

Environmental Assessment Upper Venada Arroyo Stormwater Drainage and Infiltration Improvements Sandoval, County, New Mexico

Prepared for

Southern Sandoval County
Arroyo Flood Control Authority and the
U.S. Army Corps of Engineers

Prepared by



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FINDING OF NO SINGIFICANT IMPACT

UPPER VENADA ARROYO STORMWATER DRAINAGE AND INFILTRATION IMPROVEMENTS PROJECT

SOUTHERN SANDOVAL COUNTY, NEW MEXICO

The U.S. Army Corps of Engineers, Albuquerque District (Corps) has conducted an environmental analysis in accordance with the National Environmental Policy Act of 1969, as amended. The Environmental Assessment (EA) for the Upper Venada Arroyo Stormwater Drainage and Infiltration Improvements Project, dated July 2025, addresses stormwater flows in Southern Sandoval County, New Mexico.

This EA, incorporated herein by reference, evaluated various alternatives for improvements to stormwater drainage and infiltration in the Upper Venada Arroyo, a tributary of the Rio Grande. The project area is located northwest of Paseo del Vulcan and east of Westphalia Boulevard NE in Rio Rancho, New Mexico. The purpose of the Upper Venada Project is to mitigate high-flow events and remove debris and sediments from stormflows by implementing flood prevention measures that would reduce downstream flow rates before discharge into the Rio Grande.

The recommended plan involves construction of a single off-channel storage pond on the west tributary of Upper Venada Arroyo. A side weir would be built to drop into the off-channel pond when flow in the main stem reaches a certain level. Inflow would be controlled with hardened inlets, bypass, or drop structures. The inlet/bypass structures would be sized to carry the 100-year flow. Any water stored in the off-channel pond would be treated for floatable debris using an inverted ported riser system prior to discharge back into the downstream conveyance. Flows from more frequent return period storms would bypass the off-channel pond. In addition to a "no action" plan, one alternative entailing the construction of three off-channel storage ponds was considered. See Section 2 of this EA for a description of alternatives.

For all alternatives, the potential effects were evaluated, as appropriate. A summary assessment of the potential effects of the recommended plan are listed in Table 1:

Table 1: Summary of Potential Effects of the Recommended Plan

	Insignificant effects	Insignificant effects as a result of mitigation	Resource unaffected by action
Aesthetics	☒	☐	☐
Air quality	☒	☐	☐
Aquatic resources/wetlands	☐	☐	☒
Invasive species	☒	☐	☐
Fish and wildlife habitat	☒	☐	☐
Threatened/Endangered species/critical habitat	☐	☐	☒
Historic properties	☐	☐	☒
Other cultural resources	☒	☐	☐
Floodplains	☒	☐	☐
Hazardous, toxic & radioactive waste	☐	☐	☒
Hydrology	☒	☐	☐
Land use	☐	☐	☒
Navigation	☐	☐	☒
Noise levels	☒	☐	☐
Public infrastructure	☐	☐	☒
Socioeconomics	☐	☐	☒
Soils	☒	☐	☐
Tribal trust resources	☐	☐	☒
Water quality	☒	☐	☐

All practicable and appropriate means to avoid or minimize adverse environmental effects were analyzed and incorporated into the recommended plan. Best management practices (BMPs) are detailed in the EA, listed below, and will be implemented, if appropriate, to minimize impacts:

- Activities would be limited to the designated or otherwise approved areas shown on the construction drawings for construction areas, staging, and access.
- Construction areas would be watered for dust control and comply with local sedimentation and erosion-control regulations.
- All fuels, oils, hydraulic fluids, and other similar substances would be appropriately stored out of the floodplain. Construction equipment would be inspected daily and monitored during operation to prevent leaking fuels or lubricants from entering any surface water.

- BMPs would be implemented regarding the treatment and disposal of waste material. Waste material would be disposed of properly at commercial disposal areas or landfills.
- A Stormwater Pollution Prevention Plan would be required. Water resources would be protected with silt fencing, geotextiles, or straw bales according to the plan in order to prevent runoff of sediment from areas disturbed by construction.
- Areas disturbed by construction and not developed would be revegetated with native grasses.
- In compliance with the Migratory Bird Treaty Act, impacts to nesting birds would be avoided by scheduling work outside of the nesting season. If work during the avian nesting season cannot be avoided, the area would be surveyed prior to start of work and impacts to any active nests would be avoided.

Initial project-related ground disturbance will be monitored by a permitted archaeologist. An archaeological monitoring plan will be developed and implemented in accordance with §4.10.17.11 NMAC: Monitoring of Archaeological Sites and Areas of Historic and Scientific Interest. If buried cultural deposits are discovered during project activities without an archaeological monitor present, work will cease, and SSCAFCA, USACE and the SHPO will be notified.

Public review of the Draft EA and FONSI were completed from April 28 to May 28, 2025. A comment-response table is included in section 5 and comment letters are provided in Appendix F of this Final EA and FONSI.

Pursuant to section 106 of the National Historic Preservation Act of 1966, as amended, the U.S. Army Corps of Engineers is making a determination that historic properties will not be adversely affected by the recommended plan. The New Mexico Historic Preservation Division (State Historic Preservation Office) concurred with this determination on February 7, 2025.

Pursuant to section 7 of the Endangered Species Act of 1973, as amended, the U.S. Army Corps of Engineers determined that the recommended plan would have no effect on federally listed species or their designated critical habitat.

The proposed work does not involve a discharge of dredged or fill material within waters of the United States regulated by Section 404 of the Clean Water Act (CWA); therefore, a Department of the Army permit under Section 404 of the CWA would not be needed for this project.

All applicable environmental laws have been considered and coordination with appropriate agencies and officials have been completed.

All applicable laws, executive orders, regulations, and local government plans were considered in evaluation of alternatives. Based on this report, the reviews by other Federal, State and local agencies, Tribes, input of the public, and the review by my staff, it is my determination that the recommended plan would not cause significant adverse effects on the quality of the human environment; therefore, preparation of an Environmental Impact Statement is not required.

Date

Matthew T. Miller
Lieutenant Colonel, U.S. Army
District Commander

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1. Introduction

On behalf of the Southern Sandoval County Arroyo Flood Control Authority (SSCAFCA) and the U.S. Army Corps of Engineers (USACE) Albuquerque District, Daniel B. Stephens & Associates, Inc. (DBS&A) has prepared this environmental assessment (EA) for improvements to stormwater drainage and infiltration in Upper Venada Arroyo (the Arroyo) in Sandoval County, New Mexico.

This EA was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. §§ 4321 *et seq.*) and the United States Army Corps of Engineers NEPA implementing regulations (33 C.F.R. part 230).

The Assistant Secretary of the Army for Civil Works (ASA(CW)) has removed most of the sections from 33 CFR 230 and indicated that the Civil Works program will follow the DoD implementing procedures for NEPA issued on 30 June 2025. Actions that were ongoing as of the effective date of the new rule will continue to use the rule in place at the time the action was started. Therefore, this EA follows the USACE Procedures that were in place at the time the draft EA was prepared.

1.1 Background and Location

In cooperation with, and at the request of SSCAFCA, the U.S. Army Corps of Engineers (USACE), Albuquerque District is planning to make improvements to stormwater drainage and infiltration in the Arroyo, which is a tributary of the Rio Grande located northwest of Paseo del Vulcan and east of Westphalia Boulevard NE in Rio Rancho, New Mexico (Figure 1) in an area of mostly undeveloped land. SSCAFCA is proposing to construct multiple flow-diversion/lateral weir structures in the west tributary of the Arroyo to divert maximum flows into an off-channel pond while allowing the low flows to bypass the lateral weir. A variety of channel configurations have been considered during the design phase of the project.

The Preferred Alternative (the Proposed Action) would be funded through the USACE and with SSCAFCA bonds. SSCAFCA owns the land and is the non-federal public sponsor for the Proposed Action. Figures 1 and 2 show the Proposed Action location (the Project Area). The implementation of the Proposed Action is expected to start around September or October 2025, and construction is likely to last approximately 6 months. It would be conducted under Section 595 of the Water Resources Development Act of 1999 (the Act) (Public Law 106-53) as amended. The Act authorizes USACE to provide assistance in the form of design and

construction for water-related environmental infrastructure, resource protection, and development projects in Idaho, Montana, rural Nevada, New Mexico, and rural Utah. Types of projects included under the Act are wastewater treatment and related facilities, stormwater retention and remediation, environmental restoration, surface water resource protection and development, and sewer and water line replacement. Provisions under the Act require that the Proposed Action be publicly owned to receive federal assistance.

1.2 Purpose and Need

Upper Venada Arroyo is a major drainage channel with an extensive watershed that is currently mostly undeveloped, but much of the land around the Project Area, including upstream, is slated for future development. The Proposed Action is needed to provide flood protection for adjacent and downstream neighborhoods and erosion control along the Arroyo. Hardened surfaces from future development would increase the volume of runoff and lead to severe erosion of the channel before discharging into the Rio Grande. There are currently no facilities to prevent large storm flows from entering the Arroyo and subsequently the Rio Grande. The purpose of the proposed work is to mitigate high-flow events and remove debris and sediments from stormflows by implementing flood prevention measures that would reduce downstream flow rates before discharge into the Rio Grande.

1.3 Regulatory Compliance

DBS&A has prepared this EA for SSCAFCA and USACE in compliance with all applicable federal statutes, regulations, and executive orders, including, but not limited to, the following:

- Clean Water Act (33 U.S.C. 1251 et seq.)
- Clean Air Act (42 U.S.C. 7401 et seq.)
- National Historic Preservation Act (16 U.S.C. 470 et seq.)
- Archaeological Resources Protection Act (16 U.S.C. 470aa et seq.)
- Endangered Species Act (16 U.S.C. 1531 et seq.)
- Executive Order 11988, Floodplain Management
- National Environmental Policy Act (42 U.S.C. 4321 et seq.)
- Native American Graves Protection and Repatriation Act (25 U.S.C. 3001 et seq.)
- Executive Order 11593, Protection and Enhancement of the Cultural Environment
- Executive Order 11990, Protection of Wetlands

- U.S. Army Corps of Engineers' Procedures for Implementing NEPA (33 CFR Part 230; ER 200-2-2)
- Farmland Protection Policy Act (7 U.S.C. 4201 et seq.)
- Executive Order 13112, Invasive Species
- Federal Noxious Weed Act (7 U.S.C. 2814)
- Energy Independence and Security Act of 2007 (P.L. 110-140, Section 438, 121 Stat. 1492, 1620)
- Migratory Bird Treaty Act (16 U.S.C. 703, et seq.)
- Fish and Wildlife Coordination Act (48 Stat. 401; 16 USC 661 et. seq.)

This EA also reflects compliance with all applicable State of New Mexico and local regulations, statutes, policies, and standards for protecting the environment, including water and air quality, endangered plants and animals, and cultural resources.

2. Proposed Action and Alternatives

All agencies that take part or assist in projects that use federal funding are mandated by the National Environmental Policy Act (NEPA) to evaluate both the Proposed Action and other alternative courses of action. Alternatives can include design and/or location considerations that may mitigate or reduce impacts generated by a given action. In general, the NEPA process can provide decision makers with an evaluation of present and future conditions with regard to the implementation and timing of an action at a given site. A particular design chosen from alternatives evaluated can then be implemented in the best interest of the public and the environment.

2.1 Alternatives Considered

To improve downstream conveyance while maintaining sediment equilibrium in the downstream reach of the Arroyo, peak flows need to be temporarily diverted and stored, while flows from the more frequent return periods should remain unchanged. In total, three alternatives are considered for this NEPA analysis, including (1) the No-Action Alternative, which is used as the comparison basis, (2) the Proposed Action, which includes a single-off channel facility (storage pond) upstream of the Paseo del Vulcan and Venada Arroyo crossing (Figure 3), and (3) an

alternative to the Proposed Action, which entails the construction of three off-channel storage ponds (Figure 4).

2.1.1 No-Action Alternative

Under the No-Action Alternative, the off-channel facility or facilities would not be constructed. No federal funding would be expended, and there would be no new effects to the Project Area or surrounding environment. However, the No-Action Alternative would not support SSCAFCA's efforts to improve storm flows to the Rio Grande. The No-Action Alternative should be seen as an unsound course of action because preventive measures would not be implemented to mitigate the effects of erosion caused by high flows in the Arroyo.

