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Author(s): Loftin, Samuel R.

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Los Alamos National Laboratory Floodplain Assessment for the West Road Maintenance Project

Los Alamos
NATIONAL LABORATORY

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

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ACRONYMS

CFR	Code of Federal Regulations
DOE	U.S. Department of Energy
LANL	Los Alamos National Laboratory
ft.	feet
mi.	miles
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 to take action at Los Alamos National Laboratory (LANL) and do maintenance on West Road at locations along its entirety from the intersection with West Jemez Road/New Mexico State Road 501 (NM 501) to the intersection with Dulce Street through Los Alamos Canyon (Figure 1). The proposed West Road Maintenance Project is intended to improve vehicular and pedestrian safety on West Road by reducing traffic hazards associated with poor road conditions and unsafe roadside parking. Proposed road maintenance and improvement activities throughout the length of West Road include asphalt milling and resurfacing of approximately 2.06 miles (mi.) of the road. West Road crosses approximately 0.35 mi. (1,900 feet (ft.)) of the Los Alamos Canyon floodplain at the bottom of Los Alamos Canyon. Project activities within the floodplain include: 1) mill and resurface the roadway, 2) replace existing guardrails, 3) block access to the informal roadside parking along either side of West Road in Los Alamos Canyon, 4) install trail signage and perform trail maintenance, and 5) restore habitat and reduce wildland fire risk through invasive species removal.

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 statment 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.

