DOE/EA-2122

Final Environmental Assessment for the Construction and Operation of a Second Fiber Optic Line to Los Alamos National Laboratory Los Alamos, New Mexico

National Nuclear Security Administration

May 2020

FINAL ENVIRONMENTAL ASSESSMENT FOR THE CONSTRUCTION AND OPERATION OF A SECOND FIBER OPTIC LINE TO LOS ALAMOS NATIONAL LABORATORY LOS ALAMOS, NEW MEXICO[1]

EXECUTIVE SUMMARY

The National Nuclear Security Administration (NNSA), which oversees Los Alamos National Laboratory (LANL) located in Los Alamos, New Mexico, has prepared this final environmental assessment (EA) to analyze the potential environmental affects that could result from the NNSA proposal to construct and operate a fiber optic line and routing that would provide redundant voice, data, and internet services. LANL's current high performance voice, data, and internet services are essential to support NNSA mission of maintaining the nation's nuclear deterrent and collaborative scientific research and are dependent upon a single fiber optic line and, as such, are vulnerable to outages or service interruptions. The proposed second fiber optic line would provide the same level of service to LANL and Los Alamos County. The entire project would require the installation of approximately 18.9 miles of new fiber optic line 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.

This final NNSA EA and the Finding of No Significant Impact (FONSI) are expected to be adopted by the BLM and USFS, which is a process similar and agreed to in the *Memorandum of Understanding Implementing One Federal Decision Under Executive Order 13807.* The memorandum was signed by the Secretaries of the Departments of Agriculture, Interior, and Energy among others that established cooperative relationships and agreement to the timely processing of environmental reviews and authorization decisions identified in Executive Order 13807.

The underground fiber optic line would originate and tie into existing fiber optic infrastructure at the Marty Sanchez Links de Santa Fe golf course. From the golf course, the route would parallel Caja del Rio Road to the intersection of Santa Fe County Road (CR) 62, where it would continue on CR 62 crossing BLM lands until meeting the boundary of the Santa Fe National Forest (SFNF). On SFNF lands, the route would be primarily within the Santa Fe National Forest Road (FR) 24 roadbed. The underground portion of the fiber optic cable would terminate at a vault adjacent to the Public Service Company of New Mexico (PNM) Reeves 115 kV electrical transmission line (RL) support structures. From the vault, the fiber optic line would transition to optical ground wire and connect to the top of the RL transmission line replacing the existing RL shield wire[2]. The fiber optic line would require the spanning of White Rock Canyon to LANL lands. The canyon crossing would require two in-line new steel monopole structures on each side of the canyon for a total of four monopole structures. Once on LANL lands, the line would remain aerial until reaching Technical Area (TA) -71 Southern Technical Area substation, where the line would once again divert underground and parallel New Mexico State Road (NM) 4. The line would continue in the roadway corridor until reaching its termination at the existing

[1] 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.

[2] Shield wires are wires installed on overhead transmission lines to protect them from lightning.

underground fiber optic facilities at the intersection of Piedra Loop and Sherwood Boulevard in the community of White Rock.

The implementation of required conservation measures for the Proposed Action project are summarized below and would avoid or minimize short-term and long-term adverse impacts (see Section 5.0).

- A traffic safety plan would be implemented during construction to ensure public transportation safety and to minimize traffic disruption.
- Soil disturbance and vegetation removal would be avoided or minimized as practical. If vegetation has been cleared from a construction area, it would be distributed within the area to be reclaimed for the purposes of decreasing wind and rain erosion, increasing soil moisture, encouraging re-vegetation, and providing a catchment matrix for wind dispersed seeds.
- Site reclamation on construction-scarred areas would be required. Reclamation success would be evaluated by comparing project-affected sites with pre-construction conditions and/or adjacent areas in terms of final grading and removal of any introduced berms, re-contouring to approximate pre-construction contours, removal of plants listed on the New Mexico Noxious Weed List, and relief of compacted soils.
- Identification and mitigation of potential impacts to water resources would be addressed in the required Storm Water Pollution Prevention Plan (SWPPP). Sediment control best management practices (BMP) would be outlined in the SWPP for stabilization during the monsoon season. The SWPPP would include both temporary and permanent erosion control BMP to be used.
- Construction operations would be controlled to minimize potential disturbance of wildlife. Control measures would include construction limited to daylight hours, construction vehicle traffic restricted to approved areas and roadways, and vehicle speed limited to 25 mph.
- The White Rock Canyon crossing structures (monopoles) would be designed with appropriate colors and non-specular structure materials on the monopoles to reduce the visual impact, reflection, and glare.
- The aerial fiber optic cable spanning White Rock Canyon would have aircraft warning spheres installed to alert pilots of the presence of a cable. These warning spheres and additional bird diversion devises would serve as anti-collision devices to prevent or minimize bird impacts with the fiber optic cable.
- The proposed project will avoid impacts to all identified cultural resources during construction and fiber optic installation activities by excluding areas where archaeological sites are present from ground disturbance including staging and laydown areas. If previously unknown subsurface cultural deposits are discovered, construction activities in the area would halt until the appropriate land management agency determines the appropriate treatment in consultation with the State Historic Preservation Officer (SHPO).
- The Federal Aviation Administration (FAA) requires a Notice of Proposed Construction or Alteration to be filed for any construction or alteration that is more than 200 ft. at ground level at its site (14 CFR §77). The fiber optic cable would span White Rock Canyon at over 1,000 ft. above ground level. Therefore, a minimum of 45-days prior to construction PNM would submit a Notice of Proposed Construction or Alteration to the FAA. The FAA would then issue a determination in writing stating whether the proposed construction would be a

hazard to air navigation. Because the fiber optic line would be erected adjacent to the RL canyon spanning structures and power lines replete with orange aircraft warning spheres, no new air navigation hazards from the proposed project would be introduced. Based on the FAA response, the project would install additional aircraft warning equipment if required or recommended.

The Draft EA was made available from December 23, 2019 through January 24, 2020 for public review and comment. A total of 485 comment letters and emails were received on the Draft EA. All public comments were considered by NNSA during preparation of this Final EA and FONSI.

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[Cover Page Photographic credits from CenturyLink and PNM 2019]

ACRONYMS AND TERMS

Acronym	Terms
BLM	Bureau of Land Management
BMP	Best management practices
CFR	Code of Federal Regulations
CR	Santa Fe County Road
DOE	United States Department of Energy
Dugouts	Open trenches, maintenance vaults or bore pits
EM	Office of Environmental Management
FAA	Federal Aviation Administration
FONSI	Finding of No Significant Impact
FR	Forest Road
ft.	feet
GSFRP	Greater Santa Fe Recreation Partnership
in.	inch
kV	Kilovolt
LANL	Los Alamos National Laboratory
NEPA	National Environmental Policy Act of 1969
NM	New Mexico
NM-4	New Mexico State Road 4
NMDOT	New Mexico Department of Transportation
NNSA	National Nuclear Security Administration
NPDES	National Pollutant Discharge Elimination System
OPGW	Optical Ground Wire
PA	Programmatic Agreement
PNM	Public Service Company of New Mexico
REDI	Northern New Mexico Regional Economic Development Initiative

Acronym	Terms
RL	Reeves Line: PNM's 115 kV Electric Transmission Line
RMP	BLM Taos Resource Management Plan
SFNF	Santa Fe National Forest
SHPO	State Historic Preservation Office
SMS	Scenery Management System (USFS)
STA	Southern Technical Area [substation]
SWPPP	Storm Water Pollution Prevention Plan
TA	Technical Area
TSCP	Traffic Safety and Control Plan
U.S.C.	United States Code
USFS	United States Forest Service
U.S.	United States
VMS	Visual Management System (USFS)
VRM	Visual Resource Management (BLM)
Weed	Plants listed on the New Mexico Noxious Weed List

1.0 INTRODUCTION

The National Nuclear Security Administration (NNSA), a semiautonomous agency of the Department of Energy (DOE), Los Alamos Field Office, which oversees Los Alamos National Laboratory (LANL) located in Los Alamos, New Mexico (Figure 1-1) has submitted a request to CenturyLink™[3] to provide for redundant voice, data, and internet services to the existing service. Subsequently, CenturyLink has proposed the construction and operation of a redundant fiber optic line[4]. The entire project, the Proposed Action, would require the installation of approximately 18.9 miles of new fiber optic cable[5] and supporting infrastructure on lands owned and managed by the Bureau of Land Management (BLM); DOE; United States Forest Service (USFS); Santa Fe County; Los Alamos County White Rock community; and within a New Mexico Department of Transportation (NMDOT) roadway right-of-way. Currently, there is only a single fiber optic line that serves and transmits voice, data, and internet service to LANL and Los Alamos County this includes Los Alamos County emergency services. The proposed second fiber optic line would provide the same level of service to LANL and Los Alamos County residents and businesses. Redundancy service would diversify the existing telecommunications network by providing an alternate route for the network, and it would enhance and protect critical customer traffic routing on the network. This service would improve system reliability in the event of outages or service interruptions from natural events, human vandalism, or construction mishap and it is important for disaster recovery. Installation of the new fiber optic cable by CenturyLink would require approximately 11.6 linear miles of underground installation, supported by an estimated nine maintenance vaults[6] and 6.3 linear miles of aerial collocation on the Public Service Company of New Mexico (PNM) Reeves (RL) 115 kV electrical transmission line support structures, replacing the existing aerial ground wire and a separate 1.1 miles of White Rock Canyon aerial crossing on dedicated fiber optic monopoles..

LANL is a contractor-operated multidisciplinary, multipurpose research institution located in north-central New Mexico approximately 60 miles north-northeast of Albuquerque and about 25 miles northwest of Santa Fe. LANL covers an area of about 36 square miles, predominately within Los Alamos County with some overlap into Santa Fe County.

There are two DOE LANL Field Offices, which are NNSA and the Office of Environmental Management (EM). The NNSA Los Alamos Field Office primary mission is its national security responsibilities, which include the design, qualification, certification, and assessment of nuclear weapons. In addition, LANL, as one of the largest science and technology institutes in the world, conducts multidisciplinary research in fields such as space exploration, renewable energy, medicine, nanotechnology, and supercomputing (LANL 2018). Under contract to NNSA, Triad National Security LLC, a management partnership comprising of Battelle Memorial Institute; the

[3] A commercial internet fiber optic service provider.

[4] The term “line” is used generically to refer to the fiber optic route

[5] The term “cable” is used when referencing the installation or the actual filaments.

[6] The exact number of maintenance vaults is dependent upon the geological conditions encountered during construction. All project requirements and mitigations would be enforced for installation at each vaults location regardless of the number of vaults required. It is not anticipated that more than nine vault locations would be required.

Regents of the University of California; and the Regents of Texas A&M University, manages and operates LANL.

EM's LANL mission is to complete the cleanup of legacy contamination and waste resulting from nuclear weapons development and government-sponsored nuclear research. EM has contracted with N3B-Los Alamos (N3B), a company created by Stoller Newport News Nuclear and BWXT Technical Services Group, to assist EM in fulfilling its' LANL mission.

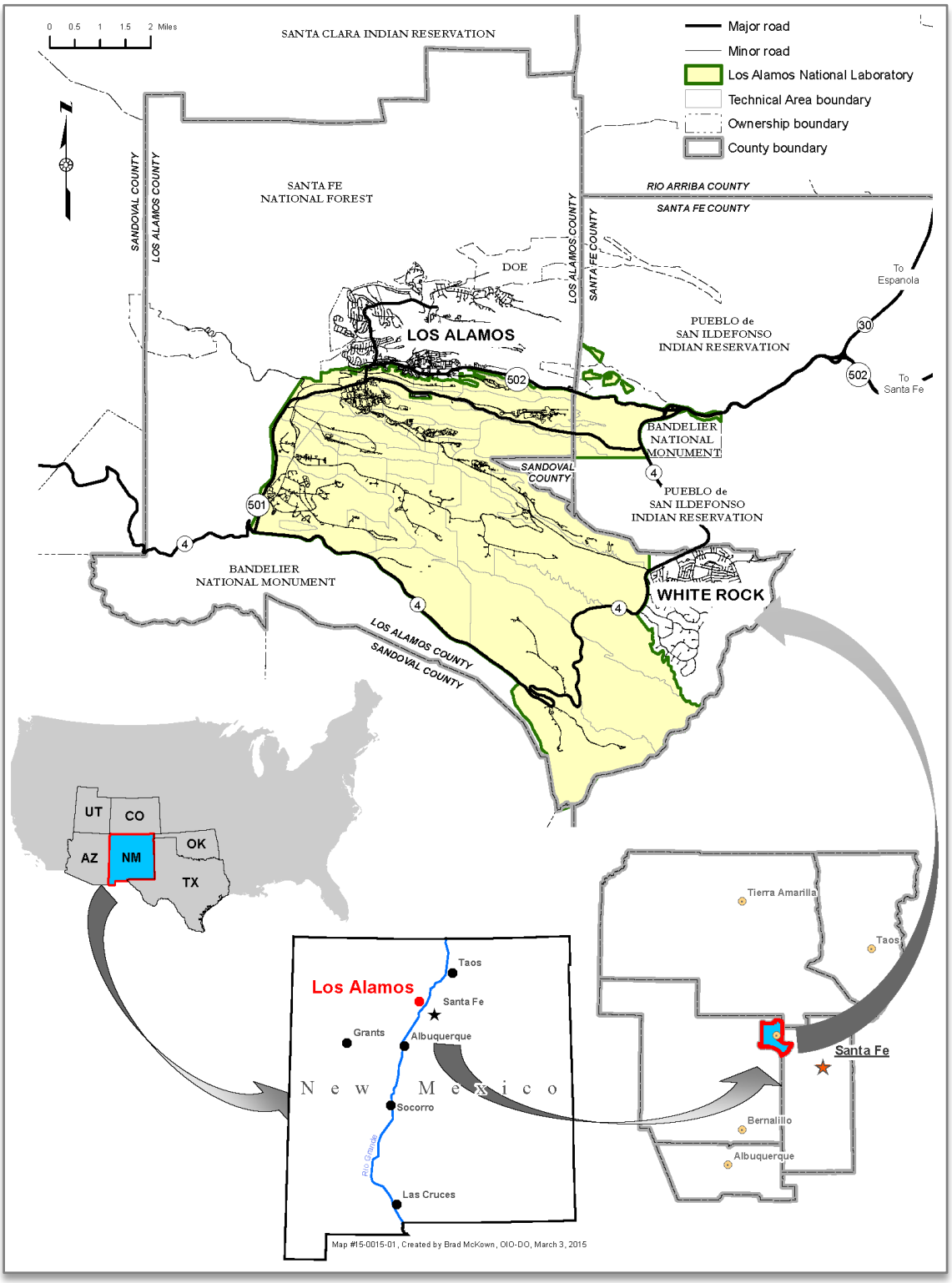

FIGURE 1-1. LOS ALAMOS NATIONAL LABORATORY LOCATION

1.1 Involved Agencies and Landowners

NNSA: NNSA, as the project proponent, is the lead agency[7] for compliance with the National Environmental Policy Act (NEPA) and prepared the Draft and this Final EA that analyzes the proposed construction and operation of a redundant fiber optic line and its associated infrastructure. The project originates in Santa Fe County at the intersection of Caja del Rio Road and North Caja del Oro Grant Road adjacent to the Marty Sanchez Links de Santa Fe golf course and terminates at CenturyLink's existing underground fiber facilities in Los Alamos County's White Rock community. The existing underground fiber serves both LANL and Los Alamos County (Figure 1-2).

Two other federal government agencies the U.S. Department of Interior, BLM, Taos Field Office and the U.S. Department of Agriculture, USFS, Santa Fe National Forest, Española Ranger District have jurisdiction and administrative control over lands involved in the Proposed Action. Both agencies have participated in the Draft and Final EA preparation process. The USFS is a Cooperating Agency.[8] The Final DOE/NNSA EA and Finding of No Significant Impact (FONSI) are expected to be adopted by each of the federal agencies. A process similar and agreed to in the *Memorandum of Understanding Implementing One Federal Decision Under Executive Order 13807* that was signed by the Secretaries of the Departments of Agriculture, the Interior, and Energy, as well as among others. This memorandum established cooperative relationships and agreement to the timely processing of environmental reviews and authorization decisions that are established in Executive Order 13807 *Establishing Discipline and Accountability in the Environmental Review and Permitting Process for Infrastructure*.

The Proposed Action requires (1) verification of compatible land use from the BLM; (2) amendment of PNM's existing DOE/NNSA easement, as the current agreement does not address the installation of communication facilities; (3) issuance of a new special-use permit and the modification to an existing special-use permit[9] by the USFS to CenturyLink and PNM, respectively; and (4) compliance with *Santa Fe County Sustainable Land Development Code* (SF 2016) and Santa Fe County Ordinance 2003-01 (SF 2003).

[7] The federal agency that is proposing, implementing, or approving a project. The lead agency is responsible for the management of the NEPA process, including public involvement, and the preparation of documents.

[8] Upon request of the lead agency, a federal agency which has jurisdiction by law or has special expertise with respect to any environmental issue.

[9] A permit issued under established laws and regulations to an individual, organization, or company for occupancy or use of National Forest land for some special purpose. In this case, the special-use permit would be for *Application for Transportation and Utility Systems and Facilities on Federal Lands*.

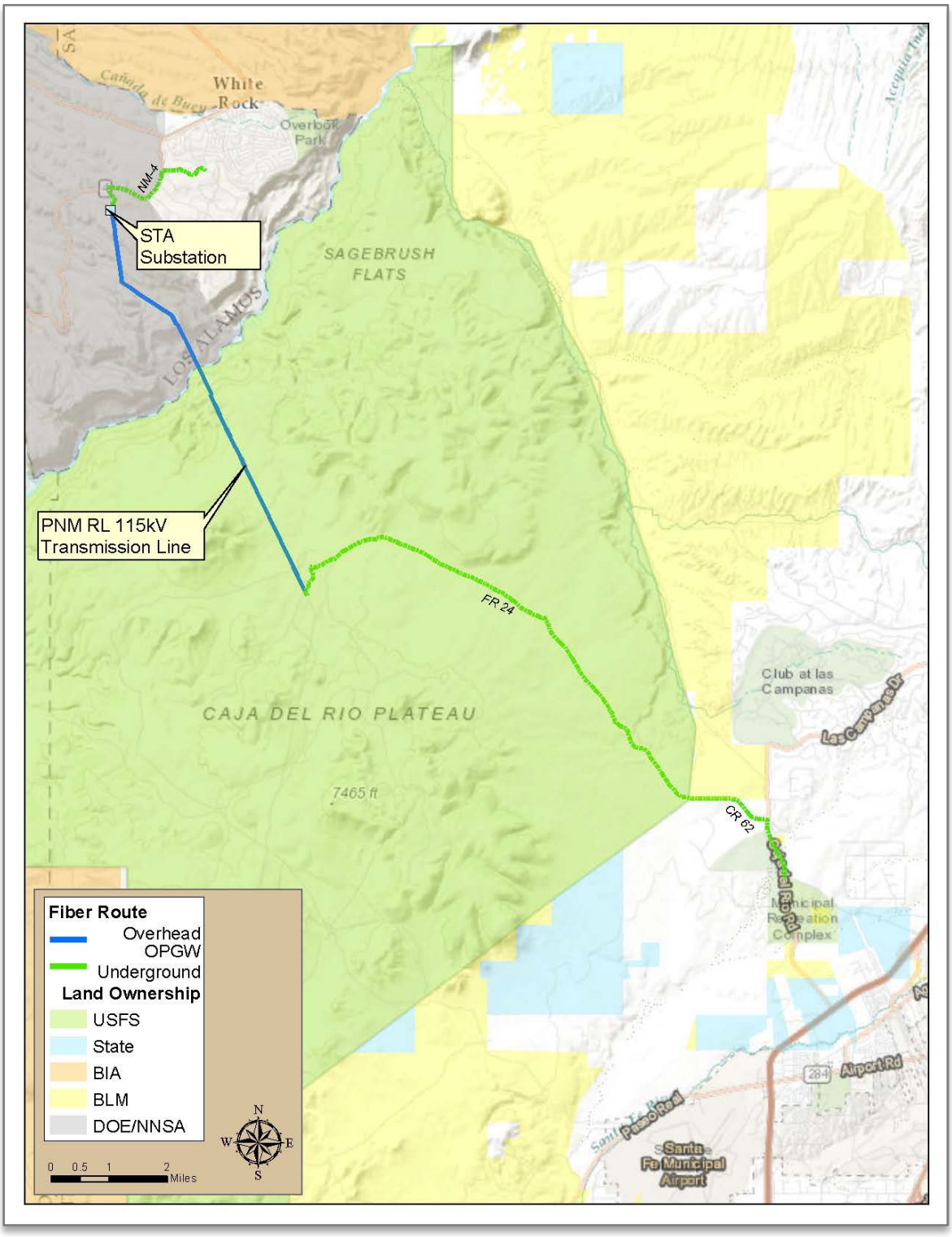

FIGURE 1-2. PROPOSED PROJECT ROUTE
(CenturyLink and PNM 2019)

BLM: BLM's Taos Field Office administers and is responsible for land use planning and the protective management of cultural and natural resources within a segment of the proposed project area located within the BLM West Santa Fe planning unit. The BLM Taos *Resource Management Plan* (RMP) (BLM 2012) provides a comprehensive framework for managing public lands and allocating resources using the principles of multiple use[10] and sustained yield[11]. All uses and activities within the Taos Field Office administered lands must conform to the RMP. One of the RMP goals is the establishment of an efficient system of utility corridors and communication sites and communication needs of the public with minimum negative impacts on visual, biological, cultural, and physical resources (BLM 2012). A BLM grant[12] of rights-of-way is required for any individual, business, or government entity to use BLM public lands for systems transmitting or receiving electronic signals and other means of communication, such as the Proposed Action. Issuance of a right-of-way would serve to direct and control the granted activity in a manner protective of natural resources associated with public lands and adjacent lands, whether private or administered by a government entity and prevent unnecessary or undue degradation to public land.

USFS: The USFS Santa Fe National Forest (SFNF) is administered through a Forest Supervisor's Office and five ranger districts. The proposed project would cross the SFNF Española Ranger District lands and, as such, would require that CenturyLink obtain a SFNF special-use authorization[13] and PNM to modify their existing special-use permit[14].

The 1987 Santa Fe National *Forest Plan* (USFS 1987), as amended, sets forth broad programmatic management direction for the SFNF. The standards, guidelines, and management direction contained in the 1987 *Forest Plan* set parameters for project compliance (USFS 1987). Approval of any management activity must be, or be made consistent, with these parameters (36 CFR §219.15) and *Forest Plan* area-specific direction that applies to Management Areas G and L which are the management areas designated that would be effected. The Santa Fe National Forest Supervisor, based on the EA analysis and DOE decision document, will decide whether to issue a special-use permit and modify an existing special-use permit; deny the issuance and modification of special-use permits; or require the preparation of an environmental impact statement for the proposed project. Approximately 7.4 miles of new underground fiber optic cable would be constructed on SFNF lands.

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[10] Includes renewable energy development (solar, wind, other); conventional energy development (oil and gas, coal); livestock grazing; hard rock mining; and outdoor recreation (such as camping, hunting, rafting, and off-highway vehicle driving (https://www.blm.gov/about/what-we-manage/national accessed February 18, 2020).

[11] The achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the public lands consistent with multiple use (The Federal Land Policy and Management Act of 1976, as amended).

[12] Grant means any authorization or instrument (e.g., easement, lease, license, or permit) BLM issues under Title V of the Federal Land Policy and Management Act, 43 United States Code (U.S.C.) 1761 et seq., and those authorizations and instruments BLM and its predecessors issued for like purposes before October 21, 1976, under then existing statutory authority. It does not include authorizations issued under the Mineral Leasing Act (30 U.S.C. 185).

[13] A written permit, term permit, lease, or easement that authorizes use or occupancy of National Forest System lands and specifies the terms and conditions under which the use or occupancy may occur.

[14] A special use authorization which provides permission, without conveying an interest in land, to occupy and use National Forest System land or facilities for specified purposes, and which is both revocable and terminable.

Santa Fe County: For lands under Santa Fe County jurisdiction, the installation of an underground communication cable is a permitted use in all zoning districts. The Proposed Action has to meet the standards set forth in Section 7.12 of the *Sustainable Land Development Code* addressing the installation of underground utilities, which includes communications cables and, preparation a site development plan and obtaining a development permit authorizing the installation (SF 2016). In addition, Santa Fe County Ordinance 2003-01 requires that a permit be obtained. Permit conditions include the maintenance of traffic and pedestrian flow and restoration of the affected property to its condition immediately prior to construction (SF 2003). Some land holdings in the proposed project area were patented by the BLM in 1997 to Santa Fe County under the Federal *Recreation and Public Purposes Act* for open space, recreation, and solid waste management. These land holdings were designated as a Santa Fe County special holding, and its current use includes a golf course, electrical substation, and regional landfill. Santa Fe County would require verification of compatible use of the fiber optic line and infrastructure by the BLM before installation. A total of 2.1 miles of new underground fiber optic cable would be constructed in Santa Fe County.

Los Alamos County - White Rock: At the intersection of NM-4 and Piedra Loop, the underground installation would continue east in private easements along Piedra Loop until it intersects with Sherwood Boulevard. CenturyLink has existing underground fiber optic facilities at this intersection where the new fiber optic filaments would be spliced into the existing fiber optic facilities. A total of 0.7 miles of new underground fiber optic line would be constructed in Los Alamos County.

NMDOT: DOE granted NMDOT a non-exclusive perpetual easement that allows for the construction, reconstruction, maintenance, repair, replacement, removal, and use of NM-4. DOE did reserve its rights to construct within the easement as long as there is no transportation interference and that DOE notifies NMDOT of work within the easement. However, NMDOT has the right to require any utilities proposed for construction within the easement be relocated. There is approximately 1.1 miles of new underground fiber optic line proposed within the NMDOT NM-4 easement. DOE/NNSA has notified NMDOT of the proposed project and is awaiting their response. Should NMDOT require CenturyLink to move the line outside of the easement but parallel to NM-4, CenturyLink would do so. Subsequently, prior to project approval, DOE would evaluate the affects resulting from location change and implement mitigation measures that would avoid or minimize adverse effects to the environment (see Section 5.0).

1.2 CenturyLink and PNM Responsibilities

CenturyLink: CenturyLink is the global communications and information technology services company that would have ownership of and be responsible for the underground construction of the fiber optic line. Post-construction, CenturyLink would be responsible for maintaining all equipment, structures and fiber optic cable with the exception of the fiber optic cable strung on PNM's RL support structures for which PNM would be responsible.

PNM: PNM's Northern New Mexico transmission system delivers power to serve customers in northern communities, including Albuquerque, Santa Fe, and Las Vegas areas, as well as customers in Valencia County south of Albuquerque. PNM would be responsible for stringing CenturyLink's fiber optic cable on PNM's RL support structures. The RL is owned by PNM and is located in an existing utility corridor originating at PNM's Bernalillo-Algodones Substation and terminating at LANL. PNM's existing DOE/NNSA easement does not include communication

facilities; therefore, a new or amended DOE/NNSA easement would be required. A portion of the project would require the erection of four new monopole structures; two on each side of White Rock Canyon, for the fiber optic cable to span the Rio Grande, a distance of approximately 1.1 miles, as the existing structures cannot support the additional weight of the fiber optic cable (see Section 3.3.2.4).

1.3 Scope of the Environmental Assessment

An EA is a planning and decision-making tool that serves to inform the decision-makers and the public of the potential environmental consequences of the Proposed Action and No Action Alternative, to determine if NNSA will require preparation of an environmental impact statement or issue a FONSI and proceed with the Proposed Action.

Two alternatives are analyzed in this Final EA:

1. Proposed Action: Construction and operation of a redundant fiber optic line and associated infrastructure on lands owned and/or managed by the BLM; DOE; USFS; Santa Fe County; and Los Alamos County White Rock residents.
2. No Action Alternative: The No Action analysis provides a benchmark, enabling decision-makers to compare the magnitude of environmental effects of the action alternatives (CEQ 1981), in this case the Proposed Action. No Action means the Proposed Action would not take place.

Decommissioning of the proposed redundant fiber optic line is not addressed in either the Draft or this Final EA as the effective operational lifecycle is approximately 25–30 years. It would be speculative to define or anticipate the decommission requirements within this timeframe. In the unlikely event, the facilities are no longer needed prior to the end of the expected lifecycle; CenturyLink would abandon facilities (e.g., vaults and fiber optic cable) in place if the environmental impacts of leaving the cable in place would be less than removing them.

