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January 2021

Los Alamos National Laboratory Floodplain Assessment for the Heating, Ventilation, and Air Conditioning Project at Technical Area 39

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

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ACRONYMS

AOC	Area of Concern
CFR	Code of Federal Regulations
DOE	U.S. Department of Energy
HVAC	Heating, Ventilation, and Air Conditioning
LANL	Los Alamos National Laboratory
NNSA	National Nuclear Security Administration
PR-ID	Permits and Requirements Identification
SWMU	Solid Waste Management Unit
TA	Technical Area

INTRODUCTION

The National Nuclear Security Administration (NNSA), a semi-autonomous agency within the U.S. Department of Energy (DOE), is proposing the addition of a heating, ventilation, and air conditioning (HVAC) unit approximately 25ft north of structure 39-0097 on a currently paved area within at Los Alamos National Laboratory (LANL) within Technical Area (TA) 39 (Figure 1). The proposed HVAC unit will be used to stabilize temperatures inside structures 39-0097 and 39-0088.

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 1022), which was promulgated to implement DOE requirements under Executive Order 11988 *Floodplain Management* (E.O. 11988). 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.” 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 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. Following the release of the Floodplain Statement of Findings, DOE/NNSA will endeavor to allow 15 days of public review prior to implementing the proposed action.

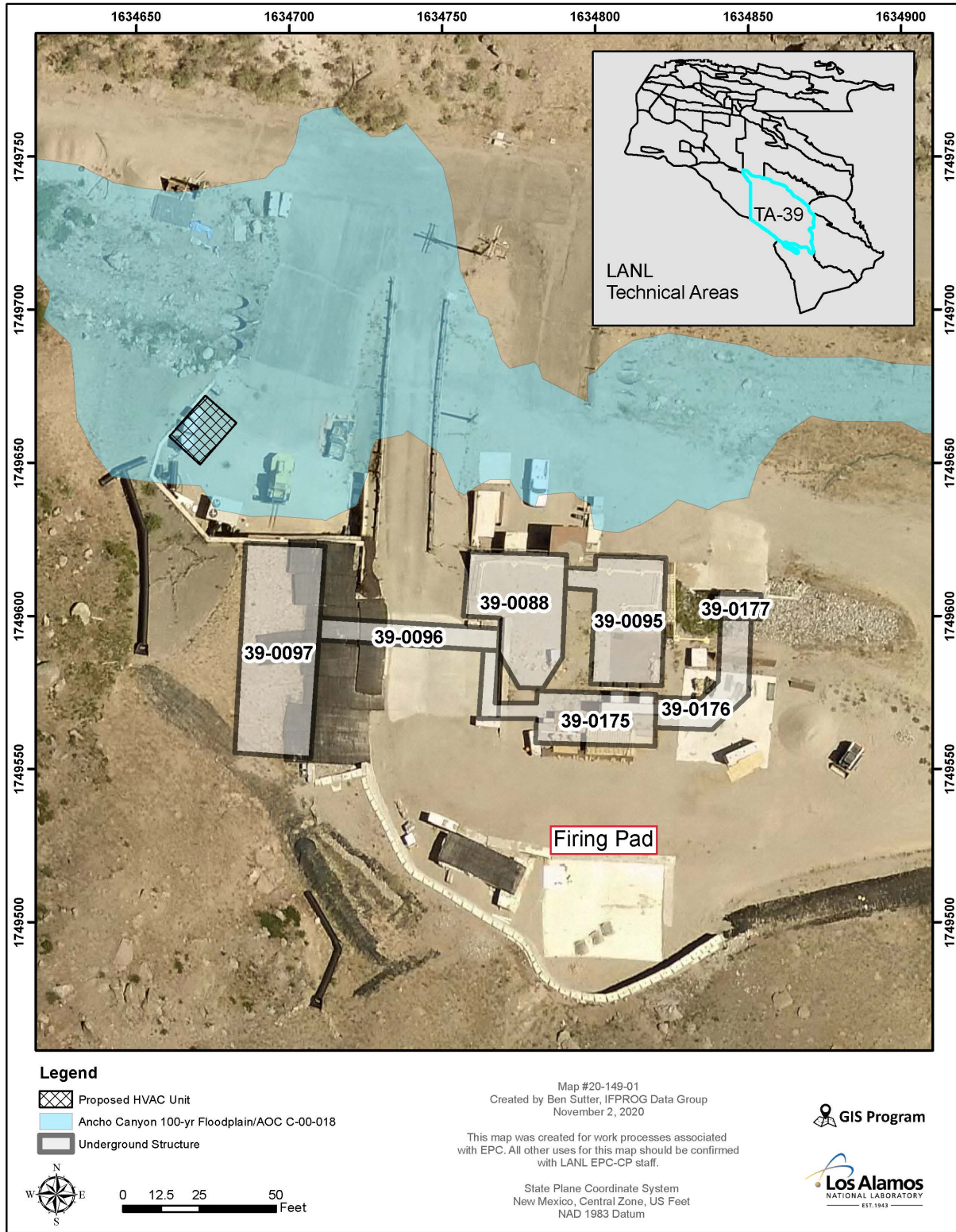


Figure 1. Location of TA-39 (inset) and the proposed HVAC unit north of underground structure 39-0097, and the Ancho Canyon 100-yr floodplain.