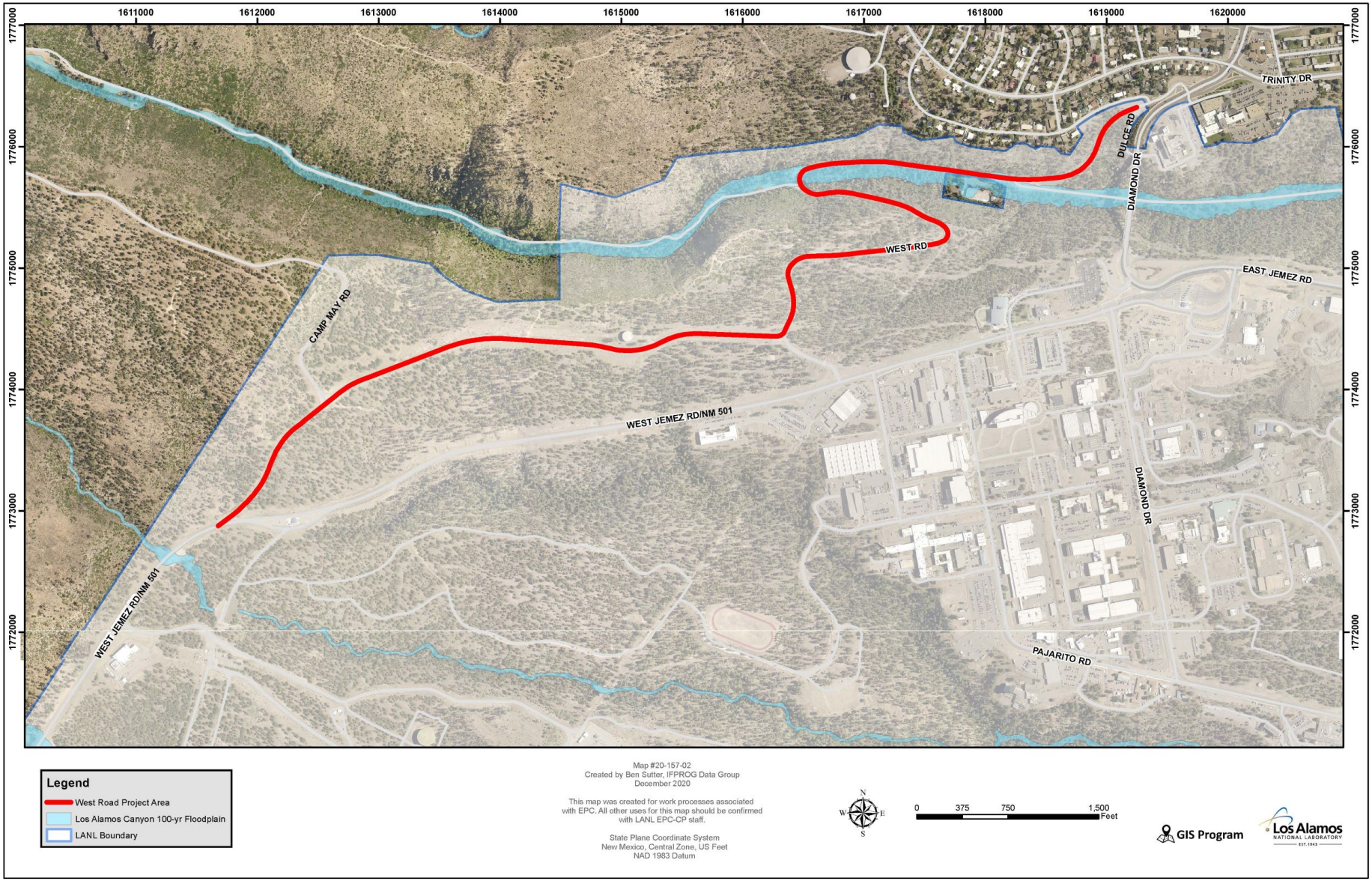

Figure 1. Overview of the West Road Maintenance Project.

BACKGROUND

West Road, owned by DOE, is regularly used by vehicles as an alternate route around the main campus of LANL to West Jemez Road/NM 501. West Road is a bypass road that allows the public to avoid traveling through Technical Area 3 at LANL and access areas west of the laboratory. These areas include Camp May Road to Pajarito Mountain, approximately six mi. west of Los Alamos, and NM 501 towards Jemez Springs, New Mexico, approximately 38 mi. southwest of Los Alamos, or Bandelier National Monument, approximately 11 mi. south of Los Alamos.

West Road is currently in need of maintenance. The steepness of West Road leads to erosion of the shoulders and subgrade. The safety issues associated with West Road are potholes, deteriorated guardrails, and undesignated roadside parking with poor visibility. The proposed project would implement maintenance and upgrades to improve current road conditions and safety issues.

The upper portion of Los Alamos Canyon is characterized by mixed conifer and ponderosa pine forests with steep canyon sides/cliffs and a relatively narrow canyon bottom. Although a stream channel runs through the canyon, water flow is intermittent. Areas adjacent to the stream channel were disturbed by flooding after the 2011 Las Conchas Fire. There is some riparian vegetation remaining, but Siberian elm trees, an invasive species, have also established in some parts of the canyon, contributing to reduced native habitat and excess fire fuel, and should be removed.

The portion on the floodplain impacted by this project is approximately 1.44 acres (33 ft. wide by 1,900 ft. long). The canyon bottom is developed with a paved road, hiking trails, parking areas, and an ice-skating rink (Figure 2).

PROJECT DESCRIPTION

Road maintenance activities are proposed throughout the length of West Road. This assessment focuses on activities occurring in or near the Los Alamos Canyon 100-yr floodplain (Figure 1). Activities proposed within the floodplain include milling and resurfacing the roadway, replacing existing guardrails, extending guardrails and placement of post and cable barricades or other in-kind roadside barriers to discourage informal roadside parking, and placement of traffic warning signs. In addition, informational trail kiosks and wayfinding markers would be installed, and Siberian elms removed in coordination with the LANL Trails Management Program and the LANL Wildland Fire Maintenance Program. The milling and resurfacing of the existing roadway and the replacement of existing guardrails are considered maintenance activities and are not required to be included in as part of this floodplain assessment (CFR 2003). However, placement of roadside barriers, traffic signs, trail kiosks, and wayfinding markers and removal of Siberian elms are included in this assessment.

Figure 3 shows the west end of the project area in the floodplain looking west. Vehicles currently park on road shoulders near this road curve to access local recreational trails. To better protect