This Final EA has been prepared in accordance with the National Environmental Policy Act of 1969, as amended; Council on Environmental Quality Executive Office of the President *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).

1.4 Public Involvement

On March 20, 2019, in accordance with 10 CFR §1021.301 *Agency review and public participation,* DOE/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*[15]. The notification letter was sent to the recipients listed below:

[15] 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.

- City of Española
- City of Santa Fe
- Los Alamos County
- New Mexico Environment Department
- Northern New Mexico Citizens Advisory Board
- Pueblo de Cochiti
- Pueblo de San Ildefonso
- Pueblo of Jemez
- Santa Clara Pueblo
- Santo Domingo Pueblo

One response was received and that was from the Director of Policy, New Mexico Environment Department (APPENDIX A).

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 National Environmental Policy Act (NEPA) website: http://energy.gov/nepa/nepa-documents/environmental-assessments-ea.

Printed copies of the Draft EA were available, upon request, from the NNSA Los Alamos Field Office NEPA Compliance Officer at the address and email listed below.

Comments on the Draft EA were to be submitted no later than January 24, 2020 to NNSA by U.S. mail or email at the following addresses:

Mail: NNSA Los Alamos Field Office
ATTN: NEPA Compliance Officer – Fiber Optic Draft EA Comments
3747 West Jemez Road
Los Alamos, NM 87544

Email: NA-LA_NCO@nnsa.doe.gov
Subject line: Fiber Optic Draft EA Comments

All comments on the Draft EA provided were considered by NNSA during preparation of this Final EA (see APPENDIX D). A total of 485 comments were received from organizations and individuals. Fifteen of these 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. Comments were received from the following organizations:

- State of New Mexico, Department of Game & Fish
- Defenders of Wildlife, Southwest Program Office
- National Wildlife Federation
- New Mexico Wild
- New Mexico Wildlife Federation
- New Mexico Wilderness Alliance

- National Wildlife Federation &
  EarthKeepers 360

The remaining 481 comments were identical or very similar campaign letters all from individuals. The letters from organizations listed previously and, in accordance with the Council on Environmental Quality guidance, a single campaign email representative of the 481 comments are provided in APPENDIX D followed by NNSA response to comments.

2.0 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 harm 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 line to provide these services.

3.0 DESCRIPTION OF THE PROPOSED ACTION

3.1 Proposed Action

Location

The underground fiber optic line 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-filament 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 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. A total of 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, a hard packed dirt roadway with substantial ruts in some stretches, 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 7.4 miles until FR 24 approaches the RL, where the line 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 line would terminate at a vault adjacent to the RL utility corridor. From the vault, the fiber optic line would transition to optical ground wire (OPGW) and connect to the top of the RL transmission line, replacing the existing RL shield wire[16] for a distance of approximately 3.6 miles. PNM would install the OPGW portion of the project.

PNM access to the OPGW portion of the project would utilize a two-track pathway directly under the RL easement mostly within the RL 115kV transmission line permit area and an adjacent pathway that would be used for PNM's access to the transmission line in order to avoid an arroyo that would require extensive roadwork and to stay within PNM's easement. No new access roads or modification to the original roadway design function or road realignments are required to complete the OPGW portion of the project. Most of the work would be within the existing SFNF authorized utility corridor. However, at the RL White Rock Canyon crossing (Figure 3-1), in order to span the Rio Grande with the OPGW, installation of two in-line new steel monopole structures would be required on each side of the canyon, a total of four monopole structures. The monopoles would be approximately 80 ft. in height and taper with a top dimensions of about 20 inches (in.) and 48 in. at the bottom. Guy-wire, which are tensioned cables designed to add stability to a free-standing structure, would be in a V pattern with anchors approximately 15 ft. apart. New structures, monopoles, are necessary, as the existing PNM RL structures were engineered in 1965 with specially constructed wire and self-supporting lattice angular steel towers and cannot safely support the additional weight required to string

[16] Shield wires are wires installed on overhead transmission lines to protect them from lightning.

approximately 1.1 miles of OPGW across White Rock Canyon. Two monopole structures would be erected on both USFS and DOE/NNSA lands, adjacent to the RL canyon spanning structures. The OPGW canyon spanning structures would be located outside of the existing transmission right-of-ways. Therefore, the easements would have to be expanded by 150 ft. in width and 1,000 ft. in length on each side of White Rock Canyon. Temporary staging areas of approximately 200 ft. by 200 ft. would be required for each of the four structures.

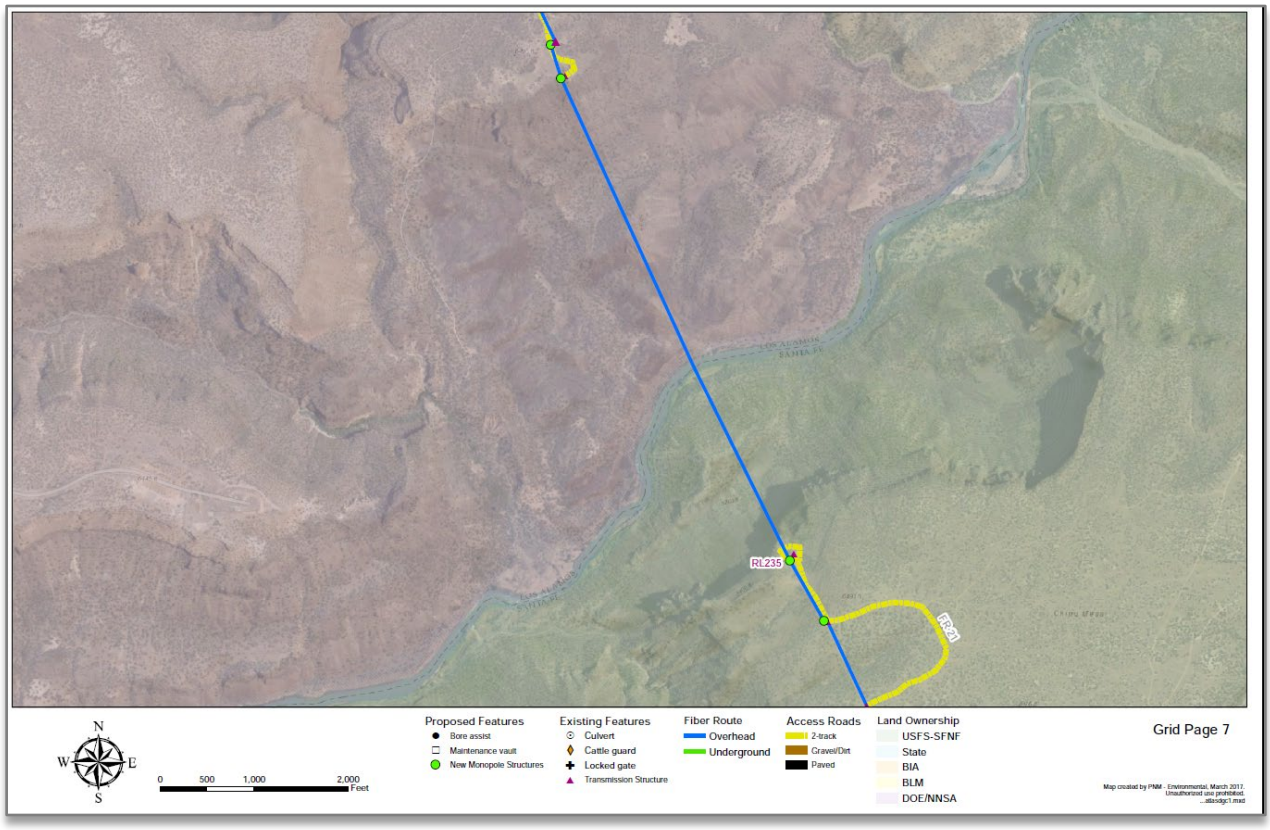

FIGURE 3-1. WHITE ROCK CANYON CROSSING; GREEN DOTS INDICATE PLACEMENT OF MONOPOLES
(CenturyLink and PNM 2019)

Once on the DOE/NNSA side in Technical Area (TA)-71 of White Rock Canyon, the cable would remain aerial for approximately 2.7 miles until reaching the TA-70 Southern Technical Area (STA) substation. The area surrounding the STA substation is graded. CenturyLink would then trench/bore from the STA substation north to NM-4 for approximately 0.2 miles, then trench/bore along NM-4 for 1.1 miles to the community of White Rock. At the NM-4 and Piedra Loop intersection, the line 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 (CenturyLink and PNM 2019).

Installation Requirements

Underground Installation: The underground fiber optic cable would be installed within a high-density polyethylene (HDPE) 2 in. pipe placed within a trench or 3 in. borehole. Excavation methods would be determined real-time during construction. Inside the 2 in. pipe would be a 4-way microduct to allow for future expansion. Both HDPE and microduct would be spliced at approximately 700 ft. intervals. All buried fiber optic cables, at a minimum, would be at a depth of 36 in. Maintenance vaults would be placed at ground level. This project would utilize trenching and boring. Trenching and boring would be at a depth of no less than 36 in. Boring would be the primary method in areas of difficult substrate or environmental conditions. Trenching would be accomplished through use of a chain trencher or backhoe to excavate a trench approximately 8 – 10 in. wide. Trenching would not require water and the trench would be manually backfilled as the excavation proceeds. The backfilled soil would be leveled and compacted through use of a mechanical tamper.

Boring would require a bore assist pit roughly 2-3 ft. wide by 4-6 ft. long approximately every 700 ft. within or adjacent to the roadway corridors. The pits would serve as interduct placing and splicing locations. This distance could be adjusted or shortened, within reason, to accommodate environmentally sensitive areas. In addition, bore depths can be adjusted to go under rock outcroppings, drainage crossings, and other obstacles. A backhoe, mini track, or similar construction equipment would be used to excavate the pits. From the pit the channel would be bored.

Concrete maintenance vaults would be required and placed about every 4,900 ft. outside the roadbeds. The maintenance vaults, which are 5 ft. in diameter, would require a 6 ft. square pit to allow for placement (Figure 3-2). The finished lid dimensions of the maintenance vaults at ground level would be approximately 30 in. round. An estimated nine maintenance vaults would be required. Locate balls[17] would be used to eliminate the need for above ground markers. All buried facilities would be at a minimum depth of 4 ft. and vaults and locate balls would be placed at ground level. Disturbed vegetated areas would be re-vegetated and returned to the governing land management agency specifications (see Section 5.0) (CenturyLink and PNM 2019).

[17] Locate balls are used for locating fiber optic cable. When excited by any standard marker locator, the locator ball produces a 5 ft. spherical radio frequency field, identifying the presence of fiber cable below.

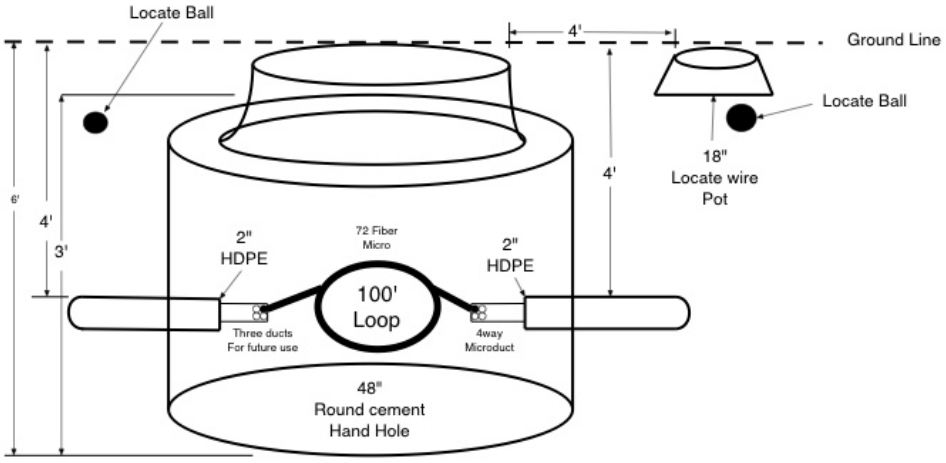

FIGURE 3-2. CROSS SECTION OF CONCRETE MAINTENANCE VAULT
(CenturyLink and PNM 2019)

OPGW Installation: The fiber optic line would transition from underground to aerial OPGW at the top of the RL 115kV transmission line. The OPGW combines the function of protective ground wire for the electrical power transmission line with the fiber optic communication capabilities, and it would be installed on the existing transmission support structures, typically without modification. The existing ground wires located above the RL conductors would be replaced by pulling ground wire while simultaneously stringing the OPGW. One pull site is required at each end of every cable section that is pulled. It is anticipated the six sections would be pulled, so 12 individual sites would be required. The size of each site would be approximately 50 ft. wide by 200 ft. long. OPGW stringing begins with the installation of travelers, large pulley assemblies, at each shield wire position on each structure. The shield wire is unclipped from the supports and transferred to the adjacent traveler. Traveler installation and shield wire transfer are expected to be performed from a helicopter flying structure-to-structure (Figure 3-3).

FIGURE 3-3. HELICOPTER ASSISTED INSTALLATION SHIELD WIRE TRANSFER
(CenturyLink and PNM 2019)

Once the shield wire is fully unclipped, the far end would be connected to a pulling rope connected to a stationary tensioning trailer to mitigate cable slack. This pulling rope and tensioner maintains tension on the shield wire so that it does not dip or fall to the ground. The shield wire is then connected to the pulling trailer. The shield wire is then drawn toward the pulling trailer and coiled onto a large reel for recycle.

The pulling rope is then strung from the tensioning trailer at the far end to the pulling trailer at the near end and used to pull the high tension pulling cable from the pulling trailer to the tensioning trailer. Once the pulling cable is installed, it would be used to pull the new OPGW at high-tension from the tensioning trailer toward the pulling trailer. Once installed, the helicopter would return to each structure to transfer the OPGW from the travelers to the permanent attachment hardware. The travelers would then be removed from each structure (CenturyLink and PNM 2019).

Staging Areas

CenturyLink would require approximately three (3) staging areas along FR 24 to park equipment during the construction phase. The areas would need to be roughly 25 ft. by 50 ft. The staging locations are flexible and would be located at the least sensitive locations. Worker parking would be located at the staging areas (CenturyLink and PNM 2019). All staging areas would be approved by the governing land management agency prior to construction.

Logistical Support Equipment and Personnel

Construction activities, estimated construction equipment, and personnel requirements are shown in Table 3-1 and Table 3-2 below.

TABLE 3-1. CONSTRUCTION ACTIVITIES AND ESTIMATED CONSTRUCTION EQUIPMENT AND PERSONNEL REQUIRED FOR INSTALLATION OF UNDERGROUND FIBER OPTIC CABLE AND SUPPORT STRUCTURES

Activity	Equipment/Quantity	Personnel
Survey/Staking	• ¾ Ton pickup trucks (2) • All-terrain vehicles (2)	2
Access improvements	• 1 Ton truck with trailer (1) • Backhoe (1) • ¾ Ton pickup (1) • 1 Ton pickup (1)	2
Trenching	• Backhoe or chain trencher (1) • Tamper (1)	2
Boring	• Semi transport with trailer (1) Bore rig (1) • Water trucks (2) or trucks with water trailers (2) (would require multiple trips daily) for boring support • Truck with hydro-vacuum on trailer (1) • ¾ Ton pickup (1)	8
Bore pit and access vault excavations	• Truck with trailer (1) • Backhoe (1) • Truck with trailer - for vaults, conduits and other materials (1) • Truck with reel trailer for interduct (1)	4
Fiber placement	• Truck with trailer for fiber jetting machine (1) • Truck with fiber reel trailer (1) • Pickup truck (1)	6
Construction inspection	• ¾ Ton pickup truck (1)	1

(CenturyLink and PNM 2019)

TABLE 3-2. CONSTRUCTION ACTIVITIES AND ESTIMATED CONSTRUCTION EQUIPMENT AND LABOR REQUIREMENTS FOR AERIAL INSTALLATION OF FIBER OPTIC CABLE AND WHITE ROCK CANYON CROSSING SUPPORT STRUCTURES

Activity	Equipment/Quantity	Personnel
Soil borings	• ¾ Ton pickup trucks (2) • Drill rig (1)	4
Survey	• ½ Ton pickup trucks (2) • All-Terrain vehicles (2)	2
Access improvements	• Semi with trailer (1) • Caterpillar D-6 (1) • 1 Ton pickup (1)	2
Foundations	• 1 Ton pickup trucks (4) • Drill rig (1) • Crane (1) • Concrete trucks (8)	7
Staging	• Private vehicles (8) • 1 Ton pickup truck (1) • Crane (1) • Rough terrain forklift (1)	2
Structures	• 1 Ton pickup trucks (4) • Crane (1) • Bucket truck (1)	6
Wire pulling and clipping	• 1 Ton pickup trucks (4) • Pulling trailer (1) • Tensioning trailer (1) • Bucket truck (1) • Helicopter (1)	7
Construction inspection	• ¾ Ton pickup truck (1)	1
Environmental monitoring	• ¾ Ton pickup truck (1)	1

(CenturyLink and PNM 2019)

Construction Duration

CenturyLink estimates that underground construction would require around 16 to 18 weeks to complete. For the White Rock Canyon aerial crossing, PNM would require approximately 6 to 8 week for completion.

Project Commitments

The Caja del Rio Plateau White Rock Canyon crossing lies within a USFS designated road less area (Management Area L). Compliant with USFS regulations (36 Code of Federal Regulations Part 294 Special Areas) that prohibits road construction and road reconstruction within inventoried road less areas; there would be no new access roads, changes in the roadways original design function, or road realignment within this area. All construction-scarred areas would be returned to original condition or better. Once the trenching/boring operations are complete and maintenance vaults placed, all sites would be restored and re-vegetated per the

governing land management agency specifications. Maintenance vaults would have a final contouring and clean-up after the fiber installation and operations were complete.

Prior to construction, an approved traffic control plan, by all land management agencies, would be in place. During roadway work, flagmen, traffic and pedestrian safety cones, and fence barricades would be utilized as appropriate. For safety purposes and if found necessary to leave an excavated area open without construction personnel present, covers, operation barricades, and/or fences would be utilized to prevent public access. All areas that would be open overnight or for longer periods of time would be closed, covered, or barricaded until construction operations commence.

During the first four months following placement, monthly inspections would be conducted to check for sunken trenches, pits, and vaults. Thereafter, CenturyLink would perform annual maintenance patrols along the underground placement corridor using existing roadways. Aside from any needed fiber locate requests for the underground facilities, regular maintenance of the underground fiber facilities is not normally required, except in the case of repair of damage due to digging activities or washouts. Maintenance requirements are expected to be infrequent and access to be limited to existing roadways. In addition, reasonable efforts would be made to limit periodic maintenance access to times when dry field conditions are present. Although the USFS will retain responsibility for the routine maintenance of FR 24, weather conditions and normal use can combine to cause rutting and other road damage. CenturyLink would be responsible for road maintenance in the places where this rutting may threaten to damage its infrastructure.

3.2 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.

3.3 Alternatives Eliminated from Detailed Study

3.3.1 NNSA Alternatives Communication Services

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 mission.

3.3.2 Alternative Routes

3.3.2.1 Eastern Route

Fiber optic line placement would need to traverse Pueblo Tribal 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.

3.3.2.2 Northern New Mexico Regional Economic Development Initiative (REDI)

The REDI 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.

3.3.2.3 Western Route

A fiber optic line across the Jemez Mountains west of Los Alamos County was considered. The estimated cost of construction was very high due to the need to bore though rock along the corridor. This would have also required approval from the USFS, Bandelier National Monument, Valles Caldera National Preserve, and Jemez Pueblo. Therefore, these alternatives were not carried forward for detailed analysis, as they were not considered reasonable options to meet NNSA's purpose and need for action.

3.3.3 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.

4.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section presents the potential direct, indirect, and cumulative effects of the Proposed Action Alternative and the No Action Alternative. Compliant with Council on Environmental Quality (CEQ) regulations and DOE's NEPA guidance, this Final EA applies a sliding-scale approach to impacts analysis consistent with DOE's *Recommendations for the Preparation of Environmental Assessments and Environmental Impact Statements* (DOE 2004). Specifically, more information is provided regarding the resources that have a greater potential to be impacted by the Proposed Action Alternative and the No Action Alternative, while less depth and breadth of analysis is applied to resource areas having clearly no or minor environmental impacts.

The Council on Environmental Quality NEPA regulations requires an assessment of cumulative effects for federal actions. Cumulative actions are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonable foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such actions" (40 CFR 1508.7). The affected lands within the fiber optic line have been modified from past activities, such as housing development, ranching [grazing], roadway construction, trail creation, and underground and overhead utility corridors.

LANL land modifications within TA-70 and TA-71 include utility corridors; TA-70 STA substation; and biking, horseback, and hiking trails. The buried section of the fiber optic line along NM-4 and the White Rock community would be located in lands previously modified by roadway construction and housing developments. There are no identified reasonable foreseeable future actions within or closely adjacent to the fiber optic line at TA-70, TA-71, and along NM-4. Currently, a housing development of around 161 family homes on approximately 48 acres of property is under construction on the north side of NM- 4, west of the Los Alamos County Visitor Center in White Rock.

The fiber optic line is adjacent to Caja del Rio Road on Santa Fe County lands and the *El Camino Real de Tierra Adentro National Historic Trail* both traversing on USFS and BLM lands and is adjacent to CR 62. The Caja del Rio Plateau USFS lands include a trailhead facility with a shade ramada, vault toilets, fire pits, informational kiosk, and a graveled parking area. The USFS and BLM have established long-term cattle grazing allotments within and adjacent to the project area. Cattle movement and distribution are controlled throughout the area by fencing and use of cattle guards. Present activities in the affected area include all-terrain vehicle use, biking, livestock grazing, hiking, horseback riding, outfitting and guided jeep tours, recreational vehicle driving and camping, and target shooting. Each of these activities uses existing trails and roadway corridors.

There are two reasonable foreseeable future actions within Caja del Rio Plateau. The first is the development or improvement of roadway and trails recommended by the Greater Santa Fe Recreation Partnership (GSFRP) and DOE/NNSA identification and consideration of alternatives to upgrade LANL's electrical power capacity. The GSFRP is a regional collaboration among governmental and non-governmental partners chartered to develop cross-jurisdictional master trails and comprehensive outdoor recreation master plans for the greater Santa Fe area. Recommendations from the GSFRP could result in additional and/or improved trails and roadways, thereby, resulting in the potential of increased visitation and recreational use. The second, to ensure continuity of LANL operations and increasing power demands LANL must

have reliable and resilient electrical power to meet current and future mission requirements. Alternatives to meet these requirements could include the reconductoring of existing powerlines or construction of a new powerline corridor within the Caja del Rio Plateau. Proposals from the GSFRP or NNSA would be further evaluated when a formal project proposal and the specific details are available to conduct a NEPA analysis.

Few cumulative impacts are anticipated to result from the implementation of the Proposed Action as the proposed fiber optic line would be located within or adjacent to roadways; within existing utility corridors and easements; within the existing USFS roadbed; or aerial on the existing RL transmission line. Where there is a potential for cumulative effects they will be mentioned in the affected resource section.

4.1 Air Quality

4.1.1 Proposed Action

During the construction phase, emissions from heavy equipment (e.g., pickup trucks, water trucks, backhoe, reel trailers, bore rigs) would temporarily affect ambient air quality. Air emissions from construction vehicles and equipment would be minor and temporary resulting in negligible impacts to air quality. Ground disturbing activities such as clearing for vaults and trenching would temporarily generate fugitive dust. To minimize the effects of fugitive dust during construction, dust suppression via water trucks or other methods would be implemented.

Post-construction during the operational period, there would not be emission of air pollutants.

Cumulative Impacts: No cumulative impacts have been identified.

4.1.2 No Action Alternative

There would be no air emissions, as the fiber optic line would not be constructed.

4.2 Geology and Soils

4.2.1 Proposed Action

The proposed fiber optic line parallels existing roadways and is primarily within FR 24 roadbed, or it is strung overhead on existing powerline poles. In a majority of the area, the soil surface is exposed dirt, gravel, and rocks interspersed with vegetation. During construction, soil erosion and sedimentation would be avoided or minimized through BMP and compliance with National Pollutant Discharge Elimination System (NPDES) permit requirements for erosion and sedimentation control would be followed. Site watering would serve to suppress wind blow dust. Post-construction, the construction-scarred areas would be re-vegetated where necessary and re-contoured. The re-vegetated and re-contoured land would serve to reduce erosion and windblown dust. There would be no effect to the geologic structure of the affected areas.

Cumulative Impacts: No cumulative impacts have been identified.

4.2.2 No Action Alternative

There would be no effect to geology and soils, as the fiber optic line would not be constructed.

4.3 Water Resources

4.3.1 Proposed Action

The proposed fiber optic line is not in a 100-year floodplain or within a wetland. Surface water quality could be affected by the construction due to increased silt load resulting from runoff during and following wet (rain and snow) weather events. Soil disturbances associated with installation or construction activities can potentially result in adverse water quality impacts. Vegetation removal can alter site runoff patterns. Operationally, fiber optic requires no process water or cooling water.

As a proposed construction site greater than one acre along the entire line, the project would be required to and would file a *Notice of Intent* and follow the requirements of a *National Pollutant Discharge Elimination System Construction General Permit* and prepare a *Storm Water Pollution Prevention Plan* (SWPPP) specific to the proposed fiber optic line. BMP would be adopted for pre- and post-construction, preventing to the extent practicable, pollutants (primarily sediment, oil and grease, and construction materials) from entering storm water runoff. Likewise, a spill plan would also be required. The site-specific spill plan would address chemicals and any petroleum products used or stored on the work site and the actions to take in case of a spill. Post-construction stabilization measures such as re-contouring and re-vegetation would be implemented. There are no adverse impacts anticipated to surface water resources because of implementation of the Proposed Action.

The Proposed Action is not expected to have any adverse impacts on the ground water quality in the area of potential effect. Implementation of BMP during construction would prevent the introduction of potential pollutants migrating into the groundwater from a surface incident.

Cumulative Impacts: No cumulative impacts have been identified.

4.3.2 No Action Alternative

There would be no effect to water resources, as the fiber optic line would not be constructed.

4.4 Plant and Animal Resources

4.4.1 Proposed Action

DOE/Los Alamos County

The fiber optic line on DOE lands consists of primarily piñon-juniper woodlands along with herbaceous plants and grasses that have adapted to disturbed areas. There are no wetlands present. Animal and plant species are common and generally found throughout the region. Threatened and endangered species are identified, managed, and protected through implementation of LANL's *Threatened and Endangered Species Habitat Management Plan for Los Alamos National Laboratory* (LANL 2017). Suitable habitats for federally listed threatened and endangered species have been designated as areas of environmental interest (AEI). AEIs are geographical units at LANL that are managed for the protection of federally listed species, and they consist of core habitat areas and buffer areas. The purpose of the core habitat is to protect, in compliance with the Endangered Species Act, areas essential for the existence of the specific threatened or endangered species. The purpose of buffer areas is to protect core areas from undue disturbance and habitat degradation. The proposed LANL area for the fiber optic line is not within core or buffer habitat areas.

Sandhill cranes (*Antigone Canadensis*) and numerous waterfowl are known to migrate south along the middle and lower Rio Grande Valley between November – December and back north between February – March (Gerber et al. 2014 and LANL 2020). The fiber optic cable that would span White Rock Canyon would have aircraft warning marker balls 36 in. in diameter installed every 200 ft. to alert pilots to the presence of the fiber optic cable. These warning spheres would also serve as anti-collision devices to prevent or minimize bird impacts with the fiber optic cable. Additional bird diverters that spin and are reflective would be installed approximately every 200 ft. Wire [cable]-marking systems have been shown to avoid or reduce avian impacts by 55–94% (LANL 2020). Large, heavy-bodied, less maneuverable species such as swans, pelicans, herons, cranes, and other waterfowl are generally thought to be more susceptible to aerial line collisions than smaller more maneuverable species. One literature review found that for these less maneuverable species collision reduction percentages were between 42–81% with most around 50% (LANL 2020). However, there is little evidence for the comparative effectiveness of different marker types; most studies that compared different line markers found inconclusive results (Gernardino et.al. 2018).

Once White Rock Canyon is crossed, the fiber optic cable is primarily aerial and strung on the RL and as such would have no impacted or minimal impact on species and habitat from the canyon crossing to NM-4. From the STA substation, the line is underground and parallels NM-4 to its terminus at the intersection of Piedra Loop and Sherwood Boulevard. Fiber optic cable burial would occur in roadway shoulder maintained areas or in landscaped environments. Vegetation removal and disturbance would be minimal. During construction activities, compliance with the *Migratory Bird Treaty Act* restricts vegetation removal during the peak bird breeding season, May 15 through July 31, unless LANL biological resources staff have conducted a nest check to ensure that there are no nesting birds present. If active nests were found, the nest tree or shrub would be left in place until the nesting is complete.

