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Los Alamos National Laboratory Wetland Assessment for the Replacement Water Lines from Technical Area 48 to Technical Area 55 Project

Los Alamos
NATIONAL LABORATORY

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Prepared for: U.S. Department of Energy
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ACRONYMS

CFR	Code of Federal Regulations
DOE	U.S. Department of Energy
EPC	Environmental Protection and Compliance
HDPE	High-density polyethylene
LANL	Los Alamos National Laboratory
ft.	feet
NNSA	National Nuclear Security Administration
NPDES	National Pollutant Discharge Elimination System
PRID	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 to take action at Los Alamos National Laboratory (LANL) near a wetland at Technical Area (TA) 48 and under a wetland at TA-55. The project proposes to install two 12-inch water lines along an alignment from TA-48 to Pecos Road on the east side of TA-55 (Figure 1). The proposed water lines will replace aging cast iron pipes that provide water for fire suppression to buildings within TA-55, and potable water to other areas in the Pajarito Corridor.

NNSA has prepared this wetland assessment in accordance with 10 Code of Federal Regulations (CFR) Part 1022 *Compliance with Wetland and Wetland Environmental Review Requirements* (10 CFR Part 1022) (CFR 2003) which was promulgated to implement DOE requirements under Executive Order 11988 *Wetland Management* (EO 1977). A wetland 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 wetland as "the 100-year wetland, that is, a wetland with a 1.0 percent chance of flooding in any given year (CFR 2003)." This wetland assessment evaluates potential impacts to wetland 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 Wetland Assessment for a 15 day for public review and comment period. Please provide comments on this Wetland Assessment to Kristen Dors at:

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or

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After the close of the public comment period DOE/NNSA will reevaluate the practicability of alternatives to the proposed wetland action and the mitigating measures, taking into account all substantive comments received, before implementing the proposed wetland action.