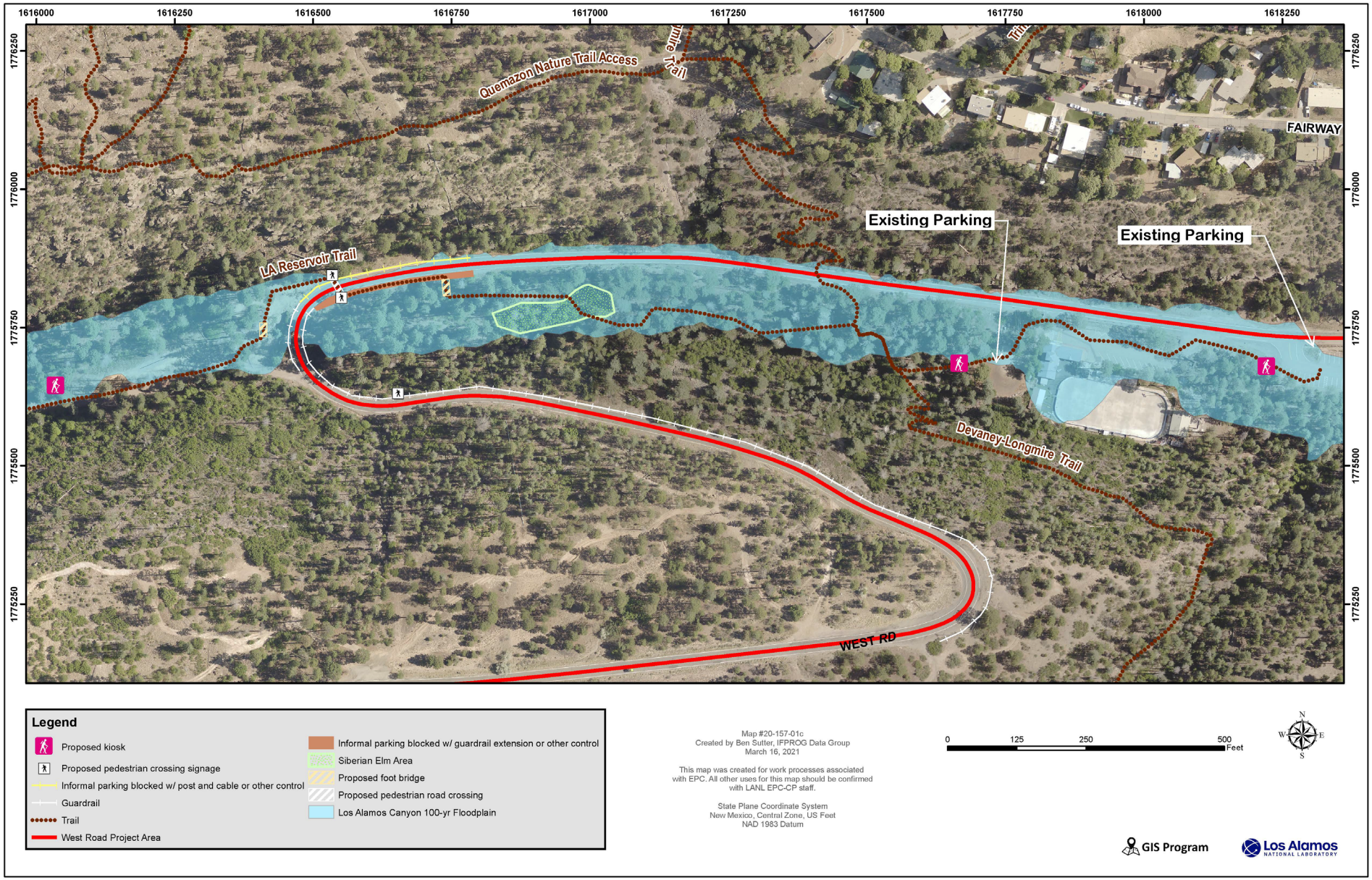

Figure 2. Detail of the West Road Maintenance Project showing Los Alamos 100-yr floodplain and the proposed project elements.

floodplain resources and control vehicle parking hazards, barriers would be installed in this location using heavy equipment to block the informal parking. The guardrails on the inside and outside road curve would be replaced. The guardrail on the inside road curve would be extended with the installation of new guardrail or another in-kind barrier to block informal roadside parking along the south side of the road. The guardrail on the outside curve of the road would also be extended with post and cable barriers, or an in-kind barrier, to block the informal roadside parking along the north side of the road. A gap would be left in the guardrail and post and cable barrier where the LA Reservoir Trail crosses West Road for pedestrians to pass through. Five traffic signs, including Pedestrian Crossing and No Parking, would also be installed along the road in the canyon. Two of the Pedestrian Crossing signs would be installed on either side of the road where the LA Reservoir Trail crosses West Road (Figure 2). One Pedestrian Crossing sign would be installed prior to the road curve for the downhill traffic lane. Postholes for the guardrails, post and cable, and traffic signs would be a maximum of 4 ft. deep. Any excess soils would be stabilized along the side of the road, outside of stream or riparian areas, following guidelines in the LANL Seeding Specification (LANL 2018).

Figure 3. West end of project in canyon bottom looking west.

Pedestrians will be redirected from walking along the road using trail information kiosks, wayfinding markers, and a clear pathway. Up to three trail information kiosks would be placed, one near the gate to the Los Alamos Reservoir, on DOE property, and two at existing parking locations (Figure 2), one on LAC property and one on DOE property. The parking area located to

the east of the ice-skating rink with approximately 50 paved parking spots is located on DOE property. The unpaved overflow parking area located on the west side of the ice-skating rink, as well as the rink itself, is located on Los Alamos County property, and has space for approximately 10 vehicles. The paved parking at the rink is only for ice-skating rink customers. The LANL Trails Management Program would install kiosks in coordination with Los Alamos Parks, Recreation, and Open Spaces staff. The kiosks would contain a trail map to direct the public to the trail by avoiding the roadway and would include safety information to alert trail users to potential trail hazards and rules (Figure 4). The kiosks would be approximately 4 ft. wide and 6 ft. tall. Postholes for the kiosks would be a maximum of 4 ft. deep using hand equipment. Any excess soils would be stabilized outside of the stream and riparian areas following guidelines in the LANL Seeding Specification (LANL 2018).

