NTIA Project NT10BIX5570116

Environmental Assessment for the REDI Net Middle-Mile Fiber Optic Project in Los Alamos, Rio Arriba, and Santa Fe Counties, New Mexico

North Central New Mexico Economic Development District

April 2011

Parametrix

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Prepared for

North Central New Mexico Economic Development District

Prepared by

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ACRONYMS

ACEC	Area of critical environmental concern
amsl	Above mean sea level
ANA	Alliance for Nuclear Accountability
AOC	Areas of concern
AQCR	An Air Quality Control Region
ARRA	American Recovery and Reinvestment Act
BLM	Bureau of Land Management
BMPs	Best management practices
BTOP	Broadband Technology Opportunities Program
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulation
CH_4	Methane
CO_2	Carbon dioxide
CSL	Cleanup Sites List
CWA	Clean Water Act
dB	Decibels
DOC	Department of Commerce
DOE	Department of Energy
EA	Environmental assessment
EPA	Environmental Protection Agency
F	Fahrenheit
FCC	Federal Communication Commission
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
ft	Feet
GHG	Greenhouse gas
HDD	Horizontal Directional Drilling
IFC	Interagency Fire Center
JMEC	Jemez Mountains Electric Cooperative
LANL	Los Alamos National Laboratories
LUST	Leaking Underground Storage Tank
mya	Million years ago

ACRONYMS (CONTINUED)

N_20	Nitrous oxide
NAAQS	National Ambient Air Quality Standards
NCNMEDD	North Central New Mexico Economic Development District
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMAC	New Mexico Administrative Code
NMBG&MR	New Mexico Bureau of Geology and Mineral Resources
NMDGF	New Mexico Department of Game and Fish
NMDOT	New Mexico Department of Transportation
NMEMNRD	New Mexico Energy, Minerals, and Natural Resources Department
NMED	New Mexico Environment Department
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NRAP	North Railroad Avenue Plume
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NTIA	National Telecommunications and Information Administration
NWI	National Wetlands Inventory
OHWM	Ordinary high water mark
OTDR	Optical Time Domain Reflectometer
POPs	Points of presence
PRPA	Paleontological Resources Preservation Act
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
ROW	Right(s)-of-way
RTC	Radiation control technician
SHPO	State Historic Preservation Officer
SIP	state implementation plan
SRCP	State Register of Cultural Properties
SWQB	Surface Water Quality Bureau
TCPs	Traditional Cultural Properties
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture

ACRONYMS (CONTINUED)

USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
VRP	Voluntary Remediation Program
WCA	Wildlife Conservation Act

EXECUTIVE SUMMARY

In June 2010, the Department of Commerce (DOC)—through the National Telecommunications and Information Administration (NTIA)—awarded a $10.6 million grant to the North Central New Mexico Economic Development District (NCNMEDD) under the Broadband Technology Opportunities Program (BTOP). The grant, funded through the American Recovery and Reinvestment Act (ARRA), is intended to provide high-speed broadband service to rural communities in northern New Mexico: the project will provide much-needed connectivity to businesses, anchor institutions, Native American Pueblos, and households in this traditionally under-served part of the state. By providing high-speed connectivity, the project is expected to facilitate rural economic development, job creation, education, and improved health care for northern New Mexicans—all core tenets of the BTOP program. However, before the fiber optic cable can be installed, the grant requires the NCNMEDD to fulfill its obligations under the National Environmental Policy Act (NEPA), the National Historic Preservation Act (NHPA), and other applicable local, state, and federal regulations. Following successful completion of the environmental process, the NCNMEDD has three years from the date of award to construct the project.

The proposed broadband installation spans three counties—Santa Fe, Los Alamos, and Rio Arriba—and includes lands managed by four federal agencies, five tribes, county and municipal governments, and the New Mexico Department of Transportation (NMDOT). The total length of the project is 125 miles; the new broadband cable will be placed on existing power poles for 79 percent of the project length. However, in areas where no such infrastructure is available, the line will be buried in existing disturbed rights-of-way (ROW); installed in existing buried conduit; or will tie into and light existing buried dark fiber. The cable will also be placed in existing conduit on the Omega Bridge over Los Alamos Canyon to safely span that drainage. Additionally, two small utility huts will be installed—one in Española; a second in Santa Fe. The line will eventually serve 107 anchor institutions, over 1,300 businesses, and approximately 19,000 households throughout the participating communities.

Two factors have contributed to limited differences between this environmental assessment (EA) and the grant award for the REDI Net project. For the most part, this is the result of moves/additions/deletions of the community anchor institutions and the fiber alignment to connect them to the core. However, this did not materially change the scope of the project, the service area, or the backbone fiber routes. Adjustments were limited and only involved the fiber laterals and participating or non-participating anchor connections. These minor changes resulted in a measurement discrepancy between the original grant documents and the EA, along with another contributing factor of different engineering methodologies used to estimate total fiber lengths. For example, totals given in the grant documents were based on the entire fiber requirements for building REDI Net, which also accounts for slack in the lines and spare storage; the distance measurements in this EA are strictly based on linear feet—calculated using geographic information system (GIS) data and information provided by the project engineer.

Due to the conditions of the ARRA funding, the NTIA is requiring the proponent to submit a final EA—and all other supporting studies—by the end of March 2011. Parametrix, NCNMEDD's environmental consultant, has conducted all of the required studies and has produced the following EA; the Broadband Planning Group is providing all design and engineering services.