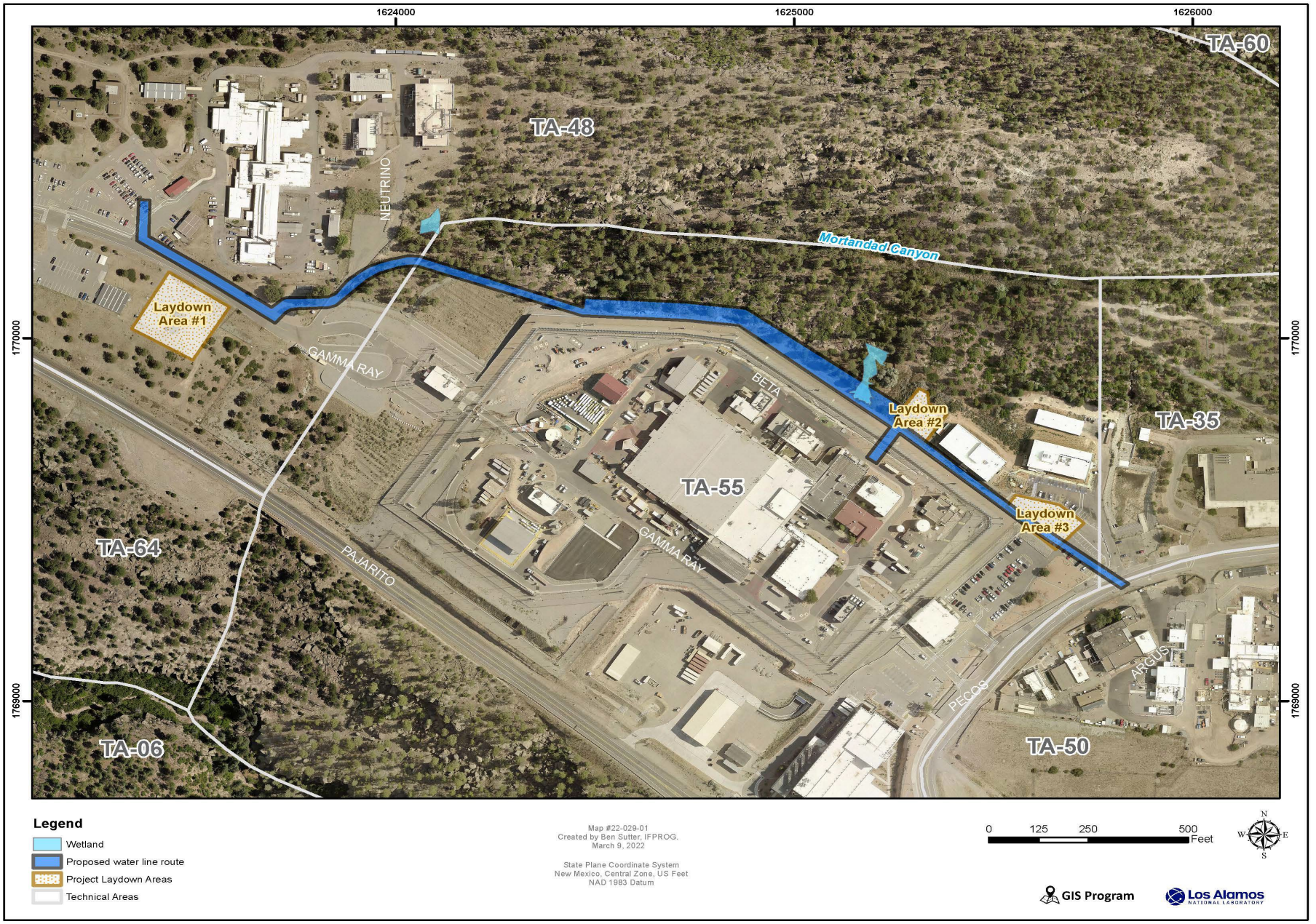

Figure 1. Map of the proposed replacement water line route and wetlands.

BACKGROUND

Cast iron water pipes currently provide water to all facilities throughout the Pajarito Corridor. The pipes are aging and near the end of their life cycle. The proposed new water lines from TA-48 to Pecos Drive on the east edge of TA-55 will replace the aging cast iron pipes that provide water for fire suppression to buildings within TA-55, and potable water to other areas in the Pajarito Corridor.

The majority of the mesa top in the TA-48 and TA-55 area is developed with buildings, roads, fences, and other structures. The remaining vegetated areas are characterized by ponderosa pine (*Pinus ponderosa*) and pinon pine (*Pinus edulis*)/juniper (*Juniperus sp.*) forest intermixed with chamisa (*Chrysothamnus nauseosus*) and sagebrush (*Artemisia tridentata*). Two small wetlands exist along the area of the proposed project.

The proposed project route would pass to the south of the TA-48 wetland and is not expected to impact that area. However, the project proposes to take additional measures to ensure no impact and is included in this assessment. The TA-48 wetland is located on the east side of TA-48 to the east of Neutrino Road and is approximately 0.06 acre in size (Figure 1). The TA-48 wetland is dominated by cattail species (*Typha* sp.). This wetland is part of Solid Waste Management Unit 48-010, an unlined surface impoundment constructed in 1978 by excavating directly into the tuff rock. The surface impoundment formerly received cooling tower blowdown discharge, noncontact cooling water discharge, and storm water runoff from the parking lot for building TA48-0045. Currently, the impoundment receives only storm water from the parking lot and discharges to the east to a tributary of Mortandad Canyon.

The TA-55 wetland sits on the north edge of the mesa and is approximately 0.13 acres in size (Figure 1). The TA-55 wetland contains a mix of tree, shrub, and forb species including water birch (*Betula occidentalis*), narrowleaf cottonwood (*Populus angustifolia*), narrowleaf willow (*Salix exigua*), rush species (*Juncus sp.*), sedge species (*Carex sp.*), panicled bulrush (*Scirpus microcarpus*), and cattail (*Typha latifolia*) (Figures 2 and 3). Non-native invasive species are also present. The southern end of the wetland is within the urbanized area of TA-55. The remainder is a mixture of formerly disturbed and revegetated area and undisturbed area. Past disturbances in this area include asphalt paving, structures, fill/gravel, and deposition of building debris. The majority of water to this area is intermittent discharge from National Pollutant Discharge Elimination System (NPDES) Outfall 03A181 (LANL 2019) consisting of treated cooling tower blowdown. Water flows from the outfall through an area of base course and disperses into several braided channels flowing to the north to a tributary of Mortandad Canyon.

Figure 2. Southern portion of the TA-55 wetland.

Figure 3. Northern portion of the TA-55 wetland.

