

ENVIRONMENTAL ASSESSMENT
FOR:
TULE RIVER INDIAN TRIBE OF CALIFORNIA
WASTEWATER EFFLUENT DISPOSAL IMPROVEMENT PROJECT
CA21 - N80



LEAD AGENCY:



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Abbreviations & Acronyms

APE	Area of Potential Effects
BMP	Best Management Practice
CAA	Clean Air Act of 1970
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CWA	Clean Water Act
dB	decibel(s)
dBA	A-weighted decibel(s)
DTSC	Department of Toxic Substances Control
EA	Environmental Assessment
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
GHG	greenhouse gas
gpd	gallons per day
HHS	U.S. Department of Health and Human Services
IHS	Indian Health Service
mph	miles per hour
NAAQS	national ambient air quality standards
NAHC	Native American Heritage Commission
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resource Conservation Service
OSHA	Occupational Safety & Health Administration
PL	Public Law
PM ₁₀	Respirable particulate matter
PM _{2.5}	Fine particulate matter
ppm	parts per million
PRC	Public Resource Code
SF	square feet
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SJVAPCD	San Joaquin Valley Air Pollution Control District
SWPPP	Storm Water Pollution Prevention Plan
THPO	Tribal Historic Preservation Officer
USACE	U.S. Army Corps of Engineers
U.S.C.	U.S. Code
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

Chapter 1 Introduction

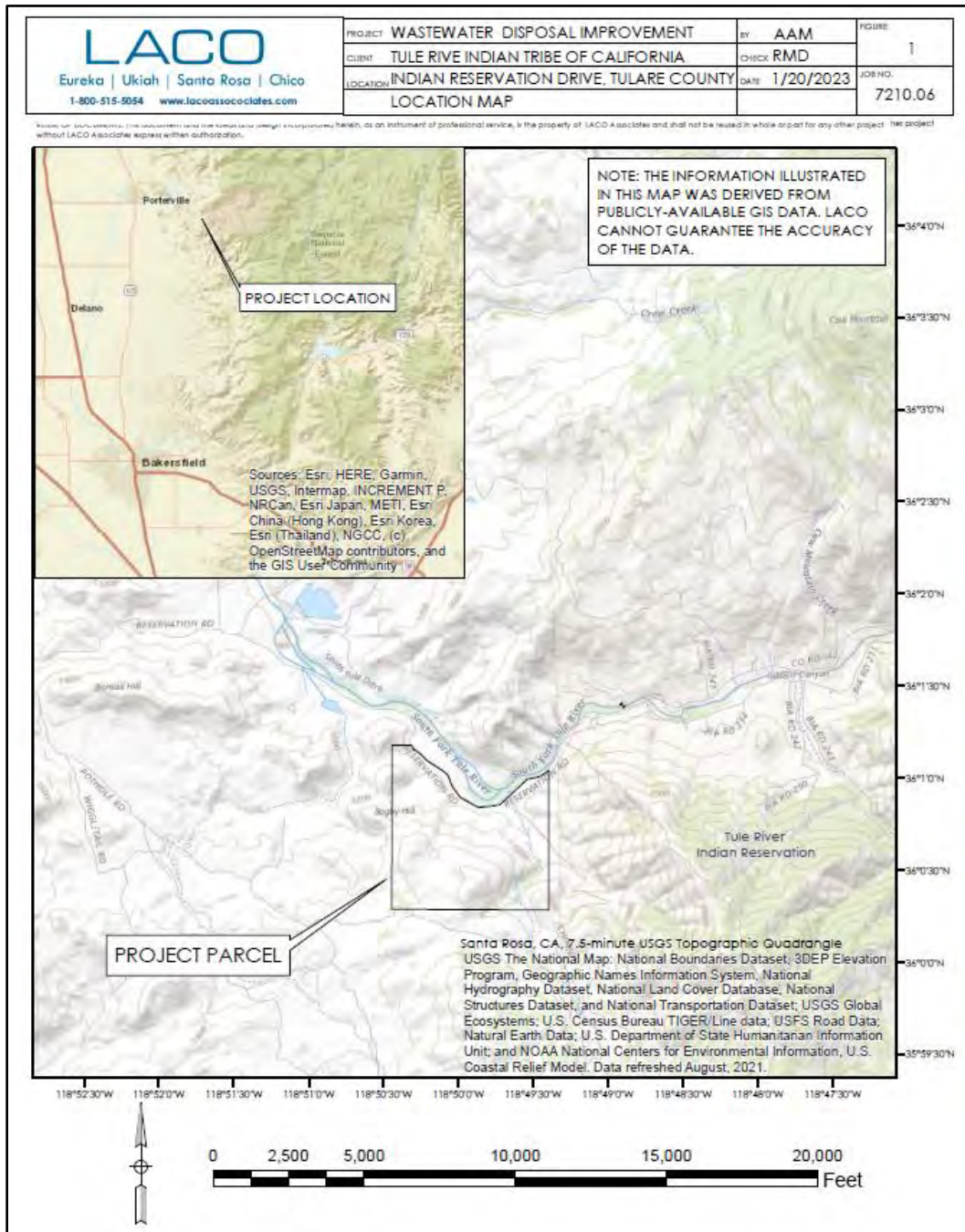
This Environmental Assessment (EA) has been prepared for the U.S. Department of Health and Human Services (HHS), Indian Health Service (IHS) to document the environmental review of improvements proposed to the wastewater effluent disposal system of the Tule River Indian Tribe of California (Tribe). IHS proposes to fund the Proposed Action under the Sanitation Facilities Construction (SFC) program. IHS, as Lead Agency, will use this EA to determine if improvements to the Tribe's wastewater effluent disposal system would result in significant effects on the quality of the human environment. The objectives of the evaluation include but are not limited to evaluating potential project alternatives and the potential impacts on the human and natural environment that may occur if the Proposed Action is implemented.

1.1 Overview of the Proposed Action

The Proposed Action would include improvements to the Tribe's wastewater effluent disposal system in order to expand effluent disposal capabilities and increase treated effluent storage capacity at the wastewater treatment plant (WWTP). The proposed improvements, including 23 new 1-acre spray fields and an approximately 900,000-gallon storage tank, would augment the current effluent disposal system that is inadequate and failing, allowing the Tribe to properly dispose of treated effluent and prevent off-site discharge. To connect the proposed spray fields to the WWTP, approximately 3,650 linear feet (LF) of 4-inch pipe (main line) would be installed within the existing dirt access road to convey treated effluent to each cluster of spray fields (the number of spray fields per cluster to be determined during final engineering design). Approximately 6,000 LF of 1-inch pipe would be installed to connect spray field clusters to the 4-inch main line. The new water lines would be buried to a depth of approximately 3 feet. Installation of the 900,000-gallon storage tank would require excavation in an area of approximately 15,500 square feet (SF) to an average depth of 10 feet. Approximately 1.7 acres would be disturbed during construction. While the overall project area would be 24.7 acres (23 new 1-acre spray fields and installation of the storage tank and water lines), ground disturbance would only occur on the 1.7 acres needed to install the storage tank and water lines. The Tribe additionally proposes to evaluate the possibility of applying for a National Pollutant Discharge Elimination System (NPDES) wastewater discharge permit for emergency use through the U.S. Environmental Protection Agency (EPA).

The Proposed Action would be implemented on undeveloped lands near the existing WWTP located on trust land of the Tribe adjacent to the Tule River Indian Reservation (Reservation) in Tulare County, California, on the parcel identified by Assessor's Parcel Number (APN) 305-130-017 (Site). See Figure 1 for the general location of the Proposed Action. In 2015 the Site was converted to trust land.

Figure 1 – Location Map



1.2 Background

The Reservation is located east of the Site, where the majority of the Tribe's development is located. In July 2014, the Tribe constructed the existing WWTP on fee land adjacent to the west of the Reservation, to replace failing septic systems. The WWTP was constructed using modular units, with a treatment capacity of 75,000 gallons per day (gpd) and in November 2016, a second treatment unit with a maximum capacity of 120,000 gpd was installed, increasing the total treatment capacity of the WWTP to 195,000 gpd (equivalent to the capacity to support 390 homes at a rate of 500 gpd/house). The WWTP was additionally constructed with a

300,000-gallon storage tank for treated effluent and an emergency 800,000 gallon storage pond for untreated wastewater, in the event the WWTP is offline. During initial construction of the WWTP in 2014, approximately 7,075 linear feet of drainfield was installed adjacent to the WWTP to dispose of an estimated 64,000 gpd of treated effluent; however, soon after installation, the capacity of the drainfield was determined to actually be closer to 10,000 gpd. In January 2015, approximately 7.5 acres of spray fields were installed on trust land southeast of the WWTP in order to provide an alternative effluent disposal option. While the spray fields were designed to dispose of an estimated 79,500 gpd, the system has been found to be deficient above flows of 40,000 gpd. See Figure 2, below, for the locations of these existing features.