Santa Fe County/BLM

From the CenturyLink infrastructure in an underground vault at the Marty Sanchez Links de Santa Fe golf course, the fiber optic line would run underground and parallel to Caja del Rio Road until reaching the intersection of CR 62 where it would continue underground on CR 62 crossing BLM lands until meeting the boundary of the SFNF. The installation in this section would occur approximately 10-15 ft. west of the Caja del Rio Road shoulder and on CR 62, it would be located approximately 10 ft. southwest from the Santa Fe Landfill boundary fence. Habitat along Caja del Rio Road is typical of disturbed and maintained (mowed) roadsides. Similarly, CR 62 is a maintained dirt route with disturbed road shoulders. Prior to surface disturbing activities during breeding season, surveys would be conducted in potential nesting habitat to identify any active nest. Undergrounding the fiber optic line would have minimal impact on species and habitat given the brief construction period, avoidance of impact to nesting birds, and that surface disturbed areas would be re-vegetated.

USFS

Three biological evaluation surveys were conducted on April 19, April 26, and May 3, 2019, along the proposed project route on USFS lands (See APPENDIX B) to identify the presences of proposed endangered, threatened, and regional forester's sensitive species; USFS management indicator species; and avian species. The project area was found to provide habitat for a variety of mammals, reptiles, and birds that are common in the juniper-savannah habitat.

Common mammal species in the area include Colorado chipmunk (*Neotamias quadrivittatus*), Gunnison's prairie dog (*Cynomys gunnisoni*), black-tailed jackrabbit (*Lepus californicus*), western spotted skunk (*Spilogale gracilis*), badger (*Taxidea* taxus), desert cottontail (*Sylvilagus audubonii*), mule deer (*Odocoileus hemionus*), Rocky Mountain elk (*Cervus elaphus*), gray fox (*Urocyon cinereoargenteus*), and coyote (*Canis latrans*). Common reptiles that may be found in the project area include New Mexican whiptail (*Aspidoscelis neomexicanus*), roundtail horned lizard (*Phrynosoma modestum*), collard lizard (*Crotaphytus collaris*), striped whipsnake (*Masticophis taeniatus*), western diamondback rattlesnake (*Crotalus atrox*), prairie rattlesnake (*Crotalus viridis*), and bullsnake (*Pituophis melanoleucus*) (DOT/USFS/BLM 2016). The project is not anticipated to adversely affect any mammalian or reptile species as the fiber optic cable would be laid primarily in the FR 24 roadbed or hung aerially, in staging and vault areas any species would be expected to temporarily relocate to adjacent undeveloped areas during construction activities, and post-construction site restoration would substantial restore affected habitat.

A variety of migratory and resident bird species use the project area for nesting, wintering, foraging, and sheltering. Common bird species that can be found in the project area include the broad-tailed hummingbird (*Selasphorus* platycercus), chipping sparrow (*Spizella passerina*), common raven (*Corvus corax*), juniper titmouse (*Baeolophus ridgwayi*), lark sparrow (*Chondestes grammacus*), mourning dove (*Zenaida macroura*), pinyon jay (*Gymnorhinus cyanocephalus*), and spotted towhee (*Pipilo maculatus*). The White Rock Canyon cliffs provide suitable roosting and nesting habitat for several birds of prey including golden eagle (*Aquila chrysaetos*), ferruginous hawk (*Buteo regalis*), and red-tailed hawk (*Buteo jamaicensis*). Guano (whitewash) was observed on the cliff walls indicating the presence of large birds using the area.

Avian point count surveys consisted of 22 survey points spaced approximately 0.5 mile apart (Figure 4-1). Project biologists observed and listened for five minutes, documenting all species, including numbers of individuals. Although the surveys were tailored toward identifying avian species, any USFS species of concern or management indicator species were recorded (Triad 2019). Forty-four bird species and 622 individual birds were observed including the gray vireo (*Vireo vicinior*), which is listed as a threatened species by the State of New Mexico.

The primary impacts from the project would be disturbance of nesting and foraging habitat from construction activities and vegetation removal outside of the FR 24 roadbed. A majority of disturbance would occur from laydown yards, equipment staging, or vault construction. During construction activities, compliance with the *Migratory Bird Treaty Act* restricts vegetation removal during the peak bird-breeding season, May 15 through July 31, unless a project biologist has conducted a nest check to ensure that there are no nesting birds present. If active nests were found, the nest tree or shrub would be left in place until the nesting is complete.

Much of the work would occur in the FR 24 roadbed, minimizing vegetation removal and soil disturbance. To conserve habitat, the project would select laydown yards and equipment storage areas to minimize soil disturbance and removal of vegetation. Previously disturbed areas would be used for staging. Vegetation removal would be done outside of the breeding season (April–July) to protect active nests. If vegetation removal occurs within the breeding season, a LANL biologist would survey vegetation for active nests before removal.

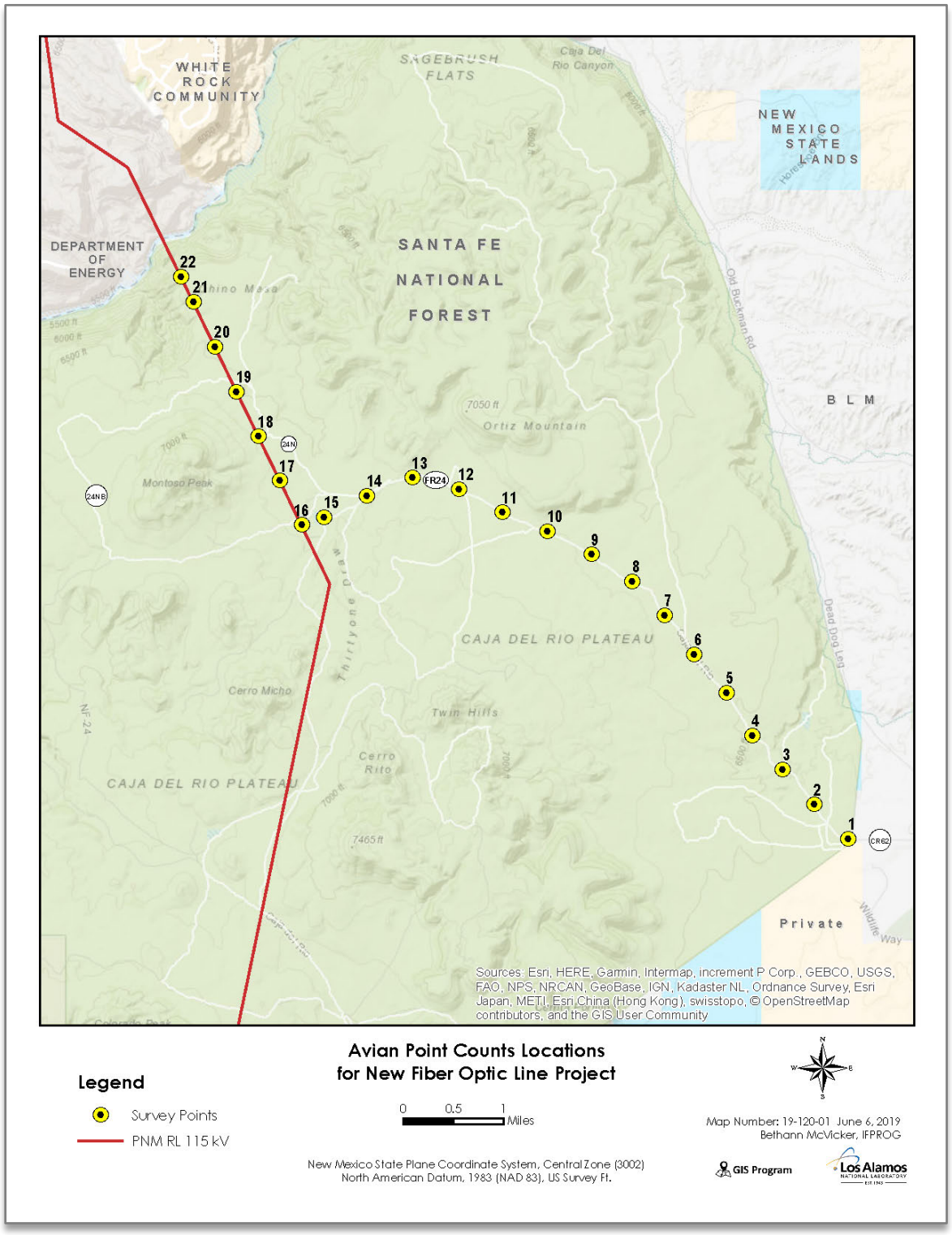

FIGURE 4-1. AVIAN POINT COUNT LOCATIONS
(Triad 2019)

Vegetation surveys were conducted concurrently with the avian point counts along the proposed route. The vegetation surveys focused on species listed in the SFNF's small project biological evaluation form that had the potential to occur in the area. The proposed route is primarily comprised of bare soil with plants dispersed irregularly within the juniper-savanna vegetation community that is dominated by oneseed juniper (*Juniper monosperma*) and pinyon pine (*Pinus edulis*). Other species present were mainly early successional species that tend to do well in disturbed habitats. No sensitive species were identified (Triad 2019).

Vegetation impacts would be from direct removal during construction. Prior to construction and as a component of the breeding bird survey, should any sensitive species be identified, the plants would be flagged and worked around as best as practicable and/or, if feasible, individual plants would be transplanted outside the area of disturbance. Many of these early successional plants would naturally re-establish after the project was complete. To prevent the adverse consequences from the potential introduction or spread of weed species the project will be required to implement the mitigation measures detailed in Section 5.0.

Provided the mitigation measures in Section 5.0, such as site restoration requirements, are followed, the project is not expected to adversely affect sensitive animal or plant species.

Cumulative Impacts: There could be a long-term change of vegetation in construction affected areas and an increase in weedy invaders even with the mitigation commitments specified in Section 5.0. This would add cumulatively to all the other disturbed sites in the area. In dry areas like the Caja del Rio, even historic sites show a change of vegetation decades later with weed species.

4.4.2 No Action Alternative

There would be no change in existing site or powerline corridor conditions. Thus, there would be no effect to plants and animals or their habitat.

4.5 Recreation

4.5.1 Proposed Action

DOE/Los Alamos County

TA-70 and TA-71 are utilized by a variety of recreationists that include hikers, mountain bikers, horseback riders, and others who enjoy the outdoors. Public use of motorized vehicles is not allowed in these areas. At the RL White Rock Canyon crossing, installation of the two in-line steel monopole structures would be required. Temporary staging areas of approximately 200 ft. by 200 ft. would be required for each of the two structures. Signage in those areas would be posted to exclude recreationists during the construction period. Once monopoles are erected, there would be no effect to recreational use in the affected area.

Installation and operation of the fiber optic aerial cable utilizing existing power poles will not affect the recreational use of TA-70 or TA-71 land. Similarly, installation of the underground fiber optic line along NM-4 and the White Rock community will not affect recreational use, as it is directly adjacent to the roadways and not in recreational lands.

Santa Fe County and BLM Lands

Santa Fe County affected lands initiate from the Marty Sanchez Links de Santa Fe golf course and run parallel to Caja del Rio Road into the intersection of CR 62 then continue on CR 62 crossing BLM lands until meeting the boundary of the SFNF. The installation in this section would occur approximately 10-15 ft. from the edge of the westerly fence line of the Caja del Rio Road then turn west staying approximately 10 ft. from the southern fence line of the Santa Fe Landfill boundary fence on CR 62.The shoulder of CR 62 includes lands owned or managed by the Santa Fe County and BLM. Prior to starting construction activities that could affect normal traffic flow, CenturyLink would have a traffic safety and control plan (TSCP) specific to higher speed traffic along these roadways in place that upon implementation would safely direct and guide the traveling public, recreationists including pedestrians and bicyclists, through the work zones, as well as to protect the construction workers. During installation of the underground fiber optic line traffic, primarily recreational traffic, accessing USFS lands may experience minor traffic delays. Once installed there would be no effect to traffic or recreational use.

SFNF Land

The Caja del Rio Plateau has been a recreational area used mainly by the residents in Santa Fe County and surrounding communities but is experiencing an increase of visitors from other regions. The area provides for a variety of outdoor activities but has had a history of recreational abuse characterized by dumping, illicit alcohol and drug use, irresponsible shooting, and cross country travel by motorized vehicles (DOT/USFS/BLM 2016). The Santa Fe National *Forest Travel Management Implementation Plan* limits motor vehicle use to designated roads only.

On SFNF lands, the route would be primarily within and down the middle of FR 24 roadbed, a hard packed dirt roadway with substantial ruts in some stretches and the most used road in the Caja de Rio plateau, or in certain situations parallel FR 24, approximately 10–20 ft. adjacent to and south of the FR 24 roadway. A small portion of the project would entail use of a two-track road mostly within the RL 115kV transmission line permit area with similar road conditions to FR 24. Both roadways are used by recreationists and ranchers especially FR 24. The TSCP will be specific to FR 24 roadway conditions and traffic considerations. During installation of the underground fiber optic line, traffic may experience minor traffic delays and/or very short site-specific minor detours around the immediate construction zone. However, every effort will be made to allow single lane traffic to avoid travel outside the existing roadway. No temporary roads or cross-country will be permitted. Signage will be placed at appropriate locations along the roadways alerting traffic that construction will be encountered. In the traffic control areas, flagman will be present to direct the traffic as to the appropriate course of action. Post-construction there would be no effect to traffic along the two-track road mostly within the RL 115kV transmission line permit area and FR 24. A potential benefit from the project is that section FR 24 may be improved during the fiber optic line installation, due to grading and other actions necessary to protect the underground line. Once the fiber optic line is installed, there would be no effect to traffic or recreational use.

At the RL White Rock Canyon crossing, installation of the two in-line steel monopole structures would be required. Temporary staging areas of approximately 200 ft. by 200 ft. would be required for each of the two structures. Signage in those areas would be posted to exclude recreationists during the construction period. Once monopoles are erected, there would be no effect on recreational use in the area.

Cumulative Impacts: No cumulative impacts have been identified.

4.5.2 No Action Alternative

There would be no impacts from the Proposed Action, as the redundant fiber optic line would not be constructed. The potential benefit of FR 24 additional road maintenance would not occur.

4.6 Scenic Resources

4.6.1 Proposed Action

A continuing responsibility of the Federal Government in compliance with NEPA is to assure for an aesthetically and culturally pleasing surroundings for the American people (NEPA 1969). In general, scenery is the aggregate of visual and auditory (noise) natural and manmade features that give a particular landscape its character and aesthetic quality that is an integrated part of ecosystem management.

DOE/Los Alamos County

DOE scenic resources NEPA guidance directs for the identification of lands with "scenic, or aesthetic importance;" and discusses the potential direct, indirect, and cumulative effects of the Proposed Action and alternatives on scenic or areas of aesthetic importance (DOE 1997). Furthermore, this guidance directs consideration of mitigation design alternatives that would mitigate for aesthetic intrusion (DOE 2004).

Of the 6.3 mile project corridor associated with the OPGW ground wire replacement on PNM's transmission line, approximately 2.7 miles would be located on DOE lands. The proposed fiber optic cable crossing over White Rock Canyon is approximately 1.1 mile in length and bisects both USFS and DOE/NNSA lands. Noticeable visual features of the lands adjacent to the OPGW portion of the project within DOE/NNSA property include recreation areas and developed recreational trails for hiking and horseback riding, linear energy infrastructure, the STA substation, utility patrol roads, and communication facilities. Several trails in the vicinity provide access to the Rio Grande along the south edge of White Rock Canyon. The STA substation area is graded, and it contains multiple transmission lines, which link to the STA substation. From the STA substation, the fiber optic line would run underground and parallel roadways to its termination point in the White Rock community.

The White Rock Canyon fiber optic cable span would be visible from vantage points on or relatively near the canyon edge and from below, along the Rio Grande. During monopole erection and cable stringing construction, activities would be noticeable but transitory. Post-construction, the fiber optic cable crossing over White Rock Canyon would parallel and be approximately 60 ft. to the west of the existing electrical power transmission structures and lines. The separation distance is an engineering requirement to prevent potential impacts from galloping wire [ice buildup resulting in line bounce] and differential wind displacement [response of an electrical line from wind fluctuations]. Similar to the RL, 36 in. colored marker balls and additional bird diverters would be placed on the fiber optic cable approximately every 200 ft. to alert aircraft and birds to the presence of the fiber optic cable (Figure 4-2). Several measures would be taken to retain the landscape character, thereby minimizing visual impacts. The White Rock Canyon crossing monopole structures would, as much as practical, be designed to match the height, color, and site to blend in with the existing RL structures and TA-71 landscape (Figure 4-2).

FIGURE 4-2. CONCEPTUAL RENDERING OF THE MONOPOLE WHITE ROCK CANYON CROSSING LOOKING FROM USFS LANDS TOWARD DOE/NNSA LANDS

Non-specular structure materials on the monopoles would be used to reduce reflection and glare. Staging areas would be selected to minimize soil and vegetation impacts. In addition, ground surfaces and staging areas disturbed during construction would be restored to approximate the original grade and re-vegetated as necessary. Whenever possible at the monopole locations, disturbance to existing vegetation, topsoil, and rock formations would be avoided or minimized. The OPGW on DOE/NNSA land would replace the existing ground wire on PNM's transmission line and would not be a visual change from current conditions. The underground fiber optic line corridor that would parallel roadways would be re-vegetated but may be evident for years. The concrete maintenance vaults would be placed at ground level and not obvious to drivers or a casual observer who were not in the immediate area.

Post-construction and after re-vegetation, the fiber optic line along NM-4 and within the community of White Rock would not be noticeable.

Santa Fe County, BLM, and USFS

Santa Fe County does not have visual quality standards. Lands administered by the BLM and USFS are managed to achieve a specific level of visual or scenic quality. However, the two federal agencies use different systematic processes to analyze the potential visual effects of proposed projects and activities.

Post-construction and after re-vegetation, the fiber optic line along Caja del Rio Road and CR 62 would not be noticeable.

BLM: On BLM land, visual resource management (VRM) is conducted in accordance with BLM Manual 8400 – *Visual Resource Management*. VRM classes are used as minimum management objectives for identified visual management units within BLM land. Each VRM class describes differing degrees of modification allowable in basic landscape elements. VRM classifications are listed below.

- Class I: Preserve the existing character of the landscape. The level of change should be very low and must not attract attention.
- Class II: Retain the existing character of the landscape. The level of change should be low. Management activities may be seen, but should not attract the attention of the casual observer.
- Class III: Partially retain the existing character of the landscape. The level of change should be moderate. Management activities may attract attention, but should not dominate the view of the casual observer.
- Class IV: Allow management activities requiring major modifications to the existing character of the landscape. The level of change may be high. Management activities may dominate the view. However, every attempt would be made to minimize the impact and aim to repeat the basic elements in the landscape.

In Addition, all permitted actions on BLM lands would be evaluated to minimize impacts on the night sky.

The area along CR 62 is managed by the BLM as VRM Class III (DOT/USFS/BLM 2016). The CR 62, the landfill, and two-track roads dominate visually the BLM affected land section. The installation of an underground fiber optic cable and associated maintenance vaults would not alter the visual environment of the area once the vegetation has been re-established. Post-construction the fiber optic line would not be noticeable by users of the *El Camino Real de Tierra Adentro National Historic Trail.* There are no lighting requirements associated with the Proposed Action.

USFS: The USFS Santa Fe *Forest Plan* references the VMS that has since been replaced by the Scenery Management System (SMS) (USFS 1987). This analysis uses the SMS and corresponding terms for the impacts analysis. The SMS builds upon the VMS incorporating additional factors when evaluating potential scenery effects and does not exclude any VMS factors (USFS/BLM 2006). The SMS categories and management objectives are listed below.

- Very High: Landscape character “is” intact with only minute if any deviations. The existing landscape character and sense of place is expressed at the highest possible level (USFS 1995).
- High: Landscapes where the valued landscape character "appears" intact. Deviations may be present but must repeat the form, line, color, texture, and pattern common to the landscape character so completely and at such scale that they are not evident (USFS 1995).
- Moderate: Landscapes where the valued landscape character "appears slightly altered." Noticeable deviations must remain visually subordinate to the landscape character being viewed (USFS 1995).

- Low: Landscape character "appears moderately altered." Deviations begin to dominate the valued landscape character being viewed, but they borrow valued attributes, such as size, shape, edge effect and pattern of natural openings, vegetative type changes, or architectural styles outside the landscape being viewed. They should not only appear as valued character outside the landscape being viewed but compatible or complimentary to the character within (USFS 1995).
- Very Low: Valued landscape character "appears heavily altered." Deviations may strongly dominate the valued landscape character. They may not borrow from valued attributes, such as size, shape, edge effect and pattern of natural openings, vegetative type changes, or architectural styles within or outside the landscape being viewed. However, deviations must be shaped and blended with the natural terrain (landforms) so that elements such as unnatural edges, roads, landings, and structures do not dominate the composition (USFS 1995).
- Unacceptably Low: The valued landscape character being viewed appears extremely altered. Deviations are extremely dominant and borrow little if any form, line, color, texture, pattern, or scale from the landscape character. Landscapes at this level of integrity need rehabilitation. This level should only be used to inventory existing integrity. It must not be used as a management objective (USFS 1995).

On USFS lands, the underground fiber optic line would be installed entirely within Management Area G with a management emphasis on wildlife, range, and firewood collection, and the installation of the OPGW on the PNM transmission line would be within Management Areas G and L which has a management emphasis semi-primitive, non-motorized recreation. Management Area G meets the SMS management categories of “Low” to “Moderate.” Contiguous with Management Area G is the White Rock Canyon Management Area L, which is the site of the proposed White Rock Canyon OPGW crossing and a designated road less area. This area is managed under the SMS category of “high.” It should be noted that both management areas in the Santa Fe National Forest, *Southwestern Region’s June 2019 Santa Fe National Forest Draft Land Management Plan, Draft Environmental Impact Statement* are identified as potential wilderness areas.

The USFS project area is primarily on an undeveloped mesa top that is a two-needle pinyon (*Pinus edulis*)-juniper (*Juniperus monosperma*) savannah and woodland crisscrossed by two-track and single-track roadways and trails. The proposed route is comprised primarily of bare soil with plants dispersed irregularly. The species present were mostly early successional species that tend to do well in disturbed habitats. The most prominent activities are cattle grazing, recreational vehicle camping, off-highway vehicle use, mountain biking, hiking, and target shooting. Most of the fiber optic cable installation would occur along the existing roads and PNM’s RL transmission line, with minimal additional disturbance to undeveloped areas. On SFNF lands, the line would parallel FR 24, approximately 10–15 ft. adjacent to the dirt roadway, for approximately 7.4 miles until FR 24 intersects with the RL 115kV transmission line. Given that, the fiber optic line would be underground with maintenance vaults at ground level and adjacent to FR 24, after re-vegetation, there would be little noticeable change to the scenic environment. The underground portion of the fiber optic line would terminate at a vault and then connect to the top of the RL transmission line replacing an existing ground wire with OPGW for a distance of approximately 3.6 miles. The OPGW would be installed on existing transmission

support structures typically without modification and therefore, little to no change in the scenic environment.

Similar to the RL, the White Rock Canyon fiber optic cable span would utilize 36 in. diameter colored marker balls every 200 ft. and bird diverters placed 100 ft. from each marker ball. Both marker balls and bird diverters serve to alert aircraft and birds to the presence of the fiber optic cable (Figure 4-2). The fiber optic cable would be visible from vantage points on or relatively near the White Rock Canyon edge, high points within the local Caja del Rio Plateau project area and from below, along the Rio Grande.

To the extent practical, the monopole structures would be designed and colored to match the line, color, texture, and pattern of the existing Caja del Rio Plateau landscape and RL structures. Non-specular structure materials on the monopoles would be used to reduce reflection and glare (Figure 4-2). Staging areas would be selected to minimize soil and vegetation impacts. The ground surfaces and staging areas disturbed during construction would be restored to approximate the original appearance and grade and re-vegetated as necessary. Whenever possible, and as practical, impacts to vegetation would be avoided or minimized, topsoil stockpiled for later site restoration, and impacts to rock formations minimized and restored as close to original post-construction appearance.

Line Maintenance: For all affected land, maintenance activities would not affect the characteristic landscape. Such maintenance activities would include travel along access routes adjacent to the underground fiber optic line and under PNM lines for inspection and, if necessary, repair.

Cumulative Impacts: Approximately nine new concrete maintenance vaults and four new monopoles are additive to the utility corridors and structures that are presently there. Additionally the change, perhaps long-term, in vegetation characteristics is additive with other activities that had affected the landscape, such as, ranching and motorized vehicle use. Therefore, a visitor's sense of isolation and appreciation of the natural landscape may be affected. Impacts analyses of future projects in the area may have to incorporate additional mitigations, which would not have been necessary in the past, to offset further effects to the scenic environment.

4.6.2 No Action Alternative

There would be no impacts from the Proposed Action, as the redundant fiber optic line would not be constructed.

4.7 Noise

4.7.1 Proposed Action

The predominant noise source in the project areas consists of intermittent traffic noise associated with highway traffic and within the BLM and USFS lands intermittent recreational and off-road vehicles noise and target practice shooting. Construction activities, primarily from construction equipment operation, would contribute a short-duration increase to ambient noise level adjacent to the fiber optic line. Construction activities would be of relatively short-duration and would occur during daylight hours.

Cumulative Impacts: No cumulative impacts have been identified.

4.7.2 No Action Alternative

There would be no impacts from the Proposed Action, as the redundant fiber optic line would not be constructed.

4.8 Land Tenure and Use

4.8.1 Proposed Action

DOE/Los Alamos County

DOE: The OPGW line would cross White Rock Canyon from USFS lands onto LANL lands at TA-70. Two new steel monopole structures and anchors would be required on DOE/NNSA lands. The monopoles would be erected directly adjacent to the RL transmission line structures. Part of TA-70 affected area is within LANL's approximately 1,000 acre White Rock Canyon Reserve (Reserve) dedicated October 30, 1999 (Figure 4-3). Resource management for the Reserve is intended to maintain the native plant communities and to provide the opportunity to study the only area of a DOE facility that borders the Rio Grande. The Reserve establishment Proclamation recognized and supported the future land uses for LANL operations and of the escarpment as a safety and security buffer zone (DOE 1999).

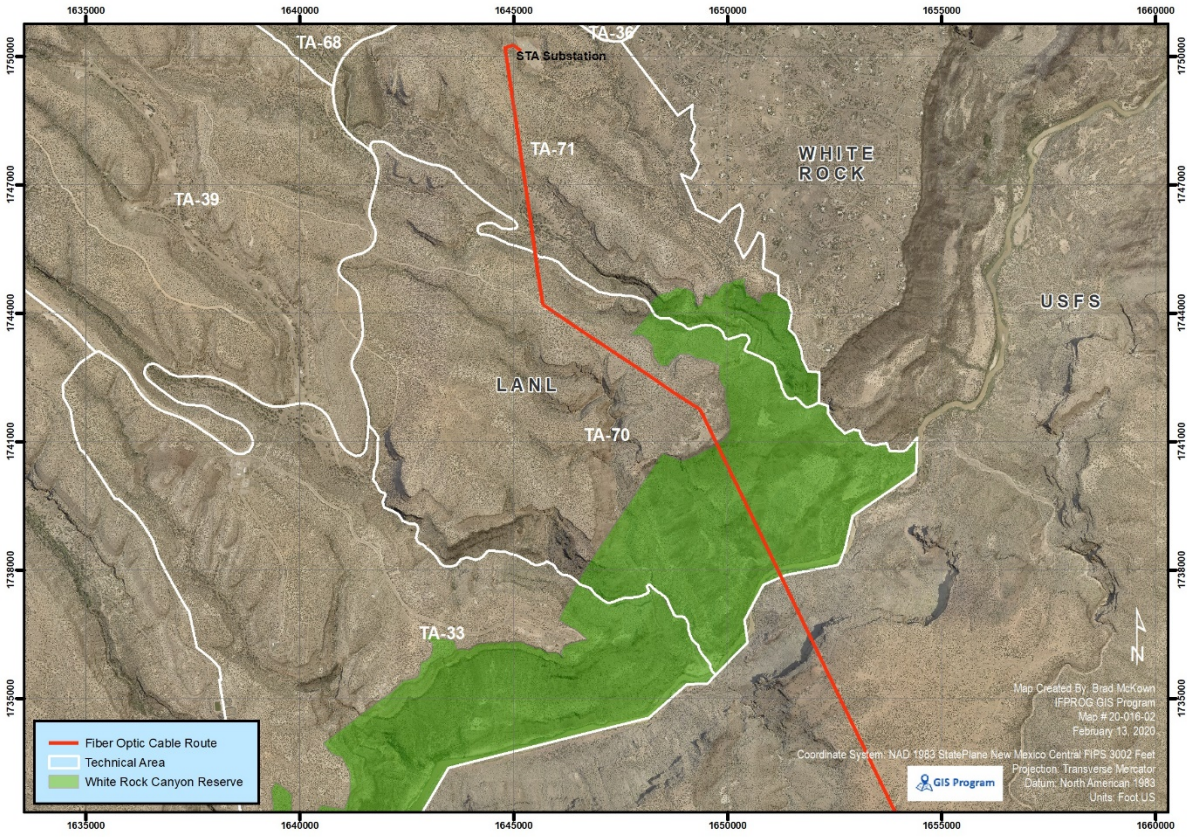

FIGURE 4-3. WHITE ROCK CANYON RESERVE

The OPGW would transition from the new monopoles to the RL transmission line poles for the remaining route to the TA-70 STA substation. From the STA substation, the fiber optic line would be installed underground following existing roadways, right-of-ways, and private easements to its terminus at Piedra Loop in the community of White Rock. PNM's existing DOE/NNSA easement would require modification as it does not allow for the installation of communication facilities. Therefore, a new DOE/NNSA easement would have to be obtained for the project. The new easement would substantially overlap with PNM's transmission line easement on LANL lands. The notable exception would be the additional easement needed for the construction of the White Rock Canyon monopoles and anchors on LANL lands. The remaining routing is compatible and compliant with the land use and requirement for those areas.