2.1.2 Preferred Alternative

The Proposed Action would involve construction of a single off-channel storage pond on the west tributary (Figure 3 and Appendix A). A side weir would be built to drop into the off-channel pond when flow in the main stem reaches a certain level. The facility would be sized to ensure that downstream infrastructure is not overwhelmed in the 100-year, 24-hour storm event while not affecting stormwater flows associated with an annual rain event (0.64in/24hr). The excavated pond would be constructed in a location along the existing arroyo that would minimize earthwork requirements, maximize storage, minimize new impermeable area, and be conducive to having a New Mexico Office State Engineer (OSE) non-jurisdictional/low hazard facility. Inflow would be controlled with hardened inlets, bypass, or drop structures. The inlet/bypass structures would be sized to carry the 100-year flow. If possible, side slopes on the ponds would be 4:1, and steeper slopes would be covered in gravel mulch or riprap as required. The off-channel pond would provide storm sediment control and water quality improvement for flows diverted into it, as well as any direct discharges it receives. Any water stored in the off-channel pond would be treated for floatable debris using an inverted ported riser system prior to discharge back into the downstream conveyance. Water would be detained in the pond no longer than 96 hours. Flows from more frequent return period storms would bypass the off-channel pond. The pond structure would be within existing SSCAFCA right-of-way (ROW), and no additional land acquisition would be necessary. Downstream channel stabilization and bank armoring would be installed as necessary with approximately 0.24 acre of fleximat (articulating concrete blocks connected by cable, allowing for permeability) and 0.10 acre of shotcrete/structural concrete. The estimated cost for this structure is \$4,400,000.

2.1.3 Three Storage Pond Alternative

Under this third alternative, multiple off-channel storage ponds would be built on the west tributary of the Arroyo (Figure 4). The alternative would consist of three excavated ponds with downstream embankments, inflow controlled with stepped RCC inlet/bypass/drop structures, and side slopes at 4:1. No additional ROW would be necessary, as the ponds would be located within SSCAFCA ROW. All inlet/bypass structures would be sized to pass the 100-year developed discharge and would meet the non-jurisdictional/low hazard classification by OSE. Differences with the Preferred Alternative would involve not only the number of off-channel storage ponds that need to be built (three vs. one), but also their placement. Two of the three ponds would be located along the main stem of the Arroyo and one would be located on a tributary that intersects the main stem between the two ponds. The main stem would need to be rerouted around the westernmost pond. Thus, the footprint of the disturbance would be significantly larger. The estimated cost for a multiple pond system is \$5,700,000.

2.2 Alternatives Considered and Eliminated from Further Consideration

An additional alternative was considered but eliminated from further consideration, primarily due to cost versus effectiveness of the mitigation. It would entail construction of a single large traditional dam on the west tributary of the Arroyo. The dam would be 36 feet high with a 3:1 downstream slope. The structure would be designed for the 100-year storm event with inflows of 4,356 cubic feet per second (cfs) into the structure and the 36-inch reinforced concrete pipe (RCP) spillway designed for a peak flow of 180 cfs. The dam would have a 1,600-foot-wide stepped RCP emergency spillway designed to pass the 1-hour probable maximum precipitation (PMP) storm (56,000 cfs), with a peak storage of 383 acre-feet. The dam would be classified as "high hazard" by OSE. This alternative would require the acquisition of approximately 7.3 acres of privately owned land. The estimated cost is \$7,600,000.00, not including the cost of the additional 7.3 acres of land. This alternative was determined to be cost-prohibitive, and is therefore not evaluated further.

3. Existing Conditions and Foreseeable Effects of the No-Action Alternative, the Proposed Action, and the Multiple Storage Pond Alternative

3.1 Physical Resources

Temperatures for the Project Area average an annual maximum temperature of 71°F and an average annual minimum temperature of 37.5°F. The warmest months are June, July, and August (average maximum temperatures of 89.9°F, 91.7°F, and 89.0°F, respectively, and average minimum temperatures of 51.1°F, 58.5°F, and 57.9°F, respectively) (NWS, 2023). The coolest months are December, January, and February (average maximum temperatures of 48.2°F, 49.3°F, and 55.1°F, respectively, and average minimum temperatures of 19.8°F, 20.0°F, and 23.8°F, respectively). The Project Area can be classified as arid, with average annual precipitation ranging from 8 to 11 inches (Griffith et al., 2006). From mid-June through the end of September, the proposed Project Area falls within the North American Monsoon region (NOAA, 2023). The wet summer season is characterized by high daytime temperatures, advection of warm, humid air primarily from the Gulf of Mexico, and the formation of thunderstorms as this humid air rises and cools over land surfaces, nearby mountain ranges, and advancing fronts.

3.1.1 Physiography, Geology, and Soil

The Project Area is in the Albuquerque Basin ecoregion, part of the deep physiographic basins of the Rio Grande rift (Griffith et al., 2006). This ecoregion is lower in elevation, drier, and warmer than the surrounding ecoregions to the north, east, and west. The Rio Grande, located east of the Project Area, flows from north to south through the basin.

The Albuquerque Basin is the largest basin along the Rio Grande rift, measures 30 miles wide, 90 miles long, and extends from the La Bajada Escarpment south of Santa Fe to north of Socorro. The basin formed during the upper Tertiary (Miocene and Pliocene) period, coincidental with the uplifting of the Sandia-Manzano-Los Pinos easterly tilted fault-block mountain range east of the Rio Grande (Figure 5). Total basin subsidence and the resultant infilling of alluvium derived from the higher terrain west of the Rio Grande is estimated to be more than 15,000 feet. Basin terrain in the area is characterized by gently sloping plains from the west to the Rio Grande ranging in elevation from about 4,875 to 4,860 feet above mean sea level (feet msl).

General soil conditions on the floodplain of the Rio Grande are deep, nearly level, well-drained soils that were formed in recent alluvium. The following descriptions of two major soil series along the Arroyo are taken from information obtained from the U.S. Department of Agriculture (USDA) Soil Conservation Survey (NRCS, 2022) (Figure 6). Grieta-Sheppard loamy fine sands association soils occur in the northern portion of the Project Area along the Arroyo. These soils have 2 to 9 percent slopes, and have a moderate infiltration rate when thoroughly wet. This association consists chiefly of moderately deep or deep, moderately well-drained, or well-drained soils that have a moderately fine to moderately coarse texture. These soils have a moderate rate of water transmission. Grieta fine sandy loam occurs in the southern part of the Project Area in the Arroyo. The soil has a 1 to 4 percent slope.

Under the Proposed Action and the Multiple Storage Pond Alternative, soils would be disturbed during construction and in some areas would be shifted into different configurations. This impact to soils would be greater under the Multiple Storage Pond Alternative due simply to the larger footprint of the three ponds. However, a stormwater pollution prevention plan (SWPPP) would be prepared by the contractor under either alternative, and erosion protection measures would be implemented as part of the SWPPP. Effects to soils as a result of the Proposed Action or the Multiple Storage Pond Alternative would therefore be temporary and minimal. Long-term effects would be beneficial, as erosion would be mitigated in the Arroyo and the Rio Grande would be protected from excessive sedimentary soils entering the river. Erosion and increasing sediment flow downstream would continue and worsen under the No-Action Alternative.

3.1.2 Water Resources

The Venada Arroyo is ephemeral and is not a relatively permanent water. The Arroyo ultimately discharges to the Rio Grande approximately 3.79 miles from the project site. The segment of the Rio Grande from the Alameda Bridge to the HWY 550 Bridge, where the confluence with the Venada Arroyo occurs, is currently listed as impaired under Clean Water Act Section 303(d) for alpha particles, E. coli, and fish consumption advisories for mercury and polychlorinated biphenyls (PCBs) and does not support the designated uses for livestock watering, aquatic life, or wildlife habitat. The CWA 303(d) List and Integrated Report is available at: <https://www.env.nm.gov/surface-water-quality/303d-305b/>.

Section 402 of the Clean Water Act (CWA) (33 U.S.C. 1251 et. seq.) as amended, regulates point source discharges of pollutants into waters of the United States and specifies that stormwater discharges associated with construction activities shall be conducted under the National

Pollution Discharge Elimination System (NPDES) guidance. The NPDES general permit guidance would apply to the Proposed Action and the Multiple Storage Pond Alternative because the total Project Area is over 1 acre in size. Therefore, a SWPPP would be required and prepared by the contractor for this project.

Because the Arroyo has been determined to be ephemeral and is not a relatively permanent water, it is not considered a water of the United States and no 404(b)(1) analysis under Section 404 of the CWA of 1972 would be required.

Section 401 of the CWA, as amended, requires that a Water Quality Certification Permit be obtained for anticipated discharges associated with construction activities or other disturbance within waterways. Because there would be no discharge to waters or wetlands of the United States, a Water Quality Certification Permit would not be required.

Although Section 401 certification is not required, all best management practices (BMPs) described throughout the document will be adhered to during project implementation. Because the Arroyo discharges to the Rio Grande, SSCAFCA must be compliant with its existing municipal separate storm sewer system (MS4) permit. The MS4 permit pertains only to an annual event (i.e., the rainfall event that exceeds 0.62 inch). The MS4 permit allows authorization to discharge to waters of the United States under NPDES General Permit No. NMR04A000 (CDM Smith, 2016). This permit requires SSCAFCA to develop, implement, and enforce a stormwater management plan (SWMP) designed to reduce the discharge of pollutants to the maximum extent practicable, to protect water quality, and to satisfy applicable surface water quality standards (see Permit No. NMR04A000 for additional information and permit conditions)). The SWMP must include BMPs, control techniques, system design and engineering methods, and other provisions the U.S. Environmental Protection Agency (EPA) determines appropriate for the control of pollutants.

Under the Proposed Action and Multiple Storage Pond Alternative, excavated, off-channel storage ponds would be constructed in old channel oxbows and have downstream embankments. The ponds would provide storm sediment control and water quality improvement. Because the storage pond(s) would be connected to the Arroyo and designed to only capture high-flow storm events, normal water flows would not be altered significantly. A less-than-significant beneficial impact would result from improved sediment control and water quality from both the Proposed Action and the Multiple Storage Pond Alternative. Under the No-Action Alternative, there would be no short-term impacts on sediment control and water quality.

3.1.3 Floodplains and Wetlands

Executive Order 11988 (Floodplain Management) provides federal guidance for activities within the floodplains of inland and coastal waters. The order requires federal agencies to take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains.

According to the Flood Insurance Rate Map, the Project Area is located within the Special Flood Hazard Area encompassing the 100-year floodplain associated with the Arroyo. The floodplain limit shown on the map extends the width of the Arroyo by up to 670 feet in the Project Area. The 100-year floodplain for the Arroyo is classified as "Zone A," which identifies areas where no base flood elevation has been determined. A flood insurance study (FIS) for Sandoval County, New Mexico and incorporated areas (FEMA, 2008a and 2008b) did not include a detailed study of the Arroyo, although there is a Letter of Map Revision (LOMR) for the downstream end of the project to east of Paseo del Vulcan. The LOMR notes the area within its boundaries as an area of minimal flood hazard (FEMA, 2013).

The No-Action Alternative would not comply with Executive Order 11988, as it would not reduce the risk of floods or improve water quality, and would not minimize the impacts of floods and water quality on human safety and health. There would be a negative effect to floodplain management as a result of the No-Action Alternative.

The purpose of the Proposed Action and the Multiple Storage Pond Alternative is to minimize the impacts of floods associated with storm events on human health and safety; therefore, it complies with Executive Order 11988. A beneficial impact would therefore result from these two alternatives.

Executive Order 11990 (Protection of Wetlands) requires the avoidance, to the greatest extent possible, of both long- and short-term impacts associated with the destruction, modification, or other disturbance to wetland habitats. There are no jurisdictional wetlands within or nearby the Project Area (DBS&A, 2022); therefore, no impacts to wetlands would occur from the No-Action Alternative, the Proposed Action, or the Multiple Storage Pond Alternative.

3.1.4 Air Quality, Noise, and Aesthetics

The Project Area is in New Mexico's Air Quality Control Region 2 for air quality monitoring. Sandoval County is "in attainment" (does not exceed state and federal air quality standards) for all criteria pollutants (U.S. EPA, 2023a). Air quality in the Project Area is generally good. The closest Class I area is Bandelier Wilderness, located approximately 85 miles to the north of the

Arroyo. Class I areas are special wilderness areas of scenic beauty and natural wonder, such as national parks, national monuments, and wilderness areas, where air quality should be given special protection. Class I areas are subject to maximum limits on air quality degradation. All vehicles involved in construction will be required to pass a current New Mexico emissions test and have required emission control equipment.