Wayfinding markers would be installed at all trail intersections (Figure 5). The fiberglass posts would be installed approximately 16 inches deep into the ground. The aboveground portion of the markers would be approximately 3 ft. tall. Trail maintenance would be performed, which may include hand trimming brush along the trail (not digging) using clippers or chainsaws, removing down trees across the trail, installing a small footbridge across the drainage, and establishing a safe pedestrian route on the north side of the road. Removed woody biomass may be mechanically chipped at the roadside, or removed from the site in coordination with waste management.

To restore habitat and reduce excess fuels that may contribute to wildland fire risk, a dense thicket of Siberian elm would be removed along the trail, as well as Siberian elms, oaks, and hazard trees along the roadway. Elms are most prevalent in the wetter, upper portion of the canyon, but treatments may extend down Los Alamos Canyon to New Mexico Highway 4 as needed during fuel mitigation efforts. The Siberian elms would be cut above ground and stumps would be drilled and painted with herbicide to prevent regrowth, consistent with NPDES Pesticide General Permit requirements and following USDA Siberian Elm removal guidance (USDA 2014). No herbicides will be applied in waters of the US. Future restoration efforts may include riparian plantings and small rock structures to increase soil moisture. These efforts are consistent with LANL Wildland Fire Mitigation and Forest Health Plan (LANL 2019) and Threatened and Endangered Species Habitat Management Plan for Los Alamos National Laboratory (LANL 2017) plans to reduce wildland fire risk and promote forest health and protect endangered species. Roadway shrub removal efforts would also improve visibility and safety.

Figure 4. Example of a kiosk used for trail information.

Figure 5. Example of a wayfinding trail marker.

FLOODPLAIN 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 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 consists of maintenance activities on existing road and shoulder areas and will not require National Pollution Discharge Elimination System Construction General Permit coverage. The road and shoulders will not be widened.
- 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 compliance in the area of the floodplain.
- No historical or archeological sites are located in this area of the floodplain; therefore, no impacts will occur to cultural resources.
- The project is located in Jemez Mountain Salamander habitat, but road maintenance activities are confined to previously disturbed areas in existing roadways and roadsides. Trail maintenance activities would be coordinated with biological resources staff to avoid soil disturbance in core salamander habitat. Any trail grade adjustments would be made by adding clean fill dirt instead of digging.
- Trail maintenance activities would not change or impede floodplain processes. Future restoration activities may include planting riparian species such as willows.
- There will be no soil-disturbing activities in the watercourse; therefore, this project will not require any Clean Water Act Section 404 permit coverage or 401 certification.
- The project does not impact any solid waste management units or areas of concern.

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.

- Since all road maintenance activities are adjacent to existing roads or parking areas, heavy equipment would not be used within the floodplain, especially if conditions are too wet to prevent damage to the soil structure.
- Equipment would be refueled at least 100 ft. from the Los Alamos 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 roadway maintenance activities are limited to the existing road and shoulder areas. Flow paths within the floodplain would not be significantly modified from pre-project conditions to post project conditions. The LANL Facilities and Operations monitors roads for erosion. This area is also managed as part of the LANL Trails Management Program, with annual trails maintenance assessments to identify problem erosion areas.

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 would not remove any protected habitat. The proposed action may impact aesthetic values since all construction activities in the floodplain are accessible to the public. However, these impacts are temporary, and the benefits of improved pedestrian and vehicular safety would outweigh any impacts to visual aesthetics.

ALTERNATIVES

The alternatives available to DOE/NNSA include: (1) no action alternative, and (2) an only milling and resurfacing the roadway alternative. These alternatives were not selected by DOE/NNSA because the potential for a traffic safety issue would persist if barriers were not installed and informal parking areas are not better controlled. In addition, forest health would not improve, and excess fire fuels would remain close to an urban area.

The proposed project as described in this assessment would improve the overall condition of West Road, including potential traffic and pedestrian safety issues. Trail and habitat maintenance activities would restore habitat, reduce excess fuels that may contribute to wildland fire risk and provide better long-term protection of the floodplain.

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

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