Los Alamos County: The underground fiber optic line would be constructed along NM-4 within the DOE/NNSA granted easement to NMDOT. DOE/NNSA would notify NMDOT of the proposed project.

At the NM-4 and Piedra Loop intersection, the underground installation would continue east in private easements along Piedra Loop until it intersects with Sherwood Blvd.

BLM/Santa Fe County

All uses and activities within the Taos Field Office administered lands must conform to the RMP. The Proposed Action would meet the RMP goals to establish an efficient system of utility corridors and communication sites to meet the energy and communication needs of the public with minimum negative impacts on visual, biological, cultural, and physical resources (BLM 2012). A BLM grant of right-of-way would be required for CenturyLink to use BLM public lands for the underground fiber optic line installation. The issuance of a right-of-way would serve to direct and control the granted activity in a manner protective of natural resources, and prevent unnecessary or undue degradation to the public land. Concurrent with a BLM grant of right-of-way, Santa Fe County would require a Development Permit/Site Development Plan per the County's Sustainable Land Development Code (SF 2016). The installation of an underground communication cable(s) is a permitted use in all Santa Fe County zoning districts.

USFS

The USFS is authorized to grant right-of-way for communication and electrical transmission lines under 36 CFR Part 251, Subpart B. These regulations set forth the necessary procedures, processes, and requirements related to the use and occupancy of National Forest lands by any individuals or entities. All permits, contracts, and other instruments for the use and occupancy of these National Forest System lands must be consistent with the *Forest Plan* (USFS 1987) [36 CFR 219.10 (e)].

The *Forest Plan* directs the minimization of the number of utility corridors by allowing only those that are most appropriately located on forestlands, and utilizing existing corridors whenever possible from a need and resource management standpoint (USFS 1987). Existing land uses in the project area include transportation and utility corridors and easements. A key decision variable in selecting the proposed route was crossing the SFNF in an existing corridor, which is consistent with *Forest Plan* direction. The forest-wide goals, standards, and guidelines from the *Forest Plan* that apply to this project are primarily those regarding protection of cultural resources, wildlife habitat, and water and soil resources. The project has been designed to conform to the area-specific *Forest Plan* direction that applies to Management Areas G and L. Emphasis in this Management Area G is on key wildlife habitat protection, habitat improvement,

and forage and firewood production. Contiguous with Management Area G, and where the underground portion of the fiber optic line would go aerial, is Management Area L. Management of Area L focuses on maintaining semi-primitive non-motorized recreation opportunities and providing the user with a moderate to high probability of experiencing isolation from the sights and sounds of humans (USFS 1987). The underground portion of fiber optic line effecting USFS lands would be constructed within an existing transportation corridor (FR 24), and does not constitute a new utility and is, therefore, consistent with the *Forest Plan*. However, a special-use authorization would be required.

The majority of all OPGW work would occur in areas already permitted for the RL 115kV transmission line utilizing utility corridors or easements in Management Area G and L. The route would not affect current land uses. A special-use authorization would be required for the installation of two monopoles and support structures within USFS boundaries, which would be erected outside of the transmission line corridor boundaries. In addition, an amendment to the PNM's SFNF master permit would be required.

Authorizations for special uses may be issued to qualified applicants when the proposed use (1) fulfills a demonstrated special need without unduly infringing on use by the general public; (2) is in accordance with an approved implementation plan and would not cause adverse impacts on the National Forest and its resources; (3) serves a function that cannot be provided by private enterprise off National Forest lands, and/or (4) is compatible with Management Area objectives (USFS 1987). The Proposed Action would meet these conditions to qualify for a special-use permit and amended special-use permit.

Cumulative Impacts: No cumulative impacts have been identified.

4.8.2 No Action Alternative

There would be no effect to current land tenure and use.

4.9 Cultural Resources

4.9.1 Proposed Action

In compliance with Section 110 of the National Historic Preservation Act of 1966, as amended, (NHPA) LANL archaeologists conducted a literature survey at the New Mexico State Historic Preservation Division Archaeological Records Management Section and at the SFNF Headquarter office in Santa Fe, New Mexico for known cultural resources along the proposed fiber optic line. Additionally, a systematic pedestrian survey was conducted along the proposed route from May 2019 through October 2019. The cultural resources findings are as follows:

NNSA

There are nine historic properties identified along the fiber optic line through DOE/NNSA land at LANL (Table 4-1) (LANL 2020a). These archaeological sites are associated with cultural periods that range from the Archaic Period (5,500 years ago) to the Ancestral Pueblo Periods (200 AD to 1600 AD). These include (from east to west), LA 29796, LA 29797, LA 82593, LA 21625, LA 139570, LA 82591, LA 139541, LA 6787, and LA 82602. The proposed project will avoid impacts to all identified cultural resources during construction and installation activities by excluding areas where archaeological sites are present from ground disturbance including staging and laydown areas. These archaeological sites fall under the requirements and stipulations of LANL's Programmatic Agreement (PA) among DOE/NNSA Los Alamos Field

Office, New Mexico State Historic Preservation Office (SHPO) and the Advisory Council on Historic Preservation (DOE 2017). In accordance with the PA, the project work scope is reviewed by subject matter experts who define areas of potential effects, historic properties, and they provide comments to project managers that stipulate requirements for NHPA compliance. Work is allowed to proceed without a 30-day review by the SHPO, if there will be no effect by avoidance to any archaeological sites.

For the nine archaeological sites located on DOE/NNSA land, archaeologists would flag the boundaries of these places with white twine and pink flagging, and they would monitor when activities are in the vicinity of these sites. These areas will be avoided by project personnel, vehicles, and any project-related activities.

TABLE 4-1. HISTORIC PROPERTIES SURVEYED IN THE FIBER OPTIC LINE PROJECT AREA, PAJARITO PLATEAU (DOE/NNSA) AND CAJA DEL RIO PLATEAU (USFS)

Laboratory of Anthropology Site Record No.	Cultural Period	Eligibility Status	NM-SHPO Concurrence Year
LA 21517 (USFS)	5,500 BC – AD 1600	Eligible (Criteria D)	2001
LA 44836 (USFS)	5,500 BC – AD 1600	Eligible (Criteria D)	2002
LA 44837 (USFS)	Unknown	Not Eligible	2002
LA 69641 (USFS)	10,000 BC – AD 200	Eligible (Criteria D)	1998
LA 121595 (USFS)	5,500 BC – AD 200	Eligible (Criteria D)	2002
LA 175649 (USFS)	5,500 BC – AD 1600	Undetermined Potentially Eligible (Criteria D)	2013
LA 175650 (USFS)	5,500 BC – AD 1600	Undetermined Potentially Eligible (Criteria D)	2013
AR-03-10-06-01983 (USFS)	5,500 BC – AD 200	Eligible (Criteria D)	Expected in 2020
LA 6787 (DOE/NNSA)	AD 1150 – AD 1325	Eligible (Criteria D)	1991
LA 21625 (DOE/NNSA)	AD 1150 – AD 1325	Eligible (Criteria D)	1999
LA 29796 (DOE/NNSA)	AD 200 – AD 1600	Eligible (Criteria D)	1999
LA 29797 (DOE/NNSA)	AD 1150 – AD 1325	Eligible (Criteria D)	1991
LA 82591 (DOE/NNSA)	AD 1150 – AD 1325	Eligible (Criteria D)	1991
LA 82593 (DOE/NNSA)	AD 1150 – AD 1325	Eligible (Criteria D)	1999
LA 82602 (DOE/NNSA)	5,500 BC – AD 1325	Eligible (Criteria D)	2007
LA 139541 (DOE/NNSA)	5,500 BC – AD 200	Eligible (Criteria D)	Expected in 2020
LA 139570 (DOE/NNSA)	5,500 BC – AD 200	Eligible (Criteria D)	Expected in 2020

BLM/Santa Fe County

The section of BLM property where the proposed fiber optic line is located contains no cultural resources (LANL 2020a).

The section of Santa Fe County property where the proposed fiber optic line is located contains no cultural resources (LANL 2020a).

USFS

There are eight cultural resources (archaeological sites) located within the proposed fiber optic line situated on SFNF lands (Table 4-1) (LANL 2020a). These archaeological sites are associated with cultural periods that range from the Paleoindian Period (10,000 years ago) to the Historic Period (1800 AD to 1920 AD). Seven of the archaeological sites are eligible, or potentially eligible, for listing on the National Register of Historic Places (Register); one of the archaeological sites is not eligible for Register listing. Of the seven eligible resources, three archaeological sites are bisected by the existing FR 24 along the proposed fiber optic line; two of the eligible archaeological sites are adjacent to FR 24; and two of the eligible archaeological sites are bisected by the PNM 115kV overhead transmission RL line access road.

The proposed project will avoid impacts to all identified cultural resources during construction and installation activities by excluding areas where archaeological sites are present from ground disturbance and staging and laydown areas. The three sites within the FR 24 do not contain intact features or artifacts due to the excavation, use, and roadbed erosion. All work in these site areas will be strictly limited to the current road width so as not to disturb the area adjacent to the road cut for the underground portion of the fiber optic line. The two sites located beneath the overhead transmission line will ensure no adverse effects as only rubber tire vehicles, limited to the existing roadbed, will be used so as not to cause further erosion of the access road. The construction activities would not diminish the integrity of the seven eligible sites. Therefore, there would be no adverse effect on the cultural resource properties and the Register eligibility of the cultural resource sites would not change. The proposed project will follow implementation guidelines of the *U.S. Department of Agriculture Forest Service Region 3 Programmatic Agreement* (2003) for compliance with the National Historic Preservation Act of 1966, as amended. Since the project would avoid cultural resources, no adverse effects to the historic properties are anticipated. At the direction of SFNF District Archaeologists, an archaeological monitor would oversee excavation during installation of the fiber optic line when activities are near and adjacent to archaeological sites. There would be no effects to cultural resources during operations because maintenance activities would take place within the areas already disturbed by construction activities. Work on USFS lands follow the National Historic Preservation Act Section 106 process that requires a 30-day review by the SHPO prior to commencement. The project would not commence until the SHPO concurs with the determination that all archaeological sites would be avoided by project activities.

Cumulative Impacts: No cumulative impacts have been identified.

4.9.2 No Action Alternative

There would be no effect upon cultural resources.

4.10 Socioeconomic Resources

4.10.1 Proposed Action

There would be limited benefits to the local economy, as construction would have only small effects due to the short duration of construction. Construction workers would come primarily from Santa Fe County region and would commute to the job site daily. Thus, any local economic gains related to construction would be minor. Similarly, operations and maintenance personnel would come from the existing contractor workforce. The Proposed Action would not alter population and demographic characteristics or have any disproportionate impacts upon housing and employment markets.

The primary economic benefit would be protection from internet service interruption due to a failure in the single fiber optic line. Service disruption in LANL's high performance voice, data, and internet service would compromise NNSA's mission of maintaining the Nation's nuclear deterrent and collaborative scientific research potentially, resulting in compromised work and project schedules and subsequent higher costs due to idled personnel and delayed research. The Los Alamos Community would benefit in a similar manner, which is the protection from a single point failure of the fiber optic line resulting in interruption of internet service.

Cumulative Impacts: No cumulative impacts have been identified.

4.10.2 No Action Alternative

LANL's communication and data capabilities would continue to be vulnerable to outages or service interruptions.

4.11 Environmental Justice

4.11.1 Proposed Action

There are no identified cumulative effects to any population. Therefore, there are no disproportionately high and adverse cumulative effects on human health or environmental effects on minority populations and low-income populations due to construction, operation, and maintenance of the fiber optic line.

Cumulative Impacts: No cumulative impacts have been identified.

4.11.2 No Action Alternative

There are no identified disproportionately high and adverse cumulative effects on human health or environmental effects on minority populations and low-income populations from the No Action Alternative.

4.12 Public and Worker Safety

4.12.1 Proposed Action

Construction, operation, and maintenance of fiber optic line and facilities do not pose a threat to public health or safety risk. Construction and operation hazards are well understood, and they present no unique risks to the public or worker personnel. All construction and operation employees and contractors would be required to adhere to the appropriate health and safety plans and emergency response plans, and they will be trained to operate under a health and

safety program that meets industry and Occupational Safety and Health Administration standards and regulations. CenturyLink's TSCP would be in place, which would safely direct and guide the traveling public through the work zones, as well as protect the construction workers.

Cumulative Impacts: No cumulative impacts have been identified.

4.12.2 No Action Alternative

There would be no changes to public health and worker safety conditions, as the fiber optic line would not be constructed.

4.13 Infrastructure

4.13.1 Proposed Action

Existing infrastructure (e.g., roadways and powerline poles excluding the White Rock Canyon RL infrastructure) are sufficient to support the Proposed Action; however, four monopoles (two on Forest Service land and two on DOE land) would require installation at the White Rock Canyon crossing. On USFS lands construction of the underground portion of the fiber optic line would be coordinated with the grazing permit holders to identify the location of underground water lines so that the water lines would not be impacted by construction. Although the USFS will retain responsibility for the routine maintenance of FR 24, weather conditions and normal use can combine to cause rutting and other road damage. CenturyLink would be responsible for road maintenance in the places where this rutting may threaten to damage its infrastructure.

Cumulative Impacts: No cumulative impacts have been identified.

4.13.2 No Action Alternative

Without a redundant fiber optic line, LANL's communication and data capabilities would remain vulnerable to outages or service interruptions.

4.14 Waste Management

4.14.1 Proposed Action

The Proposed Action would result in the production of vegetation debris (green waste) from clearing areas for the fiber optic vaults, constructing OPGW support structures, and generating solid waste material from construction activities. Green waste generated from the site clearing activities would be left on site and used to control wind and water soil erosion and to establish conditions for post-construction site re-vegetation.

Once the fiber optic line is functional, maintenance requirements would generate minimal solid waste. The equipment associated with fiber optic lines generally do not generate hazardous waste.

Regardless, there are sufficient landfill capacity, hazardous waste treatment storage, and disposal facilities that would accept construction and operationally generated solid and hazardous waste.

Cumulative Impacts: No cumulative impacts have been identified.

4.14.2 No Action Alternative

There would be no generation of solid or hazardous waste, as the fiber optic line would not be constructed.

4.15 Transportation

4.15.1 Proposed Action

Construction, operation, and maintenance of the fiber optic line would not change the existing levels-of-service to the surrounding road network nor limit recreation access. The materials required for construction would not require the use of oversized trucks and would not require roadway closures. A TSCP would be implemented during construction to ensure transportation safety and to minimize traffic disruption. The basic objective of the TSCP is to permit the contractor to work within the public right-of-way efficiently and effectively while maintaining a safe uniform flow of traffic within the construction work zone. The public traveling through the work zone in vehicles, bicycles, or as pedestrians would be given equal consideration. The work zone would consist of an advanced warning signs alerting motorists of upcoming changes in driving conditions, and a flagman would be present, as necessary. During construction operations, traffic may experience minor delays or short detours around the work zone on unpaved roadways. There would be no roadway closures.

Federal Aviation Administration (FAA) Considerations: The FAA requires a *Notice of Proposed Construction or Alteration* (Form 7460) to be filed for any construction or alteration that is more than 200 ft. at ground level at its site (14 CFR §77). The proposed monopoles and support structures would be approximately 80 ft. in height from ground level. Similar to the RL, 36 in. diameter colored marker balls every 200 ft. and bird diverters placed 100 ft. from each marker ball. Both marker balls and bird diverters serve to alert aircraft and birds to the presence of the fiber optic cable (Figure 4-2). However, the OPGW would span White Rock Canyon at over 1,000 ft. above ground level. Therefore, a minimum of 45-days prior to construction PNM would submit Form 7460 to the FAA. The FAA would then issue a determination in writing stating whether the proposed construction would be a hazard to air navigation, and FAA would advise all known interested persons. Because the fiber optic cable would be erected adjacent to the RL canyon spanning structures and powerlines replete with orange aircraft warning spheres, no new air navigation hazards from the proposed project would be introduced. Based on the FAA response, the project would install additional aircraft warning equipment if required or recommended.

Cumulative Impacts: No cumulative impacts have been identified.

4.15.2 No Action Alternative

There would be no changes to current traffic conditions, as the fiber optic line would not be constructed.

4.16 Unavoidable Adverse Impacts

4.16.1 Proposed Action

Neither the Proposed Action nor No Action Alternative would result in the exceedance of a regulatory limit or standard, the capacity of a specific resource, or the infrastructure and utilities capability to provide services.

4.17 Relationship Between Short-Term Use of Resources and Long-Term Productivity

4.17.1 Proposed Action

Neither the Proposed Action nor No Action Alternative would result in substantial change in land use or condition. Therefore, there would be no impact from the short-term use (Proposed Action) versus long-term productivity.

4.18 Irreversible and Irretrievable Resource Commitments

4.18.1 Proposed Action

Construction of the fiber optic line would commit natural and man-made materials and human and fiscal resources. The Proposed Action would require a commitment of irretrievable resources in the form of fiber optic equipment, powerline poles, fiber optic cable, and other associated infrastructure.

5.0 MITIGATION MEASURES

5.1 Transportation

A traffic safety plan would be developed, approved by the governing land management agency, and implemented during construction to ensure public transportation safety and minimize traffic disruption.

5.1.1 Road Maintenance

Post construction CenturyLink would be responsible for restoration of FS 24, as close as practical, to the original pre-construction topographic contours and the mitigation of road conditions that could expose and jeopardize the fiber optic cable from erosion and vehicle use impacts. Thereafter, CenturyLink would be responsible for fiber optic cable line inspection and road maintenance activities necessary for fiber optic cable protection.

5.2 Erosion and Sedimentation Control

Soil disturbance and removal of vegetation would be avoided or minimized outside of the construction corridor by having work boundaries clearly marked. Site blading and grading would be minimized and generally performed for erosion control and land reclamation activities. To further minimize surface impacts, all construction vehicle traffic would be restricted to approved areas, roadways, and right-of-ways unless approved by the agency with land management jurisdiction. In addition:

- Any active construction areas would be graded in such a manner that berms would be limited to those areas only where needed for erosion control and drainage.
- To the maximum extent possible, vegetation removal and trimming would be limited for safe construction, fire control purposes, and electrical safety requirements.
- If soil has to be excavated or graded in areas of temporary disturbance, topsoil would be stockpiled in a long and low configuration, and then redistributed prior to reclamation to the extent practical.

Restoration to pre-construction topographical conditions in surface disturbed areas would commence after fiber optic installation and approval of the restoration plan by the governing land management agency.

5.3 Site Restoration

The purpose of site restoration is to restore the areas disturbed by the proposed project to a natural appearance such that the construction-scarred areas will be difficult to detect upon site restoration and successful re-vegetation. All temporary construction areas, material storage yards, and staging sites would be restored to their original use after construction and cleanup. Reclamation activities would be conducted on construction disturbed areas. After final construction activities have been completed, site restoration tasks would be implemented and these tasks include the following requirements.

- Disturbed areas would be restored as closely as practical to the original pre-construction topographic contours, unless otherwise agreed to by the governing land management agency. All practical means would be made to restore the land to its approximate original contours, natural drainage patterns, and vegetation (i.e., use of native plants and seeds mix) within the right-of-way, as required by the governing land management agency.

- The effectiveness of erosion control measures would be evaluated by noting particular site conditions, including soil movement and downslope sedimentation, surface plant litter movement, flow pattern development, rills and gullies, wind scour depressions, and plant root system exposure. If the conditions listed were present, it would be assumed that project-related erosion is occurring, and options for remedial measures would be evaluated and implemented as needed. Post-construction erosion control measures would be required and considered successful when no project related erosion are observed for a one-year period following construction.

- Identification and mitigation of potential impacts to water resources would be included in the SWPPP as required by the Environmental Protection Agency Construction General Permit. In the SWPPP, all disturbed and undisturbed areas of vegetative and soils would be identified. In addition, sediment control BMP would be outlined for stabilization during the monsoon season. A schedule for implementation of these erosion and sedimentation control measures would be included in the SWPPP. The SWPPP would include both temporary and permanent erosion control BMP to be used.

- Subsurface soils, if excavated, would be used as initial fill for disturbed sites. Following this, salvaged topsoil would be spread on the disturbed area and raked to create imprinting or micro-catchment depressions for water retention and seed collection. Seed capture and propagation would be encouraged by mechanical pitting and imprinting. If determined to be beneficial, certified weed free mulch would be applied.

- If vegetation has been cleared from a construction area, it would be distributed within the area to be reclaimed for the purposes of decreasing wind and rain erosion, increasing soil moisture, encouraging re-vegetation, and providing a catchment matrix for wind dispersed seeds.

- The existing seed bank in the first several in. of soil would be used to the extent possible to re-vegetate a disturbed site augmented by supplemental seeding where necessary. Seeding specification would comply with the requirements of the governing land management agency. Fertilizer would only be used if required and approved by the governing land management agency. Where necessary (e.g., unstable soils, steep slopes), erosion control measures, including contouring, would be used to prevent erosion and sedimentation until vegetation becomes established. Reclamation success would be evaluated by comparing project-affected sites with pre-construction conditions and/or adjacent areas in terms of final grading and removal of any introduced berms, re-contouring to approximate pre-construction contours, removal of plants listed on the New Mexico Noxious Weed List, and relief of compacted soils.

- The prevention of the introduction of plants listed on the New Mexico Noxious Weed List (weeds) will be addressed throughout construction. All heavy equipment utilized during construction would be washed prior to arrival. This will help minimize weed seed introduction from a different region. Equipment will have accumulations of dirt removed before leaving the work sites to prevent the transportation of weeds and weed seeds elsewhere. Monitoring of weed populations and success criteria, as defined by the land governing agency, for construction disturbed areas would be conducted annually until the weed abatement success criteria have been met. Photographs would be taken of weed populations prior to treatment and following treatment. Monitoring would be conducted during the growing season, generally between late March and mid-May. Weed surveys would be conducted in areas previously disturbed during construction on foot and/or by vehicle within the construction areas. Species names and locations of weed infestations would be mapped and transferred to an updateable geographic information system (GIS) database.

5.4 Special Wildlife Considerations

Construction operations would be conducted to minimize potential disturbance to wildlife. Measures would include construction limited to daylight hours, construction vehicle traffic restricted to approved areas and roadways, and vehicle speed limited to 25 mph.

During construction activities, compliance with the *Migratory Bird Treaty Act* restricts vegetation removal during the peak bird-breeding season, May 15 through July 31, unless a project biologist has conducted a nest check to ensure that there are no nesting birds present. If active nests were found, the nest tree or shrub would be left in place until the nesting is complete.

If trenches or boring pits cannot be backfilled and have to be left open overnight, escape ramps would be provided preferably no more than 100 ft. apart but at no less than 290 ft. (NM G&F 2003). Escape ramps would be constructed parallel or perpendicular to the existing trench with the escape ramp slope between 30 and 45 degrees. End caps would be placed on any conduit left in the trench overnight, to preclude trapped animals from entering. Staged conduit on the surface would be capped until placed in the trench. Conduit would be checked for wildlife, and any wildlife found would be removed before the conduit is placed into the trench. Trenches, maintenance vaults, or bore pits (dugouts) left open overnight would be inspected the following day by a project biologist. Animals within the dugouts would be removed and relocated to undisturbed habitat a minimum of 165 ft. from the work area.

Additionally, for locations left open for long periods of time [days] wildlife entrapment may be avoided by the installation of a silt fence or similar barrier around the dugouts. Silt fence would be tied to counter-sunk T-posts, rebar, or stakes, and buried at the base to help prevent animals from burrowing under the fence.

- Silt fences would be constructed of a solid synthetic geotextile material, and not mesh. Wildlife can climb mesh, and they can become ensnared in it.
- Silt fencing would be located as close to the trench as practical to avoid large patches of undisturbed habitat.
- Silt fence construction would surround the entire length of open dugouts.

- Silt fences would be buried at least five in. below ground level with a minimum height of three ft. above ground level.
- Silt fences would be staked to remain taut throughout the open dugout period.
- Daily inspection would occur to ensure that the bottom of the fence remains buried, and that there are no holes or gaps in the fence.

The White Rock Canyon crossing structures would be designed with appropriate colors, forms and non-specular structure materials to reduce the visual impact, reflection, and glare. In addition, ground surfaces and staging areas disturbed during construction would be restored to approximate original grade and re-vegetated as necessary. Whenever practical, vegetation clearing would be avoided, rock formations retained, and topsoil stockpiled for spreading after construction completion.

Sandhill cranes (*Antigone Canadensis*) along with numerous other waterfowl are known to migrate south along the middle and lower Rio Grande Valley between November – December and back north between February – March (Gerber et al. 2014 and LANL 2020). Thus, the aerial fiber optic cable spanning White Rock Canyon, in addition to aircraft warning marker balls, would install bird diversion devices to prevent or minimize bird impacts with the fiber optic cable

5.5 Cultural Resources

An archaeological monitor would be required to monitor excavation during installation or stringing of the fiber optic line. If previously unknown subsurface cultural deposits are discovered, construction activities in that area would halt, and the USFS would determine appropriate treatment in consultation with the SHPO.

5.6 Housekeeping

Construction sites and access roads would be kept in an orderly condition throughout the construction period by using approved enclosed refuse containers. Refuse and trash would be removed from the sites and disposed of in an approved manner. Project personnel would not deposit or leave any food or waste in the project area. At the conclusion of construction, where affected by project construction, CenturyLink and PNM would remove all construction materials from the project site and associated staging areas and dispose of or recycle these materials at an off-site location, as appropriate. No construction debris would remain in the right-of-way following completion of construction.

6.0 REFERENCES

Bernardino et. al. 2018 J. Bernardino, K. Bevanger, R. Barrientos, J.F. Dwyer, A.T. Marques, R.C. Martins, J.M. Shaw, J.P. Silva, F. Moreira. *Bird collisions with power lines: State of the art and priority areas for research*. Biological Conservation 222 (2018) 1-13. June 2018.

BLM 2012 Bureau of Land Management. Taos Resource Management Plan, Taos Field Office. May 2012.

CEQ 1981 Council on Environmental Quality, Executive Office of the President, Memorandum to Agencies: Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations. 46 Fed. Reg. 18026 (March 23, 1981), As amended.

CenturyLink and PNM 2019 CenturyLink and Public Service Company of New Mexico. Second Fiber Circuit Route Plan of Development. November 20, 2019.

DOE 1997 Department of Energy, Environmental Impact Statement Checklist. Office of Environment, Safety and Health, Office of NEPA Policy and Assistance. November 1997.

DOE 1999 The Secretary of Energy Proclamation. Signatories: Secretary of Energy U.S. Department of Energy; Director, Intermountain Region, U.S. Department of the Interior, National Park Service; Governor, State of New Mexico; U.S. Army Corps of Engineers, Acting Division Engineer, South Pacific Division; and Forest Supervisor, Santa Fe Nation Forest, U.S. Department of Agriculture, National Forest Service. October 30, 1999.