The Proposed Action and Multiple Storage Pond Alternative would result in a temporary but negligible increase in suspended dust particles from construction activities. City and county regulations pertaining to dust would be followed. The Proposed Action and Multiple Storage Pond Alternative would maintain the work area within or outside the project boundaries free from particulates in accordance with federal, state, and local air pollution standards. The two alternatives would disturb more than 0.75 acre, with a larger footprint for the Multiple Storage Pond Alternative. Appropriate erosion and sediment controls (e.g., sediment fences and straw wattles) would be implemented under a fugitive dust control permit. Truck-mounted water sprinklers and other methods would be used during construction to minimize dust. Parking construction equipment in temporary staging areas would require implementing procedures to prevent oil, fuel, and hydraulic fluid leaks from entering the Arroyo. Air quality in Rio Rancho and Corrales (Sandoval County) would not be affected by the Proposed Action, the Multiple Storage Pond Alternative, or the No-Action Alternative.

According to the Centers for Disease Control (CDC, 2021), a typical, quiet residential area experiences a noise level of 40 decibels. A residential area near heavy traffic has a noise level of 85 decibels. Heavy machinery has a noise level of 120 decibels. During construction (Proposed Action and Multiple Storage Pond Alternative), noise would temporarily increase in the vicinity during vehicle and equipment operation. The Noise Center (ASHA, 2023) advises that noise levels above 85 decibels will harm hearing over time, and that noise levels over 140 decibels can cause damage to hearing after just one exposure. The nearest noise receptor is an animal shelter (Watermelon Mountain Ranch) located approximately 0.25 mile from the west end of the Project Area. The increase in noise during construction would be minor and temporary. Construction would be conducted during business hours (7:00 a.m. to 5:00 p.m.), and would end when construction is complete. Therefore, the Proposed Action and Multiple Storage Pond Alternative would have no significant effect on noise. The No-Action Alternative would have no effect on noise.

Aesthetically, the terrain of the Project Area can be characterized as open land that is partially disturbed by dirt roads and some grading and grubbing. Under the Proposed Action and the

Multiple Storage Pond Alternative, all construction work would be confined to the Arroyo and existing dirt roads, and construction staging areas would be confined to the extent possible to previously disturbed ground. All proposed equipment would be installed within the boundaries of the proposed Project Area. The Proposed Action, Multiple Storage Pond Alternative, and No-Action Alternative would have no effect on the aesthetic values or scenic quality in the area.

3.2 Hazardous, Toxic, and Radioactive Waste Environment

There is no development within 0.25 mile of the Project Area, with the exception of a non-profit animal shelter. Development in the surrounding area consists of residential development beyond to the north and to the west. A school is located 0.75 mile to the south. The majority of the land beyond the Project Area is undeveloped with the exception of dirt roads that cross the area. A review of online resources from the EPA (U.S. EPA, 2023b) and New Mexico Environment Department (NMED) (NMED, 2023) revealed no regulated sites listed in the agency databases. A search of available environmental records was conducted by Environmental Data Resources, Inc. (EDR) (Appendix B). The records search revealed no findings on the subject property and one finding within the area of the subject property.

EDR listed a site approximately 0.5 mile south of the subject property as the Sandoval County Landfill. No violations were associated with the landfill. A Google Earth historical aerial photograph review showed disturbed ground of approximately 150 acres that appeared to have been used for solid waste in two areas; one area appeared in the southeast corner of the landfill area in the 1996 photograph that appeared to contain disposed tires. In subsequent photographs, it appeared that the tires were either moved or buried, as the corner lot is empty. By 2018 the area contained regrown vegetation. The other cleared area was in the southwest corner of the landfill and appeared in the 2014 photograph. A paved road leading to the Paseo Gateway, a master plan development for the City of Rio Rancho, cuts through the corner of the landfill adjacent to the cleared area. A small pit is visible in this cleared corner of the landfill and dirt piles line the pit. The 2017 photograph shows the pit filled in and the surrounding area shows vegetative regrowth in the cleared lot. The 150-acre landfill appears to not be in use in the 2023 photograph and has filled in with vegetative regrowth. The landfill is beyond the project area and appears to not be active; therefore, it was determined based on the records review and aerial photographs dating to 1996 that there is no recognized environmental condition (REC) and no significant impact to the subject property from the finding.

There would be no effect from the Proposed Action or Multiple Storage Pond Alternative on any existing hazardous, toxic, or radioactive waste sites, as no RECs within or near the proposed

construction project were identified. If areas of concern or contaminants are later identified, construction must cease, and USACE would coordinate with SSCAFCA to determine the appropriate course of action. Fluids (e.g., oils) from construction equipment will be handled and controlled according to the BMPs outlined in the construction SWPPP to prevent releases to the environment. Therefore, there would be no anticipated effect from hazardous, toxic, or radioactive waste as a result of the Proposed Action or the Multiple Storage Pond Alternative.

There would be no effect from the No-Action Alternative on hazardous, toxic, and radioactive waste, as there are no RECs within or near the Project Area and no construction would occur.

3.3 Biological Environment

3.3.1 Vegetation Communities

The vegetation of the Albuquerque Basin ecoregion is dominated by sand scrub and desert grassland species including drought-resistant perennial bunchgrasses (growing in clumps), especially Indian ricegrass (*Achnatherum hymenoides*), threeawn (*Aristida* spp.), blue grama (*Bouteloua gracilis*), sand dropseed (*Sporobolus cryptandrus*), mesa dropseed (*Sporobolus flexuosus*), muhly (*Muhlenbergia* spp.), and James' galleta (*Pleuraphis jamesii*) (Griffith et al., 2006) (Appendix C). Scattered shrubs and dwarf-shrubs are often present, especially sand sage (*Artemisia filifolia*), saltbush (*Atriplex canescens*), joint fir (*Ephedra trifurca*), broom snakeweed (*Gutierrezia sarothrae*), and winterfat (*Krascheninnikovia lanata*) (USGS, 2019). These grasslands typically intergrade into salt-desert shrubs or sagebrush, and support grasslands due to unusual soils (sand, gravel, or alluvium) and low rainfall (Griffith et al., 2006).

A biological survey was conducted by a DBS&A biologist on September 16, 2022 (DBS&A, 2022) (Appendix C) (Figure 7). Vegetation in the Project Area was sparse within the Arroyo due to rain events in the channel and erosion on the banks of the channel. The channel bottom was observed to be broad and sandy with little vegetation, but the edges and floodplain of the channel contained scattered shrubs including fourwing saltbush (*Atriplex canescens*), Schott's dalea (*Psoralea schottii*), purple aster (*Dieteria canescens*), prairie sunflower (*Helianthus petiolaris*), Apache plume (*Fallugia paradoxa*), and giant sacaton (*Sporobolus wrightii*).

Dominant species above the Arroyo in the Project Area included large and small shrubs such as sagebrush species (*Artemisia* spp.), and other species such as fourwing saltbush, as well as grasses including blue grama, six-weeks grama (*Bouteloua barbata*), sandhill muhly (*Muhlenbergia pungens*), and dropseed (*Sporobolus* spp). Species of forbs above the channels

included Fendler globemallow (*Sphaeralcea fendleri*), common purslane (*Portulaca oleracea*), wooly dalea (*Dalea lanata*), and phlox heliotrope (*Heliotropium convolvulaceum*). Commonly observed cactus species included plains prickly pear (*Opuntia phaeacantha*) and tree cholla (*Cylindropuntia imbricata*). The areas of heavy ground disturbance above the channel contained dense populations of kochia (*Kochia scoparia*) and tumbleweed (*Salsola tragus*).

No plants listed as rare in Sandoval County were observed during the survey, and none of the plants listed in the New Mexico Department of Agriculture's New Mexico Noxious Weed List were found in the Project Area (Appendix C). The impacts of the Proposed Action or Multiple Storage Pond Alternative to vegetation would be minimal. The only vegetation that would be affected includes fourwing saltbush, sand sage, and Russian thistle, all of which occur in abundance throughout the area. None of the vegetation impacts would be substantial or significantly alter the vegetation conditions of the area. Any area disturbed by construction and not covered by an impervious surface would be revegetated by seeding with native grasses. The No-Action Alternative would have no effect on the vegetation.

3.3.2 Wildlife

Wildlife species expected to be encountered on-site are limited to those well adapted to desert environments, as the Project Area is an open area with low-growing, scattered shrubs and no source of consistent water nearby (Appendix C). Species such as ground squirrels, rabbits, and lizards, as well as predators of those species such as coyotes, roadrunners, and hawks may use the Project Area. During rain events, water that flows through the wet-weather conveyance may temporarily attract additional wildlife to the site. During the biological survey by DBS&A on September 16, 2022, wildlife evidence consisted primarily of ground squirrels (*Ictidomys* spp.). Rodent sighting, trails, tracks, and burrows were observed to be common throughout the Project Area. Canid tracks and scat, either dog or coyote (*Canis* spp.), were observed within the channel bottom. Sparrows (chipping [*Spizella passerina*], house [*Passer domesticus*], and black-throated [*Amphispiza bilineata*]) were the most commonly observed birds. Flocks were concentrated on fourwing saltbush, where the seeds of the saltbush provide a major food source for birds. Other birds documented either by sight or sound in the Project Area included curve-billed thrasher (*Toxostoma curvirostre*), American crow (*Corvus brachyrhynchos*), and a Cooper's hawk (*Accipiter cooperii*). No nests were observed within erosion-created cavities on the Arroyo walls within the Project Area. One vacant nest was observed within a fourwing saltbush during the survey—in the far northeast corner of the Project Area on the side of the Arroyo bank. Invertebrates, primarily nectar-feeding insects such as butterflies, were prevalent

throughout the Project Area, as many herbaceous species were blooming. Observed invertebrates included clouded sulphur butterfly (*Colias philodice*), bumblebee (*Bombus* spp.), harvester ants (*Pogonomyrmex* spp.) and pinacate beetle (*Eleodes* spp.).

Any displacement or disturbance of wildlife during installation would be insignificant under the Proposed Action or the Multiple Storage Pond Alternative. Any trenches left overnight would be covered to prevent trapping of wildlife, or ramps would be installed to allow animals to safely escape (see section 3.7.7 of Mitigation/Avoidance). Prior to start of construction, a qualified biologist would survey the Project Area for wildlife including for evidence of occupancy by prairie dogs or burrowing owl. If burrowing owls or prairie dogs are detected, NMDGF and USFWS would be contacted for guidance. Work would be conducted outside the bird breeding season to the extent feasible; if work would take place between April 15 and September 1, a qualified biologist would conduct a preconstruction survey for nesting birds and work would avoid impacts any active nests. With mitigation measures in place, there would be no significant adverse effect on wildlife as a result of the Proposed Action or the Multiple Storage Pond Alternative. There would be no impact on wildlife under the No-Action Alternative.

3.3.3 Special Status Species

Three agencies have primary responsibility for protecting and conserving special status plant and animal species in New Mexico. The U.S. Fish and Wildlife Service (USFWS), under authority of the Endangered Species Act of 1973 (16 U.S.C. 1531) (ESA), as amended, has the responsibility for federally listed species. The New Mexico Department of Game and Fish (NMDGF) has the responsibility for state-listed wildlife species. The New Mexico State Forestry Division (Energy, Minerals, and Natural Resources Department) (NMEMNRD) has the responsibility for state-listed plant species. Each agency maintains an updated list of species that are classified as protected, or are candidates for that classification, based on their present status and potential threats to future survival and recruitment into viable breeding populations. These types of status rankings represent an expression of threat level to the survival of a given species as a whole and/or within local or discrete populations. Federal special status species listed by the USFWS for the Project Area are provided in Table 1 (USFWS, 2025), along with their habitat associations and their potential to be present in the Project Area (DBS&A, 2022).

No federally listed threatened, endangered, or proposed species were observed in the Project Area during DBS&A's biological survey (DBS&A, 2022) (Appendix C). DBS&A determined that the Project Area does not contain habitat for any of the federal special status species identified.

Special status species listed by the NMDGF as state endangered or threatened and state endangered plant species listed by NMEMNRD for Sandoval County, New Mexico are provided in Table 2, along with habitat association information and potential for presence in the Project Area.

No state-listed plants or animals were observed during the September 16, 2022 biological survey conducted by DBS&A. Due to a lack of habitat and no known presence of these special status plant and animal species, there would be no effect to any such species under the Proposed Action or the Multiple Storage Pond Alternative. The No-Action Alternative would similarly have no impact on special status species.

