

# FINDING OF NO SIGNIFICANT IMPACT

## FINAL ENVIRONMENTAL ASSESSMENT FOR THE CONSTRUCTION AND OPERATION OF A SECOND FIBER OPTIC LINE TO LOS ALAMOS NATIONAL LABORATORY LOS ALAMOS, NEW MEXICO

May 2020

**RESPONSIBLE AGENCY:** U.S. Department of Energy National Nuclear Security Administration

**ACTION:** Finding of No Significant Impact

**SUMMARY:** The National Nuclear Security Administration (NNSA), which oversees Los Alamos National Laboratory (LANL) located in north-central New Mexico is a multidisciplinary, multipurpose research institution owned and managed by the United States Department of Energy's (DOE) NNSA, Los Alamos Field Office. In support of LANL's missions, NNSA prepared an *Environmental Assessment for the Construction and Operation of a Second Fiber Optic Line to Los Alamos National Laboratory Los Alamos, New Mexico* (EA). The EA analyzed the potential environmental impacts that could result from the proposed construction and operation of a second fiber optic line that would provide redundant voice, data, and internet services to LANL and Los Alamos County.

The entire project would require the installation of approximately 18 miles of new fiber optic cable and supporting infrastructure on lands owned and managed by the Bureau of Land Management (BLM); DOE; United States Forest Service (USFS); Santa Fe County; and Los Alamos County White Rock community.

The Final EA was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969; Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (40 Code of Federal Regulations [CFR] 1500-1508); and DOE National Environmental Policy Act Implementing Procedures (10 CFR Part 1021).

**PURPOSE AND NEED:** LANL's current high performance voice, data, and internet service that is essential to support NNSA mission for maintaining the nation's nuclear deterrent and collaborative scientific research is contingent on the present single fiber optic line and, as such, is vulnerable to outages or service interruptions. Internet service protection is necessary. An

interruption of service due to a failure of the existing single fiber optic line would impair LANL's high performance voice, data, and internet service, and consequently compromise NNSA mission for maintaining the nation's nuclear deterrent and collaborative scientific research. Therefore, to support access and maintain the reliability of LANL's communication and data capabilities, it is imperative to have a redundant, geographically separate, and equivalent capacity fiber optic system to provide these services.

**PROPOSED ACTION:** NNSA has submitted a request to CenturyLink, a commercial internet fiber optic service provider, to provide for redundant voice, data, and internet services to the existing service. In response, CenturyLink has proposed the construction and operation of a redundant fiber optic line. The underground fiber optic cable would originate and tie into existing CenturyLink fiber optic infrastructure at an underground vault adjacent to the Marty Sanchez Links de Santa Fe golf course at the intersection of Caja del Rio Road and North Caja del Oro Grant Road. CenturyLink would install the new underground 72 strand fiber optic cable through a combination of trenching or boring depending upon geologic conditions and presence of cultural resources. From the golf course, the route would parallel Caja del Rio Road to the intersection of Santa Fe County Road (CR) 62, an unpaved improved dirt and gravel roadbed, where it would continue on CR 62, crossing BLM lands, until meeting the boundary of the Santa Fe National Forest (SFNF). The installation in this section would occur approximately 10-15 feet (ft.) west of the Caja del Rio Road shoulder and for the most westerly 0.75 miles on CR 62, it would be located approximately 10 ft. southwest from the Santa Fe Landfill boundary fence. Approximately 2.1 miles of lands owned or managed by the BLM and Santa Fe County would be crossed.

On SFNF lands, the route would be primarily within the Santa Fe National Forest Road (FR) 24 roadbed or in certain situations parallel to FR 24, approximately 10-20 ft. adjacent to and south of the FR 24 roadway. The route would proceed for approximately 7.3 miles until FR 24 approaches the Public Service Company of New Mexico Reeves (RL) 115 kV electrical transmission line support structures where the cable would deviate west cross-country from FR 24 to intersect with the RL; a distance of approximately 0.1 mile. The underground portion of the fiber optic cable would terminate at a vault adjacent to the RL utility corridor. From the vault, the fiber optic cable would transition to optical ground wire (OPGW) and connect to the top of the RL electrical transmission line structures, replacing the existing aerial shield wire for a distance of approximately 3.6 miles. At the RL White Rock Canyon crossing, in order to span the Rio Grande with the OPGW onto DOE LANL lands, installation of two in-line new steel monopole structures would be required on each side of the canyon adjacent to the RL canyon spanning structures, for a total of four monopole structures.

