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**Los Alamos National Laboratory
Floodplain Assessment for the
Technical Area 8 to Technical Area
22 Natural Gas Line Replacement
Project**

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Los Alamos Field Office

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ACRONYMS

AOC	Area of Concern
CFR	Code of Federal Regulations
DOE	U.S. Department of Energy
EO	Executive Order
ft.	feet
IRT	Integrated Review Tool
LANL	Los Alamos National Laboratory
NNSA	National Nuclear Security Administration
TA	Technical Area

INTRODUCTION

The National Nuclear Security Administration (NNSA), a semi-autonomous agency within the U.S. Department of Energy (DOE), is proposing new construction that crosses through upper Pajarito Canyon and upper Starmer Canyon from Technical Area (TA) 8 to TA-22 at Los Alamos National Laboratory (LANL). The project proposes to install a new 12 inch natural gas line to replace the existing 70+ year old natural gas line. Replacement will prevent loss of service to several LANL TAs and Bandelier National Monument. The project activities within the 100-year floodplains include 1) new natural gas line installation to replace and existing aging gas line, 2) relocating a section of fence and 3) three construction equipment and materials storage areas (Figure 1).

NNSA has prepared this floodplain assessment in accordance with 10 Code of Federal Regulations (CFR) Part 1022 *Compliance with Floodplain and Wetland Environmental Review Requirements* (10 CFR Part 1022) (CFR 2003) which was promulgated to implement DOE requirements under Executive Order 11988 *Floodplain Management* (EO 1977). A floodplain is defined in 10 CFR 1022 as “the lowlands adjoining inland and coastal waters and relatively flat areas and flood prone areas of offshore islands,” and a base floodplain as “the 100-year floodplain, that is, a floodplain with a 1.0 percent chance of flooding in any given year (CFR 2003).” This floodplain assessment evaluates potential impacts to floodplain values and functions from implementation of the proposed action, identifies alternatives to the Proposed Action, and allows for meaningful public comment.

DOE/NNSA has published this Floodplain Assessment for a 15 day for public review and comment period. Please provide comments on this Floodplain Assessment to Kristen Dors at:

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After the close of the public comment period and prior to issuing a floodplain statement of findings DOE/NNSA will reevaluate the practicability of alternatives to the proposed floodplain action, mitigating measures and take into account all substantive comments received during the public comment period. DOE/NNSA will endeavor to allow 15 days of public review prior to implementing the proposed action.