3.4 Cultural Resources

Implementation of proposed federal actions must comply with the National Historic Preservation Act (NHPA) of 1966 (16 U.S.C. § 470 et seq., as amended). Under the NHPA, consideration of historic preservation issues is to be integrated into the early stages of project planning by federal agencies. Under Section 106 of the NHPA, a federal agency is required to account for the effects of proposed actions on any district, site, building, structure, or object that is included or eligible for inclusion in the National Register of Historic Places (NRHP), prior to the expenditure of funds on the action. Section 110 of the NHPA requires the identification and evaluation of any historic properties on federal property that meet the eligibility criteria of the NRHP. The New Mexico Historic Preservation Division (NMHPD) serves as the New Mexico State Historic Preservation Office (SHPO). Federal agencies are responsible for assessing whether proposed projects will impact historic or archaeological resources. Federal agencies consult with the SHPO on their NRHP eligibility and effect determinations and seek concurrence or resolution of adverse effects.

The area of potential effects (APE) for the Proposed Action includes an area of 141.3 acres (OCS, 2023) (Appendix D). Okun Consulting Solutions (OCS) archaeologist Adam Okun conducted a search of the State of New Mexico Archaeological Records Management Section's New Mexico Cultural Resources Information System (NMCRIS) database and map server, the State Register of Cultural Properties, and the National Register of Historic Places (NRHP) prior to conducting a 100 percent pedestrian survey of the APE.

The cultural resource survey was completed by OCS archaeologists in two sessions: between September 7 and 15, 2022 and between November 14 and 18, 2022 after additional consultation with USACE archaeologists (OCS, 2023). A total of four newly discovered

archaeological sites and eight isolated occurrences (IOs) were documented during a 100 percent pedestrian survey of the APE. Two additional previously recorded sites (LA 18429 and LA 164147) could not be relocated, as they appear to have been fully or partially destroyed since they were originally documented. No further management considerations are warranted for either of these sites, as they do not contain intact elements within the APE.

Of the newly discovered sites, LA 202545 lacks information potential and is recommended as not eligible for listing on the NRHP. No further management considerations are warranted for this resource. Similarly, the eight IOs lack information potential, are recommended not eligible for listing on the NRHP, and do not require additional management considerations.

LA 202546, LA 202547, and LA 202548 are recommended as eligible for listing on the NRHP under Criterion D for their information potential because they contain intact prehistoric thermal features (LA 202547 and LA 202548) or contain a large artifact scatter in a setting that suggests excellent potential for buried features (LA 202546).

USACE initiated consultation with the SHPO in a letter dated January 15, 2025. USACE agreed with the recommendations made by Okun consulting Solutions and made them their formal recommendations. The SHPO concurred with the determination of **no historic properties affected** and the site eligibility determinations in a letter dated February 07, 2025 (Appendix E). With implementation of all avoidance measures, the Proposed Action would have no impact on historic properties. Under the Multiple Storage Pond Alternative, however, construction activities would take place in close proximity to LA202248 and would therefore have the potential to impact it. The construction footprint would overlap with LA202545, which would therefore be impacted. The No-Action Alternative would have no impact on cultural resources in the Project Area.

Besides consultation with the SHPO, Tribal Consultation also occurred, as required by Section 106 of the NHPA and consistent with the Department of Defense's American Indian and Alaska Native Policy, signed by Secretary of Defense, William S. Cohen, on October 28, 1998, based on the State of New Mexico Indian Affairs Department and Historic Preservation Division's 2021 Native American Consultation List. According to the NMHPD, there are 17 tribes with lands and jurisdiction in Sandoval County, including the Comanche Nation of Oklahoma, Jicarilla Apache Nation, Kewa Pueblo, Navajo Nation, Ohkay Owingeh, Pueblo de Cochiti, Pueblo of Isleta, Pueblo of Jemez, Pueblo of Laguna, Pueblo of San Felipe, Pueblo of San Ildefonso, Pueblo of Sandia, Pueblo of Santa Ana, Pueblo of Santa Clara, Pueblo of Tesuque, Pueblo of Zia, and the Hopi Tribe. Coordination letters were submitted to each tribe on January 15, 2025 to determine

if they have concerns about any traditional cultural properties, sacred sites, or properties of religious or cultural significance that may be affected by the project. To date, no responses have been received regarding the coordination letters.

3.5 Land Use and Socioeconomic Considerations

Land use of the area around the Arroyo is characterized primarily by a mixture of vacant, undeveloped rangeland and residential and municipal development. Current land use consists of dirt roads that are used to access homes beyond the Arroyo to the north and for all-terrain vehicle (ATV) recreation. The Arroyo bottom and parts of the banks are also used for ATV recreation. A non-profit animal shelter (Watermelon Mountain Ranch) is located west of the west end of the Project Area, and the shelter staff use the surrounding roads to exercise the animals. Most of the land around the Project Area is gridded out with dirt roads for future development. Under both the Proposed Action and the Multiple Storage Pond Alternative, there would be restrictions on ATV recreation in the Project Area around the structures both during and after construction, as access in and around the ponds would be limited by fencing. Land use of the Project Area would not change otherwise; therefore, any effect of the Proposed Action and Multiple Storage Pond Alternative on land use would be negligible.

The Project Area is located within the City of Rio Rancho limits and is near the Town of Bernalillo. Rio Rancho and Bernalillo are located in Sandoval County. Industries making major contributions to Sandoval County's economy include (1) health care, social assistance, and educational services, (2) retail trade, (3) construction, and (4) manufacturing. Table 3 summarizes demographic data for Sandoval County and New Mexico, for comparison.

Under both the Proposed Action and the Multiple Storage Pond Alternative, there would be a temporary positive effect on the socioeconomics of the region during construction of the facility or facilities, as both alternatives would provide construction jobs, slightly boosting tax revenues and the economy. There would be no permanent effect to the socioeconomics of Sandoval County following completion of the Proposed Action or the Multiple Storage Pond Alternative. The No-Action Alternative would have no impact on land use or socioeconomics in the Project Area or surrounding region.

3.6 Human Health and Safety

The Proposed Action and Multiple Storage Pond Alternative would both improve water quality and provide flood mitigation for storm flows. There are currently no existing facilities in place to

treat storm flows or to ensure that these flows reaching the Rio Grande are treated for water quality. Human health and safety would be beneficially affected by these two alternatives. Under the No-Action, however, storm flows would continue to flood the area, creating a negative impact on human health and safety.

3.7 Mitigation/Avoidance

3.7.1 Physiography, Geology, and Soil

A SWPPP will be prepared by the contractor for the Proposed Action. Erosion protection measures will be implemented as part of the SWPPP.

3.7.2 Water Resources

A SWMP will be prepared by SSCAFCA. It will provide BMPs that are adhered to during project implementation and will be designed to reduce the discharge of pollutants to the maximum extent practicable, to protect water quality, and to satisfy applicable surface water quality standards. The SWMP will include BMPs, control techniques, system design and engineering methods, and other provisions that EPA determines appropriate for control of pollutants.

3.7.3 Floodplains and Wetlands

No floodplains and wetlands mitigation measures are necessary for the Proposed Action.

3.7.4 Air Quality, Noise, and Aesthetics

All vehicles involved in construction will be required to pass a current New Mexico emissions test and have required emission control equipment.

Appropriate erosion and sediment controls (e.g., sediment fences and straw wattles) will be implemented under a fugitive dust control permit. Truck-mounted water sprinklers and other methods will be used during construction to minimize dust.

Construction will take place during business hours (7:00 a.m. to 5:00 p.m.).

3.7.5 Hazardous, Toxic, and Radioactive Waste Environment

Fluids (e.g., oils) from construction equipment will be handled and controlled according to the BMP as outlined in the construction SWPPP to prevent releases to the environment.

To the extent possible, all work will be confined to the Arroyo and existing dirt roads, and construction staging areas will be confined to previously disturbed ground.

3.7.6 Biological Environment

Any trenches left overnight will be covered to prevent trapping of wildlife, or ramps will be installed to allow animals to safely escape.

The Project Area will be surveyed for wildlife prior to the start of construction. If any evidence is found that burrowing owls or prairie dogs are present within the project area, NMDGF and USFWS will be contacted for guidance.

Work will be conducted outside of the bird breeding season to the extent feasible. If work will start between April 15 and September 1, a qualified biologist will conduct a preconstruction survey for nesting birds and all work would avoid impacts to any active nests.

3.7.7 Cultural Resources

As described by OCS (2023), the discovery of isolated (but partly intact) prehistoric features below the ground surface in the walls of the Arroyo demonstrates the potential for other similar discoveries across the Project Area. Due to this landscape-scale potential for subsurface prehistoric features along the Arroyo, all initial project-related ground disturbance will be monitored by a permitted archaeologist for implementation of the Proposed Action. An archaeological monitoring plan will be developed and implemented in accordance with §4.10.17.11 NMAC: Monitoring of Archaeological Sites and Areas of Historic and Scientific Interest. The monitoring plan will include protocols for the preservation or investigation of subsurface cultural deposits that could be discovered during the Proposed Action. If buried cultural deposits are discovered during project activities without an archaeological monitor present, work will cease, and SSCAFCA, USACE and the SHPO will be notified.

3.7.8 Land Use and Socioeconomic Considerations

No land use or socioeconomic mitigation measures are necessary for the Proposed Action.

3.7.9 Human Health and Safety

No human health and safety mitigation measures are necessary for the Proposed Action.

4. Conclusion and Summary

The Proposed Action evaluated in this EA addresses the method and potential effects for the proposed flood management infrastructure modifications and potential water quality improvements. The Project Area is located in an area that has little adjacent development but is experiencing rapid growth. Impacts to the environment would be non-significant and primarily related to construction. The Proposed Action would not result in any moderate or significant short-term, long-term, or cumulative adverse effects. Therefore, the Proposed Action would not significantly affect the quality of the natural, cultural, and human environment, and is recommended for implementation.

5. Preparation, Consultation and Coordination

5.1 Preparation

This EA was prepared by SSCAFCA for the USACE, Albuquerque District. Personnel primarily responsible for preparation include Julie Kutz (biologist), Jean-Luc Cartron (senior biologist), and Ken Brinster (senior scientist) of DBS&A, Adam Okun (principal investigator) of OCS, and Andy Edmondson, P.E. and Dave Gatterman, P.E. of SSCAFCA.

5.2 General Consultation and Coordination

The public was provided a Notice of Availability (Appendix F) for a 30-day review period of the draft EA on 28 April, 2025. A hardcopy of the draft EA was made available for public review at the Loma Colorado Main Library during the public review period. An electronic copy of the draft EA was made available here –

<https://www.spa.usace.army.mil/Missions/Environmental/Environmental-Compliance-Documents/Environmental-Assessments-FONSI/>.

5.3 Agency Consultation and Coordination

Agencies and entities that were contacted in preparation of this EA include the following:

- Shawn Sartorius, U.S. Fish and Wildlife Service, New Mexico Ecological Services Field Office
- Jennifer Faler, U.S. Bureau of Reclamation, Albuquerque Area Office

- Mike Sloane, New Mexico Department of Game and Fish
- Jennifer Baca, New Mexico Interstate Stream Commission
- Shelly Lemon, New Mexico Environmental Department, Surface Water Quality Bureau
- Michelle Ensey, State Historic Preservation Officer
- Wayne Johnson, Manager, Sandoval County Public Works
- John Rhoderick, New Mexico Environmental Department, Water Protection Division

Comments during the public review period were received from New Mexico Department of Game and Fish and the New Mexico Environment Department (see Appendix F). A comment response table is provided below.