Figure 2 - Existing Conditions. Source: PER (IHS, 2020)



In 2019, the Tribe requested that IHS conduct a preliminary evaluation for expanding the wastewater effluent disposal capabilities at the WWTP due to failure of the spray fields causing treated effluent to drip down the hillsides into the nearby drainage, which discharges to the South Fork Tule River. In the Preliminary Engineering Report (PER) dated June 2020, IHS determined that the spray field failure is due to several factors including significant slope of fields, intermediate rock/confining layers, lack of redundancy to allow for rest cycles, and actual infiltration rates less than expected. At that time, the WWTP served 159 homes and a limited number of non-residential buildings, with estimated wastewater flows of approximately 70,000 gpd during winter months when the spray fields were failing.

1.3 Overview of the Environmental Review Process

This EA has been prepared in general conformance with the scope and limitations of the National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. 4321 *et seq.*), the Council on Environmental Quality (CEQ) NEPA Implementing Regulations (40 CFR §1500-1508, 2022), the HHS General Administration Manual (GAM) §30 Environmental Protection Requirements (2000), and the IHS Environmental Review Manual (2007). IHS performed an initial analysis to determine if the Proposed Action would require the additional analysis of an EA or if it would meet the requirements to be categorically excluded per the Federal Register notice published January 6, 1993 (58 FR 569). Based on the IHS Full Environmental Information and Documentation dated August 18, 2021 (see Appendix A), an EA was identified as the appropriate level of environmental analysis for the Proposed Action.

This EA has been prepared to analyze and document the environmental consequences associated with the Proposed Action and the No Action Alternative. As Lead Agency, IHS will use this document to determine if the proposed project would result in adverse effects on the quality of the environment. A notice published in a newspaper of general circulation will invite public comments on the EA. The comment period, as well as information regarding access to the EA, will be disclosed in the notice. Consistent with the requirements of NEPA, IHS will determine that either a Finding of No Significant Impact (FONSI) is appropriate or prepare an Environmental Impact Statement (EIS). If a FONSI is deemed appropriate, IHS will release a public Notice of Availability (NOA) of the findings of the evaluation prior to making a decision on the Proposed Action.

Chapter 2 Purpose of and Need for Action

2.1 Purpose of the Project

The purpose of the project is to expand the Tribe's wastewater effluent disposal system in order to provide sufficient disposal capacity for existing and planned uses on the Reservation. The proposed improvements would provide for safe and reliable disposal of existing wastewater flows, reducing potential environmental problems associated with the failure of the existing spray fields.

2.2 Need for the Project

As discussed in Section 1.2 of this EA, the Tribe's WWTP has a total treatment capacity of 195,000 gpd, to support the equivalent of 390 homes, and the disposal system is comprised of a failed (and no longer used) drainfield with a capacity of approximately 10,000 gpd and 7.5 acres of spray fields with an observed capacity of approximately 40,000 gpd. The WWTP currently serves approximately 230 homes and a limited number of non-residential buildings on the Reservation. Sewer collection expansion projects have been funded to connect 81 additional homes to the sewer system by May 2024. At that time, it is anticipated that approximately 155,500 gpd of wastewater will require treatment and disposal at the WWTP. The Tribe's wastewater effluent disposal system is failing with current effluent flows, which are well below the treatment capacity of the WWTP and the intended capacity of the existing disposal system. The Tribe does not have a NPDES wastewater discharge permit through the EPA for off-site discharge of treated effluent and is therefore in violation of the federal Clean Water Act (CWA). Additionally, the Tribe has an active ordinance prohibiting the discharge of any pollutant into the waters of the Reservation (Ordinance No. 02-99). With additional homes proposed for connection to the WWTP within the next two (2) years, the failure of the disposal system and the unauthorized discharge would be expected to worsen.

2.3 IHS's Objectives

The IHS SFC program, created pursuant to Public Law 86-121 (1959), seeks to raise the health status of the American Indian and Alaska Native people to the highest level possible by providing environmental engineering services and sanitation facilities to American Indians and Alaska Natives. The following specific project objectives have been identified based on the SFC program mission and applicable laws, and the needs of the Tribe:

1. To improve the overall health conditions of residents of the Reservation;
2. To provide a wastewater effluent disposal system that accommodates the needs of current and future housing units, within the treatment capacity of the WWTP; and
3. To provide a wastewater effluent disposal system that avoids undesirable environmental impacts, especially on the physical and biological environments.

2.4 Relevant Laws, Regulations, and Other Documents

2.4.1 Regulations

Regulations promulgated by a variety of government agencies at the federal, State, and local (tribal) level are cited and discussed throughout this EA. These regulations result in the identification of environmental effects and relevant consequences of implementation of the project. Compliance with the following laws, statutes, Executive Orders (EOs) has been evaluated in Chapter 4 of this EA.

Table 1. Summary of Compliance Regulations and Agency Responsibilities. Source: IHS, 2007; LOA, 2023; ASM, 2023; LACO, 2023

Regulation	Code Citation	Agency Responsibilities
Archaeological Resources Protection Act (ARPA)	16 U.S.C. §470aa-470mm (1979, amended 1988)	Ensure archaeologists consulting on federal actions meet professional standards.
Clean Air Act (CAA) of 1970	42 U.S.C. §7401 et seq. (1970)	Evaluate potential project emissions in relation to the National Ambient Air Quality Standards (NAAQS).

Clean Water Act (CWA)	33 U.S.C. §1251 <i>et seq.</i> (1972), as amended	Comply with NPDES permit requirements for stormwater discharges during construction and/or discharge of treated wastewater to waters of the U.S., as appropriate.
Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)	42 U.S.C. §9601 <i>et seq.</i> (1980)	Identify the potential for presence of hazardous material contamination.
Endangered Species Act (ESA)	16 U.S.C. §1531 (1973)	Identify potential project impacts to listed fish, wildlife, plants, and habitats. Consult with USFWS when project "may affect" listed species or their habitat.
Farmland Protection Policy Act	7 U.S.C. §4201 (1981)	Identify potential project impacts to important farmland and evaluate alternatives for minimizing impacts.
Fish and Wildlife Coordination Act	16 U.S.C. §661-666e (1934) as amended	Identify potential project impacts to waters of the U.S. and consult with USFWS, as needed.
Migratory Bird Treaty Act (MBTA)	16 U.S.C. §703-712 (1918), as amended	Ensure project compliance with prohibitions against unauthorized "take" of listed migratory bird species.
Section 106 of the National Historic Preservation Act (NHPA)	36 CFR §800 (1966)	Identify historic properties and assess potential project effects. Consult with interested parties and State Historic Preservation Officer (SHPO).
Native American Graves Protection and Repatriation Act (NAGPRA)	P.L. 101 to 601 (1990)	Identify and consult with culturally affiliated tribes or groups, and seek to develop plans of action and implement appropriate mitigation.
Noise Control Act	42 U.S.C. §4901 <i>et seq.</i> (1972)	Identify and evaluate potential noise impacts to nearby sensitive receptors.
Safe Drinking Water Act	P.L. 93-523 (1974), as amended	Analyze existing water quality and potential project impacts. Determine whether a sole source aquifer would be affected by the Proposed Action.
Executive Order 11988: Floodplain Management		Evaluate the potential effects of the Proposed Action on a floodplain.
Executive Order 11990: Protection of Wetlands		Minimize the destruction, loss or degradation of wetlands as a result of the Proposed Action, and preserve and enhance the natural and beneficial values of wetlands.
Executive Order 12898: Federal Sections to Address Environmental Justice in Minority Populations and Low-Income Populations		Identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of the Proposed Action on minority and low-income populations.
Executive Order 13690: Federal Flood Risk Management Standards and a Process for Further Soliciting and Considering Stakeholder Input		Improve the resilience of communities and federal assets against the impact of flooding.

2.4.2 Project and Site Studies

The following existing studies and reports were considered in the environmental analysis contained in this EA. These include:

- Preliminary Engineering Report, June 10, 2020, prepared by IHS - see Appendix B;
- Biological Resource Survey – dated February 13, 2023, prepared by Live Oak Associates, LLC. (LOA) – see Appendix D;
- Cultural Resources Survey – dated January 2023 – prepared by ASM Affiliates, Inc. (ASM);

- Administrative Draft Environmental Assessment for the Tule River Tribe Wastewater Collection, Treatment, and Disposal System – dated October 2009, prepared by Analytical Environmental Services (AES) for IHS; and
- Environmental Assessment for the Conveyance of 876.12 acres of Fee Property to Federal Trust, Tule River Tribe, Tulare County, California – dated December 2009, prepared by LACO Associates, Inc. for the Bureau of Indian Affairs (BIA).