Floodplain Assessment for the TA-8 to TA-22 Natural Gas Line Replacement Project

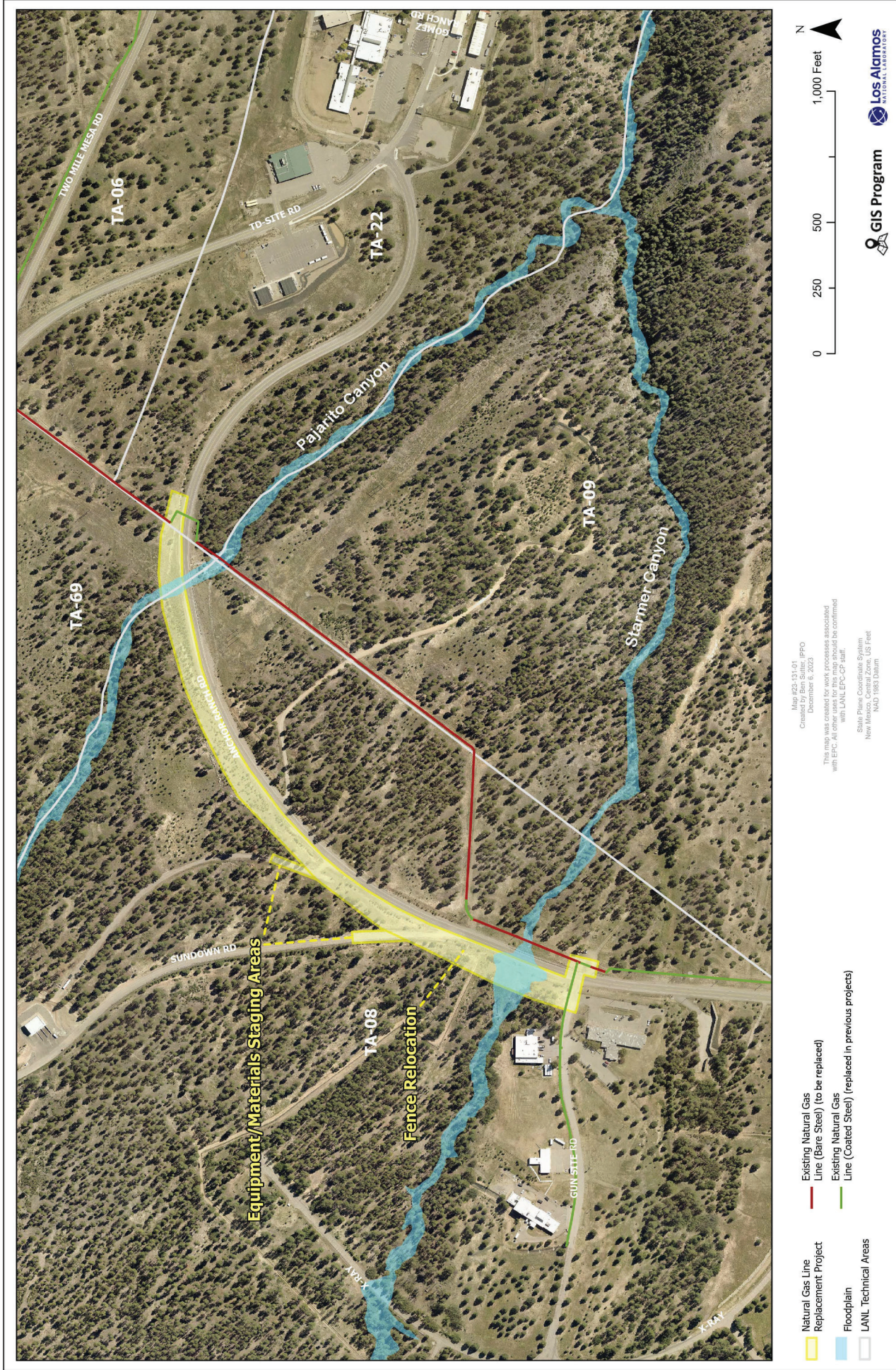


Figure 1. Proposed Natural Gas Line Replacement Project and Pajarito Canyon and Starmer Canyon 100-year Floodplains.

BACKGROUND

An existing natural gas main distribution line runs north to south through LANL from TA-03 to TA-16. It currently supplies multiple areas of LANL and Bandelier National Monument. The existing line is an over 70 year old bare steel pipe. LANL is in the process of replacing sections of the line to meet standards in 49 CFR 192 (CRF 2023) and correct identified corrosion and exposed areas of pipe. As the replacement natural gas line is installed, the older existing gas line will be abandoned in place.

The section of natural gas line proposed in this project would replace approximately 2600 ft. (0.5 mile) of gas line with approximately 2300 ft. (0.45 mile) of new gas line. The new gas line would be installed along the west side of Anchor Ranch Road from TA-8 to TA-22 (Figure 1). The project also proposes one area of fence relocation and three areas to support construction activities including staging construction equipment and materials. Please note the southernmost staging area located in TA-16 was used for previous gas line section installations and is not shown on Figure 1.

The proposed replacement natural gas line crosses the Pajarito Canyon floodplain and the Starmer Canyon branch of Pajarito Canyon floodplain (see Figure 1). The canyon bottoms in the proposed project areas are relatively undeveloped (Figures 2 and 3) except for the paved road with culverts and maintained road shoulders. The vegetation is predominantly shrubs and grasses. The portion of the Pajarito Canyon floodplain potentially impacted by this project is approximately 2001 square feet (ft.) (0.05 acre) total. The portion of the Starmer Canyon branch of Pajarito Canyon potentially impacted by this project is approximately 7248 square ft. (0.17 acre) total.



Figure 2. Location of Proposed Gas Line Replacement at Pajarito Canyon Looking West.



Figure 3. Location of Proposed Gas Line Replacement at Starmer Canyon Branch of Pajarito Canyon Looking South.