Commenter	Comment	Response
New Mexico Department of Game and Fish	Burrowing owls, prairie dogs, and other burrowing wildlife may be in the project area; the project site should be surveyed for wildlife prior to commencing construction.	Noted; EA updated to include that a qualified biologist will conduct a preconstruction survey of the site prior to start of work. If burrowing owls or prairie dogs are detected, NMDGF and USFWS will be contacted for guidance.
New Mexico Department of Game and Fish	If work during the breeding bird season cannot be avoided, the area should be surveyed for active nest sites.	Noted; EA updated to include that if work will start between April 15 and September 1, a qualified biologist will conduct a preconstruction survey for nesting birds and work will avoid impacts any active nests.
NMED, Surface Water Quality Bureau	Comment 1: The Surface Water Quality Bureau opposes the draft EA due to concerns with impacts to surface water quality associated with increased impervious areas, water storage ponds, and from cumulative effects of future development.	Noted; see responses to specific concerns below.
NMED, Surface Water Quality Bureau	Comment 2: The Surface Water Quality Bureau notes threats to surface water quality associated with increased impervious areas and water storage ponds and strongly encourages the incorporation of Low Impact	Noted; text has been added to the EA to clarify the following: -The proposed project would not affect management of stormwater associated with an annual rain event (0.64in/24hr)

	Development (LID) and Green Infrastructure (GI) into the future developments for the Venada Arroyo Watershed.	but would manage high flows up to the 100-yr storm event. GI/LID has limited utility for managing flows of this magnitude. -The project employs minimal impermeable area by using materials that will allow the arroyo to continue to infiltrate stormwater (e.g. articulating concrete blocks for channel stabilization). -Per NM State Engineer requirements, the maximum detention time of the pond in the project is 96-hours.
NMED, Surface Water Quality Bureau	Comment 3: The draft EA should be updated to include information from the U.S. Environmental Protection Agency's municipal separate storm sewer system (MS4) permit, NPDES permit number NMR04A00, which includes the City of Rio Rancho, SSCAFCA, and Sandoval County.	Noted; text has been added to the EA referencing the MS4 permit. SSCAFCA will comply with applicable permits and conditions.
NMED, Surface Water Quality Bureau	Comment 4: The draft EA should describe current water quality impairments.	Language added to section 3.1.2 of EA.
NMED, Surface Water Quality Bureau	Comment 5: The SWQB recommends that the draft EA be revised to include an alternative that fully incorporates LID, GI, and other MS4 permit requirements.	Noted; the EA analyzes 3 alternatives: the preferred alternative, a 3-pond alternative, and a no-action alternative. The preferred alternative incorporates aspects of LID, GI and will comply with all applicable permit requirements.
NMED, Surface Water Quality Bureau	Comment 6: The EA should consider cumulative effects of development of the currently undeveloped watershed in the determination of effects.	Noted; in response to Executive Order 14154, the Council on Environmental Quality issued an interim final rule to remove 40 CFR parts 1500 – 1508 of NEPA regulations. This included the removal of the definition of cumulative effects. The proposed project is a small increment of future development of the Venada watershed.

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Figures

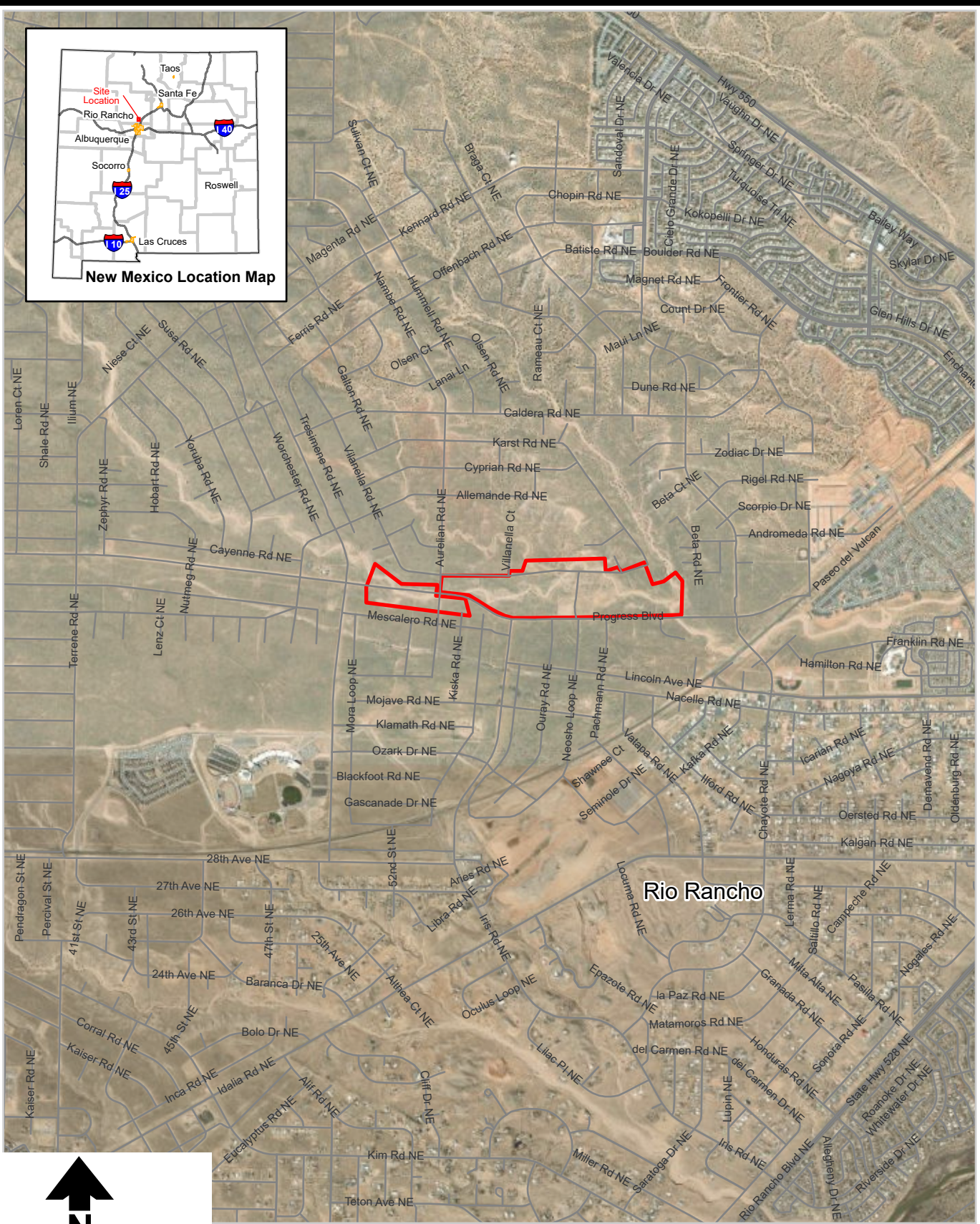


Image source: CoRRGIS, City of Rio Rancho, 5/18/2020



0 1500 3000 ft



Explanation

Project area



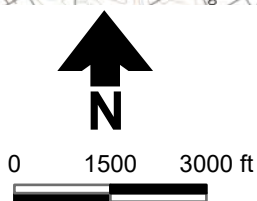
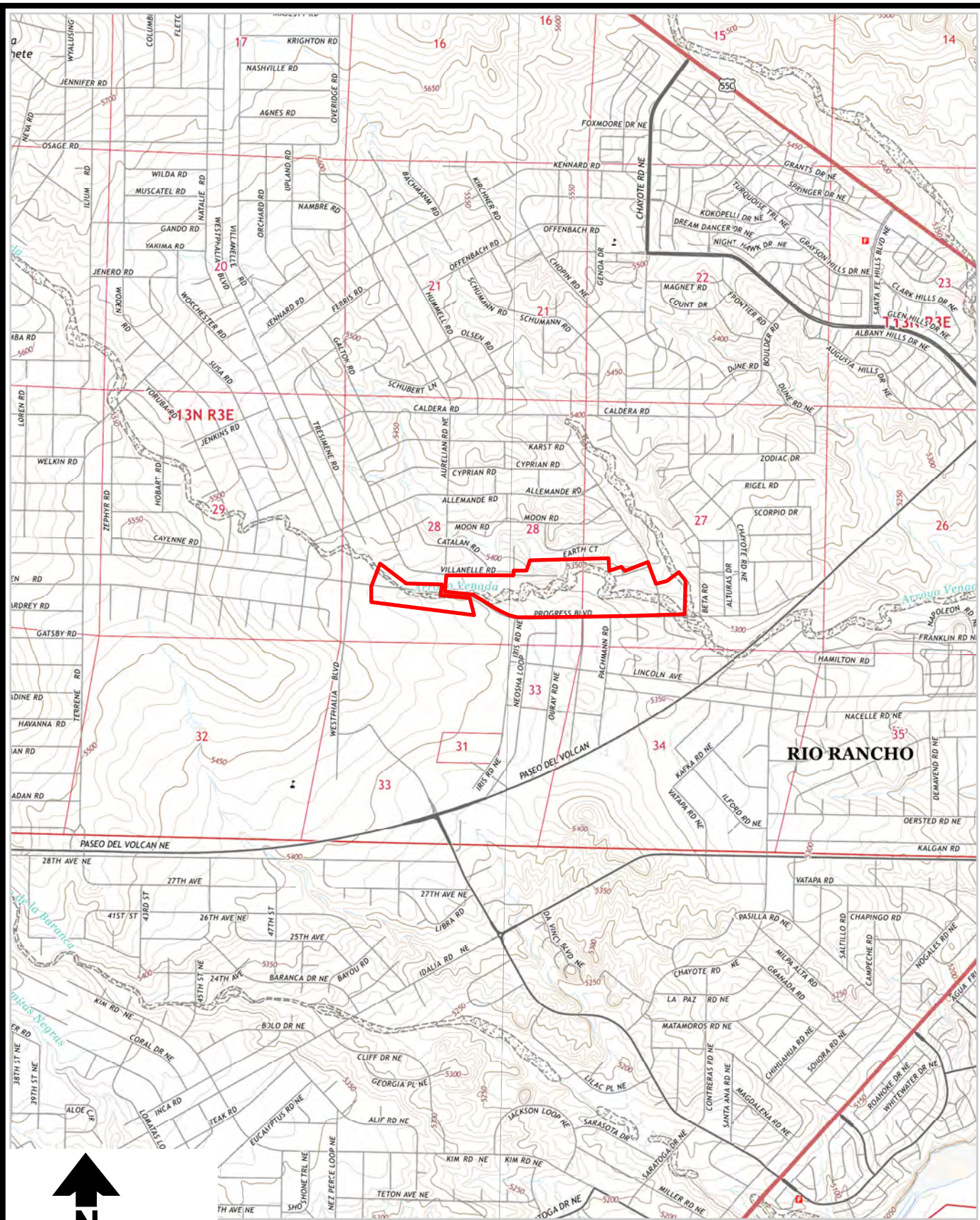
3/7/2025

a Geo-Logic Company
DB24.1253

**UPPER VENADA ENVIRONMENTAL ASSESSMENT
Area Map**

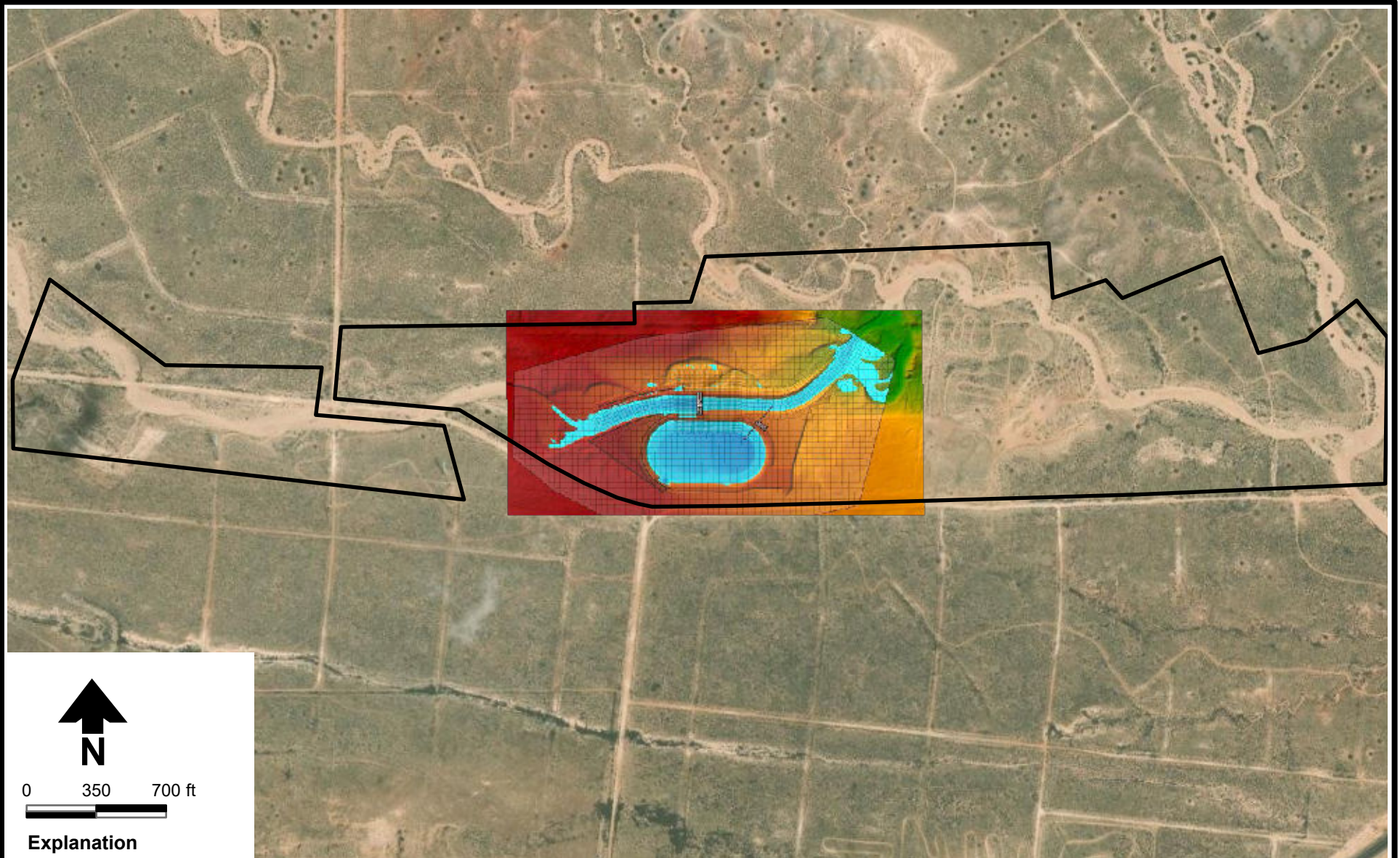
Figure 1

S:\PROJECTS\DB22.1256 UPPER VENADA EA\GIS\ARC\GIS PROJ\VENADA.APRX



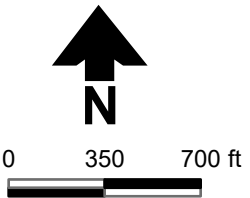
Explanation
 Project area

Source: U.S. Geological Survey 7.5 Minute Quadrangle Map
US Topos NM Bernalillo 2013 and NM Loma Machete 2013
<http://rgis.unm.edu/>
Accessed 8 September 2022



