Floodplain Assessment

for the Los Alamos County Waterline

and San Ildefonso Pueblo Fiber Optic Cable

Los Alamos County, New Mexico

February 2024

Prepared for

San Ildefonso Pueblo
San Ildefonso Services

Los Alamos County
Department of Public Utilities

Submitted to

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

Prepared by

PATHFINDER Environmental

Pathfinder Environmental, LLC ♦ 1800 Old Pecos Trail, Suite A2 ♦ Santa Fe, New Mexico 87505

Table of Contents

ACRONYMS

AOC	Area of Concern
CFR	Code of Federal Regulations
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
EO	Executive Order
LACDPU	Los Alamos County Department of Public Utilities
LANL	Los Alamos National Laboratory
MBTA	Migratory Bird Treaty Act
NM 4	New Mexico State Highway 4
NM 502	New Mexico State Highway 502
NNSA	National Nuclear Security Administration
OHWM	Ordinary High Water Mark
PRID	Project Review Information Database
Pueblo	Pueblo de San Ildefonso
PVC	Polyvinyl chloride

1.0 INTRODUCTION

This floodplain assessment has been prepared for two projects by two separate proponents in Los Alamos County (County), New Mexico (NM). One project is the construction and operation of a new water supply line within the right-of-way of New Mexico State Highway 4 (NM 4) by Los Alamos County's Department of Public Utilities (LACDPU). The other project is the installation of a fiber optic conduit and cable within the right-of-way of NM 4 and NM Highway 502 (NM 502) by Pueblo de San Ildefonso (Pueblo). The two project proponents are working together to install the waterline and the fiber optic cable in the same trench along NM 4 in order to minimize ground disturbance and to take advantage of the opportunity to streamline permitting and construction (see Figure 1). The segment of the Pueblo's fiber optic cable planned for installation along NM 502 would start just east of the Pueblo's eastern boundary, where it would connect to existing fiber optic infrastructure, and proceed west to the north side of the interchange with NM 4, where it will then cross under NM 502 and go into the County's waterline trench. The project activities within the 100-year floodplain include 1) excavation of a trench, 2) installation of 12-inch and 16-inch PVC-coated ductile iron pipe and associated fittings, 3) partial backfilling and compaction, 4) placement of a PVC fiber optic conduit above and to the side of the new pipeline, and 5) final backfilling, compaction, and surface grading of the trench. They also include horizontal drilling beneath some segments of the 100-year floodplain. Portions of the project are located on Department of Energy property.

This floodplain assessment was prepared 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 actions by LADPU and the Pueblo, 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

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 implementation of the proposed action.