PROJECT DESCRIPTION

This assessment focuses on activities occurring in or near the Pajarito and Starmer Canyon 100-year floodplains that include installation of a replacement natural gas line. The additional activities of fence relocation and three laydown areas are outside the floodplains and will not be addressed in this assessment.

In both floodplains, a corridor approximately 30 ft. wide or less would be cleared and grubbed with a skid steer or excavator to allow space for a trench and equipment access on either side of the trench. Vegetation and soil disturbance in the floodplains would be minimized to the extent possible to maintain the vegetation and avoid soil compaction. A trench would be excavated with a backhoe approximately 3-5 ft. wide and 5.5 ft. deep at channel crossings. Use of heavy equipment would be minimized to the extent possible in the floodplain and only the backhoe would be used in the channel to minimize disturbance. Once the natural gas line is installed, the trench would be backfilled to grade. Excavated material and other stockpiles would be staged outside the floodplain.

A concrete slab would be installed at both floodplain crossings directly over the natural gas line flush with the ground to prevent erosion and protect the line from possible damage. Each slab would be approximately 17 ft. of flow line in the channel bottom. The sides would conform to the existing channel slope and extend approximately 12 ft. up the side slopes. Riprap rock would be installed at the leading and tail edges of the slab for additional erosion protection.

FLOODPLAIN IMPACTS

LANL maintains an Integrated Review Tool (IRT) used by LANL subject matter experts to identify, evaluate and resolve project-specific issues such as presence of underground utilities, contaminated soils, spills and leaks, soil disturbance and stabilization, threatened and endangered species habitat, floodplains or wetlands, and regulatory agency authorizations such as US Army Corp of Engineers permit requirements and Clean Water Act permit requirements. The process aids in identifying potential impacts to the natural and beneficial floodplain values and potential effects on lives and property.

Short-term Impacts

The following requirements were identified and reviewed in the IRT process to avoid potential impacts.

- The total project is over one acre; therefore, will require National Pollution Discharge Elimination System Construction General Permit coverage. This permit requires controls to limit soil erosion, sediment loss, and spills and leaks during and after construction. Controls would include temporary perimeter controls to reduce sediment transport during construction, final stabilization to control erosion after construction activities are completed, and pollution prevention measures such as housekeeping and spill prevention. Any required vegetation stabilization will be completed in accordance with the LANL Seeding Specification (LANL 2021).
- The project will not have any additional requirements for the Energy Independence and Security Act, Section 438. Proposed activities will not result in an increase in impervious surfaces and include stabilization of disturbed areas including restoring vegetation.
- Per consultation with the US Army Corps of Engineers, Clean Water Act Section 404 permit coverage or New Mexico State 401 certification requirements will not be required for this project.
- Based on LANL surveys and procedures, no historical or archeological sites are located in the areas of proposed disturbance. Provided project activities remains within the proposed project area, impacts to surrounding cultural sites are not anticipated. The project must follow the proper procedure for inadvertent discoveries.
- The proposed project is not located in threatened or endangered species habitat based on LANL surveys and procedures; therefore, no impacts are anticipated to occur to current listed species in the Los Alamos County area. If Jemez Mountain Salamanders are discovered during excavation work, the project must pause work and immediately notify LANL biologists.
- The proposed project will involve minimal disturbance of the Pajarito Canyon Area of Concern¹ (AOC) C-00-011. Any disturbed soil from the AOC would be stabilized using LANL approved best management practices and managed on site. The project is required to take precautions to avoid inadvertently transporting potentially contaminated soil from

the sites. If any soil is removed from the AOC, it must be disposed of in accordance with the LANL Waste Management Procedure P409 (LANL 2022).

The Pajarito Canyon AOC C-00-007 occupies the same footprint as the Pajarito and Starmer Canyon 100-yr floodplains. The 100-yr floodplain represents the extent to which post-Lab aged sediments and contaminants could have been deposited and therefore, is used to delineate the extent of the AOC. AOC contaminants of potential concern are summarized in Table 1. Existing sampling data can be viewed by the public in the Intellus website (<http://www.intellusnm.com>).

Table 1. AOCs potentially impacted by project activities.