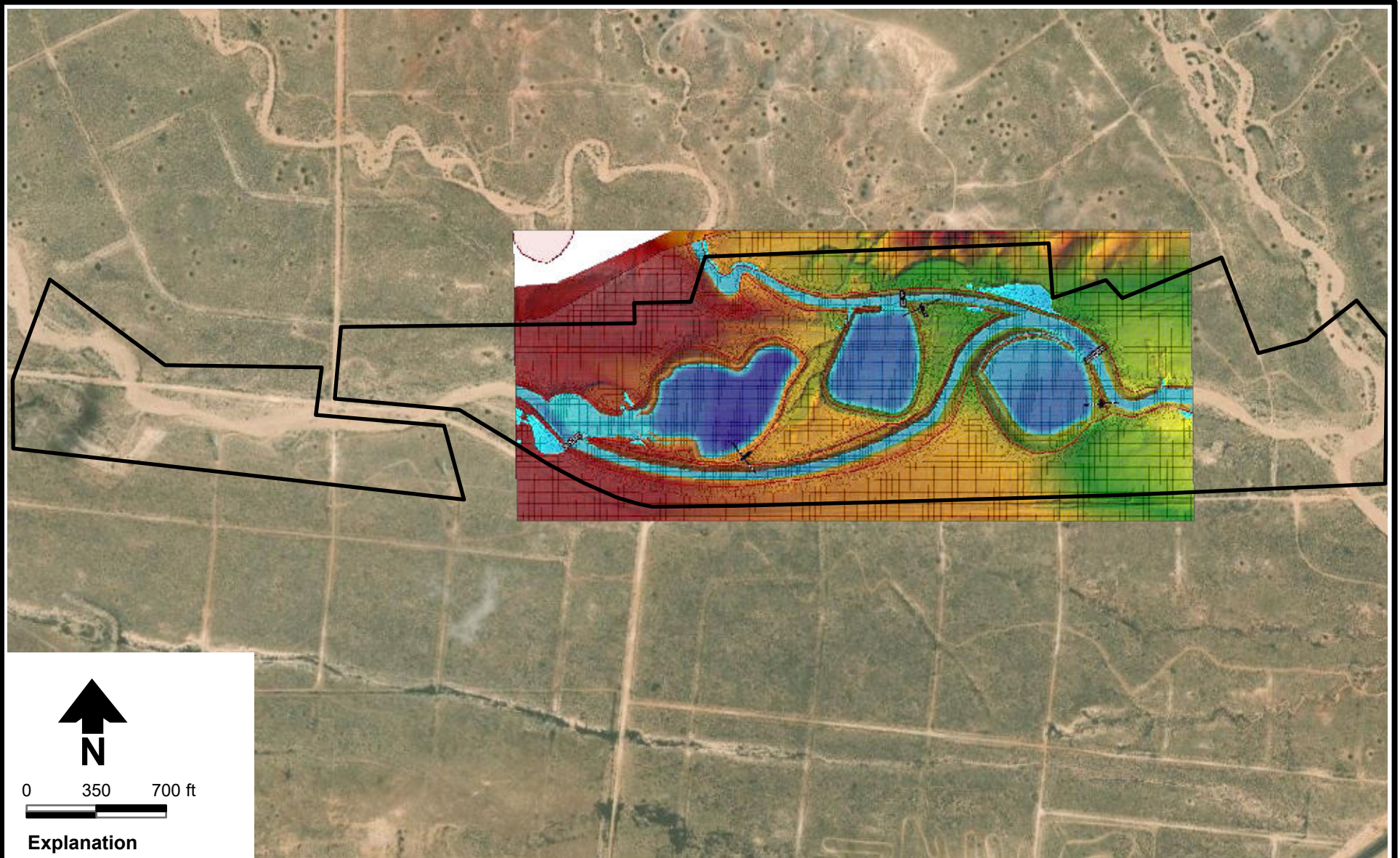
Aerial image: Maxar Vivid, 2/5/2024

UPPER VENADA ENVIRONMENTAL ASSESSMENT
**Preferred Alternative
Conceptual Design**

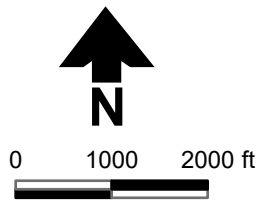
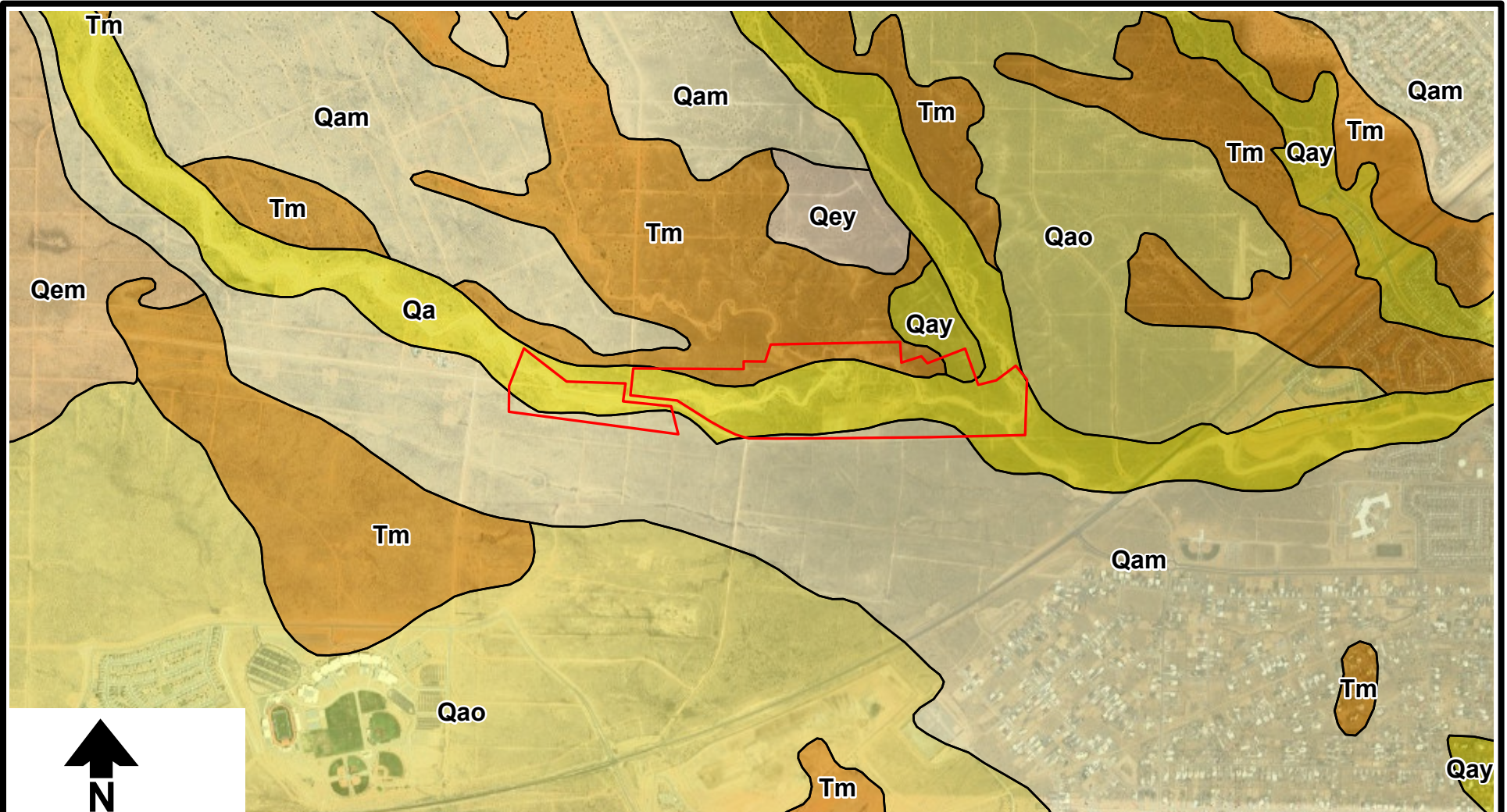


Explanation

 Project area



UPPER VENADA ENVIRONMENTAL ASSESSMENT
**Three Storage Pond Alternative
Conceptual Design**



Explanation
 Project area

Tributary-stream alluvium (Holocene)	Qa
Medial-age slope alluvium (middle Pleistocene)	Qam
Old slope alluvium (middle to lower Pleistocene)	Qao
Young slope alluvium (upper Pleistocene)	Qay
Older eolian sand (middle Pleistocene)	Qem
Younger eolian sand (Holocene to upper Pleistocene)	Qey
"Middle red" formation (upper Miocene)	Tm