DOE 2004 Department of Energy, Recommendations for the Preparation of Environmental Assessments and Environmental Impact Statements, Second Edison, Office of NEPA Policy and Compliance, December 2004.

DOE 2008 Department of Energy, Site-Wide Environmental Impact Statement for Continued Operation of Los Alamos National Laboratory, Los Alamos, New Mexico. DOE/EIS-0380, May 2008.

DOE 2017 Programmatic Agreement among the U.S. Department of Energy, National Nuclear Security Administration, Los Alamos Field Office, the New Mexico State Historic Preservation Office and the Advisory Council on Historic Preservation Concerning Management of the Historic Properties at Los Alamos National Laboratory, Los Alamos, New Mexico. Implemented on August 2, 2017.

DOE 2019 Department of Energy, National Environmental Policy Act (NEPA) coverage of a second fiber optic circuit route to Los Alamos National Laboratory, Los Alamos, New Mexico. February 11, 2019.

DOE 2019 Department of Energy, National Environmental Policy Act (NEPA) coverage for the proposed construction and operation of a second fiber optic circuit route to Los Alamos National Laboratory, Los Alamos, New Mexico. May 1, 2019.

DOT 2017 Memorandum of Understanding Implementing One Federal Decision Under Executive Order 13807. August 15, 2017.

DOT/USFS/BLM 2016 United States Department of Transportation, Federal Highway Administration, Central Federal Lands Highway Division and United States Department of Agriculture, United States Forest Service, Espanola Ranger District, and United States Department of the Interior, Bureau of Land Management, Taos District. Environmental Assessment EA# DOI-BLM-NM-L000-2014-086. El Camino Real De Tierra Adentro National Historic Trail, Buckman Road Segment, Retracement Trail Project. FHWA NM FLAP CR 77000 (1). November 16, 2016.

Gerber et al. 2014 Gerber, B. D., J. F. Dwyer, S. A. Nesbitt, R. C. Drewien, C. D. Littlefield, T. C. Tacha, and P. A. Vohs. 2014. Sandhill Crane (Antigone canadensis), version 2.0. In A. F. Poole (ed.) The Birds of North America. Cornell Lab of Ornithology, Ithaca, NY, USA. 2014.

LANL 2017 Threatened and Endangered Species Habitat Management Plan for Los Alamos National Laboratory, LANL Publication No. LA-UR-17-29454, Los Alamos, NM.

LANL 2018 https://lanl.gov/discover/news-stories-archive/2018/June/0608-new-contractor.php

LANL 2020 Los Alamos National Laboratory. Audrey Sanchez, Brent Thompson, and Charles Hathcock, EPC-ES. Literature review on impacts to avian species from aerial line collisions and suggested mitigations. January 23, 2020.

LANL 2020a Los Alamos National Laboratory. Across the River Box and Beyond Cultural Resources Survey for the Second Fiber Optics Line for the Los Alamos National Laboratory on the Caja Del Rio and the Pajarito Plateaus. LA-CP-19-20776. Environmental Protection & Compliance – Environmental Stewardship Group Los Alamos National Laboratory, Triad LLC. LANL Report Number: 383, LANL Survey Number: 1232, NMCRIS Activity Number: 145031, SFNF Report Number: R2019031000003. March 2020.

NEPA 1969 The National Environmental Policy Act of 1969, as amended. 1969.

NM G&F 2003 Trenching Guidelines New Mexico Department of Game and Fish. http://www.wildlife.state.nm.us/download/conservation/habitat-handbook/project-guidelines/Trenching-Project-Guidelines.pdf accessed February 10, 2020. September 2003.

SF 2003 Santa Fe County Ordinance 2003-01. An Ordinance Regulating Procedures for Working in, Disturbing and Repairing County Property and Rights of Way. 2003.

SF 2016 Santa Fe County, Sustainable Land Development Code, Adopted by Ordinance 2016-9, December 13, 2016.

Triad 2019 Triad National Security, LLC. Biological Resources Staff, Environmental Protection and Compliance Division, Environmental Stewardship Group, Los Alamos National Laboratory. LA-UR-19-25861. Biological Evaluation of the Fiber-Optic Line Installation for Improved Communication at the Los Alamos National Laboratory. July 2019.

USFS 1987 USDA Forest Service, Southwestern Region. Santa Fe National Forest Plan As Amended through Amendment 13 – June 2010. Published July 1987.

USFS 1995 United States Department of Agriculture, Forest Service. Agriculture Handbook Number 701. Landscape aesthetics, A handbook for Scenery Management. December 1995.

USFS/BLM 2006 Santa Fe National Forest and Taos Field Office of the BLM in Santa Fe County, New Mexico. Final Environmental Impact Statement for the Buckman Water Diversion Project. September 2006.

APPENDIX A: Correspondence from New Mexico Environmental Department

NEW MEXICO
ENVIRONMENT DEPARTMENT

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April 9, 2019

NNSA Los Alamos Field Office
ATTN: NEPA Compliance Officer
3747 West Jemez Rd
Los Alamos, NM 87544
By email: NA-NL_NCO@nnsa.doe.gov

Dear Mr. Goodrum,

The New Mexico Environment Department (NMED) has reviewed the scoping letter for the proposed DOE NNSA LANL 2nd Fiber Optic Circuit Route project and offers the following comments:

NMED Air Quality Bureau Comments

This project is located in Los Alamos County, which is in attainment of all National Ambient Air Quality Standards. The project is located Los Alamos National Laboratory, which is very near the Bandelier National Monument, where Regional Haze anthropogenic impairment from this project is of some concern.

Activities identified in this proposal will create temporary increases in pollutant emissions due to combustion-related construction equipment usage, as well as earth excavation and movement.

Haze is caused by particulate matter, such as dust, and aerosols. The activities in this project will produce dust and aerosols which contribute to haze.

To ensure air quality standards are met, applicable local or county regulations requiring noise or dust control must be followed for the duration of this project. If none are in effect, dust control measures should be considered to minimize the release of particulates due to vehicular traffic, construction equipment and ground disturbances - especially during high wind events. Areas disturbed by construction activities resulting in significant ground disturbance within and adjacent to the project should be reclaimed to avoid long-term problems with soil erosion and fugitive dust.

All asphalt, concrete, quarrying, crushing and screening facilities contracted in conjunction with the proposed project must have current and proper air quality permits. For more information on air quality permitting and modeling requirements, please refer to 20.2.72 NMAC.

Activities identified in this proposal will temporarily increase local emissions and may impact air quality in the area. Negative impacts associated with construction activities will be minimized if regulations and guidelines identified here are followed. The project as proposed is not expected to affect air quality on a long-term basis.

NMED Surface Water Quality Bureau Comments

Clean Water Act, Section 402 NPDES Industrial Storm Water Construction General Permit (CGP)

The U.S. Environmental Protection Agency (USEPA) may require a National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) coverage for storm water discharges from construction activities (such as clearing, grading, excavating, and stockpiling) that disturb (or re-disturb) one or more acres. Prior to discharging storm water, construction operators may need to obtain coverage under an NPDES permit.

Among other things, this permit requires that a Storm Water Pollution Prevention Plan (SWPPP) be prepared for the project, including support and staging areas, and that appropriate Best Management Practices (BMPs) be installed and maintained both during and after construction to prevent, to the extent practicable, pollutants (primarily sediment, oil & grease and construction materials from construction sites) in storm water runoff from entering waters of the U.S. This permit also requires that permanent stabilization measures (re-vegetation, paving, etc.), and permanent storm water management measures (storm water detention/retention structures, velocity dissipation devices, etc.) be implemented post construction to minimize, in the long term, pollutants in storm water runoff from entering these waters.

Part 9 of the 2017 CGP includes permit conditions applicable to specific states, Indian country lands, or territories. In the State of New Mexico, except on tribal land, permittees must ensure that there is no increase in sediment yield and flow velocity from the construction site (both during and after construction) compared to pre-construction, undisturbed conditions (see Subpart 9.4.1 of the 2017 CGP).
USEPA requires that all "operators" (see Appendix A of the 2017 CGP) obtain NPDES permit coverage by submitting a Notice of Intent (NOI) for construction projects. Generally, this means that at least two parties will require permit coverage. The owner/developer of this construction project who has operational control over project specifications, the general contractor who has day-to-day operational control of those activities at the site, which are necessary to ensure compliance with the SWPPP and other permit conditions, and possibly other "operators" will require appropriate NPDES permit coverage for this project.
The CGP, NOI, deadlines for submitting an NOI, Fact Sheet, and Federal Register notice is available at:
https://www.epa.gov/npdes/stormwater-discharges-construction-activities

Clean Water Act, Section 404 USACE/Section 401 Certification

Information is provided below if the project (or associated construction support areas, if any) during construction requires discharge of dredged/fill material into Waters of the U.S., including wetlands. Section 404 of the Clean Water Act requires approval from the U.S. Army Corp of Engineers (USACE) prior to discharging dredged or fill material into waters of the United States (U.S.).

Any person, firm, or agency (including Federal, state, tribal and local governmental agencies) planning to work in waters of the United States should first contact the USACE regarding the need to obtain a permit from the Regulatory Division. Failure to receive and implement proper permit coverage would be a violation of the Clean Water Act.
More information on the §404 permitting process, including applicability of Nationwide Permits, mitigation requirements, requirements for certification for any discharges on state, private or tribal land, can be obtained from the USACE at:
http://www.spa.usace.army.mil/Missions/RegulatoryProgramandPermits.aspx
For additional information, including permitting procedures and jurisdictional water determination, contact the USACE, Albuquerque District, 4101 Jefferson Plaza NE, Albuquerque, New Mexico 87109-343, 505-342-3262.

Thank you for providing NMED with the opportunity to review and comment on this proposed project.

Sincerely,

Michaelene Kyrala
Director of Policy
New Mexico Environment Department
Office: 505.827.2892
E-mail: michaelene.kyrala@state.nm.us

APPENDIX B: SFNF's Small Project Biological Evaluation Form and Point Count Survey Data

	BE. No	

SANTA FE NATIONAL FOREST

Small Project Biological Evaluation Form

Project Name:	Fiber Optic Line Installation for Improved Communication at the Los Alamos National Laboratory	**District** : **Espanola District**		**Date:**	Date of report

Project Type:	**Construction**	X	**Nonstructural**	X	**Reconstruction/Maintenance**		

Location	Caja Del Rio, Santa Fe National Forest

Location (Legal - Attach map) See report

Project Actions:

To install a fiber optic line from existing CenturyLink infrastructure in Santa Fe to Los Alamos National Laboratory. The project will include the installation of approximately 18.9 miles of new fiber optic line. Two installation methods will be employed: (1) underground installation and (2) collocation of the fiber cable on PNM's RL transmission line. The area of interest for this evaluation starts at the beginning of Forest Service Road (FR) 24 near the Santa Fe County Landfill. The underground portion of this project will be trenched alongside FR 24 to bury the cable. Once FR 24 intersects PNM's RL electrical transmission line, the fiber optic line will move to above ground and will be attached to the transmission line pole structures. This process will continue until reaching the aerial crossing of White Rock Canyon.

Vegetation/Habitat Type:

The project area is on a mesa top dominated by two-needle pinyon (*Pinus edulis*)-juniper (*Juniperus monosperma*) savannah and woodlands.

I. Prior Biological Evaluation						**No**	**Yes**
1. Prior Project BE (Name):		Date:		No:		X	

II. Species and/or Habitat				**No**	**Yes**
1. Survey Completed (Date)	April, May, and June 2019	By:	LANL Biologists		X
2. Previous Species Observation (Heritage Database)				X	

3. Federally Listed Species Present	X	
4. Habitat For Federally Listed Species Present	X	
5. Sensitive Species Present		X
6. Habitat For Sensitive Species Present		X
III. Analysis of Effects	**No**	**Yes**
1. Significant Habitat Alteration	X	
2. Effects Outside Project Area	X	
3. Cumulative Effects on Listed Species or Habitat	X	
4. Cumulative Effects on Sensitive Species or Habitat	X	
IV. Determination of Effects	**No**	**Yes**
1. May Affect Threatened, Endangered, or Proposed Species	X	
2. May Affect Individual Sensitive Species	X	
3. May Affect Sensitive Species' Population Viability	X	
V. Consultation Requirements	**No**	**Yes**
1. Formal Consultation Required	X	
2. Additional Informal Consultation Required	X	

Based on the findings above and the size and effect of the proposed project, a detailed biological evaluation and further consultation are not required.

Prepared and Approved By :	On file	Date:	

Information Sources

Species Present	Status	Species Affected	Pop. Viability Affected

PROPOSED, ENDANGERED, THREATENED AND REGIONAL FORESTERS (R3) SENSITIVE SPECIES LIST (PETS)				
Common Name	**Scientific Name**	**Status**	**Determination**	**Rationale For Omission**
Amphibians				
Jemez mountains salamander	*Plethodon neomexicanus*	**E**	N/A	Species range is outside of the project area.
Northern leopard frog	*Lithobates pipiens*	RFSS	N/A	Suitable habitat is outside of the project area.
Birds				
Mexican spotted owl	*Strix occidentalis lucida*	**T**	N/A	Suitable habitat is outside of the project area.
Northern goshawk	*Accipiter gentilis*	RFSS	N/A	Suitable habitat is outside of the project area.
Boreal owl	*Aegolius funereus*	RFSS	N/A	Species range is outside of the project area.

Burrowing owl (western)	*Athene cunicularia hypugaea*	RFSS	N/A	Suitable habitat is outside of the project area. No prairie dog towns were found during surveys.
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	**T**	N/A	Suitable habitat is outside of the project area.
American peregrine falcon	*Falco peregrinus anatum*	RFSS	MIIH	The project disturbance will be primarily along an existing road and will not impact nesting or foraging habitat along cliffs.
Bald eagle	*Haliaeetus leucocephalus*	RFSS	N/A	Suitable habitat is outside of the project area.
Gray Vireo	*Vireo vicinior*	RFSS	MIIH	The project disturbance will be primarily along an existing road, and impacts to nesting or foraging habitat from vegetation removal will be very limited. Noise from construction activities could disturb this species depending on the time of year the work takes place.
Invertebrates				
Lilljeborg Peaclam	*Pisidium lilljeborgi*	RFSS	N/A	Suitable habitat is outside of the project area.
Ruidoso Snaggletooth	*Gastrocopta ruidosensis*	RFSS	N/A	Suitable habitat is outside of the project area.
Mammals				
New Mexico meadow jumping mouse	*Zapus hudsonius luteus*	**E**	N/A	Suitable habitat is outside of the project area.
Pale Townsend's big-eared bat	*Corynorhinus townsendii pallescens*	RFSS	N/A	Suitable habitat is outside of the project area.
Gunnison's prairie dog (prairie)	*Cynomys gunnisoni*	RFSS	N/A	Suitable habitat is outside of the project area.
Gunnison's prairie dog (montane)	*Cynomys gunnisoni pop.*	RFSS	N/A	Suitable habitat is outside of the project area.
Spotted bat	*Euderma maculatum*	RFSS	N/A	Suitable habitat is outside of the project area.
Canada lynx	*Lynx canadensis*	RFSS	N/A	Suitable habitat is outside of the project area.

American marten	*Martes americana origenes*	RFSS	N/A	Suitable habitat is outside of the project area.
Goat peak pika	*Ochotona princeps nigrescens*	RFSS	N/A	Suitable habitat is outside of the project area.
American pika	*Ochotona princeps saxatilis*	RFSS	N/A	Suitable habitat is outside of the project area.
Western water shrew	*Sorex navigator*	RFSS	N/A	Suitable habitat is outside of the project area.
Cinereus (masked) shrew	*Sorex cinereus*	RFSS	N/A	Suitable habitat is outside of the project area.
Preble's shrew	*Sorex preblei*	RFSS	N/A	Suitable habitat is outside of the project area.
Fish				
Rio Grande sucker	*Catostomus plebeius*	RFSS	N/A	Suitable habitat is outside of the project area.
Rio Grande chub	*Gila pandora*	RFSS	N/A	Suitable habitat is outside of the project area.
Rio Grande cutthroat trout	*Oncorhynchus clarki virginalis*	RFSS	N/A	Suitable habitat is outside of the project area.
Plants				
Holy Ghost Ipomopsis	*Ipomopsis sancti-spiritus*	**E**	N/A	Suitable habitat is outside of the project area.
Tufted sand verbena	*Abronia bigelovii*	RFSS	NI	This species was not found during surveys.
Greene milkweed	*Asclepias uncialis ssp. uncialis*	RFSS	N/A	Suitable habitat is outside of the project area.
Chaco milkvetch	*Astragalus micromerius*	RFSS	NI	The project disturbance will be primarily along an existing forest road and will not result in extensive disturbance of undeveloped land. This species is not known to occur near anthropogenic disturbance.
Pecos mariposa lily	*Calochortus gunnisonii var. perpulcher*	RFSS	N/A	Suitable habitat is outside of the project area.
Yellow lady's-slipper	*Cypripedium parviflorum pubescens calceolus var.*	RFSS	N/A	Suitable habitat is outside of the project area.

Robust larkspur	*Delphinium robustum*	RFSS	N/A	Suitable habitat is outside of the project area.
Heil's alpine whitlowgrass	*Draba heilii*	RFSS	N/A	Suitable habitat is outside of the project area.
Pecos fleabane	*Erigeron subglaber*	RFSS	N/A	Suitable habitat is outside of the project area.
Wood lily	*Lilium philadelphicum*	RFSS	N/A	Suitable habitat is outside of the project area.
Chama blazing star	*Mentzelia conspicua*	RFSS	N/A	Suitable habitat is outside of the project area.
Springer's blazing star	*Mentzelia springeri*	RFSS	N/A	Suitable habitat is outside of the project area.
Arizona Willow	*Salix arizonica*	RFSS	N/A	Suitable habitat is outside of the project area.

E Listed as endangered under the endangered species act (1973 as amended)

T Listed as threatened under the endangered species act (1973 as amended)

RFSS Forest Sensitive Species, as identified by the Regional Forester for Region 3.

C Candidate Species, identified for conservation or protection need but has not been listed

P Proposed for federal listing under the endangered species act (1973 as amended)

N/A Not Applicable

NI No impact is expected to Forest Sensitive Species

MIIH May Impact Individual Forest Sensitive Species and action does not contribute towards loss of population viability or trend species towards federal listing

NH No habitat for species occurs within the analysis area therefore, no impacts to species or their habitat are expected because the species does not occur

NE No effect

MANAGEMENT INDICATOR SPECIES ANALYSIS FORM	
Project Name: Fiber Optic Line Installation for Improved Communication at LANL	Requested by: LANL

Project Type:	**Construction**	**Reconstruction/Maintenance**	**Other:**
	X		
	Non-structural	**Reclamation**	
	X		

Location: Caja del Rio, Santa Fe National Forest

Legal desc. (Attach map): Maps are in document

To install a fiber optic line from existing CenturyLink infrastructure in Santa Fe to Los Alamos National Laboratory. The project will include the installation of approximately 18.9 miles of new fiber optic cable. Two installation methods will be employed: (1) underground installation and (2) collocation of the fiber optic cable on PNM's RL transmission line. The area of interest for this evaluation starts at the beginning of Forest Service Road (FR) 24 near the Santa Fe County Landfill. The underground portion of this project will be trenched alongside FR 24 to bury the cable. Once FR 24 intersects PNM's RL electrical transmission line, the fiber optic cable will move to above ground and will be attached to the transmission line pole structures. This process will continue until reaching the aerial crossing of White Rock Canyon.

Will the project action(s) alter species habitat or Forest wide (FW) populations of MIS?		**Yes**		X	**No**	*On file*

Vegetation Type/Species Occurring in the Project Area	**Is the Forest wide population being impacted?**		**Is the Indicated Habitat being altered?**		**Rationale for Omission**
	YES	**NO**	**YES**	**NO**	
Mature – Old Growth Forest					
Mexican Spotted Owl		X		X	Suitable habitat is outside of the project area.
Alpine Meadow Habitat					
Rocky Mountain Bighorn Sheep		X		X	Suitable habitat is outside of the project area.

Mid-elevation grasslands, meadows and forested areas < 9,000 ft.					
Rocky Mountain Elk		X		X	The project disturbance will not impact important habitat components for the species.
Mature Ponderosa Pine Forest					
Merriam's Turkey		X		X	Suitable habitat is outside of the project area.
Mid and low elevation grasslands, woodlands and ponderosa pine habitats					
Mourning Dove		X	X		The project disturbance will be primarily along an existing road and will have minimal impact to nesting or foraging habitat.
Mature forest and woodland habitats					
Hairy Woodpecker		X		X	The project disturbance will be primarily along an existing road and will have minimal impact to nesting or foraging habitat.
Pinyon- Juniper habitat					
Pinyon Jay		X	X		The project disturbance will be primarily along an existing road and will have minimal impact to nesting or foraging habitat.
Riparian, stream and water quality					
Rio Grande Cutthroat Trout		X		X	Suitable habitat is outside of the project area.

Trends, (FW) and Total Forest/ Project Acres, and Determination Table

Vegetation Type/Species	MIS Population Trend (FW)	Habitat Trend (HT)	Total Forest Acres (TFA)	Project Area Acres (PAA)	% PAA of TFA*	Determination
Mature – Old Growth Forest			**630,191**			**NE**
Mexican Spotted Owl	**S**	**D**				**NE**
Alpine Meadow Habitat			**7,810**			**NE**

Rocky Mountain Bighorn Sheep	**S**	**S**				**NE**
Mid-elevation grasslands, meadows and forested areas < 9,000 ft.			**1,287,640**			**NE**
Rocky Mountain Elk	**I**	**S**				**NE**
Mature Ponderosa Pine Forest			**603,235**			**NE**
Merriam's Turkey	**S**	**S**				**NE**
Mid and low elevation grasslands, woodlands and ponderosa pine habitats			**581,419**			**NE**
Mourning Dove	**S**	**I**				**NE**
Mature forest and woodland habitats			**80,174**			**NE**
Hairy Woodpecker	**S**	**I**				**NE**
Pinyon- Juniper habitat			**232,204**			**NE**
Pinyon Jay	**S**	**D**				**NE**
Riparian, stream and water quality			**128.7 miles**			**NE**
Rio Grande Cutthroat Trout	**S**	**D**				**NE**

KEYS

MIS population trend column key:

I Increasing trend for MIS population Forest wide

U Unknown trend for MIS population Forest wide

S Stable trend for MIS population Forest wide

D Decreasing trend for MIS population Forest wide

Habitat trend column key:

S - Static trend for KHC Forest wide

U - Upward trend for KHC Forest wide

D – Downward trend for KHC Forest wide

S – Stable trend for KHC Forest wide

NC- No change for KHC Forest wide

Determination column key:

NE No effect to the FW trends – i.e., any impacts will not alter the existing trends, regardless of the impacts in relation to the trends.

Acreage Calculation:

WC Will Contribute to the current FW trends – i.e., any impacts are in the direction of the current trend. **WA** Will Alter the current FW trends.	* Project Area Acres is calculated by (PAA / TFA = % of TFA)

References: MIS species and 2012 MIS assessment updated for the Santa Fe National Forest

USDA Forest Service (USFS). 1987. Santa Fe National Forest Plan, as amended. Albuquerque, NM: USDA Forest Service.

USDA Forest Service (USFS). 2012. Santa Fe National Forest Management Indicator Species Assessment. Santa Fe National Forest Supervisor's Office, Santa Fe, NM.

Occurrence Records or Population Information Relative to the Project Area.

Site-specific occurrence records are not available for most of these species, but each species' occurrence in its respective habitat is assumed, as documented in the "Santa Fe National Forest Management Indicator Species Assessment. Santa Fe National Forest Supervisor's Office, Santa Fe, NM".

Determination of Impacts – Qualitative or Quantitative

Prepared By: ***On file*** Date: _____

MIGRATORY BIRD TREATY ACT ANALYSIS - Santa Fe National Forest	
Project Name:	**Fiber Optic Line Installation for Improved Communication at LANL**
Location:	**Caja Del Rio, Santa Fe National Forest**
Project Actions:	To install a fiber optic line from existing CenturyLink infrastructure in Santa Fe to Los Alamos National Laboratory. The project will include the installation of approximately 18.9 miles of new fiber optic cable. Two installation methods will be employed: (1) underground installation and (2) collocation of the fiber cable on PNM's RL transmission line. The area of interest for this evaluation

	starts at the beginning of Forest Service Road (FR) 24 near the Santa Fe County Landfill. The underground portion of this project will be trenched alongside FR 24 to bury the cable. Once FR 24 intersects PNM's RL electrical transmission line, the fiber optic cable will move to above ground and will be attached to the transmission line pole structures. This process will continue until reaching the aerial crossing of White Rock Canyon.
Background:	Direction for management and protection of migratory birds and their habitats within the continental United States exists in several forms. The Migratory Bird Treaty Act (MBTA) enacted in 1918 established Federal prohibition, unless permitted by regulations, for "taking" of migratory birds, nest or eggs. Executive Order (EO) 13186, signed January 10, 2001, directed Federal agencies to avoid or minimize adverse impacts (to the extent practical) on migratory bird resources when conducting agency actions (among many items within the "Federal Agency Responsibilities" section of the EO). Pursuant to the EO, agencies were to develop Memorandum of Understanding (MOU) to strengthen and promote migratory bird conservation and collaboration with the U.S. Fish and Wildlife Service. The original 2008 MOU was extended and signed in 2016. Bald and Golden Eagle Protection Act (1940 as amended) protects eagles from actions of anyone (or entity) which would "take" eagles to the point of causing nest failure or reduce productivity (unless you or your entity have obtained a permit issued by the Secretary of the Interior). There have not been specific USFS policies provided to direct migratory bird analyses into the NEPA process. However, the Southwestern Regional Office (R3 USFS) direction on migratory bird analysis is as follows (1) analyze effects to Species of Concern which are developed by the local (State) Partners In Flight Office with an emphasis on "high priority species", (2) analyze effects of project action on Important Bird Areas (IBA's), and (3) analyze effects of project actions to important overwintering areas on USFS lands.
Analytical Process:	Species of concern evaluated for the Santa Fe National Forest are based upon NM Avian Conservation Partners species of concern criteria. NM Avian Conservation Partners considers eight risk factors in identifying conservation priority species: Global Abundance, NM Breeding Abundance, Global Breeding Distribution, NM Breeding Distribution, Threats to Breeding in NM, Importance of NM to Breeding, Global Winter Distribution, and Threats on Wintering Grounds (New Mexico Partners in Flight, 2007). Bird Conservation Region 16 (Southern Rockies/ Colorado Plateau) entirely encompasses the Santa Fe National Forest. A list of species at the highest risk are classified as "highest priority" for conservation action (by BCR 16) and is the focus of this

	analysis. This list is then evaluated at the forest level and those species which do not occur in the forest will not be evaluated or mentioned herein. Habitat for the species is used to evaluate the effects of the agency action on particular migratory bird species. That is, migratory bird species of concern are analyzed if their habitat is within the action area. This evaluation addresses general effects to migratory birds and effects to Highest Priority species for main habitat types found in the project area.
Santa Fe National Forest Species of Concern **References:**	Corman, T. and C. Wise-Gervais, editors. 2005. Arizona Breeding Bird Atlas. University of New Mexico Press, Albuquerque. 636 pages. Ehrlich, P.R., D.S. Dobkin, D. Wheye. 1988. The birder's handbook: a field guide to the natural history of north American birds. Simon and Schuster, New York, New York. P. 785. New Mexico Partners in Flight. 2007. New Mexico Bird Conservation Plan Version 2.1. C. Rustay and S. Norris, compilers. Albuquerque, New Mexico.

SPECIES ACCOUNTS

Santa Fe National Forest migratory bird species of concern. We assume the following migratory bird species of concern may occur in the activity area because their habitats also are within the activity area.

Species	Nest Substrate[b]	Nest type[b]	Usual nest height range[b] (feet)	Nesting Period[c]
Mixed Conifer Forest: Douglas fir, white fir, ponderosa pine, often some aspen and Gambel's oak.				
Owl, Flammulated[a]	snag	cavity	no information	May to Jul
Owl, Mexican spotted[a]	conifer, cliff	cavity, platform, scrape	80	May to Sep
Warbler, Red-faced[a]	ground	cup	0	May to Jul
Ponderosa pine forest: primarily pure ponderosa pine forest				
Owl, Flammulated[a]	snag	cavity	no information	May to Jul
Owl, Mexican spotted[a]	conifer, cliff	cavity, platform, scrape	80	May to Sep
Warbler, Grace's[a]	conifer	cup	20 to 60	May to Aug

SPECIES ACCOUNTS

Santa Fe National Forest migratory bird species of concern. We assume the following migratory bird species of concern may occur in the activity area because their habitats also are within the activity area.