AOC	Description	Contaminants of Potential Concern
AOC C-00-011	Pajarito Canyon system (includes Starmer Canyon)	Inorganic Chemicals, Radionuclides, High Explosives

Potential short-term direct and indirect floodplain impacts from release of pollutants to the floodplain and exposure to stormwater would be avoided or minimized through implementation of the following best management practices:

- Hazardous materials, chemicals, fuels, and oils would not be stored within the floodplain.
- Heavy equipment would not be used within the stream channel, except the trenching backhoe, especially if conditions are too wet to prevent damage to the soil structure.
- Equipment would be refueled at least 100 ft. from the Pajarito and Starmer Canyon floodplain.

Potential direct effects to migratory birds and other biological resources are minimal, as little habitat would be disturbed. The Migratory Bird Treaty Act prohibits killing migratory birds, including nestlings and eggs in an active nest. Therefore, if vegetation removal is required, during the nesting season (May 15 through July 15), an onsite inspection for bird nests from LANL Biological Resource subject matter experts would be required. Installation activities would conform to requirements stipulated in the Migratory Bird Best Management Practices Source Document for Los Alamos National Laboratory (LANL 2020).

Long-term Impacts

No long-term impacts to the floodplain are anticipated as a result of this project. Flow paths within the floodplain would not be significantly modified from pre-project conditions to post project conditions. The part of the natural gas line within the floodplains will be monitored after high flow events for erosion around or under the concrete slab. In the event this occurs, maintenance activities will be scheduled in addition to culvert inspection and maintenance.

¹An AOC is any area having a known or suspected release of hazardous waste or hazardous constituents that is not from a solid waste management unit and that the Secretary of the New Mexico Environment Department has determined may pose a current or potential threat to human health or the environment.

This assessment also considered the impacts of the proposed actions in the floodplain on the conservation of habitat for existing flora and fauna, aesthetic values, and public interest. The proposed action will not impact cultural resources because none were identified in the project area. The proposed action would not remove any protected habitat. The proposed action is not considered to negatively impact aesthetic values or public interest because the proposed action will occur in areas that are internal to LANL.

ALTERNATIVES

The alternatives available to DOE/NNSA include the no action alternative. The no action alternative was not selected by DOE/NNSA because the existing gas line is an over 70 years old bare steel pipe that has corroded and is leaking. The leaks present a loss of a resource, a safety risk to personnel and property, and a contributor to greenhouse gas.

A second replacement route was proposed to follow the existing gas line. The proposed route was longer, would require additional time and materials to avoid multiple utility lines, and additional potential risk and waste management to excavate through a Solid Waste Management Unit identified as a former Material Disposal Area. In addition, the Pajarito Canyon crossing would be steeper in this section and would require more disturbance to the canyon to establish heavy equipment access to the canyon bottom.

CONCLUSIONS

The proposed project would result in limited and minor direct and indirect impacts to the Sandia Canyon 100-year floodplain and would not result in adverse impacts to the floodplain values or functions. Temporary disturbance within the floodplain would cease following completion of installation activities. Best management practices would be implemented. This proposed project would not significantly modify flow paths within the floodplain from pre-project conditions to post project conditions. No effects to lives and property associated with floodplain modifications are anticipated.

In accordance with 10 CFR 1022, DOE/NNSA will publish this Floodplain Assessment for a 15 day for public review and comment period. After the close of the public comment period and prior to issuing a floodplain statement of finding DOE/NNSA will reevaluate the practicability of alternatives to the proposed floodplain action, mitigating measures and take into account all substantive comments received during the public comment period.

LITERATURE CITED

EO 1977. Executive Order 11988 *Floodplain Management*.

CFR 2003. 10 Code of Federal Regulations (CFR) Part 1022 *Compliance with Floodplain and Wetland Environmental Review Requirements*.

CFR 2023. 49 Code of Federal Regulations (CRF) Part 192 *Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards*.

LANL 2020. *Migratory bird best management practices source document for Los Alamos National Laboratory revised November 2020.* Stanek, J.E., Thompson, B.E., Sanchez, A.A., Berryhill, J.T. and C.D. Hathcock, LA-UR-20-24292.

LANL 2021. *32 9219 Seeding.* LANL Master Specifications.

LANL 2022. P409, *LANL Waste Management.*