Once on the LANL lands the cable would remain aerial for approximately 2.7 miles until reaching the TA-70 Southern Technical Area (STA) substation. CenturyLink would then trench/bore from the STA substation north to New Mexico (NM)-4 for approximately 0.2 miles and proceed along NM-4 for 1.1 miles to the community of White Rock. At the NM-4 and Piedra Loop intersection, the route would continue east in private easements for approximately 0.7 miles along Piedra Loop until its intersection with Sherwood Boulevard. CenturyLink has

existing underground fiber facilities at the intersection of Piedra Loop and Sherwood Boulevard where the new fiber would be spliced into the existing fiber facilities.

**NO ACTION ALTERNATIVE:** The No Action Alternative is not to construct a redundant fiber optic line. LANL's and Los Alamos County's ability to communicate with and connect to facilities and organizations around the world would remain vulnerable in the event of outages or service interruptions.

**ALTERNATIVES ELIMINATED FROM DETAILED STUDY:**

***Alternative communication equipment:*** NNSA considered alternative communication equipment including satellite, microwave, and air space lasers. These alternatives were determined to be wholly inadequate to provide the necessary bandwidth, reliability as they are highly vulnerable to weather and line-of-sight issues, and security required by NNSA's LANL missions.

***Alternative Routes:*** NNSA reviewed an eastern route that would substantially follow the DOE administrated Norton Electrical Transmission Line that crosses Pueblo Lands. Previous negotiations with various Pueblos have been unsuccessful. In addition, there are significant technical challenges routing fiber along and across the NM-4 eastern route, especially in light of future upcoming road and intersection improvements.

The Northern New Mexico Regional Economic Development Initiative is a joint powers agreement among the counties of Los Alamos, Santa Fe, Rio Arriba, the City of Espanola, Ohkay Owingeh Pueblo, the Pueblo of Santa Clara, the Pueblo of Pojoaque, and the Pueblo of Tesuque for the collective management, design, construction, implementation, and operation of a broadband network. The agreement included the construction of a fiber optic line into Los Alamos County, but the fiber optic line crossed Pueblo land to the north and east of Los Alamos County. The difficulty of the terrain and inability to work out an agreement with the Pueblos has prevented this plan from proceeding in the foreseeable future.

A western route across the Jemez Mountains west of Los Alamos County had a very high estimated cost of construction due to the need to bore through rock along the corridor. This would have also required approval from the USFS, Bandelier National Monument, Valles Caldera National Preserve, and Jemez Pueblo. Therefore, this alternative was not carried forward as the route was not considered a reasonable alternative to meet NNSA's purpose and need for action.

***Alternative White Rock Canyon Spanning Structures:*** The feasibility of stringing the fiber optic cable on the existing RL electrical powerline transmission structures to span White Rock Canyon was evaluated. This alternative would avoid the construction of four new monopoles, minimizing additional site disturbance and viewshed affects. However, the RL powerline structure at the existing White Rock Canyon crossing cannot accommodate the replacement of the existing ground wires with OPGW. The RL structure was uniquely engineered in 1965 to span the extremely long 1.1 mile distance with specially constructed wire and self-supporting lattice angular steel towers. The engineering analysis determined that the electrical powerline structures would have to be replaced given that the structures could not support the additional

fiber optic cable weight necessary to span White Rock Canyon. Replacement of structures would be cost prohibitive and require the RL to be taken out of service during construction. Thereby, leaving LANL and Los Alamos vulnerable to a power shortage.