Species	Nest Substrate[b]	Nest type[b]	Usual nest height range[b] (feet)	Nesting Period[c]
Warbler, red-faced[a]	ground	cup	0	May to Jul
Warbler, Virginia's[a]	ground	cup	0	Apr to Aug
Woodpecker, Lewis's[a]	deciduous tree, snag	cavity	5 to 100	May to Aug
Middle- Elevation Riparian: Deciduous woodlands <7,500 feet elevation. Cottonwood – willow associations.				
Flycatcher, southwestern willow	shrub, deciduous tree	cup	2 to 10	Jun to Aug
Vireo, Bell's[a]	shrub	cup	1 to 5	Mar to Sep
Warbler, Lucy's	snag	cavity	3 to 11	Apr to Jul
Woodpecker, Lewis's[a]	deciduous tree, snag	cavity	5 to 100	May to Aug
Pinyon – Juniper woodland				
Jay, Pinyon	conifer	cup	3 to 26	Apr to Aug
Titmouse, Juniper	deciduous tree, snag	cavity	3 to 10	Apr to Jul
Thrasher, Bendire's	shrub	cup	2 to 4	Mar to Aug
Vireo, Gray[a]	shrub	cup	2 to 6	Apr to Aug
Montane Shrub: Chaparral and shrub habitat ranging from 5,500 to 8,000 feet elevation.				
Sparrow, Black-chinned	shrub	cup	1.5 to 3	Apr to Aug
Vireo, Gray[a]	shrub	cup	2 to 6	Apr to Aug
Warbler, Virginia's[a]	ground	cup	0	Apr to Aug

SPECIES ACCOUNTS Santa Fe National Forest migratory bird species of concern. We assume the following migratory bird species of concern may occur in the activity area because their habitats also are within the activity area.				
Species	**Nest Substrate[b]**	**Nest type[b]**	**Usual nest height range[b] (feet)**	**Nesting Period[c]**
[a] Species occur in other habitat categories too [b] Source: Ehrlich and others 1988 [c] Source: Corman and Wise-Gervais 1995				

Important Bird Areas Present	The Caja del Rio IBA is located south of the project area.
Over-wintering areas Present	
Snags, dead and downed wood	

Prepared By: ***On file*** Date: _____

LANL Wildlife Biologist

Point Count Survey Data

Species	Species Code	Point Number																						Total
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
American Kestrel	AMKE	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	**2**
Ash-throated Flycatcher	ATFL	2	-	-	-	-	-	1	1	-	2	-	-	2	2	1	1	1	-	2	-	2	-	**17**
Audubon's Warbler	AUWA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	**1**
Black-chinned Hummingbird	BCHU	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	1	-	-	-	1	**4**
Bewick's Wren	BEWR	1	6	4	3	5	5	3	2	6	1	2	5	2	3	3	2	4	-	2	4	4	-	**67**
Blue-gray Gnatcatcher	BGGN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	**2**
Brown-headed Cowbird	BHCO	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Broad-tailed Hummingbird	BTAH	-	-	-	-	-	-	-	-	1	-	-	1	1	-	1	1	1	-	-	-	-	1	**7**
Black-throated Sparrow	BTSP	-	-	-	-	-	1	-	-	-	-	1	-	1	-	1	-	-	-	-	1	1	1	**7**
Bushtit	BUSH	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	**2**
Cassin's Kingbird	CAKI	-	1	2	-	1	-	-	-	-	-	-	-	-	-	1	12	-	-	1	-	-	-	**18**
Canyon Towhee	CANT	1	-	2	-	-	-	2	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	**6**
Chipping Sparrow	CHSP	-	15	12	4	15	4	6	6	6	6	2	-	4	9	2	41	4	-	3	6	2	9	**156**
Common Raven	CORA	42	3	7	1	3	2	1	9	-	1	1	1	-	5	2	-	-	-	-	-	2	1	**81**
Dark-eyed Junco	DEJU	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Evening Grosbeak	EVGR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	**4**
Gray Flycatcher	GRFL	-	-	2	4	4	-	-	1	-	1	-	-	1	-	5	1	1	3	-	1	2	1	**27**
Gray Vireo	GRVI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	**4**
House Finch	HOFI	2	-	-	5	-	-	-	-	1	3	-	-	-	-	2	-	-	-	-	-	1	5	**19**
Horned Lark	HOLA	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Juniper Titmouse	JUTI	1	3	3	3	2	7	5	2	4	4	4	-	4	-	1	2	-	3	3	1	1	-	**53**
Lark Sparrow	LASP	-	-	1	-	-	-	-	1	-	-	-	2	-	2	3	-	1	-	-	-	-	-	**10**
Ladder-backed Woodpecker	LBWO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	**1**
Lesser Goldfinch	LEGO	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	**2**
Mourning Dove	MODO	-	5	-	2	-	-	1	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	**10**
Northern Harrier	NOHA	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**

Species	Species Code	Point Number																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	**Total**
Northern Mockingbird	NOMO	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	1	-	-	1	-	-	**4**
Northern Rough-winged Swallow	NRWS	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Pinyon Jay	PIJA	-	-	-	-	-	-	-	1	3	-	-	-	-	-	-	-	-	-	-	-	-	2	**6**
Plumbeous Vireo	PLVI	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Ruby-crowned Kinglet	RCKI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	**2**
Rock Wren	ROWR	-	-	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	1	**4**
Red-tailed Hawk	RTHA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	**1**
Say's Phoebe	SAPH	-	1	2	3	1	-	1	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	**10**
Savannah Sparrow	SAVS	-	-	-	-	-	-	-	-	-	-	-	-	-	5	1	-	-	-	-	-	-	-	**6**
Scott's Oriole	SCOR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	**3**
Spotted Towhee	SPTO	-	-	-	-	-	-	1	-	1	4	-	1	1	-	-	-	2	2	1	1	1	-	**15**
Townsend's Solitaire	TOSO	-	2	3	2	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	**9**
Turkey Vulture	TUVU	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	1	**3**
Vesper Sparrow	VESP	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Violet-green Swallow	VGSW	-	-	-	-	-	-	-	1	-	1-	-	1	-	-	-	3	-	-	-	-	1	3	**9**
Western Bluebird	WEBL	1	1	-	-	-	-	1	-	-	-	1	-	-	-	-	4	6	-	1	-	-	-	**15**
Woodhouse's Scrub-Jay	WOSJ	-	-	-	-	-	1	-	-	-	2	1	1	1	-	-	-	-	-	4	-	-	-	**10**
White-throated Swift	WTSW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	**8**

APPENDIX C: Memorandum of Understanding Implementing One Federal decision Under Executive Order 13807

MEMORANDUM OF UNDERSTANDING
IMPLEMENTING ONE FEDERAL DECISION UNDER
EXECUTIVE ORDER 13807

I. Introduction

The undersigned Federal agencies (agencies) enter into this Memorandum of Understanding (MOU) to establish a cooperative relationship for the timely processing of environmental reviews and authorization decisions for proposed major infrastructure projects under the One Federal Decision (OFD) policy established in Executive Order (E.O.) 13807.[1] E.O. 13807 requires the Office of Management and Budget (OMB) and the Council on Environmental Quality (CEQ), in consultation with the Federal Permitting Improvement Steering Council (Permitting Council), to develop a framework for implementation of the Executive Order. On March 20, 2018, OMB and CEQ issued an OMB/CEQ Memorandum to Heads of Federal Departments and Agencies titled "One Federal Decision Framework for the Environmental Review and Authorization Process for Major Infrastructure Projects under Executive Order 13807" (OFD Framework) pursuant to which agencies enter into this MOU. The agencies accordingly agree to work together to implement OFD as set forth in this MOU.

II. Background

Under the OFD approach established in E.O. 13807, Federal agencies with a role in the environmental review and permitting process for a major infrastructure project are directed to develop an environmental review and authorization decision schedule for that project. For each major infrastructure project, agencies will work together to develop a single Permitting Timetable for the necessary environmental review and authorization decisions, prepare a single environmental impact statement (EIS), sign a single record of decision (ROD), and issue all necessary authorization decisions within 90 days of issuance of the ROD, subject to limited exceptions.[2] E.O. 13807 sets a goal for agencies of reducing the time for completing environmental reviews and authorization decisions to an agency average of not more than two years from publication of a Notice of Intent (NOI) to prepare an EIS. The purposes of this MOU are to:

- provide a more predictable, transparent and timely Federal review and authorization process for delivering major infrastructure projects;

[1] E.O. 13807 defines a "major infrastructure project" as "an infrastructure project for which multiple authorizations by Federal agencies will be required to proceed with construction, the lead Federal agency has determined that it will prepare an Environmental Impact Statement (EIS) under the National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4321 *et seq.*, and the project sponsor has identified the reasonable availability of funds sufficient to complete the project." E.O. 13807 of August 15, 2017, "Establishing Discipline and Accountability in the Environmental Review and Permitting Process for Infrastructure Projects," 82 Fed. Reg. 40,463, 40,464 (Aug. 24, 2017). The funding criterion of E.O. 13807 ensures that agencies are expending resources on the environmental review and authorization of project proposals that are likely to be constructed. Public and private funds shall be considered "reasonably available" whether or not they are contingent on completion of environmental reviews and issuance of necessary authorizations for the project.

[2] All references to days in this MOU are to calendar days unless otherwise indicated.

- establish standard operating procedures for how the Federal Government will make concurrent and synchronized reviews for major infrastructure projects; and

- eliminate duplication of effort among agencies, improve the efficiency of project delivery, make better-informed decisions and promote good environmental, community and economic outcomes.

III. Definitions

Terms used herein have the definitions assigned to them in E.O. 13807 and 40 C.F.R. Parts 1500-1508.

IV. Authorities

Section 5(a) of E.O. 13807 directs Federal agencies to implement an OFD policy in accordance with the framework developed by OMB and CEQ under Section 5(b) of the Executive Order. Section 5(e) of the Executive Order authorizes CEQ to issue such regulations, guidance, and directives to Federal agencies as it may deem appropriate to further the goals of the order. Other authorities for agencies to enter into this MOU include NEPA, Title 41 of the Fixing America's Surface Transportation Act, 42 U.S.C. §§ 4370m *et seq.* (FAST-41) and the specific authorities of each agency.

V. General Agreements

The lead agency will decide whether a project sponsor has identified the reasonable availability of funds, and whether the project otherwise meets the definition of "major infrastructure project" under E.O. 13807, and is therefore subject to OFD. The lead agency's decision shall be determinative for purposes of this MOU.

This MOU sets forth the agreement of the signatory agencies through which they will jointly and cooperatively process environmental reviews and make authorization decisions for major infrastructure projects, to the extent consistent with applicable law.

A. Two-year goal. Agencies will undertake to meet the goal set forth in E.O. 13807 of reducing the time to two years for each agency to complete all environmental reviews and authorization decisions for major infrastructure projects starting from the date the NOI is published to issuance of a ROD, except as provided in the OFD Framework. To help achieve this goal, agencies commit to cooperate, communicate, share information, and resolve conflicts that could prevent meeting milestones.

B. Agency Implementation of OFD. Agencies will develop appropriate policies to ensure the use and efficient implementation of OFD for major infrastructure projects. Within 90 days, each agency will transmit to CEQ and OMB a plan to facilitate the efficient implementation of OFD.

C. Communication. Agencies will actively participate in environmental reviews and authorization processes for major infrastructure projects, and communicate with one

another, as well as project applicants and sponsors, in an effective and structured manner that starts early and continues throughout the review process. This active communication should provide all agencies with the opportunity to identify concerns, raise potential issues early in the review process, and identify solutions.[3]

D. Concurrent Reviews. Agencies will carry out their obligations with respect to the environmental review and authorization decisions for a major infrastructure project concurrently, and in conjunction with the review performed by the lead agency under NEPA, to the extent consistent with applicable law.

E. Permitting Timetable. Agencies will work together to meet the milestones, including the intermediate and final completion dates of any reviews or authorization decisions, of the Permitting Timetable established pursuant to this MOU.

F. Commitment to Process Enhancements. Agencies will work individually and collectively, as appropriate, to:

1. identify and remove process impediments to implementing OFD;

2. implement best practices that will result in more efficient reviews;

3. develop and implement appropriate programmatic agreements with respect to project reviews where multiple major infrastructure projects present common issues;

4. as appropriate, update, develop and adopt internal procedures, including amendments to their NEPA implementing procedures, to implement their responsibilities under E.O. 13807 and the OFD Framework, including through the E.O. 13807 Sec. 5(e)(iii) working group process; and

5. work together to revise and improve this MOU from time to time, as needed, including through prompt notification of any changes to agency Chief Environmental Review and Permitting Officers (CERPOs)[4] or other key personnel.

G. Cooperating Agency for FERC Proceedings.

1. Each agency whose authorization is required, or which otherwise has jurisdiction by law, for a major infrastructure project with respect to which FERC is lead agency under NEPA and which is the subject of a FERC proceeding will, upon the request of FERC, participate as a cooperating agency under Section VI. Other agencies may participate as cooperating agencies with respect to such projects at FERC's invitation, as provided in 40 C.F.R. 1501.6.

[3] Predecisional documents prepared by FERC or submitted to FERC in FERC proceedings are to be treated as confidential. Such documents may not be released, including release requested under the Freedom of Information Act or other applicable law, without prior authorization from FERC. FERC regulations prohibit the disclosure of "the nature and time of any proposed action by the Commission" and limit the disclosure of interagency communications. 18 C.F.R. §§ 3c.2(b), 388.107(e).

[4] Agency CERPOs are designated by agency heads pursuant to 42 U.S.C. § 4370m-1(b)(2)(A)(iii)(I).

2. Under 40 C.F.R. 1501.6, agencies may decline any such FERC invitation only if the agency has no jurisdiction by law. Agencies that decline to be cooperating agencies at FERC's invitation agree not to join the FERC proceeding as an intervenor.

3. An agency's participation as a cooperating agency under this subsection shall not impede such agency's ability to submit comments to the FERC docket for the relevant proceeding, nor impede the agency's ability to defend any mandatory conditions in court proceedings.

VI. Determination of Lead and Cooperating Agencies

A. Determination of Lead and Cooperating Agencies. Lead and cooperating agencies will be determined as soon as practicable and in accordance with 40 C.F.R. 1501.5 and 1501.6. Each potential lead or cooperating agency will, as soon as practicable, designate a point of contact (Project POC), which may be the agency CERPO, to represent the agency in interagency consultations about that project. In any case where the lead agency is disputed:

1. The Project POC for the agency that receives the first substantial contact with the project sponsor (originating agency) will notify the Project POCs for the other potential cooperating and lead agencies of the dispute regarding lead agency determination.

2. The Project POC of the notified agencies will have 10 business days to object. If a notified agency Project POC objects to the selection of lead agency, then the originating agency will convene a meeting with all other notified agency Project POCs to occur no later than 15 business days after responses have been received. During the meeting, the agencies will agree on an agency to be the lead agency.

3. If agencies cannot agree, then the originating agency CERPO will follow the procedures for lead agency determination by CEQ pursuant to 40 C.F.R. 1501.5.

4. Co-lead agencies may designate one of the co-lead agencies to be "lead agency" for purposes of this MOU and of the OFD Framework.

VII. Permitting Timetable

A. Development of Permitting Timetable.

1. The lead agency, in consultation with the project sponsor and cooperating and participating agencies,[5] will develop a Permitting Timetable that identifies the actions and associated milestones for applicable environmental reviews and authorizations. The Permitting Timetable will be developed as soon as practicable after the project is sufficiently advanced to allow the determination of relevant milestones and generally before publication of an NOI. To the maximum extent practicable and permitted by

[5] For purposes of this MOU, "participating agency" shall have the meaning set forth in FAST-41 or such other law as may apply to the lead agency's authorization of the project.

law, the Permitting Timetable will establish a schedule of no more than two years from NOI to publication of a single ROD that will provide for the completion of all required authorization decisions.

2. After consultation with all cooperating and participating agencies, the lead agency will transmit to each cooperating agency a proposed Permitting Timetable for comment. If no agency CERPO or Project POC objects in writing to the proposal within 10 business days, the proposal will be the Permitting Timetable for the project. To the extent an agency objects to a proposed milestone, such agency will communicate its objection and the basis for the objection to the lead agency in writing within 10 business days. If the objecting agency has authorization responsibility for the project, such agency will also include an alternative proposed milestone which will comport with the two-year OFD schedule, unless special circumstances or applicable law make the two-year schedule impracticable.

3. With respect to cooperating agencies with authorization decision responsibilities, if the lead agency cannot reconcile the alternative proposed milestone with other proposed Permitting Timetable milestones, the lead agency will elevate the issue to an appropriate senior official of the cooperating agency for timely resolution. After an opportunity to resolve the issue, the lead agency will issue the Permitting Timetable.

4. All agencies will comply with the milestones set forth in the Permitting Timetable to the maximum extent practicable and permitted by law.

B. Contents of Permitting Timetable.

1. The Permitting Timetable for major infrastructure projects should include the environmental review and authorization milestones specified in Appendix B of the CEQ/OMB Memorandum on "Guidance to Federal Agencies Regarding the Environmental Review and Authorization Processes for Infrastructure Projects," as amended. The lead agency may also include any other appropriate milestones in the Permitting Timetable that the lead agency deems appropriate, are requested by the project sponsor, or are requested by a cooperating or participating agency.

2. The lead agency will design the Permitting Timetable so that it has adequate time to accept and consider public, cooperating agency, and participating agency comments and input, and conduct any appropriate alternatives analysis or impact assessments.

3. The Permitting Timetable will account for intermediate and final completion dates for any environmental review or authorization required for the project. The Permitting Timetable should include estimated milestones for the project sponsor to develop and submit complete applications and any other information required for Federal authorization of the project, including required authorization decisions by non-Federal entities. In such cases, lead agencies will estimate when the project's design will be advanced enough to determine such dates, and establish estimated milestones accordingly.

C. Modifications and Updates.

1. Following consultations with cooperating agencies, the lead agency will update, and as necessary modify, the Permitting Timetable at least quarterly. A modified Permitting Timetable will be transmitted to each cooperating and participating agency Project POC and to the project sponsor.

2. With respect to the modification of milestones concerning actions by cooperating agencies with authorization decision responsibilities, lead agencies may modify such milestones following the procedures contained in Section VII.A.

3. If the lead agency receives a written request from the project sponsor to suspend or cancel the environmental review and authorization process, or otherwise determines that the project sponsor has suspended or cancelled the project, the lead agency will document the request and modify the Permitting Table accordingly.

D. Publication. A copy of the Permitting Timetable and any modifications will be made available to the public online, including, as appropriate and practicable, through the Federal Permitting Dashboard.

VIII. Agency Roles and Responsibilities

A. Lead Agencies.

1. The lead agency is responsible for organizing the Federal environmental review and authorization processes for a proposed project, including assigning a management official to lead the environmental review process and identifying a primary Federal point of contact at each cooperating or participating agency for the project.

2. After a lead agency has been designated, that agency will be responsible for requesting cooperation from other Federal agencies that have jurisdiction by law or special expertise (as determined by the lead agency under 40 C.F.R. 1501.6) on any environmental issue that should be addressed in the EIS. To the fullest extent possible and at the earliest time practicable, the lead agency should seek the cooperation of State, tribal or local agencies of similar qualifications in accordance with 40 C.F.R. 1506.2. The lead agency should also identify and invite participating agencies.

3. The lead agency will prepare a single EIS for the project in coordination with the other Federal cooperating agencies with authorization decision responsibilities and will ensure that the final EIS (FEIS) includes an adequate level of detail to inform decisions by all agencies with review or authorization decision responsibilities for the proposed project.

4. The lead agency will inform cooperating agencies regarding new material information and changes related to the project.

5. The lead agency is responsible for developing the Purpose and Need, identifying the range of alternatives to be analyzed, identifying the preferred alternative and determining whether to develop the preferred alternative to a higher level of detail.

6. The lead agency will provide the cooperating agencies the opportunity to review and contribute to all relevant substantive phases of the EIS preparation in conformity with the Concurrence Points set forth in Section XI.

7. The lead agency is responsible for preparing and publishing a single ROD for all Federal agencies with authorization responsibility for the project to support any necessary authorization decisions. The ROD will incorporate the decisions of each such agency, unless an exception to a single ROD is met as set forth in Section XIII or where Federal law provides for the lead agency to issue a combined FEIS/ROD.

8. The lead agency will maintain a consolidated project file of the information assembled and utilized by the Federal cooperating agencies as the basis for their environmental reviews under NEPA.

B. Cooperating Agencies.

1. Cooperating agencies with authorization decision responsibilities will coordinate and synchronize their authorization reviews with the lead agency's development of the FEIS and issuance of the ROD.

2. Agencies with authorization decision responsibilities will participate as cooperating agencies when invited by the lead agency, consistent with 40 C.F.R. 1501.6. Agencies without authorization decision responsibilities may participate as cooperating agencies whenever invited by the lead agency.

3. At the request of the lead agency, cooperating agencies will make available personnel and/or expertise to the lead agency, to the extent practicable.

4. Cooperating agencies will be responsible for identifying any information necessary to complete application review and authorizations in accordance with the Permitting Timetable, as well as the means of obtaining such information.

5. Cooperating agencies will ensure that any issues that may delay the Permitting Timetable are promptly brought to the attention of the lead agency.

6. Each cooperating agency should limit its comments to those issues that are within that agency's areas of special expertise or jurisdiction.
7. Each cooperating agency will be responsible for making its respective authorization decisions, and will maintain the administrative record associated with such decisions and provide such information as the lead agency may request for the consolidated project file.

C. Participating Agencies. Participating agencies will complete their reviews and provide any necessary input in compliance with the requests of the lead agency.

D. State, Local, and Tribal Agencies. Lead agencies may invite any relevant State, local or tribal agency with Federal authorization decision responsibilities for a major infrastructure project to be a cooperating agency. Lead agencies will seek to secure such State, local or tribal agency's commitment to comply with the Permitting Timetable and such other obligations of a cooperating agency under this MOU as the lead agency may deem appropriate and necessary for the project, if necessary by the execution of a separate written agreement with such agency.

E. CERPOs.

1. Each agency CERPO will help oversee the implementation of this MOU and E.O. 13807 at that agency.

2. Each agency CERPO should be informed of all major infrastructure projects for which that agency is either a lead agency or cooperating agency, and of the Permitting Timetables for such projects.

3. Each agency CERPO should help agency leadership ensure the prioritization of resources at that agency to comply with applicable Permitting Timetables.

IX. Preliminary Project Planning

A. Preapplication Procedures and Prescoping. After a lead agency is determined, the lead agency should begin prescoping, including through using any applicable preapplication procedures at that agency. The lead agency should also identify and begin discussions with potential cooperating and participating agencies and the project sponsor to identify potentially significant environmental issues, the community and stakeholders affected, the extent of the analysis needed, and the time required to complete environmental review and authorization decision processes. The lead agency will complete its prescoping process as expeditiously as possible.

B. Preliminary Planning. During prescoping, or as soon as practicable, the lead agency, in consultation with the cooperating agencies and the project sponsor, may develop a preliminary project plan that will establish how agencies will work together to process the environmental review and authorization decisions for the project. Plans and timetables developed for FAST-41 projects may serve as preliminary project plans. The plan may include:

- A Permitting Timetable;
- A project-specific framework for all agencies' reviews, analyses and decisions;
- Specific areas of responsibilities and roles of all involved agencies;
- Identification of the significant issues and concerns that affect the environmental review and authorizations needed for the project;

- A stakeholder, public and tribal outreach and engagement plan;
- Requirements for complete applications for respective authorizations, and an identification of the earliest possible stage when the application could be submitted;
- Procedures for integration of environmental review and authorization processes with the goal of meeting milestones in the Permitting Timetable; and
- Potential avoidance, minimization, and mitigation strategies.

C. Programmatic Coordination Plan. A preliminary project plan for an individual project may be established separately from any programmatic coordination plan, or it may incorporate one or more programmatic coordination plans established by the lead agency to govern coordination with one or more agencies.

X. Notice of Intent

A. Timing of Publication. The lead agency will publish the NOI as soon as practicable after determining (1) that a project is a major infrastructure project; and (2) after consultation with cooperating agencies, that the project proposal is sufficiently developed to permit scoping and meaningful public comment. The publication of the NOI should not be unreasonably delayed.

B. Revision or Withdrawal. If the lead agency determines that the NOI must be revised, supplemented, corrected, reissued, or withdrawn, the lead agency will transmit the proposed change to all cooperating and participating agencies and to the project sponsor, and modify the Permitting Timetable accordingly, before publishing a new NOI. The modified Permitting Timetable will reflect the date of the new NOI as the new start date for purposes of the two-year OFD schedule.

XI. Scoping and Concurrence Points

A. Scoping.

1. The scoping process should be an open process for determining the scope of issues to be addressed in the EIS, identifying the significant issues related to the proposed project and engaging stakeholders and the public. Lead agencies should determine the level and form of public engagement on a case-by-case basis, taking into account factors such as the overall size and complexity of the project.

2. Agencies will use the NEPA scoping process to agree on the relevant analyses, studies and engineering design that will be needed in order for each agency to be able to sign a single ROD and for all the authorization decisions to be issued within 90 days after the ROD is signed.

3. Agencies will consult and seek to agree on the best use and relevance of prior developed information, such as information developed during a planning process.

B. Requirement of Coordination.

1. The OFD policy integrates the requirements of all Federal agencies with authorization decision responsibilities. The undersigned agencies commit to implementing the OFD process early in project development to avoid schedule delays. The environmental review process will be conducted concurrently with the applicable authorization decision processes, and, as such, the lead agency should obtain a written concurrence from all cooperating agencies whose authorization is required for the project at three key milestones: 1) Purpose and Need, 2) Alternatives To Be Carried Forward for Evaluation, and 3) the Preferred Alternative. Lead agencies, in consultation with the relevant cooperating agencies with applicable authorization decision responsibilities, have discretion to add other concurrence points as necessary to meet project specific circumstances.

2. The lead agency will request written concurrence on each concurrence point from all cooperating agencies whose authorization is required for the project. "Concurrence" for purposes of this MOU means confirmation by the agency that the information is sufficient for that stage, and the environmental review process may proceed to the next stage of the NEPA process, as set forth in the lead agency's request for written concurrence. Each applicable cooperating agency will either confirm its concurrence or inform the lead agency that it cannot yet concur. A non-concurring agency will undertake to resolve the issue and provide the requested concurrence, and will if necessary elevate the issue pursuant to Section XII. Cooperating agency Project POCs will respond to the lead agency's request for concurrence within 10 business days. Failure to respond within 10 business days may be treated as concurrence, at the discretion of the lead agency.

3. With respect to cooperating agencies whose authorization is not required for the project, comments should be considered by the lead agency and reflected in the environmental analysis and/or project planning, as appropriate.

C. Specific Concurrent Points.

1. Concurrence Point #1: Purpose and Need.

   (a) The concurrence point will generally occur early in the NEPA review process, prior to issuance of an NOI. The Purpose and Need statement is the foundation for the NEPA alternatives analysis. Cooperating agencies with authorization decision responsibilities for a project will review the lead agency's Purpose and Need statement and determine if it meets their NEPA obligations.

2. Concurrence Point #2: Alternatives to be Carried Forward for Evaluation.

   (a) This concurrence point identifies the alternatives to be carried forward for analysis in the EIS. Concurrence should be sought as early as possible and prior to detailed analysis in the draft EIS (DEIS). Concurrence should be obtained prior to presenting the results of alternatives screening to the public. In order to fulfill the needs of other agencies' authorities, there may be alternatives that require analysis beyond what is necessary for the lead agency.

3. Concurrence Point #3 - Preferred Alternative.

   (a) A preferred alternative should be identified in the DEIS and must be identified in the FEIS. A final decision is identified in the ROD. Before a preferred alternative is identified in a DEIS or FEIS, the lead agency will request written concurrence on the preferred alternative from all agencies whose authorization is required for the project, and will explain in such request the rationale for its selection. An agency's concurrence on a preferred alternative identified in the DEIS will also serve as concurrence for that preferred alternative in the FEIS, unless there is a material change in the preferred alternative from DEIS to FEIS.

D. Changed Circumstances. If after concurrence, the lead agency determines that changes to the Purpose and Need, Alternatives, or the Preferred Alternative are necessary, then the lead agency and cooperating agencies with authorization decision responsibilities will review such changes to determine if concurrence should be revisited.

XII. Elevation of Delays and Dispute Resolution

A. Any issue or dispute that arises between or among agencies during the OFD process will be addressed expeditiously to avoid delay.