2.5 Relevant Decisions, Approvals, and Actions

Aside from IHS's decision to fund the Proposed Action and the subsequent construction scheduling, the primary decisions and approvals required before construction may begin are related to NEPA and other federal regulatory requirements. The following direct and indirect federal approvals and actions may occur as a result of the Proposed Action:

- Consultation with the USFWS under Section 7 of the federal Endangered Species Act (ESA) would be required if endangered species are likely to be adversely affected by the Proposed Action;
- Consultation with the State Historic Preservation Officer (SHPO) under Section 106 of the NHPA;
- Compliance with the EPA NPDES General Storm Water Discharge Permit for Construction Activities, Permit No. CAR100000IF, (General Permit) for stormwater discharges from construction sites that disturb one acre or more of land; and
- Coverage under an EPA NPDES wastewater discharge permit for emergency use.

Additionally, should the Tribe seek to obtain coverage under a NPDES wastewater discharge permit, the Tribe would have to overturn Ordinance No. 02-99, which prohibits discharge to the waters of the Reservation.

2.6 Scoping and Resource Issues

2.6.1 Scoping

Scoping of the Proposed Action began in 2019 when the Tribe requested that IHS conduct a preliminary evaluation for expanding the wastewater effluent disposal capabilities at the WWTP. On November 21, 2019, IHS Project Engineer Michelle Roy met with the operators of the WWTP and observed that the wastewater effluent disposal system was failing. Based on this site visit, additional reconnaissance surveys and site investigations, review of environmental records and operation and maintenance costs, and subsequent discussions with WWTP operators, additional spray fields and a supplementary storage tank were determined to be the preferred alternative for meeting the objectives of IHS and the Tribe (Proposed Action). The PER provides a detailed evaluation of alternative solutions, and the reasons for selecting the Proposed Action, based on a preliminary evaluation of the design criteria, environmental impacts, potential construction obstacles, cost estimates, and other factors (IHS, 2020).

2.6.2 Relevant Resource Issues

Based on the scoping activities completed since 2019 and the development of the Proposed Action as the preferred alternative, the following potential resource issues were identified:

2.6.2.1 Air Quality

Installation of the water lines to connect the proposed spray fields to the WWTP and the treated water storage tank would involve the use of heavy equipment, which would have the potential to emit criteria pollutants and cause the temporary release of fugitive dust.

Measurement of Significance: A significant impact would occur if project emissions would exceed federal standards for criteria air pollutants.

2.6.2.2 Water Resources

The Site contains numerous drainages that flow, and ultimately drain to the South Fork Tule River. Surface water impacts could occur during active construction activities if sediment or other contaminants were able to leave the site. The CWA requires that the Tribe obtain a discharge permit for discharges to surface waters and Ordinance No. 02-99 prohibits discharge to the waters of the Reservation. Construction of the project would disturb more than one acre of land; therefore the Proposed Action would be required to obtain and comply with the General Permit.

Measurement of Significance: A significant impact would occur if the project (construction or operation) led to a change in the quality or quantity of surface waters (including stormwater runoff) such that the changes could inhibit beneficial uses of the nearby water resources or exacerbate the violation of the CWA or Ordinance No. 02-99 associated with discharge of treated effluent.

2.6.2.3 Soils and Geologic Resources

The proposed project would have the potential to have an adverse impact due to earthwork and blasting required for construction.

Measurement of Significance: A significant impact would occur if construction activities would result in a degradation of the character, quality, or stability of soils at the Site.

2.6.2.4 Biological Resources

Construction or operation of the proposed project would have the potential to affect listed or proposed threatened or endangered (special-status) species or their habitat, if any are located in the project vicinity.

Measurement of Significance: A significant impact would occur if known special-status species or their habitat would be damaged or destroyed by project construction, or degraded due to project operation, or if the project resulted in the inadvertent "take" of any special-status species.

2.6.2.5 Noise

Construction noise impacts would be short-term and generated from construction equipment and activities. Operation of the project would be expected to generate minimal noise above baseline.

Measurement of Significance: A significant impact would occur if the project caused an increase in noise levels heard by any sensitive receptors.

2.7.2.6 Visual Resources

The project would establish 23 new 1-acre spray fields on grassy hillsides currently utilized for grazing. The new 900,000-gallon storage tank would be visible to drivers along Indian Reservation Drive and Chimney Road. Short-term visual impacts may also occur during construction.

Measurement of Significance: A significant impact would occur if visible components of the project would be located within the viewshed of a large numbers of sensitive receptors, or if the improvements would visually intrude into or obstruct a scenic landscape of importance to local residents.

2.7.2.7 Historic Properties

The proposed project may impact one or more known historic properties due to the proximity of the proposed project components to these resources. There is also the potential for installation of the water tank and the water lines to the spray fields in trenches to disturb unknown historic properties.

Measurement of Significance: A significant impact would occur if a significant historic property was inadvertently discovered and damaged during construction.

2.6.3 Resources/Issues with Insignificant or Beneficial Impacts

The project was found to have insignificant or beneficial impacts on the following resources and/or issues due to the nature and/or location of the Proposed Action and/or the status of the existing conditions (additional detail is provided in Section 3.0 of this EA):

- Recreation Resources
- Noise
- Visual Resources
- Socioeconomic Issues
- Environmental Justice
- Land Use
- Public Services and Infrastructure
- Hazardous Materials

Chapter 3 Alternatives Including the Proposed Action

3.1 Introduction

This Chapter describes the alternatives considered in the preparation of this EA. Pursuant to 40 CFR §1500.14, This Chapter provides the study and comparative presentation of the effects of the Proposed Action and alternatives considered, including the No Action Alternative. In this case, the Proposed Action involves improvements to the Tribe's wastewater effluent disposal system.

3.2 Description of Alternatives

Four (4) alternatives were considered for this project: No Action Alternative (Alternative 1), Proposed Action (Alternative 2), spray field expansion with a storage pond (Alternative 3), and NPDES wastewater discharge permit (Alternative 4). The Proposed Action was chosen as the preferred alternative from an economic, environmental, and functional standpoint and has been found to not result in any significant unavoidable impacts that would warrant an alternative design. The alternatives are compared, as follows, in terms of their potential environmental impact and their ability to achieve the purpose of the project. As noted below, the spray field expansion with a storage pond alternative was eliminated from further evaluation due to the factors described.

3.2.1 No Action

Under the No Action Alternative (Alternative 1), the Tribe's existing wastewater effluent disposal system would remain unchanged. The Tribe would continue to utilize the existing wastewater effluent disposal system for existing and planned uses. The spray fields would continue to fail and excess treated effluent would continue to flow into the South Fork Tule River, in violation of the federal CWA and Ordinance No. 02-99. With the addition of the 81 homes planned to be connected to the sewer system by 2024, the frequency and quantity of discharge would most likely increase, exacerbating the problem. The No Action Alternative does not have any associated capital costs; however, the Tribe would continue to be at-risk of incurring fines for the illegal discharge. According to the PER (IHS, 2020), the No Action Alternative is not recommended.

3.2.2 Proposed Action

The Proposed Action (Alternative 2), as described in the PER (IHS, 2020), includes spray field expansion with limited storage. The size, scope, and location of the Proposed Action was determined by IHS in the PER (2020). Proposed improvements shown on Figures 3 and 4, below, include the construction of 23 new 1-acre spray fields and an approximately 900,000-gallon storage tank for treated effluent, and the installation of associated infrastructure including two (2) booster pump stations, approximately 3,650 LF of 4-inch main line, and approximately 6,000 LF of 1-inch pipe to connect to each cluster of spray fields. While the overall project area would be 24.7 acres (23 new 1-acre spray fields and installation of the storage tank and water line), ground disturbance would only occur on the 1.7 acres needed to install the storage tank and water line. Upon completion of construction, the Tribe's effluent disposal system would be comprised of 30.5 acres of spray fields (7.5 acres existing plus 23 acres of new) and would have the capacity to store 1.2 million gallons of treated effluent during days when the Tribe is unable to utilize the spray fields due to weather, or other factors. This expanded effluent disposal system would be capable of disposing of the 155,500 gpd of wastewater anticipated to require treatment and disposal by 2024. The proposed spray fields would be placed on undeveloped grassy hillsides along Indian Reservation Drive, from community buildings currently under construction to the west to the existing WWTP emergency storage pond to the east, and adjacent to the east of the WWTP, between the WWTP and the existing spray fields. The proposed water lines would be installed within an existing dirt access road and would be buried to a depth of approximately 3 feet.