**EA REVIEW AND COMMENT:** On March 20, 2019, in accordance with 10 CFR §1021.301 *Agency review and public participation*, NNSA provided a notification letter that NNSA was preparing a *Draft Environmental Assessment for the Construction and Operation of a Second Fiber Optic Circuit Route to Los Alamos National Laboratory*<sup>1</sup>. The notification letter was sent to the recipients listed below:

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| <ul style="list-style-type: none"><li>• City of Española</li><li>• City of Santa Fe</li><li>• Los Alamos County</li><li>• New Mexico Environment Department</li><li>• Northern New Mexico Citizens Advisory Board</li></ul> | <ul style="list-style-type: none"><li>• Pueblo de Cochiti</li><li>• Pueblo de San Ildefonso</li><li>• Pueblo of Jemez</li><li>• Santa Clara Pueblo</li><li>• Santo Domingo Pueblo</li></ul> |
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The Draft EA was made available from December 23, 2019 through January 24, 2020 for public review and comment. The public was informed of the Draft EA's availability via electronic notification to the same recipients as the notification letter, to over 8,700 recipients on the LANL GovDelivery listserve, and posting on the DOE NEPA website: <http://energy.gov/nepa/nepa-documents/environmental-assessments-ea>.

Four Hundred and eighty-five comments were received from organizations and individuals within the comment period. Fifteen comments of which were comments were received past the timeline for submission but were considered equally with the other 470 comments. One government agency and six organizations, four of which submitted a combined statement, provided comments. The remaining comments were identical or very similar campaign letters all from individuals.

**ENVIRONMENTAL CONSEQUENCES:** The analysis in the EA is incorporated by reference. The following resource categories were analyzed:

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| <ul style="list-style-type: none"><li>• Air Quality</li><li>• Geology and Soils</li><li>• Water Resources</li><li>• Plant and Animal Resources</li><li>• Recreation</li><li>• Scenic Resources</li></ul> | <ul style="list-style-type: none"><li>• Noise</li><li>• Land Tenure and Use</li><li>• Cultural Resources</li><li>• Socioeconomic Resources</li></ul> | <ul style="list-style-type: none"><li>• Environmental Justice</li><li>• Public and Worker Safety</li><li>• Infrastructure</li><li>• Waste Management</li><li>• Transportation</li></ul> |
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<sup>1</sup> Title of the project was changed from "*Environmental Assessment for the Construction and Operation of a Second Fiber Optic Circuit Route to Los Alamos National Laboratory*" to "*Environmental Assessment for the Construction and Operation of a Second Fiber Optic Line to Los Alamos National Laboratory*" for technical clarification. The proposed project did not change.

With implementation of project identified mitigations, which are an integral part of the Proposed Action, there were no significant impacts identified. Mitigations include; a traffic safety plan that ensures public transportation safety and minimization of traffic disruption; construction vehicles restricted to approved areas and roadway right-of-ways: erosion and sedimentation control; site restoration; wildlife protection measures; the four fiber optic cable monopole structures for the White Rock Canyon crossing designed to the extent practical, to match the line, color, texture, and pattern of the existing landscape; avoidance of cultural resources; compliance with Federal Aviation Administration regulations and recommendations; and good housekeeping requirements.

**DETERMINATION:** NNSA has reviewed the final EA and determined that the analysis meets President's Council on Environmental Quality and DOE NEPA regulations and adequately assesses and discloses the environmental impacts of the Proposed Action and No Action Alternatives. Based on the analysis presented in the EA and public comments, NNSA has determined there would be no significant impact from proceeding with the Proposed Action. The basis of this determination is that there are no identified significant adverse effects likely to result from implementing the Proposed Action. Therefore, NNSA is issuing this Finding of No Significant Impact pursuant to the *National Environmental Policy Act* of 1969 (42 U.S.C. 4321 et seq.), the Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA (40 CFR 1500), and DOE NEPA Implementing Procedures (10 CFR 1021).

**FOR FURTHER INFORMATION CONTACT:** For further information on this EA and FONSI, contact Kristen Dors, NEPA Compliance Officer, U.S. Department of Energy, National Nuclear Security Administration, Los Alamos Field Office (NA-LA), 3747 W. Jemez Road, Los Alamos, NM 87544 or via email at NA-LA\_NCO@nnsa.doe.gov.

For further information on the DOE NEPA process contact the Office of NEPA Policy and Compliance (GC-54), U.S. Department of Energy, 100 Independence Avenue, SW, Washington DC 20585; telephone (202) 586-4600 or (800) 472-2756.

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Date