PROJECT DESCRIPTION

The proposed project will be located on the mesa top to the south of a Mortandad Canyon tributary. Two 12-inch high-density polyethylene (HDPE) water lines (one high pressure and one low pressure) would be installed in parallel starting at Gamma Ray Road along the south of TA-48, continue along the north fenced boundary of TA-55, and tie into existing high- and low-pressure waterlines on Pecos Drive. The proposed water pipes would be installed by open excavation (e.g., trenching) and horizontal directional drilling. Equipment will include but is not limited to excavators, backhoes, front end loaders, directional drilling equipment, a water truck, compaction equipment, and a crane.

Preparation for construction work would include installing a temporary smooth-wire, T-post fence approximately 5 ft. outside both the TA-48 and TA-55 wetland boundaries to act as a visual marker during construction to prevent accidental disturbance. Additional stormwater control measures would be installed at the project boundaries under LANL's Construction General Permit Program. The project route would pass to the south of the TA-48 wetland and is not expected to impact that area.

To avoid trenching in the wetland, horizontal directional drilling is proposed for approximately 66 ft. under the TA-55 wetland at the southern edge. See Figure 4 for water line replacement route under the wetland showing TA-55 wetland and the proposed project elements. Drilling is required to occur below the depth of the hydric soil layer (approximately 1-2 feet below ground surface). Prior to drilling, the project is required to coordinate with LANL Environmental Protection and Compliance (EPC) personnel for direction on hydric soil depth. The Project would install two temporary drilling pits, one 40 ft. x 12 ft. x 7ft. to the west of the wetland for boring and one 20 ft. x 20 ft. x 7 ft. pit to the east of the wetland for receiving drilling fluids and waste. The pits would be lined and constructed to completely contain fluids and cuttings (LANL 2022). Additional project controls would be installed per a Stormwater Pollution Prevention Plan required under LANL's Construction General Permit Program.

Excavated soil from digging the pits would be stockpiled upslope of the drilling pits or in the laydown areas and returned to the excavated areas post construction. Disturbed areas would be stabilized with vegetation or other permanent non-vegetative measures (e.g., rock, etc.). Excess soil and other waste would be disposed of per the LANL Waste Management Procedure P409 (LANL 2020).

NPDES Outfall 03A181 would not be altered or disturbed during construction and would continue to supply water to this wetland.

The Project also proposes to remove non-native invasive tree species of Russian Olive (*Elaeagnus angustifolia*), Paper Birch (*Betula papyrifera*), and Siberian Elm (*Ulmus pumila*). LANL EPC personnel would identify the trees to remove. Trees would be cut with handsaw or chain saw near ground level and material removed from the wetland boundary by hand. An herbicide approved for use near open water sources would either be painted onto the stumps or stumps would be drilled and herbicide applied to the drill holes.

Figure 4. Detail of the proposed water line route, the TA-55 wetland, and the proposed directional drilling elements.

WETLAND IMPACTS

LANL maintains a Permits and Requirements Identification (PRID) 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, 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 wetland values and potential effects on lives and property.

The total proposed ground disturbance for the project is approximately 4 acres; however, no disturbance is expected within the wetlands. The proposed project would use horizontal directional drilling for approximately 66 ft. under the southern edge of the TA-55 wetland. There may be short-term direct and indirect impacts to the wetland from construction activities adjacent to the wetland areas.

Short-term Impacts

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

- This project consists of soil disturbance activities including trenching, horizontal directional drilling, and creating construction support areas. NPDES Construction General Permit coverage is required. The project would be required to protect the wetland areas from impacts including but not limited to soil disturbance; vehicle and equipment transport; construction debris; storm water discharges; discharge of drilling liquids, fuels, oils, chemicals, or other waste; equipment and material staging; etc. Drilling fluids/process wastes will be managed per LANL Waste Management Procedure. Additional controls would be installed under LANL's Construction General Permit Program.

- Water line installation activities would not change or impede wetland processes and there will be no surface soil-disturbing activities in the wetlands; therefore, the project will not require Clean Water Act Section 404 permit coverage or 401 certification. However, the horizontal directional drilling under the TA-55 wetland area is required to occur below the depth of the hydric soil layer (approximately 1-2 feet below ground surface). Prior to drilling, the project is required to coordinate with LANL EPC personnel for direction on hydric soil depth.

- Proposed activities would not occur in the wetland and not expected to significantly alter the current hydrology. Therefore, this project will not be required to meet Section 438 of the Energy Independence and Security Act compliance in the wetland areas.

- Proposed herbicide application to cut stumps of invasive tree species would be conducted per the NPDES Pesticide General Permit and in coordination with LANL EPC personnel for appropriate material and application method.

