

LA-UR-22-29369

*Approved for public release;
distribution is unlimited.*

September 2022

**Los Alamos National Laboratory
Floodplain Assessment for the
Technical Area 72 Outdoor Live
Fire Range Gate Installation Project**

Prepared by: Environmental Protection and Compliance Division,
Stormwater Permitting and Compliance Team
Los Alamos National Laboratory

Prepared for: U.S. Department of Energy
National Nuclear Security Administration
Los Alamos Field Office

An Affirmative Action/Equal Opportunity Employer

Los Alamos National Laboratory, an affirmative action/equal opportunity employer, is operated by Triad National Security, LLC for the National Nuclear Security Administration of U.S. Department of Energy under contract 89233218CNA000001. By approving this article, the publisher recognizes that the U.S. Government retains nonexclusive, royalty-free license to publish or reproduce the published form of this contribution, or to allow others to do so, for U.S. Government purposes. Los Alamos National Laboratory requests that the publisher identify this article as work performed under the auspices of the U.S. Department of Energy. Los Alamos National Laboratory strongly supports academic freedom and a researcher's right to publish; as an institution, however, the Laboratory does not endorse the viewpoint of a publication or guarantee its technical correctness.

CONTENTS

Acronyms.....	iv
Introduction.....	1
Background.....	3
Project Description.....	3
Floodplain Impacts.....	5
Short-term Impacts.....	6
Long-term Impacts.....	7
Alternatives.....	8
Conclusions.....	8
Literature Cited.....	8

FIGURES

Figure 1. Map of Proposed Gates in Relation to the Sandia Canyon 100-year Floodplain.....	2
Figure 2. Proposed Location of Gate #1 Northwest of Building 72-0011 Looking North.....	4
Figure 3. Proposed Location of Gate #2 Northeast of Building 72-0041 Looking North.....	4
Figure 4. Proposed Location of Gate #3 East Perimeter Fence Looking North.....	5
Figure 5. Proposed Location of Main Gate to Range East of Building 72-0041 Looking South....	5

ACRONYMS

AOC	Area of Concern
CFR	Code of Federal Regulations
DOE	U.S. Department of Energy
ft.	feet
in.	inch
LANL	Los Alamos National Laboratory
NM 501	New Mexico State Road 501
NNSA	National Nuclear Security Administration
PR-ID	Permits and Requirements Identification

INTRODUCTION

The National Nuclear Security Administration (NNSA), a semi-autonomous agency within the U.S. Department of Energy (DOE), is proposing new construction in lower Sandia Canyon at Technical Area (TA) 72 at the Outdoor Live Fire Range facility at Los Alamos National Laboratory (LANL). The proposed upgrades are intended to improve range safety. The project activities within the 100-year floodplain include: 1) installation of three gates at the all-terrain vehicle/pedestrian walkway bridges and 2) replacement of the main entrance gate to the range with a permanent gate (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:

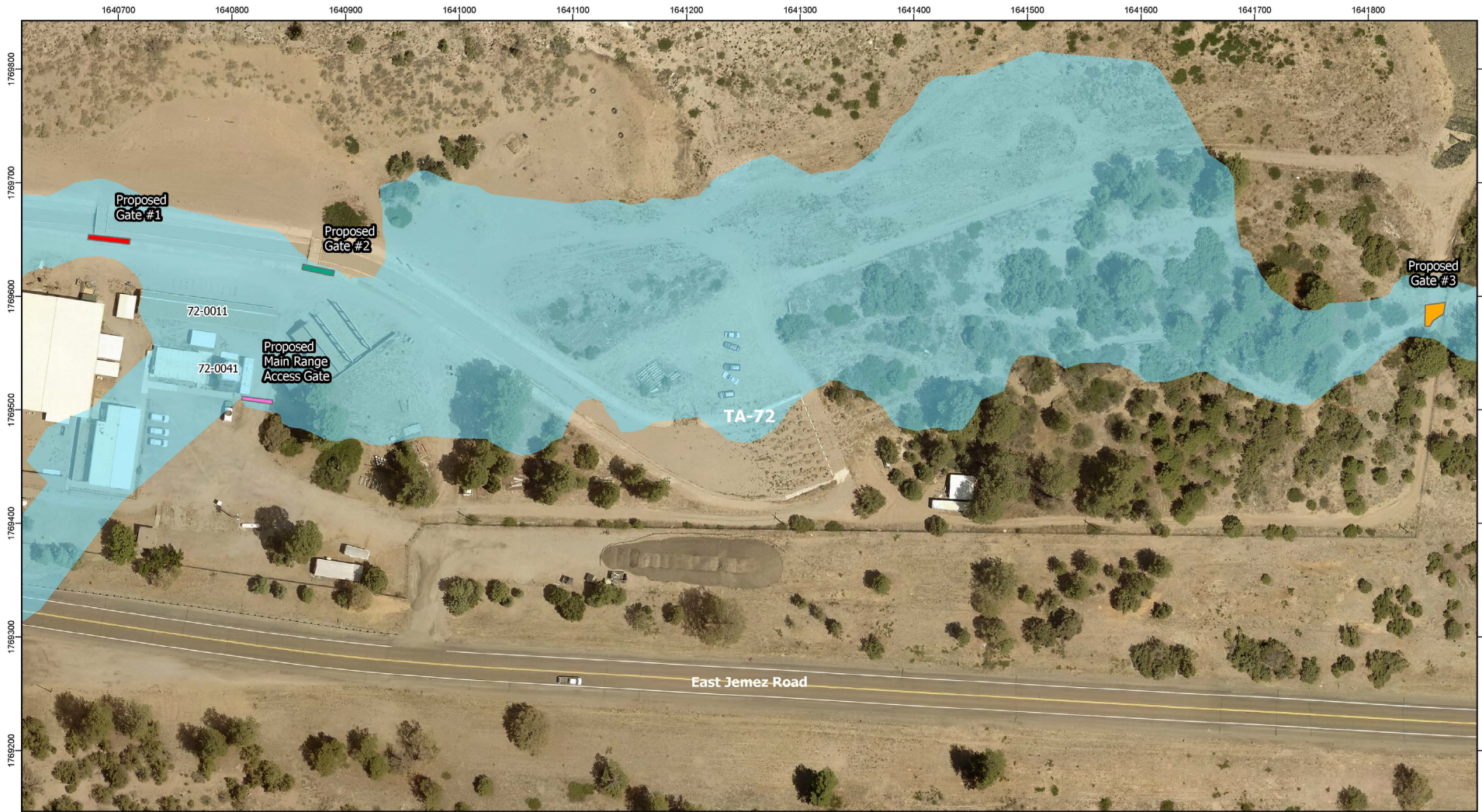
Email: kristen.dors@nnsa.doe.gov

or

Mail: U.S. Department of Energy
Los Alamos Field Office
ATTN: Kristen Dors
3747 West Jemez Road
Los Alamos, NM 87544

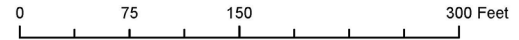
After the close of the public comment period and prior to issuing a floodplain statement of findings DOE/NNSA will reevaluate the practicability of alternatives to the proposed floodplain action, mitigating measures and take into account all substantive comments received during the public comment period.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

Floodplain Assessment for TA-72 Outdoor Live Fire Range Gate Installation Project



- █ Proposed Gate #1
- █ Proposed Gate #2
- █ Proposed Gate #3
- █ Proposed Main Range Access Gate
- █ Sandia Canyon Floodplain

Map #22-093
 Created by Ben Sutter, IFPROG
 August 31, 2022
 This map was created for work processes associated with EPC. All other uses for this map should be confirmed with LANL EPC-CP staff.
 State Plane Coordinate System
 New Mexico, Central Zone, US Feet
 NAD 1983 Datum



GIS Program



Figure 1. Map of Proposed Gates in Relation to the Sandia Canyon 100-year Floodplain.

BACKGROUND

The TA-72 Outdoor Live Fire Range is located on East Jemez Road approximately 1.5 miles east of New Mexico State Road 501 (NM 501). The proposed project area has had a live fire range since the 1950's. Over the years, the range has made multiple changes and improvements to the facilities. In 2019, the facility underwent significant updates and repairs to ensure capability is maintained for LANL Protective Force tactical training. Within the facility are multiple small ranges for use of different caliber munitions. Each range is sloped away from the stream channel to prevent stormwater runoff from the range from reaching the stream channel. Both reduced lead frangible and ball lead ammunition is used for training. At the end of each live fire training, participants walk the range and pick up brass, ammunition, and other debris for proper disposal. This facility is not open to the public but can be seen from a public road, NM 501.

Four permanent gates are proposed within the TA-72 Outdoor Live Fire Range facility to control vehicle access to individual ranges. In addition, the gates will provide a visual deterrent to pedestrians walking near individual range access points from entering the individual ranges. Locations of the four proposed gates are within the floodplain within the TA-72 Outdoor Live Fire Range boundary (Figure 1). The canyon bottom is developed with a paved road, dirt roads, parking areas, paved and gravel walkways, buildings, and berms. The portion of the Sandia Canyon floodplain impacted by this project is approximately 100 square feet (ft.) (0.002 acres) total.

PROJECT DESCRIPTION

The TA-72 Outdoor Live Fire Range is continuing process improvements to the site. This assessment focuses on activities occurring in or near the Sandia Canyon 100-year floodplain that include: 1) installation of three gates at the all-terrain vehicle/pedestrian walkway bridges to individual ranges and 2) replacement of the main entrance gate to the ranges with a permanent gate. Figure 1 shows the proposed gate locations within the Sandia Canyon floodplain. Please note the LANL base aerial image as shown Figure 1 has not been updated since the facility began significant modifications in 2019 and does not show new ranges.

