenty-six (26) sites it investigated do not implicate any Designated Critical Habitat, and no endangered or threatened species have the potential to occur at those sites. Parametrix similarly determined with respect to every one of the thirty-eight (38) sites it examined that no adverse effect on species listed by USFWS could be identified.