- One historical or archeological site is located within 100 ft. of the water line alignment. LANL EPC personnel will flag the area prior to construction activities; therefore, no impacts are expected to occur to cultural resources.

- The project intersects Mexican Spotted Owl buffer habitat. The work would be subject to the annual noise/timing restrictions for the owl. Some tree removals in the project area outside of the wetlands may be permitted in coordination with LANL EPC personnel (LANL 2017).

- NPDES Outfall 03A181 would not be altered or disturbed during construction; therefore, no impacts are expected to occur under the NPDES Industrial and Sanitary Outfalls Permit.

- Project activities associated with the TA-55 wetland will be located within several Areas of Concern (AOC): AOC 42-001(a), SWUM 42-002(b), and AOC 55-011(c). Any excavated material will either be returned to its point of origin and stabilized in place or sampled and disposed of LANL Waste Management Procedure P409 (LANL 2020). Contaminants of potential concern are summarized in Table 1.

Table 1. AOCs potentially impacted by project activities associated with TA-55 wetland.

AOC	Description	Contaminants of Potential Concern
AOC 42-001(a)	Former Incinerator Building 42-1	Organic Chemicals, Inorganic Chemicals, Radionuclides
AOC 42-002(b)	Former Decontamination Area	Organic Chemicals, Inorganic Chemicals, Radionuclides
AOC 55-011(c)	Storm drain	None [Note: This site has been issued an NFA (No Further Action) approval from NMED]

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

- Support structures such as personnel trailers will not be located within the wetland.
- Heavy equipment would not be used within the wetlands.
- Any disturbed areas near the wetlands will be stabilized by revegetating with an appropriate native seed mix or plants (LANL 2018) or with non-vegetative material such as riprap, gravel mulch, or rolled erosion control product.
- Hazardous materials, chemicals, fuels, and oils would not be stored within the wetland.
- Equipment would be refueled at least 100 ft. from the wetlands.

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. 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 negative impacts to the wetlands are anticipated as a result of this project. Invasive species such as Russian Olive (*Elaeagnus angustifolia*) can easily form dense, monotypic stands that can choke out other wetland species (USDA 2014). The proposed removal of non-native invasive tree species would provide a long-term benefit to habitat by reducing competition for native plant species and providing forage and cover for wildlife.

This assessment also considered the impacts of the proposed actions in the wetland on the conservation of habitat for existing flora and fauna, aesthetic values, and public interest. The proposed action would not remove any protected habitat. The proposed action will not impact aesthetic values since construction activities in the wetland are not accessible to the public.

ALTERNATIVES

The alternatives available to DOE/NNSA include: (1) no action alternative, (2) routing the proposed water lines through the canyon bottom to the north of TA-55, and (3) routing the water lines along Pajarito Road.

A no action alternative was not selected because the existing cast iron pipes are at the end of their life cycle and will continue to deteriorate. DOE must also fulfill safety requirements to provide fire suppression to buildings within TA-55.

Routing the proposed water lines through the canyon bottom of the Mortandad Canyon tributary was not selected because it would cause the greatest impact to LANL natural resources as there are larger wetland areas and threatened and endangered species habitat located in that proposed route. The additional environmental analyses and permitting processes such as Section 404 Clean Water Act, biological assessment, and environmental assessment, would also add considerable time and cost to the project.

The route along Pajarito Road was not selected because the area around TA-48 and TA-55 has multiple underground utilities. The project was unable to locate a corridor with enough space to add a new utility line and areas that avoided placing water lines close to other utilities such as electrical and sewer.

CONCLUSIONS

The proposed project would not result in direct and indirect negative impacts to the wetlands and would not result in adverse impacts to the wetland values or functions. Temporary disturbance near the wetlands would cease following completion of construction activities and disturbed areas that occurred during construction would be stabilized by revegetating with native plants or non-vegetative measures (e.g., rock). Best management practices would be implemented during

construction. This proposed project would not modify existing elevations and flow paths within the wetland from pre-project conditions to post project conditions or result in other long-term negative impacts to the wetland and its functionality. No effects to lives and property associated with wetland modifications are anticipated.

In accordance with 10 CFR 1022 and based upon the information presented in this wetland assessment, DOE/NNSA concludes that this proposed project conforms to applicable wetland protection standards and the appropriate steps have been taken to minimize potential harm within the wetland. Upon publication of this assessment, DOE/NNSA will initiate a 15-day public review period prior to implementing the proposed project.

LITERATURE CITED

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