B. Agencies will implement this section consistent with any dispute resolution process established in an applicable law, regulation, or legally binding agreement to the maximum extent permitted by law.

C. Agencies will seek to resolve issues or disputes at the earliest possible time at the project level through staff who have day-to-day involvement in the project.

D. Agencies will notify their CERPOs of any instance where a dispute is to be elevated. Where appropriate, agencies will also consult with the project sponsor, and its input should also be considered.

E. If a dispute between agencies causes a milestone to be missed or extended, or the lead agency anticipates that a Permitting Timetable milestone will be missed or will need to be extended, then the dispute should be elevated to an official designated by the relevant agency for resolution. Such elevation should take place as soon as practicable after the lead agency becomes aware of the dispute or potential missed milestone. Disputes that do not impact the ability of an agency to meet a milestone may be elevated as appropriate

F. Once elevated to the designated official, if no resolution has been reached at the end of 30 days after the relevant milestone date or extension date, then the relevant agencies will elevate the dispute to senior agency leadership for resolution.

XIII. Exceptions

A. The lead agency will grant exceptions to the single EIS and single ROD requirement of E.O. 13807 when:

1. the project sponsor requests that the agencies issue separate NEPA documents;

2. the NEPA obligations of a cooperating or participating agency have already been satisfied; or

3. the lead agency determines that one ROD would not promote efficient completion of the project's environmental review and authorization process.

B. The lead agency may grant an exception to the single ROD requirement of E.O. 13807 when Federal law provides for the lead agency to issue a combined FEIS/ROD and cooperating agencies are not authorized to issue a combined FEIS/ROD. When a lead agency elects to grant such an exception, the agencies not authorized to issue a combined FEIS/ROD will issue a joint ROD or other appropriate decision document as soon as practicable, consistent with applicable law and the Permitting Timetable.

C. FERC will grant an exception to the single ROD requirement of E.O. 13807 when the FERC licensing order serves as the ROD. In such situations, the agencies not authorized to issue a combined FEIS/ROD will issue a joint ROD or other appropriate decision document as soon as practicable, consistent with applicable law and the Permitting Timetable.

D. The lead agency may also extend the 90-day deadline for any authorization required for a project in the following circumstances:

1. when applicable law prohibits an agency from issuing its approval or permit within the 90-day period;

2. the project sponsor requests that the permit decision or approval follow a different timeline; or

3. an extension would better promote completion of the project's environmental review and authorization process.

E. The lead agency may terminate the coordinated development of the single EIS and/or single ROD under OFD upon request of the project sponsor, changed circumstances, or if the project sponsor fails to respond timely to lead agency requests.

XIV. Miscellaneous Provisions

A. Agencies may enter into appropriate agreements as necessary to implement OFD, including agreements on a program- and project-specific basis. Any such agreements will be consistent with this MOU, E.O. 13807, the OFD Framework, and Federal law.

B. Nothing contained in this MOU is intended to or should be construed to limit or affect the authority or legal responsibilities of the undersigned agencies, or binds the undersigned agencies to perform actions beyond their respective authorities.

C. Nothing in this MOU shall be construed to impair or otherwise adversely affect:

1. the authority granted by law to an executive department or agency, or the head thereof; or

2. the functions of the Director of the Office of Management and Budget relating to budgetary, administrative, or legislative proposals.

D. Nothing in this MOU is intended to, or should, be construed to restrict the agencies from participating in similar activities or arrangements with other public or private entities, organizations, or individuals.

E. Independent agency staff will comply with this MOU to the maximum extent practicable, consistent with such agency's status as an independent agency, statutory requirements, and such agency's regulations and procedures.[6]

F. The mission requirements, funding, personnel, and other priorities of the undersigned agencies may affect their ability to fully implement all the provisions identified in this MOU.

G. This MOU shall be implemented consistent with applicable law and subject to the availability of appropriations.

H. Specific activities that involve the transfer of money, services, or property between or among the undersigned agencies may require execution of separate agreements or contracts.

I. This MOU is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity by any party against the United States, its departments, agencies, or entities, its officers, employees, or agents, or any other person.

J. This MOU may be modified and amended, or terminated, by written agreement among the undersigned agencies.

K. Additional Federal agencies may become parties to this MOU by signing an addendum to the MOU.

L. This MOU is effective on April 10, 2018.

[6] For purposes of this MOU, "independent agency" means an independent regulatory agency as defined in 44 U.S.C. § 3502(5).

Department of the Interior

By: _____ Date: 9APR18

Name: Ryan Zinke

Title: Secretary

Department of Agriculture

By: Sonny Perdue Date: April 9, 2018

Name: Sonny Perdue
Title: Secretary

Department of Commerce

By: Wilbur L. Ross, Jr. Date: April 9, 2018

Name: Wilbur L. Ross, Jr.

Title: Secretary

Department of Housing and Urban Development

By: _____ Date: 4-9-18

Name: Dr. Benjamin S. Carson, Sr., M.D.

Title: Secretary

Department of Transportation

By: E. L. Chao Date: 4/9/18

Name: Elaine L. Chao

Title: Secretary

Department of Energy

By: Rick Perry Date: 4/9/18

Name: Rick Perry

Title: Secretary

Department of Homeland Security

By: _____ Date: 4/9/18

Name: Kirstjen M. Nielsen

Title: Secretary

U.S. Army Corps of Engineers

By: Mark T. Esper Date: 4-9-18
Name: Mark T. Esper
Title: Secretary

Environmental Protection Agency

By: _____ Date: 4-9-18

Name: Scott Pruitt

Title: Administrator

Federal Energy Regulatory Commission

By: _____

Name: Kevin J. McIntyre

Title: Chairman

Date: 3/21/2018

Advisory Council on Historic Preservation

By: John M. Fowler Date: 3/21/18

Name: John M. Fowler

Title: Executive Director

Federal Permitting Improvement Steering Council

By: Angela C ~~~~~ Date: April 9, 2018

Name: Angela Colamaria

Title: Acting Executive Director

APPENDIX D: Agency and Public Comments Received on the Draft Environmental Assessment and NNSA Response

STATE OF NEW MEXICO
DEPARTMENT OF GAME & FISH

One Wildlife Way, Santa Fe, NM 87507

Post Office Box 25112, Santa Fe, NM 87504

Tel: (505) 476-8000 | Fax: (505) 476-8123

For information call: (888) 248-6866

www.wildlife.state.nm.us

21 January 2020

NNSA Los Alamos Field Office
ATTN: NEPA Compliance Officer
3747 West Jemez Road
Los Alamos, NM 87544

Re: Second Fiber Optic Line for Los Alamos National Labs Draft Environmental Assessment; NMDGF Doc. 19662

The Department of Game and Fish (Department) has reviewed the Second Fiber Optic Line for Los Alamos National Labs Draft Environmental Assessment, and provides the following recommendations to minimize or eliminate impacts to wildlife.

Open trenches and ditches can trap small mammals, amphibians and reptiles, and can cause injury to large mammals. Implementing the following general trenching recommendations will help to minimize unnecessary mortality of wildlife.

- Whenever possible, locate trenching activities within previously disturbed areas, such as existing road or pipeline right-of-ways. To the extent possible, avoid trenching in undisturbed habitat.
- Trench during the cooler months (October – March).
- Utilize concurrent trenching, pipe-laying, and backfilling. Keep trenching, pipe-laying, and backfilling crews as close together as possible to minimize the amount of open trench at any given time. When trenching activities are temporarily halted (e.g. overnight, weekends, holidays, weather shutdowns), protect wildlife from accessing any open trench between digging and backfilling operations by using one or more of the methods described below.
- Avoid leaving trenches open overnight. When trenches cannot be backfilled immediately, escape ramps should be constructed at minimum every 90 meters, and preferably no more than 30 meters apart. Escape ramps can be constructed parallel or perpendicular to the existing trench. The escape ramp slope should not exceed 45 degrees (1:1), and ideally be less than 30 degrees. If pipe has been installed and backfilling has not occurred, escape ramps may need to be constructed on both sides of the trench, since the pipe may block access of amphibians, reptiles, and small mammals to ramps if only constructed on one side.
- Any trenches that have been left open overnight should be inspected the following day by a qualified biologist. Any animals remaining in the trench should be removed prior to backfilling. Required tools include snake tongs for removing snakes, and a dip net for capturing and removing amphibians, lizards, and small mammals. Many animals trapped in a trench will burrow under loose soil, so to the extent possible, the biologist should disturb loose soil in the trench to uncover trapped animals for removal. Animals should be relocated at least 50 meters away from the open trench in undisturbed habitat.

- Place end caps on open end(s) of the pipe once it has been laid in the trench, to preclude trapped animals from entering. Staged pipe on the surface should be capped until placed in the trench, or checked for wildlife and wildlife removed before being placed into the trench.

Alternatively, wildlife can be protected from entrapment by installing silt fence or similar barriers around the open trench. Silt fence should be tied to counter-sunk T-posts, rebar or stakes, and buried at the base to help prevent animals from burrowing under the fence. Proper installation of silt fence to exclude wildlife from accessing the open trench precludes the need for escape ramps, concurrent backfilling and a biological monitor, if the following management practices are employed.

- Install silt fencing before ground disturbing activities such as clearing, grubbing and trenching occur.
- Use silt fences constructed of a solid synthetic geotextile material, and not mesh. Wildlife can climb mesh and can also become ensnared in it.
- Locate silt fencing as close to the trench as possible, and do not include large patches of undisturbed habitat.
- Construct silt fence on both sides of and parallel to the entire length of open trench.
- Bury silt fences at least 10 centimeters below ground level, and have a minimum height of 50 centimeters above ground level.
- Stake silt fences so they remain taut throughout the life of the project.
- Construct temporary silt fencing across open ends of the trench during shut-downs.
- Inspect the silt fence daily to ensure that the bottom of the fence remains buried, and that there are no holes or gaps occur in the fence.

Please note that future requests of this nature may be submitted to the Department's online Environmental Review Tool at https://nmert.org/. This interactive tool allows users to submit proposed projects for review of potential impacts to special status species and their habitats in New Mexico. It generates automated project reports that provide Department guidance regarding routine or low-impact projects, and initiates the Department review process for activities that may require a custom review of potential considerations for wildlife and wildlife habitats.

With implementation of the recommendations described above, the Department believes that this project as proposed is unlikely to adversely affect protected wildlife. More detailed guidelines are available through the Department's Habitat Handbook Project guidelines at http://www.wildlife.state.nm.us/conservation/habitat-handbook/. Additional wildlife information including species accounts, species lists, and beneficial management practices can be accessed from the Department's Biota Information System of New Mexico (BISON-M) at www.bison-m.org. The Department recommends that you contact the U.S. Fish and Wildlife Service for current listings of federally listed species.

Thank you for the opportunity to review and comment on the proposed project. If you have any questions, please contact Mark Watson, Terrestrial Habitat Specialist, at 505-476-8115 or mark.watson@state.nm.us.

Sincerely,

Chuck Hayes, Assistant Chief
Ecological and Environmental Planning Division

cc: USFWS NMES Field Office

	Comment	Response
1	Whenever possible, locate trenching activities within previously disturbed areas, such as existing road or pipeline right-of-ways. To the extent possible, avoid trenching in undisturbed habitat.	Recommendations received from the New Mexico Department of Game & Fish have been incorporated into the project mitigation measures.
2	Trench during the cooler months (October – March)	Should construction be necessary outside of October - March, the mitigation measures incorporated into the project would be protective of wildlife.
3	Utilize concurrent trenching, pipe-laying, and backfilling. Keep trenching, pipe-laying, and backfilling crews as close together as possible to minimize the amount of open trench at any given time. When trenching activities are temporarily halted (e.g. overnight, weekends, holidays, weather shutdowns), protect wildlife from accessing any open trench between digging and backfilling operations	Recommendations received from the New Mexico Department of Game & Fish have been incorporated into the project mitigation measures.
4	Avoid leaving trenches open overnight. When trenches cannot be backfilled immediately, escape ramps should be constructed at minimum every 90 meters, and preferably no more than 30 meters apart. Escape ramps can be constructed parallel or perpendicular to the existing trench. The escape ramp slope should not exceed 45 degrees (1:1), and ideally be less than 30 degrees. If pipe has been installed and backfilling has not occurred, escape ramps may need to be constructed on both sides of the trench, since the pipe may block access of amphibians, reptiles, and small mammals to ramps if only constructed on one side.	Recommendations received from the New Mexico Department of Game & Fish have been incorporated into the project mitigation measures.
5	Any trenches that have been left open overnight should be inspected the following day by a qualified biologist. Any animals remaining in the trench should be removed prior to backfilling. Required tools include snake tongs for removing	Recommendations received from the New Mexico Department of Game & Fish have been incorporated into the project mitigation measures.

	Comment	Response
	snakes, and a dip net for capturing and removing amphibians, lizards, and small mammals. Many animals trapped in a trench will burrow under loose soil, so to the extent possible, the biologist should disturb loose soil in the trench to uncover trapped animals for removal. Animals should be relocated at least 50 meters away from the open trench in undisturbed habitat.	
6	Place end caps on open end(s) of the pipe once it has been laid in the trench; Staged pipe on the surface should be capped until placed in the trench, or checked for wildlife and wildlife removed before being placed into the trench	Recommendations received from the New Mexico Department of Game & Fish have been incorporated into the project mitigation measures.
7	Staged pipe on the surface should be capped until placed in the trench, or checked for wildlife and wildlife removed before being placed into the trench	Recommendations received from the New Mexico Department of Game & Fish have been incorporated into the project mitigation measures.
8	Use silt fences constructed of a solid synthetic geotextile material, and not mesh; Locate silt fencing as close to the trench as possible, and do not include large patches of undisturbed habitat. Construct silt fence on both sides of and parallel to the entire length of open trench. Bury silt fences at least 10 centimeters below ground level, and have a minimum height of 50 centimeters above ground level. Construct temporary silt fencing across open ends of the trench during shut-downs. Inspect the silt fence daily to ensure that the bottom of the fence remains buried, and that there are no holes or gaps occur in the fence	Recommendations received from the New Mexico Department of Game & Fish have been incorporated into the project mitigation measures.

1/23/20

ATTN: NEPA Compliance Officer – Fiber Optic Draft EA Comments
3747 West Jemez Road
Los Alamos, NM 87544

RE: Fiber Optic Draft EA Comments
Email: NA-LA_NCO@nnsa.doe.gov

The National Wildlife Federation, New Mexico Wildlife Federation, and New Mexico Wild would like to thank the Department of Energy (DOE) for the opportunity to provide public comment as part of the Draft Environmental Assessment (EA) for the proposed fiber optic line.

We are writing to express our concerns about the proposed Department of Energy (DOE) project creating a new 18-mile fiber optic line running along the Caja del Rio plateau to Los Alamos National Labs. As advocates for America's wildlife, we recognize that the Caja del Rio and adjacent Santa Fe National Forest and Bureau of Land Management (BLM) lands are critical to wildlife habitat and wildlife connectivity as well as have important cultural, historical and archeological value. As one of the most ecologically rich habitats in North America, the Caja del Rio and adjacent lands help connect a vital wildlife corridor from the state of Colorado to Mexico. The Area is home to herds of mule deer, elk, cougar and black bear as well as a variety of unique and sensitive plant and animal species, including Western burrowing owl, golden eagle, grey vireo, curve-billed, sage, and Bendire's thrasher, mockingbird, Scott's oriole and Northern leopard frog. Designated as an Important Bird Area (IBA),[i] the Caja del Rio and Rio Grande river corridor is critical to waterfowl as well as game and non-game species. Among others, key bird species in the area also include killdeer, Say's phoebe, Western and Cassin's kingbird, Bullock's oriole, blue grosbeak, lark, song, and white-crowned sparrow, and willow flycatcher in migration. The area has been noted for providing unique and distinct bird habitat as it contains a diverse variety of "desert" species often only found further south.

The Caja del Rio area is also situated between and adjacent to various Native American Pueblos and contains numerous cultural, archeological and sacred sites important to the area's tribes as well as to the history of New Mexico and the United States. Many of the surrounding tribes consider the area part of their ancestral home as well as have various sacred sites located throughout the Caja del Rio and within the river corridor.

As indicated in the Environmental Assessment (EA), development of a new fiber optic line will create various subsurface, surface and aerial disturbances that can be disruptive to the area's sensitive wildlife as well as archaeological and cultural sites. With regard to terrestrial wildlife, it is clear that subsurface and surface level disturbances will occur both from the digging and trenching to install the fiber optic line and to secure the line to above ground infrastructure. Additional terrestrial disturbance will occur from the ingress and egress of trucks and heavy machinery used to complete the project. Additionally, these vehicles will also cause both air and noise pollution that can impact wildlife.

Regarding aerial disturbance, DOE has noted the potential impacts to birds and raised concerns about bird collisions with the above ground fiber optic line and/or related infrastructure. Although DOE indicates it has considered less disruptive alternatives to installing a fiber optic line, such as satellite and air space laser broadband, given the potential for disruption and disturbance to both wildlife and archeological sites, we are asking DOE to again reconsider these less intrusive broadband options.

Alternatively, if DOE decides to move forward with the proposed project as opposed to reconsidering less invasive alternatives, we are asking that DOE take additional precautionary steps to mitigate impacts to wildlife. We ask that the DOE reconsider the option of constructing new structures that would support the fiber optic line to span across the Rio Grande river at White Rock canyon. The EA does not sufficiently analyze or provide detailed analysis regarding the possibility of updating existing structures to handle the weight of new fiber optic lines, thus avoiding the construction of new structures. The EA simply states that existing structures cannot handle the weight and therefore new structures must be constructed. Maximizing existing infrastructure creates multiple benefits including the avoidance of greater disturbances to plants and animals within the existing transmission corridor. Existing infrastructure in the current transmission corridor can be adequately updated to meet the needs of the project while preventing the construction of new structures.

Additionally, we ask that DOE ensure that construction crews limit ingress and egress to only authorized roads as well as work directly with wildlife biologists from the U.S. Forest Service, BLM and New Mexico Department of Game and Fish to ensure the project is conducted at an appropriate time to ensure minimal impacts to wildlife movement, including bird migrations, as well as to wildlife habitat. Given that the Caja del Rio is home to an incredibly diverse array of birds, has been designated as an Important Bird Area and taking into consideration the overall serious decline of New Mexico's bird species and populations[ii], it is critical that DOE take extra precautionary steps to ensure the protection of bird life and habitat in and around the project site. Along these lines, we encourage DOE to work collaboratively and constructively with the New Mexico Department of Game and Fish as well as with local wildlife non-profits including, the New Mexico and National Wildlife Federations, and New Mexico Wild. Furthermore, given the abundance of and potential impacts to Native American historical, archeological and sacred sites in the area, we are asking that DOE work with archeologists from the U.S. Forest Service and BLM as well as directly with the area's tribes and the Bureau of Indian Affairs to ensure the utmost preservation and protection of these sites.

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[i] *See* https://www.audubon.org/important-bird-areas/caja-del-rio

[ii] *See* https://www.santafenewmexican.com/news/local_news/report-percent-of-new-mexico-s-birds-at-risk-of/article_391c3fab-0246-5caf-8dec-81f53c9ca9a2.html; *see also:* https://www.sciencedaily.com/releases/2018/08/180816091445.htm

	Comment	Response
1	Additional terrestrial disturbance will occur from the ingress and egress of trucks and heavy machinery used to complete the project. Additionally, these vehicles will also cause both air and noise pollution that can impact wildlife. Regarding aerial disturbance, DOE has noted the potential impacts to birds and raised concerns about bird collisions with the above ground fiber optic line and/or related infrastructure. We are asking DOE to again reconsider these less intrusive broadband options.	The DOE/NNSA did discuss with subject matter experts regarding the re-consideration of the Proposed Action and alternatives. There were no other reasonable alternatives that were identified that would have resulted in less impacts. Alternatives reviewed but eliminated from further analysis are listed in Section 3.3. Project mitigation measures have been incorporated that are protective of wildlife. Impacts to all identified cultural resources during construction and installation activities would be avoided by excluding areas where archaeological sites are present from ground disturbance and staging and laydown areas. The three sites within the FR 24 do not contain intact features or artifacts due to the excavation, use, and roadbed erosion. All work in these site areas will be strictly limited to the current road width so as not to disturb the area adjacent to the road. Construction access to the two sites located beneath the overhead transmission line would be with rubber tire vehicles so as not to cause further erosion.
2	If DOE decides to move forward with the proposed project as opposed to reconsidering less invasive alternatives, we are asking that DOE take additional precautionary steps to mitigate impacts to wildlife.	Chapter 5 Mitigation Measures identify actions to be taken that are protective of wildlife.
3	We ask that the DOE reconsider the option of constructing new structures that would support the fiber optic line to span across the Rio Grande river at White Rock canyon. The EA does not sufficiently analyze or provide detailed analysis regarding the possibility of updating existing structures to handle the weight of new fiber optic lines, thus avoiding the construction of new 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

	Comment	Response
		steel towers. The engineering analysis determined that the electrical powerline structures would have to be replaced as 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.
4	Additionally, we ask that DOE ensure that construction crews limit ingress and egress to only authorized roads as well as work directly with wildlife biologists from the U.S. Forest Service, BLM and New Mexico Department of Game and Fish to ensure the project is conducted at an appropriate time to ensure minimal impacts to wildlife movement, including bird migrations, as well as to wildlife habitat.	A project condition is the limitation of construction vehicle to roadways and areas authorized by the USFS. Chapter 5 Mitigation Measures specify the conditions protective of wildlife that were identified or required by USFS and New Mexico Department of Game and Fish biologists.
5	DOE take extra precautionary steps to ensure the protection of bird life and habitat in and around the project site. Along these lines, we encourage DOE to work collaboratively and constructively with the New Mexico Department of Game and Fish as well as with local wildlife non-profits including, the New Mexico and National Wildlife Federations, and New Mexico Wild.	Chapter 5 Mitigation Measures specifies the conditions protective of wildlife that were identified by the New Mexico Department of Game and Fish biologists and in consideration of wildlife organization comments to the Draft EA.
6	Given the abundance of and potential impacts to Native American historical, archeological and sacred sites in the area, we are asking that DOE work with archeologists from the U.S. Forest Service and BLM as well as directly with the area's tribes and the Bureau of Indian Affairs to ensure the utmost preservation and protection of these sites.	A systematic pedestrian survey was conducted along the proposed route from May 2019 through October 2019. The proposed project would avoid impacts to all identified cultural resources during construction and installation activities by excluding areas where archaeological sites are present from ground disturbance. If previously unknown subsurface cultural deposits are discovered, construction activities in the affected area would cease, and the land management agency would determine appropriate treatment in consultation with the

Comment	Response
	SHPO. There are no known cultural resource sites in the project area on Santa Fe County or BLM lands. On LANL lands archaeologists would flag the cultural resource boundaries and monitor when construction activities are in the vicinity of these sites. LANL archaeological sites fall under the requirements and stipulations of LANL's Programmatic Agreement among DOE/NNSA Los Alamos Field Office, New Mexico State Historic Preservation Office and the Advisory Council on Historic Preservation. For USFS lands and at the direction of SFNF District Archaeologists, an archaeological monitor would oversee excavation during installation of the fiber optic cable when activities are near and adjacent to archaeological sites. Work on USFS lands follows the National Historic Preservation Act Section 106 process that requires a 30-day review by the State Historic Preservation Officer prior to commencement. The project would not commence on USFS lands until the SHPO concurs with the determination that all archaeological sites would be avoided by project activities. Project personnel did coordinate with and receive direction from the appropriate land management resource specialists comprised of BLM and USFS archeologists.

Southwest Program Office
210 Montezuma Avenue, Suite 210 | Santa Fe, New Mexico 87501 | tel 505.395.7330
www.defenders.org

January 8, 2020

NNSA Los Alamos Field Office
ATTN: NEPA Compliance Officer – Fiber Optic Draft EA Comments
3747 West Jemez Road
Los Alamos, NM 87544

RE: Construction and Operation of a Second Fiber Optic Circuit Route

Dear Ms. Dors,

Please accept the following comments on behalf of Defenders of Wildlife regarding construction and operation of a second fiber optic circuit route to Los Alamos National Laboratory (LANL). Defenders is a non-profit, 501(c)3 organization that works to ensure the protection of native plants and animals and their habitats throughout North America. Defenders has more than 1.8 million members, supporters and online activists nationwide, including more than 19,000 in New Mexico.

We thank the National Nuclear Security Administration for the opportunity to comment on this project, and while we appreciate the Los Alamos National Laboratory's need for an additional fiber optic cable, we have concerns about the cable's planned route and the precendent this could set for further development in the Caja del Rio.

In the fall of 2019, the Santa Fe National Forest (SFNF) put its draft revised management plan out for public comment. Defenders, along with other conservation organizations, recruited more than 15,000 comments in support of the designation of the Caja del Rio Wildlife and Cultural Interpretive Area, which would afford added protections to this 84,000 acre region west of Santa Fe to the banks of the Rio Grande. The SFNF draft land management plan acknowledges that this region hosts incredible plant and animal diversity as well as potential for habitat connectivity for daily and seasonal wildlife migrations. According to the plan, it is also home to "nationally significant cultural resources".

As a result, the plan included a Desired Condition stating:

> The natural character of the Caja del Rio supports wildlife diversity and connectivity, and maintains the cultural and archeological integrity found there, while providing interpretive opportunities for the public to learn and value these resources, in an area easily accessible to metropolitan Santa Fe.

The plan also names LANL in a Management Approach to use cross-agency collaboration to facilitate wildlife connectivity. And while the NNSA's plans seem to satisfy the SFNF draft land management plan's Standard to "maximize use of existing utility line corridors for additional utility line needs," we have concerns about how this operation will impact native and migratory wildlife.

The EA relied on compliance with LANL's Threatened and Endangered Species Habitat Management Plan. However, due to the sensitive nature of New Mexico's riparian corridors, which serve as biodiversity hot spots, NNSA should take additional steps to ensure that riparian obligate species will not be harmed during the 6-8 weeks that the EA estimates the aerial crossing will take to complete.

The Southwest Willow flycatcher has been listed as endangered since 1995 and currently has critical habitat designated along the Rio Grande both north and south of the planned construction. Because the Rio Grande serves as a flyway and corridor for this imperiled species and because this section of river supports healthy communities of willows, NNSA should conduct surveys prior to any planned activities to confirm there are no nesting birds present.

Additionally, NNSA should also conduct surveys to determine if the New Mexico meadow jumping mouse is present. The jumping mouse, which was listed as endangered in 2014, is a riparian obligate species that exists below 8,000 feet in Arizona, New Mexico and Colorado. Other populations have been identified in the Jemez Mountains, but surveys for other populations have been limited and it is possible, due to its isolation, that this section of the Rio Grande may host a relic population. Before any construction activities occur, NNSA should ensure that it is not disturbing what would be a highly genetically unique population of jumping mice.

The EA mentions using colored monopoles for the Rio Grande crossing to minimize potential for collision of raptors, but does not indicate whether these poles would have a similar deterring effect for sandhill cranes, waterfowl and other migratory birds.

Assuming proper surveys have been conducted to determine the presence of federally listed species, this project could be an opportunity to have a net positive effect for wildlife in the region. To do so, the NNSA should collaborate with the Santa Fe National Forest on a project that will facilitate greater wildlife connectivity in the Caja del Rio Wildlife and Cultural Interpretive Area as the SFNF's plans suggest.

Finally, although we believe that this project could be completed with minimal environmental impact through mitigation efforts and by avoiding sensitive habitats and times of the year, we are concerned that this project might establish a poor precedent that would allow for larger, more impactful NNSA projects in the future.

By designating the Caja del Rio Wildlife and Cultural Interpretive Area the SFNF has recognized its cultural and natural values, and we urge NNSA to respect these values as it moves forward with planning for this and future projects.