The four gates proposed within the TA-72 Outdoor Live Fire Range facility will be used to control vehicle access to individual firing ranges and add a visual aid to deter pedestrians from walking into individual firing ranges. See Figures 2, 3, 4 and 5 for photos of the proposed gate locations. The three proposed gates at the all-terrain vehicle/pedestrian bridges will be approximately 10ft. in length and 4ft. in height made of steel tubing (e.g., agricultural/farm style gates). Each gate will be mounted on one side to an approximately 4 inch (in.) diameter, 5ft. tall metal pole set in a base of concrete. A metal T-post would be installed on the opposite side of the gate panel to allow the gate to be chained and locked closed. A second metal T-post would be installed approximately 10ft. from the pole to allow the gate to be temporarily tied open to allow passage of vehicles. The proposed gate at the main range access point would be of similar construction with two gate panels that swing outward. All four gates would include a chain and lock with keys controlled by the TA-72 Outdoor Live Fire Range facility main office in Building 72-0039.

The project proposes to excavate four approximately 3ft. deep by 1ft. 5in. wide holes for the concrete bases. Any excess soils would be stabilized at the excavation site following guidelines in the LANL Seeding Specification (LANL 2021) or disposed of in accordance with the LANL Waste Management Procedure P409 (LANL 2022). The T-posts would be installed directly into the ground with a post driver.



Figure 2. Proposed Location of Gate #1 Northwest of Building 72-0011 Looking North.



Figure 3. Proposed Location of Gate #2 Northeast of Building 72-0041 Looking North.



Figure 4. Proposed Location of Gate #3 East Perimeter Fence Looking North.



Figure 5. Proposed Location of Main Gate to Range East of Building 72-0041 Looking South.

FLOODPLAIN IMPACTS

LANL maintains a Permits and Requirements Identification (PR-ID) process 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 PR-ID process to avoid potential impacts.

- This project is not 1 acre or larger; therefore will not require National Pollution Discharge Elimination System Construction General Permit coverage. However, the project is required to utilize appropriate best management practices to contain excavated materials and all other potential pollutants within the work site limits and away from potential stormwater flow.
- Proposed activities in the floodplain do not significantly alter the current hydrology. This project will not be required to meet Energy Independence and Security Act Section 438 compliance in the area of the floodplain.
- There will be no soil-disturbing activities in the watercourse; therefore, this project will not require Clean Water Act Section 404 permit coverage or 401 certification.
- No historical or archeological sites are located in the areas of proposed disturbance in the floodplain. No impacts are expected to occur to cultural resources; however, the project must follow the proper procedure for inadvertent discoveries.
- The project is not located in threatened or endangered species habitat; therefore, no impacts will occur to current listed species in the Los Alamos County area.
- The project will involve disturbance of the Sandia Canyon Area of Concern¹ (AOC) 72-001 and a small arms firing range AOC 72-0001.

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.

The Sandia Canyon AOC 72-001 occupies the same footprint as the Sandia Canyon 100-yr floodplain. 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 72-0001 is an active small-arms firing and training range used by the LANL security force and has operated as a firing range since 1966. 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
C-00-007	Sandia Canyon system	Organic Chemicals, Inorganic Chemicals, Radionuclides, PCBs
72-0001	Active small arms firing and training range	Copper, Gross-alpha, Lead

Soil is not expected to be removed from the AOCs as a result of construction activities. The project proposes to keep all disturbed soil on site, returned to its point of origin, and be stabilized in place (LANL Spec 2021). Any soil removed from the AOC from the excavation must be disposed of in accordance with the LANL Waste Management Procedure P409 (LANL 2022).

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, especially if conditions are too wet to prevent damage to the soil structure.
- Equipment would be refueled at least 100ft. from the Sandia Canyon bottom.

Potential direct effects to migratory birds and other biological resources are minimal, as little or no 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. Construction 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. The proposed installation of gate posts is limited to the existing disturbed areas of the firing range. Flow paths within the floodplain would not be significantly modified from pre-project conditions to post project conditions. The gate structures within the floodplain should be monitored after high flow events in case debris becomes entrapped on the gates. In the event this occurs, maintenance activities should be scheduled.

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 there are none in the project area. The proposed action would not remove any protected habitat. The proposed action is not considered to negatively impact aesthetic values because the proposed action will occur in areas that have been previously disturbed and are not accessible to the public.

ALTERNATIVES

The alternatives available to DOE/NNSA include the no action alternative. The no action alternative was not selected by DOE/NNSA because the gates provide an additional layer of safety for the facility. The alternative of using temporary barrier panels was not selected by DOE because they are easily moved and/or removed.

The proposed project as described in this assessment would improve the overall safety of the Outdoor Live Firing Range by controlling vehicle access with a locked gates with keys controlled by the TA-72 Outdoor Live Fire Range facility main office in Building 72-0039. The gates will also provide a visual deterrent to pedestrians walking near individual range access points from entering the individual ranges.

CONCLUSIONS

The proposed project would result in limited and minor direct and indirect impacts to the 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 construction 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*.

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. *LANL Master Specification Section 32 9219- Seeding Rev 5,* LANL Engineering Standards, <http://engstandards.lanl.gov>.

LANL 2022. P409, *LANL Waste Management.*