Image source: Google Earth Pro, 10/4/2020

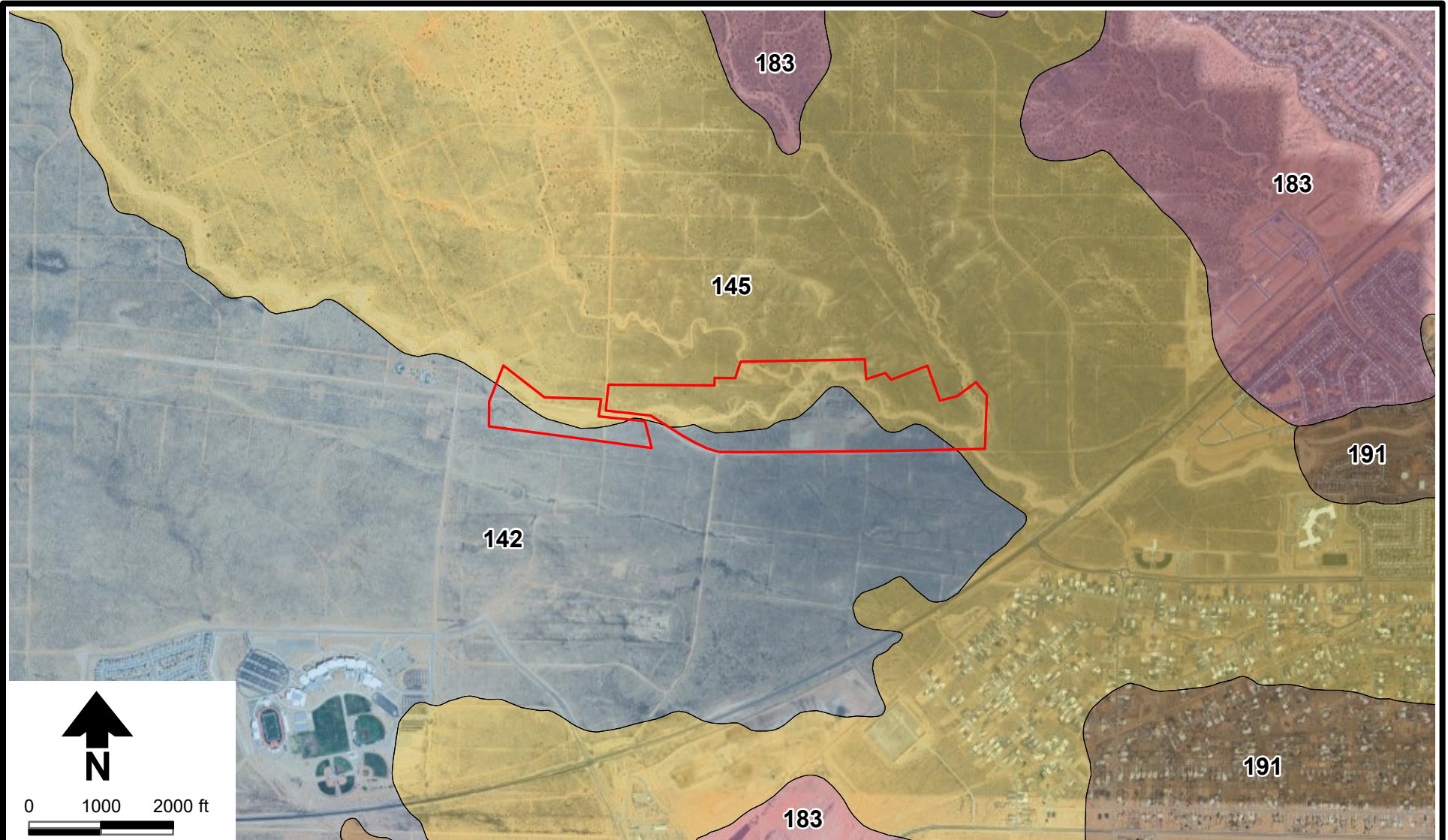
Geology source: USGS

Geologic map of the Albuquerque 1:100,000-scale quadrangle,
 Bernalillo, Sandoval, Santa Fe, and Torrence Counties, New Mexico
 Williams et al., 2005

<http://pubs.usgs.gov/of/2005/1418/>,

Accessed December 15, 2022

UPPER VENADA ENVIRONMENTAL ASSESSMENT Geology Map



Explanation

Project area

145	Grieta-Sheppard loamy fine sands, 2 to 9 percent slopes
142	Grieta fine sandy loam, 1 to 4 percent slopes
183	Sheppard loamy fine sand, 8 to 15 percent slopes
191	Sheppard loamy fine sand, 3 to 8 percent slopes

Image source: Google Earth Pro, 10/4/2020
 Soil Data Source: USDA,
 SSurgo SSA version est.: 09/08/2022
<https://websoilsurvey.sc.egov.usda.gov/>
 Accessed December 14, 2022

**UPPER VENADA ENVIRONMENTAL ASSESSMENT
 Soils Map**

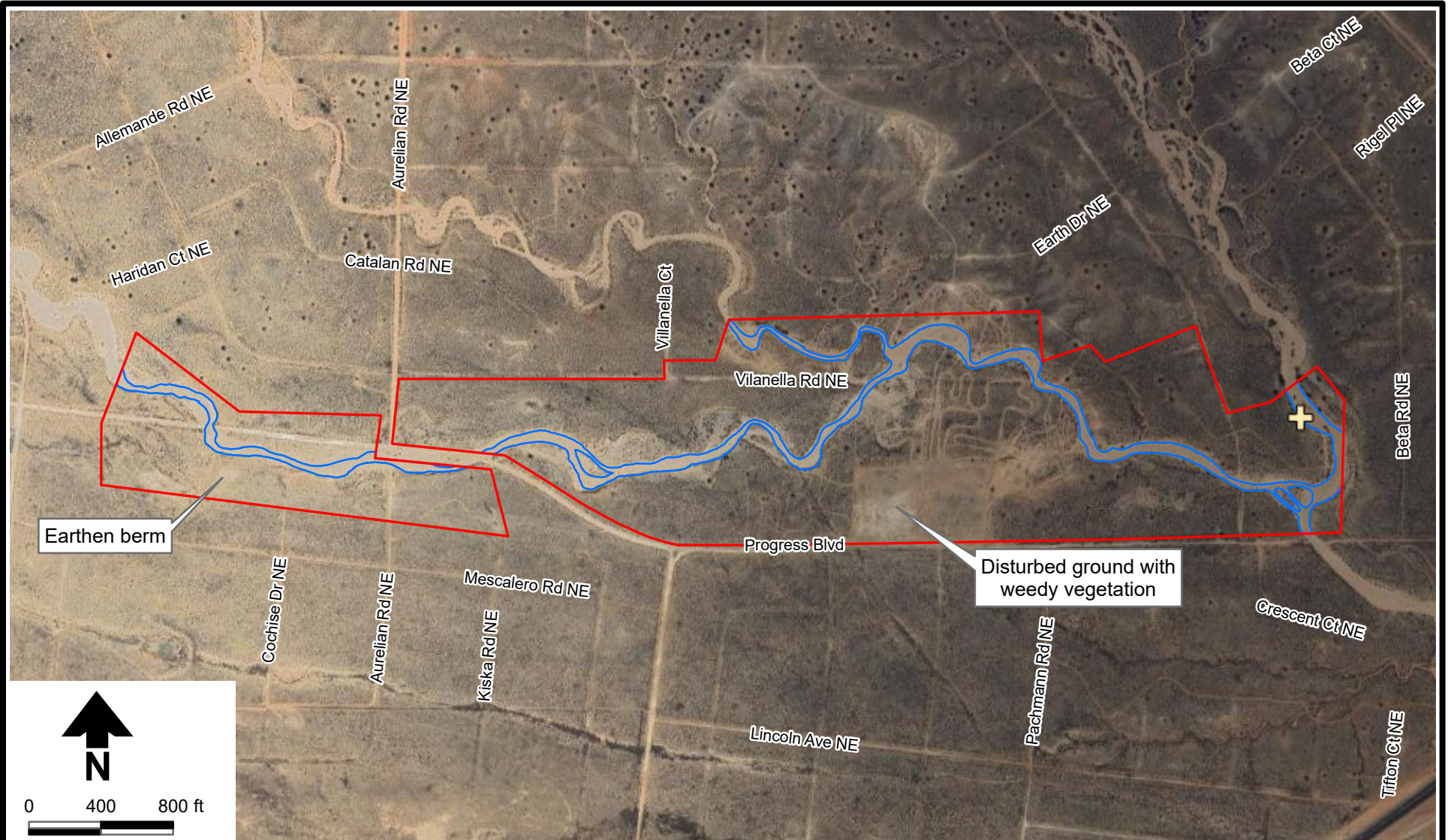


Image source: Google Earth Pro, 10/4/2020

Explanation

- Ordinary high water mark
- Project area
- + Vacant nest

Tables

Table 1. Federally Listed Species Included in the Analysis and Likelihood of Occurrence in the Project Area/Action Area
Page 1 of 4

Species Category	Species	Status	Habitat Associations	Potential for Presence in Project Area and/or Action Area
Birds	Southwestern willow flycatcher (<i>Empidonax trailii extimus</i>)	FE	Habitat for the southwestern willow flycatcher consists of dense riparian vegetation along rivers, streams, or other wetlands, where its diet consists primarily of insects. Suitable vegetation includes dense growth of willows (<i>Salix</i> spp.), arrow weed (<i>Pluchea sericea</i>), alder (<i>Alnus</i> spp.), and saltcedar (<i>Tamarix ramosissima</i>).	Unlikely to occur. The Project Area does not contain riparian vegetation or surface water.
	Yellow-billed cuckoo (<i>Coccyzus americanus</i>)	FT	The yellow-billed cuckoo is found in riparian habitat with multi-level canopy forest and dense understory.	Unlikely to occur. No riparian forest is present in the Project Area and Action Area.
	Mexican spotted owl (<i>Strix occidentalis</i>)	FT	Primarily within shaded, mesic, and cool canyons with steep sides that have mixed conifer, pine-oak, and riparian forest types. Forests used for roosting or nesting often contain moderate to high canopy closure, a wide range of tree sizes suggestive of uneven-age stands, large overstory trees of various species, and high plant species richness with adequate levels of residual plant cover to maintain fruits, seeds, and regeneration to provide for the needs of prey species for the owl.	Unlikely to occur. The Project Area does not harbor any shaded, mesic, and cool steep-sided canyon of forest patches with moderate to dense canopy cover.
Mammals	New Mexico meadow jumping mouse (<i>Zapus hudsonius luteus</i>)	FE	Habitat specialist using persistent emergent herbaceous wetlands and scrub-shrub wetlands on wet soil along perennial streams. Also uses patches of herbaceous vegetation dominated by sedges along water edges within willow and alder dominated habitats.	Unlikely to occur. The Project Area and Action Area do not contain emergent herbaceous wetlands, scrub-shrub wetlands, or willow and alder habitat containing sedges.
Reptiles	None			

Table 1. Federally Listed Species Included in the Analysis and Likelihood of Occurrence in the Project Area/Action Area
Page 2 of 4

Species Category	Species	Status	Habitat Associations	Potential for Presence in Project Area and/or Action Area
Amphibians	Jemez Mountains salamander (<i>Plethodon neomexicanus</i>)	FE	The species is endemic to the Jemez Mountains, where it occurs in mixed conifer and spruce-fir forests above 7,200 feet in specific microhabitat conditions. Preferred microhabitat is generally characterized by relatively high humidity and soils with a specific rock structure.	Unlikely to occur. The Project Area and Action Area are not within the Jemez Mountains.
Fish	Rio Grande silvery minnow (<i>Hybognathus amarus</i>)	FE	The Rio Grande silvery minnow is found in the Middle Rio Grande.	Unlikely to occur. Upper Venada Arroyo is a tributary of the Rio Grande, but the Project Area is not near the confluence with the Rio Grande. It is an ephemeral drainage, and no aquatic habitat was observed during the survey.
	Rio Grande cutthroat trout <i>Oncorhynchus clarkii virginalis</i>	FC	The Rio Grande cutthroat trout is a subspecies of cutthroat trout, endemic to the Rio Grande, Pecos, and possibly the Canadian River Basins in New Mexico and Colorado.	Unlikely to occur. Upper Venada Arroyo is a tributary of the Rio Grande, but the Project Area is not near the confluence with the Rio Grande. It is an ephemeral drainage, and no aquatic habitat was observed during the survey.

Table 1. Federally Listed Species Included in the Analysis and Likelihood of Occurrence in the Project Area/Action Area
Page 3 of 4

Species Category	Species	Status	Habitat Associations	Potential for Presence in Project Area and/or Action Area
Insects	Monarch (<i>Danaus plexippus</i>)	FP	Adult monarch butterflies during breeding and migration require a diversity of blooming nectar resources, which they feed on throughout their migration routes and breeding grounds (spring through fall). Monarchs also need milkweed (for both oviposition and larval feeding) embedded within this diverse nectaring habitat. The correct phenology, or timing, in the life cycle of monarchs and blooming of nectar plants and milkweed is important for monarch survival. New Mexico does not overlap any migration routes but contains summer breeding areas primarily in the eastern third of the state (USFWS, 2020). The US Fish and Wildlife Service has proposed to list the monarch butterfly as a threatened species with designated critical habitat	Unlikely to occur. New Mexico does not harbor any known migration routes, and there is no known breeding population in central New Mexico.. In addition the potential for milkweed plant species to be present is low. No milkweed was observed during the site survey.
	Suckley's cuckoo bumble bee (<i>Bombus suckleyi</i>)	FP	Suckley's cuckoo bumble bee (proposed for listing as endangered under the Endangered Species Act) is a semi-specialist obligate parasite known to usurp nests of Western bumble bees (<i>Bombus occidentalis</i>) and Nevada bumble bees (<i>Bombus nevadensis</i>). It requires a diversity of native floral resources (pollen and nectar) for nutrition. It is found in a wide variety of habitats, including montane meadows and prairies, farms, woodlands, boreal forests, active and fallow agricultural fields, and urban areas. The species has a broad distribution across North America, stretching from the Yukon down to Arizona and as far east as Newfoundland. The species has experienced an approximately 85 percent decline in occupancy range wide between 1900 and 2020 and has not been observed in the contiguous United States since 2016, despite an expanding survey effort throughout the range (USFWS, 2024).	Unlikely to occur. The Suckley's cuckoo bumble bee has not been observed in the contiguous United States since 2016. There are no historical occurrence records from New Mexico (The Xerces Society et al., 2017; Center for Biological Diversity, 2020).