Figure 3 - Proposed Project Layout. Source: PER (IHS, 2020)



The 900,000-gallon storage tank would be installed directly adjacent to the WWTP. Coupled with the existing 300,000-gallon storage tank, this would allow the Tribe to store up to 1,200,000 gallons of treated effluent, which would provide the Tribe with the capacity to store up to seven (7) days' worth of treated effluent. This would provide the Tribe the flexibility to store treated effluent on days when the Tribe is unable to utilize the spray fields, due to rain or other factors. Furthermore, the proposed location of the new storage tank, adjacent to the WWTP would keep all the pumps and controls centralized. The booster pumps would have the ability to draw directly from either tank, providing redundancy to the system. Installation of the tank would require excavation in an area of approximately 15,500 SF to an average depth of 10 feet. Under the Proposed Action, approximately 1.7 acres of ground disturbance would occur during construction. Construction is proposed to occur generally from June to December 2024.

Figure 4 – Storage Tank Location. Source: PER (IHS, 2020)



In addition, the Tribe would evaluate the requirements for applying for an NPDES wastewater discharge permit for emergency use from the EPA. This would provide the Tribe with the steps necessary to obtain an emergency NPDES wastewater discharge permit, if and when desired.

The Proposed Action would not only increase the capacity of the effluent disposal system, but would also provide redundancy in the disposal system, providing the Tribe with greater control of the system and the ability to rest oversaturated spray fields, when needed, without compromising capacity.

3.2.3 Alternatives Considered but Eliminated from Evaluation

3.2.3.1 Alternative 3: Spray field expansion with a storage pond

This alternative consists of construction of 13 acres of spray fields, a 5,600,000-gallon storage pond for winter storage, and help with planning to obtain a NPDES wastewater discharge permit for emergency use. Under this alternative, the storage pond would provide sufficient capacity to store effluent water during the winter months, when infiltration rates are lower at the spray fields, allowing for limited use of the spray fields during summer months, when infiltration rates are higher. A preliminary evaluation of this alternative was performed in the PER (IHS, 2020); however, this alternative was eliminated from further analysis as it would have a higher capital cost than the Proposed Action, would require added responsibility to operate and maintain the system, additional analysis and study would be necessary to determine the extent of the economic and environmental costs of construction of a lined vs. an unlined pond, and the Tribe previously expressed desire to not have storage ponds due to aesthetic impacts.

3.2.3.2 Alternative 4: NPDES discharge permit (for year-round use)

This alternative consists of applying for a NPDES wastewater discharge permit for year-round use. This alternative would allow the Tribe to discharge the effluent into the nearby watercourse and would include construction of a spillway to discharge the effluent without creating erosion. A preliminary evaluation of this alternative was performed in the PER (IHS, 2020). Environmental impacts would be anticipated to be minimal as this alternative would require limited ground disturbance for construction of a spillway. However, this alternative was eliminated from further analysis due to Ordinance No. 02-99, which prohibits discharges, potential public opposition, higher operation and maintenance costs and personnel requirements, and uncertain timing.

3.3 Comparison of Alternatives

This Section discusses the degree to which the No Action Alternative (Alternative 1) and the Proposed Action (Alternative 2) would meet the objectives outlined in Section 2.4 of this EA.

Objective 1: To improve the overall health conditions of residents of the Reservation.

This objective could be met successfully by the Proposed Action, which would substantially improve the capacity of the wastewater effluent disposal system, providing for safe disposal of wastewater generated on the Reservation and removing potential sources of environmental impacts due to the failing system. The No Action would not meet this objective, as the wastewater effluent disposal system would continue failing and discharging to the nearby watercourse.

Objective 2: To provide a wastewater effluent disposal system that accommodates the needs of current and future housing units, within the treatment capacity of the WWTP.

This objective could be met successfully by the Proposed Action, which would increase the capacity of the Tribe's wastewater effluent disposal system, to safely dispose of flows from existing and proposed housing units on the Reservation. The No Action Alternative would not meet this objective, as the current wastewater effluent disposal system is insufficient for disposing of flows from existing housing units.

Objective 3: To provide a wastewater effluent disposal system that avoids undesirable environmental impacts, especially on the physical and biological environments.

This objective could be met successfully by the Proposed Action, with the implementation of mitigation measures for Air Quality, Water Resources, Soils and Geologic Resources, Biological Resources, and Historic Properties. The No Action Alternative would not meet this objective as the currently failing wastewater effluent disposal system is causing undesirable environmental impacts on water resources, with no feasible mitigation measures.

Chapter 4 Affected Environment and Environmental Consequences

4.1 Introduction

This Chapter describes the affected environment and environmental consequences of the No Action Alternative and the Proposed Action. In accordance with 40 CFR §1508.8, direct and indirect impacts are addressed at a level of detail that is commensurate with the magnitude of the potential impact, or lack thereof.

4.2 General Description

4.2.1 Overview of Proposed Project Area and Environment

As provided in Section 1.1 of this EA, the Proposed Action involves improvements to the Tribe's wastewater effluent disposal system in order to expand effluent disposal capabilities to match current and proposed flows and increase treated effluent storage capacity at the WWTP. The Proposed Action would be implemented on the northern end of APN 305-130-017 (Site). The Site is trust land located in Tulare County, California, southeast of the City of Porterville. The Site is bordered to the east by a strip of land owned by the Bureau of Land Management (BLM), which separates the Site from the Reservation, to the north by Indian Reservation Drive, which separates the Site from the South Fork Tule River, to the west by McCarthy Ranch (owned by the Tribe), and to the south by undeveloped hills.

The proposed spray fields would generally be installed on undeveloped moderately to steeply sloped grassy hillsides along Indian Reservation Drive that are currently used for grazing. Community buildings, which will be served by the WWTP once constructed, are currently under construction adjacent to the western extent of the proposed spray fields. An existing dirt access road parallels Indian Reservation Drive, separating the road from the grassy hillsides. The dirt access road contains water and wastewater lines serving the community buildings that are under construction. The 4-inch water line that would convey treated effluent to the new spray fields would additionally be installed within the dirt access road. The proposed water tank and a cluster of spray fields would be installed adjacent to the WWTP in an area currently developed with a dirt access road that serves the existing spray fields. The existing conditions as of December 2022 are depicted in the site photos included in Appendix C.

4.3 Air Quality

4.3.1 Regulatory Setting

Air pollution control in the State of California is based on federal, State, and local laws and regulations. The EPA, California EPA (CalEPA), regional clean air agencies all regulate air quality. The principal legislation that regulates air quality at all levels is the Clean Air Act (CAA) (as amended 1977 and 1990, 42 U.S.C. 7401 et seq.). The primary objective of the CAA is to establish federal standards for air pollutant emissions from stationary and mobile sources and to work with states and Tribes to regulate polluting emissions. Air districts in California must develop regulations based on the measures identified in the CAA and State regulations. The federal government, primarily through the EPA, and State agencies establish maximum concentrations for a wide variety of pollutants such as particulate matter less than 10 microns in size (PM₁₀), particulate matter less than 2.5 microns in size (PM_{2.5}), ozone (O₃), and other smog precursors (such as oxides of nitrogen [NO_x] and reactive organic gases [ROG]). The EPA establishes National Ambient Air Quality Standards (NAAQS) and delegates the enforcement of these standards to the states.

The EPA has taken the position in the Tribal Authority Rule under the CAA based on several provisions of the statute and legislative history - that the CAA constitutes a delegation of Congressional authority to eligible tribes to run air programs over their entire reservations, including fee lands. Under that regulation, tribes may also run programs on non-reservation lands over which they can demonstrate jurisdiction. However, EPA's Indian Policy (1984) states that "Until Tribal Governments are willing and able to assume full responsibility for delegable programs, the Agency will retain responsibility for managing programs for reservations unless the State has an express grant of jurisdiction from Congress sufficient to support delegation to the State Government." Thus, EPA maintains jurisdiction over air quality on the Tribe's trust lands until such time that the Tribe chooses to assume jurisdiction.

Air districts in California are required to monitor air pollutant levels to assure that NAAQS are met and, in the event that they are not, to develop strategies to meet these standards. Depending on whether the standards are met or exceeded, local air basins are classified as being in "attainment" or "non-attainment." The CAA requires that any states in nonattainment for the NAAQS must develop State Implementation Plans (SIP) to set strategies and timelines for how to reach attainment standards. The current SIP for California is the 2022 State Strategy for the State Implementation Plan (CARB, 2022). Nearly all areas of the State of California are classified as non-attainment for PM₁₀. The San Joaquin Valley Air Pollution Control District (SJVAPCD) is responsible for monitoring air quality conditions within the counties of San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare, and a portion of Kern, including the Site (SJVAPCD, No Date). Table 2, below, displays the federal air quality standards.