Sincerely,

Michael Dax
New Mexico Representative

	Comment	Response
1	We have concerns about the cable's planned route and the precedent this could set for further development in the Caja del Rio.	The fiber optic line is within or directly adjacent to existing roadways and, where aerial, utilize existing PNM structures with the exception of the White Rock Canyon crossing. The White Rock Canyon crossing monopoles would be adjacent to the PNM structures which would serve to limit visual impacts. The route was strategically selected to have minimal impact and would not encourage further growth of undeveloped lands. Development and activities in the Caja del Rio Plateau are governed by the existing USFS 1987 Forest Management Plan currently under revision as the Draft Land Management Plan. The Santa Fe National Forest Draft Land Management Plan Draft Environmental Impact Statement was available for public comment from August 9, 2019 to November 7, 2019. Once finalized and the Record of Decision issued by the USFS the revised land management plan would become the governing management document for USFS lands within the Caja del Rio Plateau.
2	Defenders, along with other conservation organizations, recruited more than 15,000 comments in support of the designation of the Caja del Rio Wildlife and Cultural Interpretive Area, which would afford added protections to this 84,000 acre region west of Santa Fe to the banks of the Rio Grande. The SFNF draft land management plan acknowledges that this region hosts incredible plant and animal diversity as well as potential for habitat connectivity for daily and seasonal wildlife migrations. According to the plan, it is also home to "nationally significant cultural resources"	Section 5.0 Mitigation Measures identifies those requirements that are part of the Proposed Action that will avoid or minimize impacts to wildlife. The White Rock Canyon fiber optic cable installation would be located along the canyon edges and would not require access to the riparian areas along the canyon bottom. Compliance with the Migratory Bird Treaty Act restricts vegetation removal during the peak bird breeding season, May 15 through July 31, unless a project biologist has conducted a nest check to ensure that there are no nesting birds present. If active nests are found, the nest tree or shrub would be left in place until the nesting is complete. A biological evaluation and surveys [April 19, April 26, and May 3, 2019] conducted by professional biologists determined that suitable New Mexico meadow jumping mouse habitat is not present within the project area. Sandhill cranes (*Antigone Canadensis*) along with numerous other waterfowl migrate south along the

		middle and lower Rio Grande Valley between November – December and back north between February – March. Aircraft and birds collision markers would be installed on the fiber optic cable crossing White Rock Canyon to alert aircraft and birds to the presence of the fiber optic cable. One alternative currently under review is the attachment of 36 in. diameter colored marker balls placed on the fiber optic cable approximately every 200 ft. along with bird diversion devises. NNSA would be receptive to discussions with the USFS regarding a project that would facilitate greater wildlife connectivity in the Caja del Rio Wildlife and Cultural Interpretive Area that would be compatible with LANL's missions.
3	NNSA's plans seem to satisfy the SFNF draft land management plan's Standard to "maximize use of existing utility line corridors for additional utility line needs," we have concerns about how this operation will impact native and migratory wildlife.	Project mitigations, recommended by the New Mexico Department of Game & Fish along with comments provided by wildlife conservation organizations, have been incorporated that are protective of Caja del Rio Plateau wildlife.
4	NNSA should take additional steps to ensure that riparian obligate species will not be harmed during the 6-8 weeks that the EA estimates the aerial crossing will take to complete.	White Rock Canyon riparian area would be avoided by the proposed project. The aerial crossing would be conducted along the canyon edges and not require access to the canyon bottom.
5	Because the Rio Grande serves as a flyway and corridor for this imperiled species (Southwest Willow Flycatcher) and because this section of river supports healthy communities of willows, NNSA should conduct surveys prior to any planned activities to confirm there are no nesting birds present.	Nesting bird surveys are a project required mitigation component protective of wildlife species.
6	NNSA should conduct surveys prior to any planned activities to confirm there are no nesting birds present.	Nesting bird surveys are a project required mitigation component protective of wildlife species.

7	NNSA should take additional steps to ensure that riparian obligate species will not be harmed during the 6-8 weeks that the EA estimates the aerial crossing will take to complete.	White Rock Canyon riparian area would be avoided by the proposed project. The aerial crossing would be conducted along the canyon edges and not require access to the canyon bottom.
8	EA mentions using colored monopoles for the Rio Grande crossing to minimize potential for collision of raptors, but does not indicate whether these poles would have a similar deterring effect for sandhill cranes, waterfowl and other migratory birds	The statement in the Draft EA was an error. The monopoles are primarily designed to blend in with the existing landscape to minimize scenic impacts. A project protective mitigation for avian species is the White Rock Canyon crossing design would have aircraft warning marker balls 36 in. in diameter installed every 200 ft. to alert pilots to the presence of the fiber optic cable. These warning spheres would also serve as anti-collision devices to prevent or minimize bird impacts with the fiber optic cable. Additionally, bird diverters that spin and are reflective would be installed approximately every 200 ft.
9	NNSA should collaborate with the Santa Fe National Forest on a project that will facilitate greater wildlife connectivity in the Caja del Rio Wildlife and Cultural Interpretive Area as the SFNF's plans suggest.	NNSA would be receptive to discussions with the USFS regarding a project that would facilitate greater wildlife connectivity in the Caja del Rio Wildlife and Cultural Interpretive Area that would be compatible with LANL's missions.
10	Although we believe that this project could be completed with minimal environmental impact through mitigation efforts and by avoiding sensitive habitats and times of the year, we are concerned that this project might establish a poor precedent that would allow for larger, more impactful NNSA projects in the future.	Development and activities in the Caja del Rio Plateau are governed by the existing USFS 1987 Forest Management Plan currently under revision as the Draft Land Management Plan. The Santa Fe National Forest Draft Land Management Plan Draft Environmental Impact Statement was available for public comment from August 9, 2019 to November 7, 2019. Once finalized and the Record of Decision issued by the USFS, this will become the governing management document for the USFS lands within the Caja del Rio Plateau.

January 24, 2020

NNSA Los Alamos Field Office
ATTN: NEPA Compliance Officer – Fiber Optic Draft EA Comments
3747 West Jemez Road
Los Alamos, NM 87544

RE: Fiber Optic Draft EA Comments

Submitted via email to NA-LA_NCO@nnsa.doe.gov

Cc: James Melonas, Santa Fe National Forest Supervisor

To Whom it May Concern:

Thank you for the opportunity to submit comments on the proposal to construct and operate a second fiber optic circuit route to Los Alamos National Laboratory (LANL). We understand the need for increased digital infrastructure to serve LANL and the Los Alamos community. We are concerned, however, about the need to construct new steel monopole structures for the new fiber optic line to span the Rio Grande at White Rock Canyon. It does not appear that the Department of Energy (DOE) considered any alternatives during the preparation of this Environmental Assessment (EA) in violation of the National Environmental Policy Act and the Council on Environmental Quality's (CEQ) implementing regulations. We are also concerned as well about the lack of clarity regarding the true number of structures proposed for construction. This comment letter identifies insufficiencies in the NEPA analysis and includes recommendations that we believe, if adopted in the final decision, would alleviate our concerns.

This comment supplements comments submitted by the New Mexico Wildlife Federation on our behalf.

The New Mexico Wilderness Alliance (New Mexico Wild) is a nonprofit organization dedicated to the protection, restoration, and continued enjoyment of New Mexico's wildlands and wilderness areas, with thousands of members across the state.

Preliminarily, the EA does not consistently say whether this project requires the construction of two or four new steel monopole structures.[1] Before DOE makes a final decision, it must make clear to the public the actual and exact impact of this proposal. Once this has been made clear, DOE should release a supplementary or revised draft EA for public comment.

FOREST PLAN REVISION IMPLICATIONS

The Santa Fe National Forest (SFNF) is nearing completion of a revision of its Forest Plan, a process that has been ongoing for years and will set the management direction of SFNF for decades. Included in this process is a determination of which areas SFNF will recommend for wilderness designation, and a determination of which stretches of rivers and streams are eligible for wild and scenic designation. SFNF published its draft forest plan in August 2019, accepting public comments until early November of 2019. This proposal threatens to limit the breadth of options available to SFNF before it finalizes its plan.

New Mexico Wild submitted comments to SFNF advocating for recommending wilderness across the Caja plateau, including lands potentially impacted by this proposal. Construction of steel monopole structures threatens the natural appearance of the area and threatens the opportunities for primitive recreation.

New Mexico Wild also submitted comments to SFNF advocating for a finding of eligibility for the stretch of the Rio Grande starting at the northern tip of Forest Service land and running southwest between Forest Service land and Bureau of Land Management land. The EA does not

[1] *See* p. i ("The canyon crossing would require two in-line new steel monopole structures on each side of the canyon."); p. 10 ("installation of two in-line new steel monopole structures would be required[.]"); p.10 ("Temporary staging areas of approximately 200 ft. by 200 ft. would be required for each of the four structures."); map on p. 11 showing four monopole structures; p. 24 ("installation of the two in-line steel monopole structures would be required."); and p. 28 ("Approximately nine new concrete maintenance vaults and four new monopoles are additive to the utility corridors and structures which are already present.").

include an analysis of potential erosion and sediment issues arising from new steel and concrete structures or the construction work required to erect those structures.

A final decision on this proposal should be deferred until SFNF has published its final plan and addressed any and all objections raised during the objection period following publication of the final plan. A final decision approving the preferred alternative in the EA limits the decision-making authority of SFNF.

CONCLUSION

DOE must analyze an alternative which would make the existing PNM structures able to support to additional weight of this fiber-optic cable. Without consideration of such an alternative, any final decision made by DOE would be in violation of NEPA. Additionally, DOE must make clear the actual and exact proposed impact of this proposal on the landscape, including the true number of monopoles to be erected, and the associated new concrete maintenance infrastructure to be built.

Thank you for your consideration of our comments, please include these comments as part of the project record, let us know if you have any questions, and please include us on the list of interested parties.

Sincerely,

Logan Glasenapp
Staff Attorney
New Mexico Wilderness Alliance
Logan@NMWild.org

	Comment	Response
1	It does not appear that the Department of Energy (DOE) considered any alternatives during the preparation of this Environmental Assessment (EA) in violation of the National Environmental Policy Act and the Council on Environmental Quality's (CEQ) implementing regulations	The DOE/NNSA did discuss with subject matter experts regarding the re-consideration the Proposed Action and alternatives. There were no other reasonable alternatives that were identified that would have resulted in less impacts. Alternatives reviewed but eliminated from further analyses are listed in Section 3.3.
2	EA does not consistently say whether this project requires the construction of two or four new steel monopole structures. Before DOE makes a final decision, it must make clear to the public the actual and exact impact of this proposal	The EA is consistent in the identification of the required four monopoles. Two monopoles would be erected on each side of the canyon as Figure 3-1 illustrates. A representative statement in the Draft EA states "However, at the RL White Rock Canyon crossing (Table 3 1), in order to span the Rio Grande with the OPGW, installation of two in-line new steel monopole structures would be required on each side of the canyon." Additional descriptive text has been added and the pole height data has been corrected from 35 ft. to 80 ft. in height. The change in height was necessary to match the RL electrical power transmission structure. The result will be a minor decrease in scenic awareness of the poles to the recreational users and decrease the potential of bird collisions as the line will be of approximately the same height decreasing the hazard zone. The potential impacts of the proposed project were analyzed in the Draft EA and in NNSA response to comments received on the Draft EA. This final EA was revised accordingly and supports NNSA determination that a Finding of No Significant Impact is the appropriate decision.
3	SFNF published its draft forest plan in August 2019, accepting public comments until early November of 2019. This proposal threatens to limit the breadth of options available to SFNF before it finalizes its plan	The proposed action does not threaten to limit the breadth of options available to the SFNF for their United States Forest Service, Santa Fe National Forest, Southwestern Region's June 2019 Santa Fe National Forest Draft Land Management Plan. The breadth of management options are already identified and analyzed in the Draft Environment Impact

	Comment	Response
		Statement for the Land Management Plan (EIS). The SFNF Espanola Ranger District has the management authority to issue a new special-use permit and modify an existing special-use permit and is knowledgeable of the Draft Land Management Plan. The Espanola Ranger District decision regarding special-use permits would take into account the land management options as analyzed in the EIS.
4	Construction of steel monopole structures threatens the natural appearance of the area and threatens the opportunities for primitive recreation.	The monopole would be erected adjacent to the existing RL and to the extent practical, the monopole structures would be designed and colored to match the line, color, texture, and pattern of the existing Caja del Rio Plateau landscape and RL structures. Non-specular structure materials on the monopoles would be used to reduce reflection and glare see Figure 4-2 in the EA. The natural appearance of the area includes the RL White Rock Canyon structures and the addition of the monopoles will not substantial change the scenic environment. Primitive recreation ranging from rock climbing, hiking, mountain biking, and backpacking could be effected during construction but would return to present conditions after project completion.
5	The EA does not include an analysis of potential erosion and sediment issues arising from new steel and concrete structures or the construction work required to erect those structures	The project description and Section 5.0 Mitigation Measures addresses this topic. The EA does analyze and identify mandatory erosion and sedimentation control measures required during construction and post construction to avoid or minimize impacts.
6	A final decision on this proposal should be deferred until SFNF has published its final plan and addressed any and all objections raised during the objection period following publication of the final plan. A final decision approving the preferred alternative in the EA limits the decision-making authority of SFNF.	The SFNF Espanola Ranger District has the management authority to issue a new special-use permit and modify an existing special-use permit and is knowledgeable of the Draft Land Management Plan. The Espanola Ranger District decision regarding special-use permits would take into account the land management options as analyzed in the EIS.

	Comment	Response
7	DOE must analyze an alternative which would make the existing PNM structures able to support to additional weight of this fiber-optic cable. Without consideration of such an alternative, any final decision made by DOE would be in violation of NEPA	While stated in the Draft EA a new Section 3.3.2.4 has been added to the Final EA that provides more detail as to why this is not a reasonable alternative.
8	DOE must make clear the actual and exact proposed impact of this proposal on the landscape, including the true number of monopoles to be erected, and the associated new concrete maintenance infrastructure to be built.	The Draft EA was consistent in the identification of the required four monopoles. Two monopoles would be erected on each side of the canyon as Figure 3-1 illustrates. A representative statement in the Draft EA states "However, at the RL White Rock Canyon crossing (Table 3 1), in order to span the Rio Grande with the OPGW, installation of two in-line new steel monopole structures would be required on each side of the canyon." Additional descriptive text has been added and the pole height data has been corrected from 35 ft. to 80 ft. in height. The change in height was necessary to match the RL electrical power transmission structure. A benefit of the monopole height change is a potential to further reduce the potential for bird collisions as the line will be approximately the same height as the RL line decreasing the hazard zone. To minimize visual quality impacts, to the extent practical, the monopole structures would be designed and colored to match the line, color, texture, and pattern of the existing Caja del Rio Plateau landscape and RL structures. Non-specular structure materials on the monopoles would be used to reduce reflection and glare. Given that, the fiber optic line would be underground with maintenance vaults at ground level and adjacent to FR 24, after re-vegetation, there would be little noticeable change to the scenic environment.

Representative Campaign Letter

I am writing today to express my concerns about the proposed Department of Energy (DOE) project creating a new 18-mile fiber optic line running along the Caja del Rio plateau to Los Alamos National Labs. As an advocate for America's wildlife, I recognize that the Caja del Rio lands are critical to wildlife habitat and migration and also have important cultural value. As one of the most ecologically rich habitats in North America, the Caja and adjacent lands help connect a vital wildlife corridor from the state of Colorado to Mexico. The area is home to mule deer, elk, black bear, cougar, and western burrowing owls. It has also been designated as an Important Bird Area (IBA). In addition, it contains numerous cultural, archeological and sacred sites important to the area's tribes as well as to the history of New Mexico and the United States.

As indicated in the Environmental Assessment (EA), development of a new fiber optic line will create various subsurface, surface, and aerial disturbances that can be disruptive to the area's sensitive wildlife as well as archaeological and cultural sites. Although DOE indicates it has considered less disruptive alternatives (such as satellite and air space laser broadband), given the potential for disturbance to both wildlife and archeological sites, I am asking DOE to again reconsider these less intrusive broadband options.

If a less invasive alternative is not possible, DOE must take special precautions to limit the wildlife disturbances which will result from the digging and trenching to install the fiber optic line and to secure the line to above-ground infrastructure. It must limit additional disturbances from the construction trucks and heavy machinery used to complete the project, confining them to existing authorized roads. As DOE itself noted, there are also concerns about bird collisions with the above-ground fiber optic line or related infrastructure.

The construction crews must also work directly with wildlife biologists from the U.S. Forest Service, BLM and New Mexico Department of Game and Fish to ensure the project is conducted at an appropriate time to ensure minimal impacts to wildlife movement, including bird migrations, as well as to wildlife habitat.

In addition, given the likely impacts to Native American historical, archeological and sacred sites in the area, I am asking that the DOE work with archeologists from the U.S. Forest Service and BLM as well as directly with the Bureau of Indian Affairs and the area's tribes to ensure the utmost preservation and protection of these sites.

Sincerely,

	Comment	Response
1	As indicated in the Environmental Assessment (EA), development of a new fiber optic line will create various subsurface, surface, and aerial disturbances that can be disruptive to the area's sensitive wildlife as well as archaeological and cultural sites. Although DOE indicates it has considered less disruptive alternatives (such as satellite and air space laser broadband), given the potential for disturbance to both wildlife and archeological sites, I am asking DOE to again reconsider these less intrusive broadband options.	Sections 4.0 and 5.0 lists project mitigation requirements that are designed to avoid or minimize affects to wildlife, these include (1) conducting surveys by a professional biologist to ensure no nesting birds would be adversely effected by construction activities, (2) minimizing vegetation removal, (3) performing site restoration and revegetation requirements, and (4) installing marker balls on the fiber optic cable spanning White Rock Canyon. The proposed project would avoid impacts to all identified cultural resources during construction and installation activities by excluding areas where archaeological sites are present from ground disturbance. DOE/NNSA did review the pragmatic alternative of other alternatives including satellite, microwave, and air space lasers. These alternatives were determined to be wholly as inadequate to provide the necessary bandwidth, reliability, and security required by NNSA's LANL mission.
2	DOE must take special precautions to limit the wildlife disturbances which will result from the digging and trenching to install the fiber optic line and to secure the line to above-ground infrastructure. It must limit additional disturbances from the construction trucks and heavy machinery used to complete the project, confining them to existing authorized roads	Construction equipment would be limited to existing roadways and right-of-ways.
3	As DOE itself noted, there are also concerns about bird collisions with the above-ground fiber optic line or related infrastructure.	To mitigate potential aircraft and bird collisions with the fiber optic cable spanning White Rock Canyon, collision markers would be installed that would alert aircraft and birds to the presence of the fiber optic cable.
4	The construction crews must also work directly with wildlife biologists from the U.S. Forest Service, BLM and New Mexico Department of Game and Fish to ensure the project is	The proposed project would avoid impacts to all identified cultural resources during construction and installation activities by excluding areas where archaeological sites are

	Comment	Response
	conducted at an appropriate time to ensure minimal impacts to wildlife movement, including bird migrations, as well as to wildlife habitat.	present from ground disturbance. Additionally, an archaeological monitor would oversee excavation during installation of the fiber optic line when activities are near and adjacent to archaeological sites.
5	Given the likely impacts to Native American historical, archeological and sacred sites in the area, I am asking that the DOE work with archeologists from the U.S. Forest Service and BLM as well as directly with the Bureau of Indian Affairs and the area's tribes to ensure the utmost preservation and protection of these sites.	For the nine archaeological sites located on DOE/NNSA land, archaeologists would flag the boundaries of these places with white twine and pink flagging, and they would monitor when activities are in the vicinity of these sites. These areas will be avoided by project personnel, vehicles, and any project-related activities. There are eight cultural resource sites located within the proposed fiber optic line situated on SFNF lands. The proposed project will avoid impacts to all identified cultural resources during construction and installation activities by excluding areas where archaeological sites are present from ground disturbance and staging and laydown areas. The three sites within the FR 24 do not contain intact features or artifacts due to the excavation, use, and roadbed erosion. All work in these site areas will be strictly limited to the current road width so as not to disturb the area adjacent to the road cut for the underground portion of the fiber optic line. The two sites located beneath the overhead transmission line will ensure no adverse effects as only rubber tire vehicles, limited to the existing roadbed, will be used so as not to cause further erosion of the access road. The construction activities would not diminish the integrity of the eligible sites. Therefore, there would be no adverse effect on the cultural resource properties and the Register eligibility of the cultural resource sites would not change. An archaeological monitor would be required to monitor excavation during installation or stringing of the fiber optic

Comment	Response
	cable. If previously unknown subsurface cultural deposits are discovered, construction activities in that area would halt, and the USFS would determine appropriate treatment in consultation with the State Historic Preservation Office Project personnel did coordinate with and receive direction from the appropriate land management resource specialists comprised of BLM and USFS archeologists.

APPENDIX E: Department of Energy/National Nuclear Security Administration Los Alamos Field Office, NEPA Concurrence Request and USFS and BLM Concurrence

DEPARTMENT OF ENERGY
National Nuclear Security Administration
Los Alamos Field Office
Los Alamos, New Mexico 87544

FEB 11 2019

Mr. Sanford Hurlocker
District Ranger
Espanola Ranger District
Santa Fe National Forest
1710 N Riverside Drive
Espanola, NM 87533

Dear Mr. Hurlocker:

Subject: National Environmental Policy Act Coverage for the Proposed Construction and Operation of a Second Fiber Optic Circuit Route to Los Alamos National Laboratory

The proposed Second Fiber Optic Circuit Project (Project) would support a customer request from the Department of Energy (DOE), National Nuclear Security Administration(NNSA) for CenturyLink to construct and operate a redundant fiber optic line originating from Santa Fe to the terminus of both Los Alamos County (County) and Los Alamos National Laboratory (LANL).

Currently there is only a single fiber optic line that serves and transmits voice, data, and internet services to the County [including County emergency services] and LANL. The proposed second fiber optic line would provide the same level of service while adding protection from service interruption due to a potential failure in one of the lines. The proposed Project would be located on lands managed or owned by various Los Alamos County private landowners, DOE/NNSA, New Mexico Department of Transportation, Santa Fe County, and the United States Forest Service Santa Fe National Forest (SFNF).

As the project proponent and lead agency, DOE/NNSA will prepare an Environmental Assessment (EA) for the proposed Project. The EA will analyze the Proposed Action, which is to install approximately 18 miles of new fiber optic cable and associated infrastructure originating from the intersection of Caja del Rio Road and North Caja del Oro Grant Road in Santa Fe County continuing to and directly adjacent to Forest Route 24 within the Caja del Rio to the terminus at Piedra Loop and Sherwood Blvd within the County and the No Action Alternative.

The impacts analysis will include the identification and analysis of potential effects, if any, to biological resources including Federal species protected under the Endangered Species Act and SFNF Species of Conservation Concern; cultural resources in compliance with the National Historic Preservation Act; floodplains and wetlands as defined in Executive Orders 11988 and 11990, respectively; viewsheds; and recreation users.

NNSA will be the Lead Agency for the National Environmental Policy Act (NEPA) process and prepare the EA in compliance with DOE and NNSA regulations, policies, and guidance. SFNF, as a cooperating agency, will provide information and documents as needed, review and comment on the internal draft EA, and is expected to adopt the final EA and NEPA determination.

NNSA will notify the Pueblo de Cochiti; Pueblo of Jemez; Pueblo de San Ildefonso; and Pueblo of Santa Clara, as well as, the New Mexico Environment Department of the intent to prepare the EA. Review of cultural resource documents, conducting surveys, and preparing compliance documents will be coordinated with SFNF, as necessary. Monthly, or as needed, status calls will be scheduled to address any issues and to ensure adherence to NNSAs' estimated six-month timeline for completion.

A comment period of 14 days for the Draft EA will be conducted. All comments will be considered in the preparation of the final EA and the accompanying NNSA NEPA determination.

The NNSA Los Alamos Field Office (NA-LA) requests concurrence with the approach contained in the enclosed report. If you have any questions or comments, please contact me at (505) 667-7014 or electronically at kristen.dors@nnsa.doe.gov.

Sincerely,

Kristen Dors

Kristen Dors
NEPA Compliance Officer, NA-LA

Concurrence with the NEPA approach

Sam Hall
District Ranger, SFNF

22 Feb 19
Date

Comments: See Attachment A

Attachment A
Response to NNSA letter Feb. 11, 2019

Proposed Construction and Operation of Second Fiber Circuit Route to Los Alamos National Lab.

February 22, 2019

Kristen:

After reviewing your letter with the Forest specialists, I agree in general with the NEPA approach outlined in your letter. At the same time, I want to identify a few items we'd like to discuss further. For the sake of moving the process along, I have included this with the idea that we may need to discuss more as the process moves along.

1. For wildlife analysis, we will need to look at species defined in the current Forest Plan (1987), which include Management Indicator Species (MIS), etc. The language referring to "species of conservation concern" comes from drafts of the revision of this plan, which is not in place yet. We will provide the lists.
2. For compliance with the Section 106 of the Historic Preservation Act, we will need to work with you on specifics for how we should meet our compliance requirements. For example, I understand we have different requirements for consulting with the SHPO that will need to be ironed out, even if the NNSA takes the lead on consultation.
3. Add the pueblo of Santo Domingo to list 3.
4. Add the Caja grazing permitees to list 4.

We appreciate your taking the lead on this project and look forward to working with you to complete the planning for this project as expeditiously as we can.

SANFORD HURLOCKER
District Ranger
Española Ranger District
Santa Fe National Forest

DEPARTMENT OF ENERGY
National Nuclear Security Administration
Los Alamos Field Office
Los Alamos, New Mexico 87544

MAY 0 1 2019

Mr. Marc Jackson
Field Manager
Bureau of Land Management
Taos Field Office
226 Cruz Alta Road
Taos, NM 8757

Dear Mr. Jackson:

Subject: National Environmental Policy Act (NEPA) coverage for the Proposed Construction and Operation of a Second Fiber Optic Circuit Route to Los Alamos National Laboratory

The proposed Second Fiber Optic Circuit Project (Project) would support a customer request from the Department of Energy (DOE), National Nuclear Security Administration (NNSA) for CenturyLink to construct and operate a redundant fiber optic line originating from Santa Fe to the terminus of both Los Alamos County (County) and Los Alamos National Laboratory (LANL).

Currently there is only a single fiber optic line that serves and transmits voice, data, and internet services to the County [including County emergency services] and LANL. The proposed second fiber optic line would provide the same level of service while adding protection from service interruption due to a potential failure in one of the lines. The proposed Project would be located on lands managed or owned by the various Los Alamos County private landowners, DOE/NNSA, New Mexico Department of Transportation, Santa Fe County, the United States Bureau of Land Management (BLM), and the United States Forest Service Santa Fe National Forest (SFNF).

As the project proponent and lead agency, DOE/NNSA will prepare an Environmental Assessment (EA) for the proposed Project. The EA will analyze the Proposed Action, which is to install approximately 18 miles of new fiber optic cable and associated infrastructure originating from the intersection of Caja del Rio Road and North Caja del Oro Grant Road in Santa Fe County continuing to and directly adjacent to Forest Route 24 within the Caja del Rio to the terminus at Piedra Loop and Sherwood Blvd within the County and the No Action Alternative.

The impacts analysis will include the identification and analysis of potential effects, if any, to biological resources including Federal species protected under the *Endangered Species Act* and SFNF Species of Conservation Concern; cultural resources in compliance with the *National Historic Preservation Act*; floodplains and wetlands as defined in *Executive Orders 11988 and 11990*, respectively; viewsheds; and recreation users.

NNSA will be the Lead Agency for the National Environmental Policy Act (NEPA) process and prepare the EA in compliance with DOE and NNSA regulations, policies, and guidance. DOE/NNSA EA and decision document are expected to be adopted by each of the Federal agencies (DOE/NNSA, BLM and SFNF) which is in line with the Memorandum of

Understanding Implementing One Federal Decision Under Executive Order 13807 (EO 13807) signed by the Secretaries of the Departments of Agriculture, Interior, and Energy among others that established cooperative relationships and agreement to the timely processing of environmental reviews and authorization decisions.

NNSA will notify the Pueblo de Cochiti; Pueblo of Jemez; Pueblo de San Ildefonso; and Pueblo of Santa Clara, as well as, the New Mexico Environment Department of the intent to prepare the EA. Review of cultural resource documents, conducting surveys, and preparing compliance documents will be coordinated with BLM, as necessary. Monthly, or as needed, status calls will be scheduled to address any issues and to ensure adherence to NNSAs estimated six-month timeline for completion.

A comment period of 14 days for the Draft EA will be conducted. All comments will be considered in the preparation of the final EA and the accompanying NNSA NEPA determination.

The NNSA Los Alamos Field Office (NA-LA) requests concurrence with the approach contained in the enclosed report. If you have any questions or comments, please contact me at (505) 667-7014 or electronically at kristen.dors@nnsa.doe.gov.

Sincerely,

Kristen Dors

Kristen Dors
NEPA Compliance Officer, NA-LA

Concurrence with the NEPA approach

Field Manager, BLM

5-7-19
Date

Comments:

cc:
Brad Higdon, BLM, bhigdon@blm.gov
Chris Anderson, BLM, acanderson@blm.gov
Mark Lujan, BLM, mtlujuan@blm.gov
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Official Contract File, NA-LA

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