BACKGROUND

The Ancho Canyon 100-yr floodplain runs roughly northwest to southeast through the project area in the southern portion of LANL (Figure 1). The proposed project is located at an explosives testing site in TA-39 (see Figure 1 insert). A new HVAC unit is needed to replace an older, nonfunctional unit and stabilize temperatures inside structures 39-0097 and 39-0088. The TA-39 HVAC project is within the floodplain. The structures shown in Figure 1 are actually bunkers, the top of each bunker is level with and protected from, the firing pad. The proposed HVAC location directly north of structure 39-0097 is below the level of the firing pad and sheltered from experimental detonations. Areas near the firing pad that are outside of the floodplain are not sheltered from detonations. This proposed project will 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.

PROJECT DESCRIPTION

The proposed project is the addition of an HVAC unit 50ft north of building 39-0097 on a paved area (Photo 1). A footprint of 16 x 20ft will be cut from the paved area and excavated to a minimum 8in depth and filled with compacted base course to support the structure. The structure housing the condensing units consists of a pre-fabricated concrete pad with concrete shielding side walls and a metal grating roof. The enclosure will be approximately 9ft tall, which is below the top of the adjacent bunker that will act as shielding.



Photo 1. Proposed location of the HVAC unit on a paved area north of building 39-0097.

FLOODPLAIN IMPACTS

Floodplain impacts from the proposed project are primarily due to short term impacts of the excavation of the 16 X 20ft footprint and long-term impacts related to the location of the new HVAC unit within the floodplain. The site is currently paved and will be stabilized with concrete and asphalt once construction has completed. The following floodplain impact assessment discusses the short- and long-term impacts (positive, negative, direct, and indirect) of the proposed project on the floodplain.

Short-term Impacts

LANL maintains a Permits and Requirements Identification (PR-ID) process for 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 U.S. Army Corp of Engineers permit requirements and Clean Water Act permit requirements. The following issues were identified and resolved in the PR-ID process:

- This project is less than 1 acre and will not require NPDES Construction General Permit coverage.
- The activities associated with this project will not add new impervious surfaces. Therefore, the Energy Independence and Security Act Section 438, which requires that storm water runoff from new Federal construction or re-construction projects be released at pre-development levels, does not apply.
- The project will not disturb any threatened and endangered species habitat.
- The project is not located in the water course; therefore, this project will not require 404 permit coverage or 401 certification.
- This project will involve disturbance of the Ancho Canyon Area of Concern¹ (AOC). Mitigating activities have been identified and will be implemented (see description below).

The proposed project is located in the Ancho Canyon AOC C-00-018. The AOC occupies the same footprint as the 100-yr floodplain. Solid Waste Management Unit (SWMU) and/or AOC contaminants of potential concern are summarized in Table 1. 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.

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

Table 1. SWMUs and AOCs impacted by the project.

SWMU/AOC	Description	Contaminants of Potential Concern
AOC-C-00-018	Ancho Canyon AOC	Organic Chemicals, Inorganic Chemicals, Radionuclides, High Explosives, PCBs

Any soil and asphalt removed from the AOC from the excavation must be stabilized on site or disposed of in accordance with the LANL Waste Management Procedure P409 (LANL 2020) and the LANL Waste Management Administrative Procedure Tool 704 “Construction and Demolition Debris” (LANL 2019). The project intends to revegetate excess soil within the footprint of the AOC. Vegetation stabilization will follow the LANL Master Seeding Specification 32-9219 (LANL 2018).

The R-410A refrigerant used in the HVAC system has a boiling point of -48.5 °C. Therefore, any refrigerant that might be released due to accidental damage of the HVAC system would be released to the atmosphere and not contaminate soil or stormwater.

Other potential short-term direct and indirect floodplain impacts from the project will be avoided or minimized through implementation of the following best management practices:

- Hazardous materials, chemicals, fuels, and oils will not be stored within the floodplain. The facility has identified gas storage tanks and a porta-potty that are currently located in the floodplain. They have made arrangements to remove the gas tanks and move the porta-potty out of the floodplain.
- Heavy equipment will not be used within the floodplain if conditions are too wet to prevent damage to the soil structure.
- Equipment will be refueled at least 100ft from the 100-yr floodplain.

Potential direct effects biological resources would not occur as the area is already developed and no habitat will be disturbed.

Long-term Impacts

The proposed HVAC unit will occupy space within the floodplain. However, it should have no impact on floodwater access to the floodplain. The area is already developed and paved.

ALTERNATIVES

This facility in TA-39 is an explosives testing location. The firing point is located south and east of the underground structure 39-0097. The buildings in proximity to the firing point are more accurately described as bunkers, since they are mostly below ground. Alternative locations for the HVAC unit were considered, however, the location chosen for the new equipment afforded the best protection from blast waves and shrapnel, as well as maintenance access. Alternative locations out of the floodplain are level with the testing pad and at high risk of damage.

CONCLUSIONS

The proposed project would result in limited and minor direct and indirect impacts to the 100-yr floodplain and would not result in adverse impacts to the floodplain values or functions. Temporary disturbance within the floodplain will cease following completion of construction activities. Best management practices will be implemented. This proposed project will 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.

LITERATURE CITED

E.O 11988. Executive Order 11988 *Floodplain Management*

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

LANL 2018. *LANL Master Specification, Rev. 4; Seeding (32-9219)*. LA-UR-20-20906.

LANL 2019. ADESH-AP-TOOL-704, *Construction and Demolition Debris*.

LANL 2020. *LANL Waste Management Procedure, P409*.