Table 2 – Federal Ambient Air Quality Standards (CARB, 2022)

Pollutant	Averaging Time	National A.C
Ozone (O ₃)	1 hour	NA
	8 hour	0.07 ppm (137 µg/m ³)
Carbon Monoxide (CO)	1 hour	35 ppm (40,000 µg/m ³)
	8 hour	9 ppm (10,000 µg/m ³)
Nitrogen Dioxide (NO ₂)	1 hour	0.100 ppm (188 µg/m ³)
	Annual	0.053 ppm (100 µg/m ³)
Sulfur Dioxide (SO ₂)	1 hour	0.075 ppm (196 µg/m ³)
	24 hour	0.14 ppm
	Annual	0.03 ppm
Particulate Matter (PM ₁₀)	24 hour	150 µg/m ³
	Annual	NA
Particulate Matter (PM _{2.5})	24 hour	35 µg/m ³
	Annual	12 µg/m ³
Sulfates	24 hour	NA
Lead (Pb)	30 day	NA
	Calendar Quarter	0.15 µg/m ³
Hydrogen Sulfide (H ₂ S)	1 hour	NA
Vinyl Chloride	24 hour	NA

General Conformity

Section 176(c) of the CAA contains the General Conformity Rule (40 CFR 51.850-860 and 40 CFR 93.150-160). The General Conformity Rule requires that a federal agency responsible for a proposed action in a NAAQS non-attainment or maintenance area endeavor to ensure that the proposed action conforms to the

applicable SIP. This means that federally supported or funded activities shall not: 1) cause or contribute to any new air quality standard violation, 2) increase the frequency or severity of any existing standard violation, or 3) delay the timely attainment of any standard, interim emission reduction, or other milestone.

A federal action would comply with an applicable SIP if it does not exceed identified annual emission *de minimis* thresholds, the magnitudes of which are based on the severity of the non-attainment rating of the region in which the Proposed Action is located. Actions that exceed these thresholds are required to conduct in depth conformity determinations. Emissions of attainment pollutants are exempt from the General Conformity Rule.

4.3.2 Affected Environment

The Site is located within the San Joaquin Valley Air Basin, which is bounded to the west by the Coastal Range, to the east by the Sierra Nevada Mountains, to the south by the Tehachapi Mountains, and to the north by the Sacramento Valley, and is located within the jurisdictional boundaries of the SJVAPCD. The SJVAPCD has been determined to be in "attainment," or within allowable limits, for all federal air quality standards, except for O₃ and PM_{2.5}. However, as the Site is trust land, the project is not subject to the rules and regulations of the SJVAPCD. For the Reservation, NAAQS and not the SJCAPCD standards apply. Additionally, construction of the Proposed Action is proposed during the dry season and is anticipated to last approximately six (6) months.

Sensitive receptors are defined as people that have an increased sensitivity to air pollution or environmental contaminants, and generally include schools, parks and playgrounds, day care centers, nursing homes, hospitals, and residential dwelling unit(s). The nearest sensitive receptors to the Site include low-density residential units approximately 2,000 feet southeast of the Site.

4.3.3 Environmental Consequences

4.3.3.1 No Action Alternative

No air quality impacts would result from the No Action Alternative because no construction or change in operations would occur.

4.3.3.2 Proposed Action

Construction of the Proposed Action would involve trenching, grading, excavating, and other earth-moving activities and the use of equipment such as a mini-excavator, an excavator, and a backhoe. These activities and equipment could generate emissions of fugitive dust and exhaust. Additionally, during construction, diesel-powered vehicles and equipment would be anticipated to create localized odors. These odors, if any would be temporary in nature and would not have an adverse effect due to the nature of the existing development (WWTP), proximity of Indian Reservation Drive (which may generate similar odors), and the lack of sensitive receptors in the project area vicinity. Operation of the expanded effluent disposal system would not require additional employees or generate additional emissions, above baseline emissions from the WWTP. No significant adverse impacts would occur from operation of the Proposed Action improvements.

Potential construction emissions would be temporary, limited to the immediate area, and would not significantly increase the background levels. However, as the SJVAPCD, including the Site, is in non-attainment for the NAAQS for O₃ and PM_{2.5}, standard conditions are recommended to reduce the potential for emissions during construction. With the implementation of these conditions, the Proposed Action would not cause or contribute to any new air quality standard violation, increase the frequency or severity of any existing standard violation, or delay the timely attainment of any standard, interim emission reduction, or other milestone. An in-depth conformity determination is not required.

The Proposed Action would not lead to cumulative impacts as construction activities would be localized to the project area and temporary in nature, and there are no known projects in the area that would cumulatively lead to significant air quality emissions in the area.

4.3.4 Mitigation Measures/Conditions

IHS shall implement the following measures during construction of the improvements proposed under the Proposed Action:

- All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized to suppress dust emissions using water, a chemical stabilizer/ suppressant, coverage with a tarp or other suitable material, or vegetative ground cover.
- All unpaved roads utilized during construction shall be effectively stabilized to suppress dust emissions using water or a chemical stabilizer/ suppressant.
- All excavation, grading, demolition, or other earth-moving activities shall be effectively controlled of fugitive dust emissions utilizing application of water and/ or by presoaking.
- When soil or similar materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained.
- All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly prohibited.
- Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized to suppress fugitive dust emissions utilizing sufficient water or a chemical stabilizer/ suppressant.

4.4 Water Resources

4.4.1 Regulatory Setting

Clean Water Act

The CWA, as amended by the Water Quality Act of 1987, is the major federal legislation governing water quality. Section 303(d) of the CWA requires states to periodically prepare a list of all surface waters in the state for which beneficial uses of the water – such as drinking, recreation, aquatic habitat, and industrial use – are impaired by pollutants. These are estuaries, lakes, streams, and groundwater basins that fall short of state surface water quality standards and are not expected to improve within the next two (2) years. States are also required to develop Total Maximum Daily Loads (TMDLs) for the contaminant(s) of concern, specifying the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and allocating pollutant loadings among point and non-point pollutant sources.

Section 402 of the CWA established the NPDES permit program in 1972 to address water pollution by regulating point sources that discharge pollutants to waters of the United States. The EPA is charged with regulating and administering permits for such discharges to surface waters. NPDES program areas relevant to the Proposed Action include the regulation of discharges of stormwater during construction and of wastewater. All construction projects encompassing one (1) acre or more on federal land, including Indian lands/reservations, must be covered by the EPA's NPDES General Storm Water Discharge Permit for Construction Activities, Permit No. CAR100000IF, (General Permit). Compliance with the General Permit, which includes the requirement for preparation of a Stormwater Pollution Prevention Plan (SWPPP), is required for any project larger than one (1) acre in size. The General Permit requires operators of such construction sites to implement stormwater control BMPs designed to minimize the amount of sediment and other pollutants associated with construction sites from being discharged in stormwater runoff. Such BMPs may

include straw bales, fiber rolls, and/or silt fencing structures to assure the minimization of erosion resulting from construction and to avoid runoff into sensitive habitat areas, limit ground disturbance to the minimum necessary, and stabilize disturbed soil areas as soon as feasible after construction is completed. The NPDES permit program also regulates the discharge of wastewater to waters of the United States. This includes establishing discharge limits and specific conditions under which discharges are permitted.

Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) was established to protect public health by regulating the public drinking water supply throughout the nation, such as rivers, lakes, reservoirs, springs, and certain groundwater wells. The EPA sets health-based standards for drinking water to protect against naturally-occurring and man-made contaminants that may be found in drinking water.

Wild and Scenic Rivers Act

Under 16USC §1271 Section 7(b) and 7(c) (Wild and Scenic Rivers Act), Congress requires that rivers throughout the country designated as Wild or Scenic Rivers be preserved in free-flowing condition and that they and their immediate environments be protected for the benefit and enjoyment of present and future generations.

Executive Order 11990 (Protection of Wetlands)

Executive Order 11990 (Protection of Wetlands) requires an examination of impacts to wetlands. Policies of the federal government call for "no net loss" of the acreage and values of the nation's wetlands. Four federal agencies are directly responsible for the identification of wetlands as part of the implementation of a variety of federal laws and policies. These agencies are the U.S. Army Corps of Engineers (USACE), EPA, U.S. Fish and Wildlife Service (USFWS), and National Resource Conservation Service (NRCS).

Executive Order 11988 (Floodplain Management)

Executive Order 11988 (Floodplain Management) requires that federal agencies avoid adverse impacts associated with the occupancy and modification of flood plains, to the extent possible. This requires that each federal agency determine whether a project is located within a floodplain and consider alternatives to a project's location within a floodplain, if possible. If the project must reside within a floodplain, the agency must minimize any potential impacts.