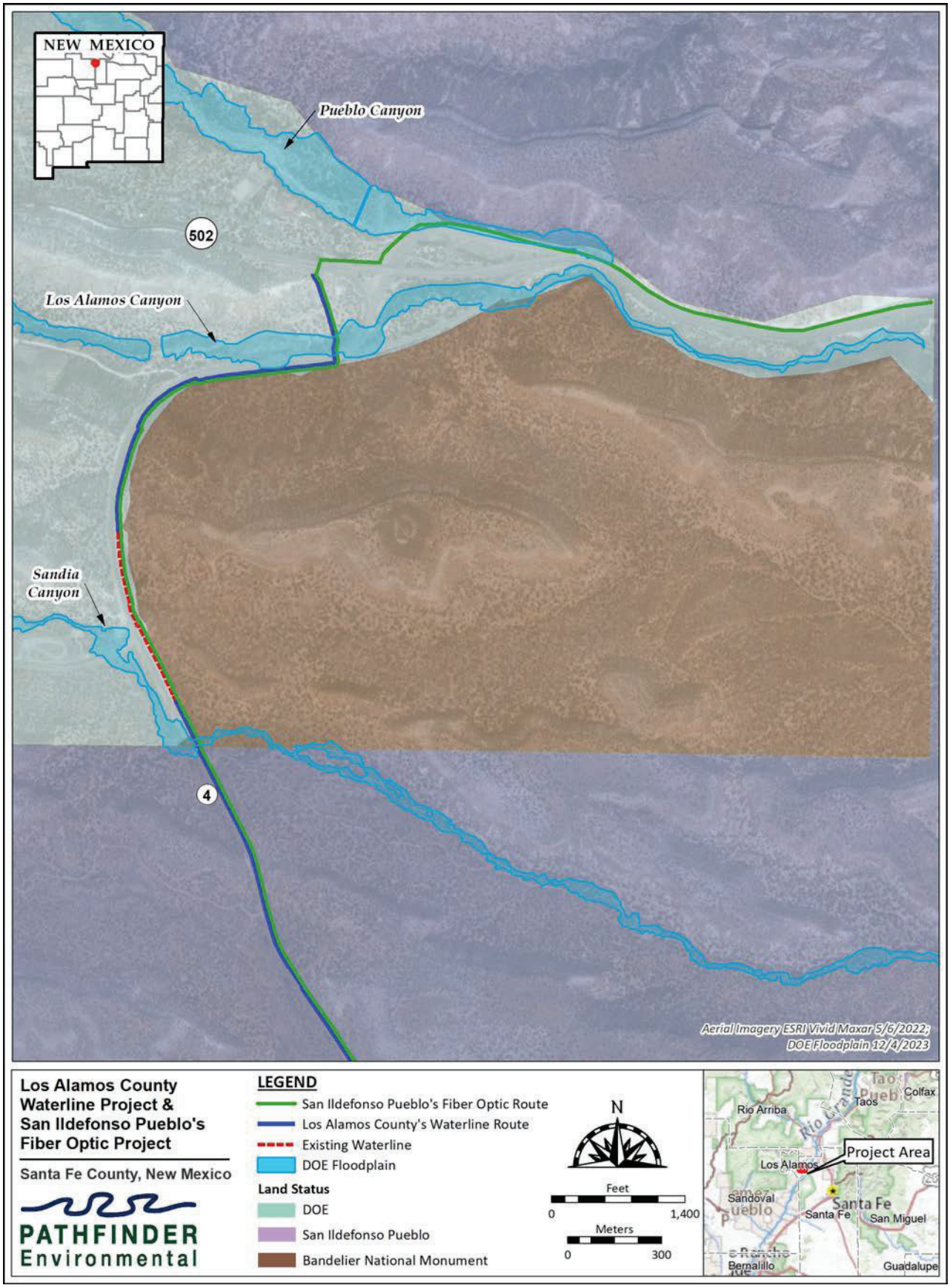

FIGURE 1. FLOODPLAIN MAP SHOWING THE ROUTES OF THE PROPOSED WATERLINE AND FIBER OPTIC CABLE (DOE/NNSA 2024)

2.0 BACKGROUND

The County currently maintains a water main in the right-of-way of NM 4 that provides water to residents, businesses, and other facilities in White Rock, NM. This 12-inch and 16-inch diameter water line is currently reaching the end of its lifecycle and needs to be replaced before it fails. Presently a new segment of waterline has already been constructed on the east side of NM 4 from approximately 1,300 feet north of the NM 4 intersection with East Jemez Road to approximately 760 feet south of the NM 4/East Jemez Road intersection, toward White Rock for a total length of approximately 2,060 feet, see Figure 1.

Current plans are to construct new waterline from White Rock to NM Highway 502 (NM 502), tying into existing waterlines at the ends, thus completing a total of approximately 3.5 miles of new waterline that passes through DOE property along NM 4. The Pueblo is concurrently developing a project to install fiber optic conduit and cable along NM 502 starting approximately 2,000 feet east of the Pueblo's eastern boundary, where it would tie into existing fiber optic cable, and proceeding west all the way to the NM 4 interchange, where it would then follow the new County waterline all the way to White Rock and eventually provide service to the Pueblo's Phillips 66 gas station and other future customers. The following five photographs (Photographs 1-5) show the drainages through which these projects would pass.