As the DOC, through the NTIA, is serving as the lead federal agency, this EA meets their format and content requirements (NTIA/BTOP 2010). In addition, NTIA, through the Federal Communication Commission's (FCC's) on-line database, conducted tribal consultation to satisfy conditions of Section 106 of the NHPA. During the process, eight tribes contacted the NTIA requesting additional information. Parametrix, on behalf of the NTIA and NCNMEDD, provided the requested summaries and maps. No further issues were identified.

A total of five alternatives were considered during the EA process:

1. Preferred Alternative (also referred to as the Proposed Action): Installation of cable on existing overhead power-poles where available; buried within disturbed utility ROW along other routes.

2. Buried Cable Alternative: Install all of the fiber optic cable below ground in utility/road ROW.
3. Overhead Cable Alternative: Install all of the fiber optic cable on existing overhead power poles.
4. Wireless Alternative: Establish and construct a network of communication towers to provide wireless broadband.
5. No Action Alternative: Do nothing. Carried forward as a baseline for comparison with the different resource evaluations presented in Chapter 4.

As stated above, this EA introduces five alternatives, although based on the purpose and need, cost, existing infrastructure constraints, rugged geography, and sensitive natural and cultural environment, the Preferred Alternative/Proposed Action and No Action Alternative were the only two selected for comprehensive analysis. In total, the Preferred Alternative/Proposed Action was generally found to have less environmental impact; a greater and more positive effect on socioeconomic conditions, public health, and community connectivity; and satisfies the financial and temporal constraints of the award, and the concerns of the cooperating state and federal land-managing agencies. The No Action Alternative would maintain the status quo and adversely affect the communities of northern New Mexico as critical broadband infrastructure would not be made available to emergency response professionals, medical institutions, schools, businesses, or homes.

Based on the fact that the majority of the Preferred Alternative/Proposed Action encompasses existing infrastructure, we did not encounter any significant environmental/cultural resource issues. In addition, based on agreements with the New Mexico State Historic Preservation Officer (SHPO), the Bureau of Land Management (BLM), the Bureau of Indian Affairs (BIA), the U.S. Forest Service (USFS), Los Alamos National Laboratories (LANL; a subdivision of the Department of Energy [DOE]) and the NMDOT, we focused our cultural resource work on areas of proposed ground disturbance. Portions of the alignment where the fiber optic cable will be attached to existing infrastructure were considered only where pole replacement activities are proposed. For biological resources, we considered the entire alignment for migratory birds, threatened and endangered species, wetlands, and Waters of the U.S.

Results of the EA indicate the Preferred Alternative/Proposed Action would not result in any adverse effects to the natural or cultural environment. In addition, the Preferred Alternative/Proposed Action is consistent with the principals of Environmental Justice: specifically, low income areas, including tribal communities, would significantly benefit from the proposed undertaking without being subject to environmental impacts or inflated costs associated with single-service, private interests.

The REDI Net project is important for New Mexico. Not only will it provide much needed intra- and inter-community connectivity, it also offers these rural areas an opportunity to participate in global information sharing and collaboration. By creating a Middle-mile network with Last-mile opportunities for key anchor institutions, this project marks the next step toward information equality—regardless of location or degree of affluence.

Table ES-1. Summary of Potential Effects of the Preferred and No Action Alternatives

Resource	Preferred Alternative/Proposed Action	No Action Alternative
Noise	Temporary minor effects related to equipment noise during installation and periodic maintenance. No long term impacts.	None

(Table Continues)

Table ES 1. Summary of Potential Effects of the Preferred and No Action Alternatives (Continued)

Resource	Preferred Alternative/Proposed Action	No Action Alternative
Air	Temporary minor increases to criteria pollutants (particulate matter and ozone-related pollutants) due to emissions from construction and maintenance vehicles.	None
Geology/Soils/Paleontology	Minor short term impacts to soils and geology during pole replacement and horizontal directional drilling (HDD) activities. Long term impacts would be permanent in areas of new poles and buried line, but negligible. No impacts to paleontological resources are anticipated.	None
Water	Possible minor short-term impacts that can be mitigated by using appropriate BMPs. No long term impacts.	None
Biological	No impacts to T&E species and critical habitat. Minor localized noise disturbance to wildlife due to installation and periodic maintenance. Minor permanent disturbance to vegetation and very marginal habitat at hut locations. Measures were developed to mitigate impacts to migratory birds and other protected species.	None
Historical/Cultural	None	None
Visual	Negligible to minor short and long term impacts.	None
Land Use	None	None
Infrastructure	Project could potentially expedite the scheduled replacement of aged, deteriorated, or overloaded existing utility poles. Minimal temporary increase in non-hazardous construction waste	None
Socioeconomic	Substantial positive effect to northern New Mexico by providing high-speed data access and Internet service to emergency response personnel, schools, government, tribes, medical professionals, businesses, and homes. Installation of broadband is also expected to spur job creation and stimulate long-term economic growth for this traditionally underserved portion of the state.	Significant negative effects to the underserved communities of northern New Mexico due to the loss of this opportunity to gain high-speed Middle Mile broadband access.
Human Health/Safety	Positive effects due to reliable and fast access to data for emergency response personnel. Also, increased opportunities for electronic medical consultations and transfer of records.	Potential negative effects: emergency response personnel would remain at a disadvantage; citizens would also have limited to no access to electronic medical consultations.