Executive Order 13690 (Federal Flood Risk Management Standards and a Process for Further Soliciting and Considering Stakeholder Input)

Executive Order 13690 (Federal Flood Risk Management Standards and a Process for Further Soliciting and Considering Stakeholder Input) is a policy of the United States to "improve the resilience of communities and federal assets against the impact of flooding." Executive Order 13690 established a "flexible framework to increase the resilience against flooding and help preserve the natural values of the floodplains" and directed the Water Resources Council to provide guidance on the implementation of Executive Order 19988 (Federal Register, 2015).

4.4.2 Affected Environment

As discussed in Sections 1.2 and 2.2 of this EA, the Tribe's WWTP has a total treatment capacity of 195,000 gpd, a disposal system with an observed (and utilized) capacity of approximately 40,000 gpd, and incoming wastewater flows of approximately 70,000 gpd. The wastewater effluent disposal system is failing with current effluent flows, leading to discharges to an adjacent seasonal drainage, which ultimately drains to the South Fork Tule River. The Tribe does not have a NPDES discharge permit through the EPA for off-site discharge of treated effluent and is therefore in violation of the CWA. Additionally, Ordinance No. 02-99 prohibits discharges to waters of the Reservation. By 2024, it is anticipated that approximately 155,500 gpd of effluent will require treatment and disposal at the WWTP.

4.4.2.1 Surface Water and Wetlands

The Site is located approximately 100 to 900 feet south of the South Fork Tule River, which is separated from the Site by Indian Reservation Drive. The Site contains numerous drainages including ephemeral drainages, an intermittent stream identified as a blue-line stream on USGS topo map, and a seasonal drainage, all of which are hydrologically connected to the South Fork Tule River. Additionally, the Site contains a manmade untreated wastewater emergency storage pond near the WWTP. According to the Biological Resource Survey prepared by Like Oak Associates (LOA) dated February 13, 2023, the ephemeral drainages did not exhibit a well-defined or consistent ordinary high-water mark. In the absence of an ordinary high-water mark, these drainages do not appear to meet the USACE definition of a jurisdictional water. The seasonal drainage carried flowing water and the intermittent drainage exhibited ordinary high-water marks. As such, these drainages would likely fall under the jurisdiction of USACE as tributary waters to the South Fork Tule River, which has traditionally been considered a water of the United States. The South Fork Tule River flows in a northwesterly direction approximately 7 miles from the Site until the confluence at Lake Success.

The Site is located within the Southern Sierra Unit, Tule River Hydrologic Area, Springville Subarea (Caltrans, Not Dated). The Site is not located within an area mapped by the EPA as a sole source aquifer recharge area (EPA, 2022b). The South Fork Tule River is not listed on the Section 303(d) list of impaired waters; however, Lake Success is listed due to pH and Mercury (EPA, 2022a).

According to the USFWS National Wetlands Inventory (NWI, Not Dated), intermittent Riverine habitat runs in a northerly direction through the center of the Site. Additionally, north of the Site, the South Fork Tule River is classified as Freshwater Forested/Shrub Wetland and Riverine habitat. However, there are no wetlands mapped at or near the Site (NWI, Not Dated) and according to the Biological Resource Survey (LOA, 2023), the soils at the Site are generally poorly drained and considered hydric and therefore do not have the propensity to support wetlands.

4.4.2.2 Floodplains

As shown on FEMA Flood Insurance Rate Map (FIRM) panel number 06107C1690E (effective 6/16/2009), the Site is located in "Zone X" and "Zone D" (see Appendix G). "Zone X" is defined as an area of minimal flood hazard. "Zone D" is defined as an area with possible but undetermined flood hazards, meaning no flood hazard has been conducted, and flood rates are commensurate with the uncertainty of the flood risk. The proposed improvements would occur within Zone X.

4.4.2.3 Groundwater

The Site is not located within a defined groundwater basin. The nearest groundwater basin is the San Joaquin Groundwater Basin, located approximately 5.75 miles west of the Site (DWR, 2019). According to the Administrative Draft EA prepared by AES for the Tule River Tribe Wastewater Collection, Treatment, and Disposal System (October 2009), surveys prior to 2009 showed groundwater at approximately 15 feet below existing ground surface in some local areas. More recent data is unknown.

4.4.2.4 Wild and Scenic Rivers

There are no wild and scenic rivers in the vicinity of the Site. The nearest wild and scenic river is the Kern Wild and Scenic River, located approximately 20 miles east of the Site (USFWS, Not Dated).

4.4.3 Environmental Consequences

4.4.3.1 No Action Alternative

Under the No Action Alternative, treated effluent would continue to discharge to an adjacent seasonal drainage and ultimately, the South Fork Tule River. The Tribe would remain in violation of the CWA and Ordinance No. 02-99. The quantity of discharged effluent would most likely increase, exacerbating the violation.

4.4.3.2 Proposed Action

Under the Proposed Action, 23 acres of additional spray fields would be added to increase the disposal capacity of the WWTP to approximately 155,500 gpd and a 900,000-gallon storage tank would be constructed, providing adequate disposal and storage capacity for connections planned through 2024. Additionally, the Tribe would understand the requirements for obtaining a NPDES permit for emergency use, which would allow for off-site discharge under certain emergency situations. The Proposed Action would result in a significant beneficial impact, as treated effluent would no longer discharge into the South Fork Tule River and the Tribe would no longer be in violation of the CWA and Ordinance No. 02-99. However, due to the previous failures of the Tribe's wastewater effluent disposal systems, it is possible that a discharge would occur during emergency situations. If this were to occur, the Tribe would continue to be in violation of the CWA and Ordinance No. 02-99, unless actions are taken to obtain a NPDES wastewater discharge permit for emergency use and modify Ordinance No. 02-99. Conditions are recommended below, to allow for this possibility.

The project would not result in any induced changes in surface water runoff patterns. As the proposed project is located on trust lands and is larger than one (1) acre in size, compliance with the General Permit would be required. This would require preparation of a SWPPP outlining stormwater control BMPs to reduce the potential for erosion of soils and sedimentation of nearby waterbodies and filing of a Notice of Intent (NOI) with the EPA prior to initiating construction activities.

The Proposed Action would not lead to cumulative impacts as construction activities would be managed in accordance with the CWA under the NPDES General Permit. Following implementation of the Proposed Action, unauthorized discharge of treated effluent would cease, improving conditions at the Site and decreasing the potential for cumulative impacts possible under the No Action Alternative with continued off-site discharge.

4.4.4 Mitigation Measures/Conditions

During construction, compliance with the General Permit would ensure that no mitigation measures or conditions are necessary. The Tribe shall consider implementing the following measures following construction of the improvements proposed under the Proposed Action:

- The Tule River Indian Tribe shall consider modifying Ordinance No. 02-99 to allow for, at a minimum, discharges to surface waters during emergency situations; and
- Should Ordinance No. 02-99 be modified to allow for discharges, the Tule River Indian Tribe shall consider applying for a NPDES wastewater discharge permit for emergency use.

4.5 Soils and Geologic Resources

4.5.1 Regulatory Setting

No regulations relating to soils and geologic resources are applicable to the Proposed Action.

4.5.2 Affected Environment

The Site is steeply sloped, generally from south to north, from an approximate elevation of 900 to an elevation of 1,300 feet. According to the NRCS National Cooperative Soil Survey (NRCS, 2019), soils at the Site are characterized as Blasingame-Rock outcrop complex, 9 to 50 percent slopes, Coarsegold loam, 15 to 30 percent slope, Coarsegold loam, 30 to 50 percent slopes, Coarsegold-Rock outcrop complex, 15 to 50 percent slopes, and Xerofluvents, flooded. Aside from Xerofluvents, flooded, these soil-mapping units, are classified as well drained, with no hydric soil rating, meaning these soils do not have the propensity to support wetlands. Approximately two (2) acres of Xerofluvents, flooded, soils occur in the northeast corner of the site on steeply sloped terrain. This soil-mapping unit is poorly drained and is considered hydric (see Appendix H).

The Site is located in the California Great Valley Geomorphic Province. The Great Valley is a trough in which sediments have been deposited almost continuously since the Jurassic period, about 160 million years ago (DOC, 2002). According to the Fault Activity Map of California [2015 (b)] of the Department of Conservation (DOC), the Kern Canyon Fault is located approximately 20 miles east of the Site and the Owens Valley Fault is located approximately 45 miles northeast of the Site. There are no known mineral or energy resources of local, regional, or national importance on or near the Site [DOC, 2015 (a)].