PHOTOGRAPH 1. VIEW NORTH OF THE SANDIA CANYON CROSSING

PHOTOGRAPH 2. VIEW NORTH OF THE LOS ALAMOS CANYON CROSSING

PHOTOGRAPH 3. VIEW EAST FROM UPPER END OF THE PUEBLO CANYON FLOODPLAIN CROSSING

PHOTOGRAPH 4. VIEW EAST FROM THE MIDDLE OF THE PUEBLO CANYON FLOODPLAIN CROSSING

PHOTOGRAPH 5. VIEW WEST FROM THE LOWER END OF THE PUEBLO CANYON FLOODPLAIN CROSSING

3.0 PROJECT DESCRIPTION

The first segment of the County's proposed waterline project consists of approximately 12,120 feet of water line that starts in White Rock adjacent to White Rock Fire Station #3 on the north side of NM 4, crosses under NM 4 to the south side, then follows the south and east side of the NM 4 right-of-way all the way to approximately 490 feet north of the Pueblo boundary onto DOE property, where it would tie into the previously described, recently completed segment. The second segment consists of approximately 4,400 feet of new waterline tying into the recently completed segment of waterline, approximately 1,300 feet north of the East Jemez Road intersection, and continuing north and then east along NM 4 to the interchange with NM 502, where it turns north (west of the interchange) and ties into the existing waterline located on the south side of NM 502 (Figure 1).

Construction of the waterline would consist of excavation of a 60 to 100-foot length of trench at a time with a minimum depth of 48 inches to the top of the new waterline. This puts the total minimum trench depth at around 67 inches. It may be deeper in some locations where conditions require it. The trench would be wide enough for workers to get down into it on either side of the new pipe as it is installed to make the necessary connections and benched to prevent cave-ins. Excavated soils would be stockpiled to the side, away from the roadway until they are placed back into the trench, compacted, and graded. Concrete barrier wall would be temporarily installed between the edge of the NM 4 pavement and the trench to provide a safe work environment for both workers and drivers during construction.

Installation of the Pueblo's fiber optic conduit would begin at the waterline tie-in point by White Rock Fire Station #3 and be installed above and to the side of the new waterline. This process consists of backfilling and compacting the trench around and up to 12 inches above the new waterline, then laying the conduit down offset 12 inches from the nearest side of the waterline in the trench, backfilling over it, compacting the fill, and grading the surface. Where the new waterline reaches the tie-in point of the existing new waterline near East Jemez Road, the conduit would be placed in the ground by horizontal drilling at the same 12-inch elevation above the existing waterline until the starting point for the second segment has been reached. From that point on to the end of the second segment of new waterline the conduit would be placed in the trench as before. At the tie-in point for the new waterline on NM 502, the conduit would then be routed under and to the north side of NM 502 to connect up with the portion of the project coming from the east along NM 502.

The segment of fiber optic planned along the north side of NM 502 would be installed by a combination of horizontal drilling and trenching. New waterline is not being installed along this segment of the fiber optic route at this time, so this is an effort separate from the County's waterline project. Horizontal drilling minimizes surface disturbance by only requiring a hole where the drill rig is working and a few hand-dug potholes along the route to confirm the location of the drill bit. The drill would make a horizontal hole a minimum of 36 inches below the surface for distances of up to 450 feet, then conduit would be connected to the end of the drill bit and pulled back through the hole to the drill rig. The drill rig would then be moved up to the far end of the

conduit, another hole dug, and the process would start over until the conduit has been installed for the entire length of the route. All holes would be backfilled when the drill rig is moved to the next drilling location.