Table 1. Federally Listed Species Included in the Analysis and Likelihood of

Occurrence in the Project Area/Action Area

Page 4 of 4

Species Category	Species	Status	Habitat Associations	Potential for Presence in Project Area and/or Action Area
Plants	None			

Federal designations: Federal Endangered Species Act, USFWS

FC = Federal candidate

FE = Federal endangered

FP = Federal proposed

FT = Federal threatened

Table 2. State Listed and Rare Plant Species Identified for Project Area and/or Action Area
Page 1 of 6

Species Category	Species	Status	Habitat Associations	Potential for Presence in Project Area and/or Action Area
Plants ^{a,b}	Wood lily (<i>Lilium philadelphicum</i>)	SE	The wood lily occurs in a wide variety of habitats from the Appalachian Mountains to the Rocky Mountains, in tallgrass prairies, open woods, thickets, and high mountain meadows. In New Mexico, the species is found in wetter habitat typical of the Rocky Mountains.	Unlikely to occur. The Project Area and Action Area do not have tallgrass prairies, open woods, thickets, and high mountain meadows, or any wetter habitat typical of the Rocky Mountains.
	Parish's alkali grass (<i>Puccinellia parishii</i>)	SE	The Parish's alkali grass requires alkaline springs, seeps, and seasonally wet areas that occur at the heads of drainages or on gentle slopes at 2,600 to 7,200 feet (800 to 2,200 meters) range-wide.	Unlikely to occur. The Project Area and Action Area do not have habitat containing alkaline springs or seeps or wet headwater areas.
	Brack's cactus (<i>Sclerocactus cloveriae</i> subsp. <i>brackii</i>)	SE	Sandy clay strata of the Nacimiento Formation in sparse shadscale scrub at 5,000 to 6,400 feet (1,500 to 1,950 meters).	Unlikely to occur. The Project Area and Action Area do not contain strata from the Nacimiento Formation.
	Gypsum Townsend's aster (<i>Townsendia gypsophila</i>)	SE	Weathered gypsum outcrops of the Jurassic-age Todilto and overlying Morrison formations. The largest populations occur on highly gypsiferous soils rather than pure gypsum. Smaller populations grow on Todilto gypsite, a highly pure, crustose form of gypsum.	Unlikely to occur. The Project Area and Action Area do not contain gypsum outcrops.
Invertebrates	None			
Fish	Rio Grande silvery minnow (<i>Hybognathus amarus</i>)	FE/SE	Rio Grande, beyond project limits and Action Area. The confluence with the Rio Grande is approximately 3.5 miles from the downstream end of project.	Unlikely to occur. The Venada Arroyo is a tributary of the Rio Grande, but the Project Area is not near the confluence with the Rio Grande, and it is an ephemeral drainage.

Table 2. State Listed and Rare Plant Species Identified for Project Area and/or Action Area
Page 2 of 6

Species Category	Species	Status	Habitat Associations	Potential for Presence in Project Area and/or Action Area
Amphibians	Jemez Mountains salamander (<i>Plethodon neomexicanus</i>)	FE/SE	The species is endemic to the Jemez Mountains, where it occurs in mixed conifer and spruce-fir forests above 7,200 feet in specific microhabitat conditions. Preferred microhabitat is generally characterized by relatively high humidity and soils with a specific rock structure.	Unlikely to occur. The Project Area and Action Area are not within the Jemez Mountains.
Mollusks	Wrinkled marshsnail (<i>Stagnicola caperata</i>)	SE	The species is known to occur only in the Cerro la Jara area of the Jemez Mountains, which is the key habitat area in the state.	Unlikely to occur. The Project Area and Action Area are not within the Jemez Mountains.
Mollusks (cont.)	Paper pondshell (<i>Utterbackia imbecillis</i>)	SE	The paper pondshell is strictly an aquatic species that inhabits mud, sand, and gravel substrates of lakes and rivers. The animals imbed themselves in softer substrates, with only the tip of the shell and the siphonal openings visible. Reproduction in freshwater mussels occurs with the release of larvae from the adult that disperse over the available environment. In New Mexico, it is known from the lower Canadian River at Conchas Reservoir (San Miguel County), the key habitat area of the state for the species. A population, likely introduced, was documented in the Middle Rio Grande near Rio Rancho, Sandoval County.	Unlikely to occur. The Project Area and Action Area have no consistently wetted softer substrates, mud, and gravel.
Reptiles	None			

Table 2. State Listed and Rare Plant Species Identified for Project Area and/or Action Area
Page 3 of 6

Species Category	Species	Status	Habitat Associations	Potential for Presence in Project Area and/or Action Area
Birds	Brown pelican (<i>Pelecanus occidentalis</i>)	SE	The brown pelican is found along seacoasts, lakes, and rivers. This species is a vagrant to New Mexico, having been verified at Bloomfield (San Juan Co.), Snow Lake (Catron Co.), and Bitter Lake National Wildlife Refuge; there are also records of the species near Cliff (Grant Co.), but is mostly found at large lakes or along major rivers, including in the San Juan, Gila, Rio Grande, and Pecos drainages.	Unlikely to occur. The Project Area does not contain surface water.
	Common black hawk (<i>Buteogallus anthracinus anthracinus</i>)	ST	The black hawk is found within wooded habitat along permanent streams. The species summers primarily at lower elevations in the Gila, San Francisco, and Mimbres drainages, which are key habitat areas.	Unlikely to occur. The Project Area does not contain surface water.
	Bald eagle (<i>Haliaeetus leucocephalus</i>)	ST	The bald eagle is usually found along seacoasts, lakes, and rivers. Nesting sites are usually isolated high in trees, on cliffs, or on pinnacles. The species is also associated with prairie dog colonies in New Mexico.	Unlikely to occur. The Project Area does not contain surface water or prairie dog colonies.
	Gray vireo (<i>Vireo vicinior</i>)	ST	In New Mexico, the gray vireo prefers open pinyon-juniper woodland or juniper savannah with a shrub component. In northwest New Mexico, gray vireos are found in broad-bottomed, flat or gently sloped canyons, in areas with rock outcroppings, or near ridgetops. In these areas, bitterbrush (<i>Purshia tridentata</i>), mountain mahogany (<i>Cercocarpus breviflorus</i>), Utah serviceberry (<i>Amelanchier utahensis</i>) and big sagebrush (<i>Artemisia tridentata</i>) are often present. Gray vireos are often found in areas of moderate shrub cover (35-45%) with large amounts of bare ground between herbaceous plants.	Unlikely to occur except as a rare transient. The Project Area is not within well-developed woodland or gently sloped canyons, or areas with rock outcroppings near ridgetops. Habitat of the project area has scattered junipers but does not contain well-developed pinyon-juniper woodlands or juniper savannah.

Table 2. State Listed and Rare Plant Species Identified for Project Area and/or Action Area
Page 4 of 6

Species Category	Species	Status	Habitat Associations	Potential for Presence in Project Area and/or Action Area
Birds (cont.)	Peregrine falcon (<i>Falco peregrinus</i>)	ST	Habitat of the peregrine falcon is primarily located in open wetlands near cliffs. In New Mexico, the breeding territories center on cliffs that are in wooded/forested habitats with large "gulfs" of air nearby in which these predators can forage.	Unlikely to occur. The Project Area does not contain wetlands near cliffs.
	Neotropic cormorant (<i>Phalacrocorax brasilianus</i>)	ST	In New Mexico, neotropic cormorants are generally found on larger bodies of water such as reservoirs, where they prey on fish.	Unlikely to occur. The Project Area does not contain surface water.
	Broad-billed hummingbird (<i>Cynanthus latirostris</i>)	ST	In New Mexico, the broad-billed hummingbird is local and uncommon. It is a regular summer resident only in the southwest corner of the state within Guadalupe Canyon; otherwise, vagrant occurrences have been documented at a select few locations around the state including Bandelier National Monument (Sandoval Co.) and as an accidental transient in residential/developed areas. It prefers riparian woodlands at low to moderate elevations.	Unlikely to occur as anything more than a vagrant occurrence. The nearest known location to the project area and Action Area is Bandelier National Monument, far outside of the Project Area.
	Costa's hummingbird (<i>Calypte costae</i>)	ST	Costa's hummingbird is a desert scrub species of the southwestern United States and northern Mexico. In New Mexico it is an uncommon and sporadic breeder in the southwest and south-central mountains. It occurs most regularly in Guadalupe Canyon and in side canyons along the lower Gila River from Cliff south.	Unlikely to occur. The Project Area is far outside of the species' regular distribution in New Mexico.

Table 2. State Listed and Rare Plant Species Identified for Project Area and/or Action Area
Page 5 of 6

Species Category	Species	Status	Habitat Associations	Potential for Presence in Project Area and/or Action Area
Birds (cont.)	Southwestern willow flycatcher (<i>Empidonax trailii extimus</i>)	SE/FE	Habitat for the southwestern willow flycatcher consists of dense riparian habitats along rivers, streams, or other wetlands where its diet consists primarily of insects. Suitable vegetation includes dense growth of willows (<i>Salix</i> spp.), arrow weed (<i>Pluchea sericea</i>), alder (<i>Alnus</i> spp.) saltcedar (<i>Tamarix ramosissima</i>), and other riparian vegetation.	Unlikely to occur. The Project Area does not contain riparian habitat or surface water.
	Baird's sparrow (<i>Ammodramus bairdii</i>)	ST	Baird's sparrow breeds in a fairly small geographic area of south-central Canada, Montana, and North and South Dakota. It winters on grasslands of the northern Mexican plateau, primarily in Chihuahua and Durango but including portions of bordering states. The winter range extends into small portions of southeast Arizona, southern New Mexico, and southwest Texas. In New Mexico, Baird's Sparrow has been found on Otero Mesa and in the Animas Valley, and may occur in other areas of suitable winter habitat, particularly in the southeast portion of state (NMPF, 2007).	Unlikely to occur. The Project Area is west and north of the species' known winter range in New Mexico and far outside the breeding distribution.
Mammals	New Mexico meadow jumping mouse (<i>Zapus hudsonius luteus</i>)	FE/SE	Habitat specialist using persistent emergent herbaceous wetlands and scrub-shrub wetlands on wet soil along perennial streams. Also uses patches of herbaceous vegetation dominated by sedges along water edges within willow and alder dominated habitats.	Unlikely to occur. The Project Area and Action Area do not contain emergent herbaceous wetlands, scrub-shrub wetlands, or willow and alder habitat containing sedges.
	Pacific marten (<i>Martes caurina</i>)	ST	The Pacific marten occupies primarily mature coniferous forests.	Unlikely to occur. The Project Area and Action Area do not contain mature coniferous forests.

Table 2. State Listed and Rare Plant Species Identified for Project Area and/or Action Area
Page 6 of 6

Species Category	Species	Status	Habitat Associations	Potential for Presence in Project Area and/or Action Area
Mammals (cont.)	Spotted bat (<i>Euderma maculatum</i>)	ST	Known in New Mexico from the Rio Grande, Rio Chama, and Animas River Valleys, the Mogollon Plateau, and the Jemez, San Mateo, and Sacramento Mountains. However, it is undoubtedly more widespread in the state than records indicate. Occupies a wide range of vegetation types, moving downslope after the reproductive season. Preferred habitat consists of meadows in subalpine coniferous forests. In the Mogollon, San Mateo, and Jemez Mountains, spotted bats were netted over streams or water holes in ponderosa or mixed coniferous forest. Bats are cliff dwellers whose diurnal roosts are the cracks and crevices of canyons and cliffs. Also recorded in pinyon-juniper woodlands and open semidesert shrublands. Rocky cliffs are necessary to provide suitable cracks and crevices for roosting, as is access to water.	Unlikely to occur. There are no coniferous forests, pinyon-juniper woodlands, streams or water holes in the Project Area or Action Area.

ST = State threatened
 SE = State endangered
 FT = Federal threatened
 FE = Federal endangered

Table 3. Demographics Summary for New Mexico and Sandoval County

	New Mexico	Sandoval County
Population	2,117,527	148,834
American Indian and Alaska Native alone	11.2%	14.1%
Black or African American alone	2.7%	2.8%
Asian	1.9%	1.9%
Hawaiian/Pacific Islander	0.2%	0.2%
White alone	81.3%	77.7%
Hispanic or Latino	50.1%	41.2%
<i>Economic Data</i>		
Median household income (2017-2021)	\$54,020	\$68,947
Unemployment rate ^a	3.4%	3.1%
Persons in poverty	18.4%	9.4%

Source: U.S. Census Bureau, 2023, unless otherwise noted

^a New Mexico Department of Labor, 2022