4.5.3 Environmental Consequences

4.5.3.1 No Action Alternative

Under the No Action Alternative, expansion of the wastewater effluent disposal system would not occur. Existing environmental conditions, including runoff from failing spray fields, would remain unchanged. With continued failure of the spray fields, erosion of surface soils may be possible due to steep slopes and unmanaged runoff.

4.5.3.2 Proposed Action

Under the Proposed Action, the WWTP would have adequate disposal capacity, and more water would infiltrate rather than run-off, decreasing the potential for erosion. Therefore, the Proposed Action would result in a beneficial impact on soils.

The Proposed Action has been designed to install the 23 acres of new spray fields on the flattest portions of the hillsides available. The spray fields themselves would allow for the surface application of treated effluent and would not require grading. The 4-inch main line that would direct the treated effluent from the WWTP to the areas of the spray fields would be installed within the existing dirt access road, which was previously constructed for use as a fire break. Additionally, the spray fields would be served by 1-inch water lines that would be installed within the undeveloped hillsides. Ground disturbance for these construction activities would be limited due to the nature of the activities, which would be limited to 1.7 acres for installation of the storage tank and trenching. Where disturbed for installation of the main line and smaller water lines, the dirt access road and hillsides, respectively, would be restored to pre-project conditions.

The 900,000-gallon storage tank is proposed to be located adjacent to the WWTP in a generally level area utilized for a dirt access road. This area has been chosen as that would allow for limited excavation and grading due to the existing development. Even still, installation of the tank would require earthwork and blasting as the eastern end of this area has an elevation approximately 10 feet higher than the current elevation of the WWTP (IHS, 2020). It is anticipated that this excavation would occur in an area of approximately 15,500 SF to an average depth of 10 feet. Due to the earthwork required for installation of the storage tank, it is recommended that a geotechnical investigation be completed to provide construction recommendations for the proposed earthwork.

The Proposed Action would not lead to cumulative impacts as construction activities would be localized to the project area, temporary in nature, and would be constructed in accordance with recommendations from a qualified engineering geologist or geotechnical engineer. Furthermore, there are no known projects in the area that would cumulatively lead to significant impacts to soils and geologic resources in the area.

4.5.4 Mitigation Measures/Conditions

The Tribe and IHS shall complete the following related to construction of the improvements proposed under the Proposed Action:

- A geotechnical investigation shall be prepared by a qualified engineering geologist or geotechnical engineer prior to construction of the proposed water tank. Any recommended measures shall be implemented during construction.

4.6 Biological Resources

4.6.1 Regulatory Setting

Endangered Species Act

The Endangered Species Act (ESA) of 1973 and as amended in 1988 establishes a national program for the conservation of threatened and endangered species of fish, wildlife and plants and the preservation of the habitat critical to the survival of listed species. The purpose of the ESA is to conserve the ecosystems upon which the endangered and threatened species depend and to recover listed species. Under the ESA, species may be listed as either "endangered" or "threatened." "Endangered" is defined as a species in danger of extinction throughout all or a significant portion of its range. "Threatened" is defined as a species likely to become endangered within the foreseeable future.

The ESA is enforced by the USFWS and the National Marine Fisheries Service (NMFS). NMFS' jurisdiction is limited to the protection of marine mammals and fishes and anadromous fishes; all other species are within the USFWS' jurisdiction. Section 9 makes it unlawful for anyone to "take" (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in such conduct) a listed animal, including significantly modifying its habitat. Section 7 of the ESA requires federal agencies to ensure that any action authorized, funded or carried out by them is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of designated critical habitat.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) is a federal law that prohibits killing, possessing, or trading of migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs. Disturbance that causes nest abandonment and/or loss of reproductive effort may also be considered a significant effect under NEPA.

Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.) requires federal agencies to consult with USFWS, or, in some instances, with the NMFS and with state fish and wildlife resource agencies before undertaking or approving water projects that control or modify surface water. The purpose of this consultation is to ensure that wildlife concerns receive equal consideration with water resource development projects and are coordinated with the features of these projects. The consultation is intended to promote the conservation of fish and wildlife resources by preventing their loss or damage and to provide for the development and improvement of fish and wildlife resources in connection with water projects. Federal agencies undertaking water projects are required to fully consider recommendations made by USFWS, NMFS, and state fish and wildlife resource agencies in project reports and to include measures to reduce impacts on fish and wildlife in project plans.

4.6.2 Affected Environment

The following environmental setting is generally based on the Biological Resource Survey prepared by LOA February 13, 2023 (see Appendix D) to analyze potential biological resources that occur at the Site, along with likely effects associated with the proposed project and feasible ways to mitigate project impacts. While the project area is 24.7 acres, an Area of Potential Effects (APE) totaling 111 acres was used for the Biological Resource Survey to encompass all components of the proposed project while also surveying the surrounding area of biological resources that may be impacted. Preparation of the Biological Resource Survey included desktop review of relevant resources and a field reconnaissance on December 9, 2022, which included a floristic survey, wildlife survey, and aquatic resources survey.

4.6.2.1 Threatened and Endangered Species

As described above, as part of the preparation of the Biological Resource Survey (2023), LOA performed a desktop review of relevant resources and a field reconnaissance on June 8, 2022, which included a floristic survey and wildlife survey. The desktop review related to special status species included a review of the USFWS Information for Planning and Consultation (IPaC) system, the California Natural Diversity Database (CNDDDB), The California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California (CNPS 2022), a previous biological study report completed by LOA that included the current project site titled *Biological Assessment, Tule River Indian Tribe, Lowe Property* (LOA 2004), U.S. Geological Survey (USGS) topographic maps, and soils information (California Soil Resource Lab 2008). Special-status plants and animals, legally protected under the State and federal regulations, and species that are considered rare by the scientific community, were evaluated for their potential for occurrence at the Site. Based on the results of the desktop review and field survey, LOA identified the special status species listed in Table 3, below, as potentially being present within the project area. For a complete list of special-status plants and wildlife with the potential to be found in the project vicinity, based on the resources reviewed, see Table 1 of the Biological Resource Survey (Appendix D).

Table 3. Potential Special Status Species. Source: LOA, 2023

Species Name	Type	Potential for Occurrence*	Status**	Federally Listed?
Munz's iris (<i>Iris munzii</i>)	Plant	Possible	CRPR 1B	No
Monarch butterfly (<i>Danaus plexippus</i>)	Insect	Possible	FC	No – Candidate
Crotch bumble bee (<i>Bombus crotchii</i>)	Insect	Possible	CE	No
California condor (<i>Gymnogyps californianus</i>)	Bird	Possible	FE, CE, CFP	Yes – Endangered
Tricolored blackbird (<i>Agelaius tricolor</i>)	Bird	Possible	CT, CSC	No
Loggerhead shrike (<i>Lanius ludovicianus</i>)	Bird	Possible	CSC	No
Pallid bat (<i>Antrozous pallidus</i>)	Mammal	Possible	CSC	No
Townsend's big-eared bat (<i>Corynorhinus townsendii</i>)	Mammal	Possible	CSC	No
Western mastiff bat (<i>Eumops perotis californicus</i>)	Mammal	Possible	CSC	No
Raptors and other migratory birds	Bird	Possible	Varies	Yes – MBTA

*Occurrence Terminology

Possible: Species not observed on the site, but it could occur there from time to time.

**Status Codes

FC: Federal Candidate CE: California Endangered CSC: California Species of Special Concern
CRPR: California Rare Plant Ranks 1B: Plants Rare, Threatened, or Endangered in California and elsewhere

Two (2) of these special-status species were determined to warrant further discussion in the Biological Resource Survey: Monarch butterfly and California condor.

During their spring and summer breeding season, Monarch butterflies lay their eggs on milkweed plants (*Asclepias* spp.). A single milkweed plant was observed outside of the proposed development area at the Site. Although the lack of additional observed milkweed plants at the Site during the field survey indicates a low density of milkweed plants, the Site is theoretically suitable for Monarch butterfly reproduction. However, the Monarch butterfly is a federal candidate species and is not yet listed or proposed for listing. Therefore, in accordance with the USFWS Endangered Species Consultation Handbook (March 1998), conference and/or consultation with the USFWS under Section 7 of the ESA is not required.

The California condor was once entirely absent from the wild but has begun to recover due to captive breeding and reintroduction efforts. The Site contains typical foraging habitat for California condors, including foothill grassland and oak savannah. Additionally, there is a potential for California condors to stay grounded after feeding, as the Site contains roosting habitat in the form of trees and low rocks. Suitable nesting habitat is absent from the Site.

4.6.2.2 Migratory Birds

The Site has the potential to be used for nesting by a variety of birds protected by the MBTA, including but not limited to the loggerhead shrike. Birds can nest in or on trees and shrubs on the site, or on the ground. If project construction takes place during the nesting season (generally February 1 to August 31), birds nesting on the site could be injured or killed by construction activities or disturbed such that they would abandon their nests. Significant construction-related disturbance is also a possibility for birds nesting adjacent to the project site. Project-related injury, mortality, or disturbance of nesting birds that results in abandonment are potentially significant adverse environmental effects of the project and could be a violation of the MBTA.