Some segments of the route along NM 502 would need to be installed by trenching, due to the presence of basalt rock in the ground. These locations would be determined in the field during installation of the conduit. Trenching would involve excavation using a backhoe or possibly a mini-excavator capable of pulling or breaking up rock wherever it is encountered along the way. The trench would be a minimum of 36 inches deep. Daily progress would depend on how much hard rock is encountered along the way. The trench would be backfilled each day leaving the end of the conduit coming out of the ground and attached to its spool. No soils would be transported off site. Large boulders would be set to the side and clean fill would be brought in to replace the volume previously displaced by the boulders. If trenching is required in a flood zone, the boulders would be set off to the edge of the channel where they would not alter the flow of water during runoff events.

4.0 FLOODPLAIN IMPACTS

Los Alamos National Laboratory (LANL) maintains a Project Review Information Database (PRID) 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 Corps 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.

PRID was used to generate an Environmental Requirements Summary for both the County's waterline project and the Pueblo's fiber optic cable project.

4.1 Short-term Impacts

The following requirements were identified and reviewed in the PRID process and presented to the County and the Pueblo in separate Environmental Requirement Summaries.

- The proposed projects are not located in threatened or endangered species habitat; therefore, no impact will occur to current listed species in the Los Alamos County area.
- The federal law, Migratory Bird Treaty Act (MBTA), prohibits killing migratory birds, including nestlings and eggs. Migratory birds breed across LANL property. The risk from these projects is from the potential destruction of active bird nests, which are defined as nests with eggs or nestlings. The County and the Pueblo have confirmed that no tree or shrub removal will occur as part of either of the two proposed projects; therefore, no impact will occur to birds protected by the MBTA.
- There are three recorded archaeological resources within 100 feet of the proposed waterline route on Laboratory-managed lands. The County or the Pueblo must provide notice to LANL Cultural Resources Program personnel by email at least 10 days prior to the start of work so that they can start work on site flagging and update activities in preparation for project activity within the proposed project area. An estimated 18 hours will be needed to complete flagging and site updates with additional time for any walkdowns. LANL archaeologists are required to be on site for monitoring when working within 50 feet of a recorded archaeological site boundary, regardless of the work being performed in the highway right-of-way. The County or the Pueblo must coordinate with the Cultural Resources Program to ensure a monitor is on site, prior to the start of work. During all ground disturbing project activities, contractors would PAUSE WORK IMMEDIATELY if they encounter bones (possible burials), clusters or alignments of rock situated above bedrock (possible masonry walls), charcoal stains (possible hearths or burned wooden structures), or clusters of artifacts such as pottery, pieces of chipped stone, and historic debris such as cans or glass. Contractors would immediately contact the LANL Cultural Resources Program to notify them of the issue and arrange an emergency field inspection to be conducted prior to the resumption of project ground-disturbing activities.
- If either of the two projects would disturb over 1 acre of ground, then a National Pollution Discharge Elimination System Construction General Permit would be required. 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 County's Revegetation Plan for their project.

- The proposed projects would require compliance with the Energy Independence and Security Act, which would be the responsibility of the County and the Pueblo, and which require the maintenance or restoration, to the maximum extent technically feasible, the predevelopment hydrology of the site including using design and construction strategies for stormwater runoff. Standard Best Management Practices would be employed throughout project construction to control and prevent erosion during precipitation events. The principal ground-disturbing activity associated with these projects is trench excavation. These projects will employ a technique of backfilling and compacting the trench once the waterline and fiber optic cable conduit are in place as the project advances from the starting point to the end point.
- As commonly occurs with linear projects, the two proposed projects would result in disturbances within the channel of multiple drainages. As a result of the recent U.S. Supreme Court decision in Sackett v. Environmental Protection Agency (EPA) (Sackett 2023), ephemeral drainages, as defined by EPA in prior regulatory guidance, are no longer considered Jurisdictional Waters of the United States. Consequently, ephemeral drainages are no longer regulated under Sections 404 or 401 of the federal Clean Water Act and no permits or water quality certifications would be required for the locations where the two projects cross them. Presently the EPA and U.S. Army Corps of Engineers are in the process of ending the use of the terms ephemeral, intermittent, and perennial as they pertain to drainages and waterways and are developing definitions for "relatively permanent" and "non-relatively permanent" waterways in accordance with the ruling in the Sackett case. Where the proposed projects would cross formerly intermittent waterways, a Jurisdictional Determination by the U.S. Army Corps of Engineers would be required and if they are determined to be jurisdictional under the new definition of "relatively permanent" waterways, then excavation within the Ordinary High Water Mark (OHWM) of any such waterways would require a Clean Water Act Section 404 permit and Section 401 water quality certification prior to construction within those drainages. Of the three drainages traversed by the proposed projects, only the drainage in Pueblo Canyon along the north side of NM 502 appears to potentially be intermittent and only the proposed fiber optic project would traverse that drainage.
- The proposed projects would involve some disturbance of In-Progress Consent Order Sites C-00-005 [Pueblo Canyon system], C-00-006 [Los Alamos Canyon system], and C-00-007 [Sandia Canyon system]. Since the proposed projects cannot avoid disturbance to these Areas of Concern (AOCs)[1], the County and the Pueblo will contact the LANL Consent Order Site Coordinator prior to the execution of field work. Any disturbed soil from the AOC would be stabilized and managed within the AOC boundary and returned to the point of origin upon completion of the project. All excavated material would be maintained within the AOCs and none would be sent off site. The

[1] An 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.

projects are required to take precautions to avoid inadvertently transporting potentially contaminated soil from the sites.

Pueblo Canyon AOC C-00-005, Los Alamos Canyon AOC C-00-006, and Sandia Canyon AOC C-00-007 occupy the same footprint as their respective 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-00-005	Pueblo Canyon system	Organic Chemicals, Inorganic Chemicals, Radionuclides, PCBs, Pesticides
AOC C-00-006	Los Alamos Canyon system	Septic Tank Wastewater, Inorganic Chemicals, Radionuclides
AOC C-00-007	Sandia Canyon system	Organic Chemicals, Inorganic Chemicals, Radionuclides, PCBs

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 a stream channel, especially if conditions are too wet to prevent damage to the soil structure.
- Equipment would be refueled at least 100 ft. from the three canyon floodplains.

4.2 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 modified from pre-project conditions to post project conditions.

This assessment also considered the potential impacts of the proposed actions in the floodplain on the conservation of habitat for existing flora and fauna, esthetic values, and public interest. The proposed projects would not remove any protected habitat. The proposed project would not negatively impact aesthetic values or public interest because the proposed projects are underground and the surface would return to its original state after construction has been completed and are located in areas that have been previously disturbed by roadway construction. The proposed project would not impact cultural resources because they would be identified and avoided before any damage could occur, either by pre-construction surveys or by monitoring during construction by an archaeologist from the LANL Cultural Resources Program.

5.0 ALTERNATIVES

The alternatives available to the County and the Pueblo include the no action alternative. The no action alternative was not selected by the County or the Pueblo because the no action alternative would not provide for a reliable new water supply line to White Rock nor would it provide for high-speed broadband internet service to the Pueblo's gas station in White Rock.

The alternatives of using an existing abandoned waterline as a conduit for the fiber optic cable or installing the conduit aerially on telephone poles were considered, but not selected. These alternatives were determined infeasible after inspection of the existing waterline and geotechnical obstacles to telephone pole installation.

6.0 CONCLUSIONS

The proposed projects would result in limited direct and indirect impacts to the Pueblo Canyon, Los Alamos Canyon, and Sandia Canyon 100-yr floodplains and would not result in adverse impacts to the floodplain values or functions. Temporary disturbance within the floodplains would cease following completion of construction activities. Best management practices would be implemented. This proposed project would not modify flow paths within the floodplains 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 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.

7.0 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.

DOE/NNSA 2024. Department of Energy, Nuclear National Security Agency. Floodplain mapping provided in Figure 1, provided by DOE/NNSA for use in this document.

Sackett 2023. Supreme Court of the United States. No. 21-454, Michael Sackett, et ux. Petitioners v. Environmental Protection Agency, et al. (05/25/2023)