4.6.2.3 Biotic Communities

The Biological Resource Survey (LOA, 2023) identified three (3) biotic habitats/land uses at the Site: Blue oak savannah, developed, and seasonal drainage.

Blue Oak Savannah at the Site dominantly consists of widely spaced blue oaks. Additionally, vegetation in this biotic habitat includes interior live oak (*Quercus wislizenii*), California buckeye (*Aesculus californica*), Poison oak (*Toxicodendron diversilobum*), an understory of non-native grasses, and a diversity of native forbs. Blue Oak Savannah at the Site also consists of a variety of amphibians, reptiles, bird species, mammals, and bat species.

The developed portion of the Site includes the existing WWTP and associated infrastructure. Vegetation at the developed portion of the Site consists of several small oleander shrubs (*Nerium oleander*) and weedy non-native grasses and forbs. While wildlife would primarily use the developed area incidentally to travel to adjacent higher-quality habitat, certain amphibians, reptiles, rodents, birds, and mammals with a certain disturbance-tolerance may be attracted to these areas.

A seasonal drainage occurs at the eastern end of the Site with associated wetland vegetation and wildlife. Wetland vegetation associated with the drainage includes curly dock (*Rumex crispus*), watercress (*Nasturtium officinale*), stinging nettle (*Urtica dioica*), common knotweed (*Persicaria lapathifolia*), common fig trees (*Ficus carica*), and willow (*Salix* sp.). Amphibians, reptiles, bird species, and mammals likely to use this drainage habitat are similar to those in the Blue Oak Savannah habitat.

Designated critical habitat was found to be absent from the Site and immediately surrounding lands. Additionally, there were no habitats found on-site that would be considered sensitive natural communities (LOA, 2023).

4.6.3 Environmental Consequences

4.6.3.1 No Action Alternative

Under the No Action Alternative, no construction would occur, so there would be no disturbance to special-status species or migratory birds.

4.6.3.2 Proposed Action

According to the Biological Resource Survey (Appendix D), the Proposed Action would have the potential to cause impacts to certain biological resources at the Site, including Munz's iris (*Iris munzii*), Monarch butterfly (*Danaus plexippus*), Crotch bumble bee (*Bombus crotchii*), and raptors and other migratory birds. Impacts to other species listed in Table 1 of the Biological Resource Survey (Appendix D) and Table 3, above, as possible at the Site, including the California condor (*Gymnogyps californianus*), Tricolored blackbird (*Agelaius tricolor*), Pallid Bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), and Western mastiff bat (*Eumops perotis californicus*) were anticipated to be less than significant as discussed in Section 4.2 of the Biological Resource Survey (LOA, 2023), and thus do not warrant mitigation.

Potentially significant effects identified in the Biological Resource Survey include: (1) construction-related impacts to individuals or populations of Munz's iris (*Iris munzii*) and Crotch bumble bee (*Bombus crotchii*); (2) disturbance of active raptor and other migratory bird nests including those of the special-status loggerhead shrike (*Lanius ludovicianus*), should the project be constructed during the nesting season; and (3) removal of habitat and potential mortality of individual Monarch butterflies (*Danaus plexippus*). However, as shown in Table 3, above, Munz's iris (*Iris munzii*), Crotch bumble bee (*Bombus crotchii*), and Monarch butterfly (*Danaus plexippus*) are not federally-listed species under the ESA. As such, potential impacts to these species would not be considered to be significant on trust land and mitigation for potential impacts to these species would not be required in order for the project to comply with the ESA. The mitigation measures recommended in the Biological Resource Survey (LOA, 2023) for impacts to these species may be implemented at the discretion of the Tribe and IHS. Additionally, as noted above, conference and/or consultation with the USFWS under Section 7 of the ESA is not required for potential impacts to Monarch butterfly (*Danaus plexippus*) as it is a federal candidate species and is not yet listed or proposed for listing (USFWS, 1998).

As mentioned above, the Site has the potential to be used for nesting by a variety of birds protected by the MBTA, including but not limited to the loggerhead shrike. Birds can nest in or on trees and shrubs at the Site, or on the ground. If project construction takes place during the nesting season, birds nesting at the Site could be injured or killed by construction activities or disturbed such that they would abandon their nests. Construction-related disturbance is also a possibility for birds nesting adjacent to the Site. Construction activities resulting in injury, mortality, or disturbance of nesting birds that results in abandonment are potentially significant impacts and could be a violation of the MBTA. Incorporation of mitigation measures to schedule construction activities outside of the nesting season, as feasible, pre-construction surveys for active bird nests, and marking and avoidance of active nests, would reduce impacts of the Proposed Action to less-than-significant.

The Proposed Action would not lead to cumulative impacts as potential impacts to migratory birds would be mitigated appropriately. Other development projects in the area would include similar measures, where relevant, to reduce potential impacts to biological resources, thereby ensuring a less than significant cumulative impact.

4.6.4 Mitigation Measures/Conditions

IHS shall complete the following related to construction of the improvements proposed under the Proposed Action:

- If construction activities occur between February 1 and August 31 (raptor and bird breeding season), a qualified biologist shall conduct pre-construction surveys for active bird nests within seven (7) days prior to the start of construction activities. The survey area shall encompass the site and accessible surrounding lands within 250 feet for nesting migratory birds and 500 feet for raptors (i.e., birds of prey).
- Additional nesting bird surveys shall occur within 200-feet of the anticipated active work area no more than seven (7) days before project activity occurs in the anticipated active work area during the breeding season.
- Should any active nests be discovered in or near proposed construction zones, a qualified biologist shall identify a suitable construction-free buffer around the nest. This buffer shall be identified on the ground with flagging or fencing and shall be maintained until the biologist has determined that the young have fledged and are capable of foraging independently.

4.7 Recreation Resources

4.7.1 Regulatory Setting

No regulations relating to recreation are applicable to the Proposed Action.

4.7.2 Affected Environment

There are various recreational opportunities in the project vicinity. The Eagle Mountain Casino, located at 681 South Reservation Road is owned and operated by the Tribe and provides local residents and guests with gaming and dining opportunities. The Tribe's Recreation Department oversees the Tule River Community Gymnasium, Ayashume Park and Bob Ojeda Baseball Field. The Recreation Department also offers recreation and sport activities, including leagues and tournaments, as well as social, cultural, and community events (Tule River Indian Tribe of California, 2018b).

Regionally, the Sequoia National Forest, which is generally located east of the Reservation, offers various outdoor activities including hiking, mountain biking, camping, hunting, fishing, boating, skiing, and other seasonal activities. Additionally, Lake Success and Success Dam, which are managed by USACE, are located approximately 8 miles east of Porterville and 8 miles northwest of the Site on Highway 190. The lake holds approximately 82,000-acre feet of water with a surface area of 2,450 acres when full (USACE, Not Dated). Camping, fishing, boating, waterskiing, swimming, and other recreational opportunities are available at the lake. The South Fork Tule River flows westward from the Reservation and the Site into Lake Success.

4.7.3 Environmental Consequences

4.7.3.1 No Action Alternative

Under the No Action Alternative, the wastewater effluent disposal system would not be expanded, the existing spray fields would continue to fail, and treated effluent would continue to discharge to the adjacent watercourse, which drains to the South Fork Tule River and, ultimately, Lake Success. While the failing spray fields are causing the discharge of treated effluent, as the discharge is unauthorized, the impact of the discharge on the water quality of the South Fork Tule River is unknown. Under the No Action Alternative, treated effluent would continue to discharge from the failing spray fields, having the potential of entering the South Fork Tule River and impacting water quality and associated recreational uses in the South Fork Tule River and Lake Success.

4.7.3.2 Proposed Action

Under the Proposed Action, the wastewater effluent disposal system would be expanded to include 23 acres of new spray fields and ground disturbance on 1.7 acres for an additional 900,000-gallon storage tank and water line. The Proposed Action may offer a beneficial impact to recreational opportunities offered by the South Fork Tule River and Lake Success as an unauthorized discharge of treated effluent would no longer have the potential to occur. No impacts to other nearby recreational uses would occur.

The Proposed Action would have a potential beneficial impact, if any, on recreational resources by reducing the possibility of unauthorized treated effluent flowing into the South Fork Tule River, and eventually, Lake Success. While a potential beneficial impact may be possible, likely implementation of the Proposed Action would have no impact on recreation resources. As such, the Proposed Action would have no bearing on any cumulative impacts to recreation resources in the general area.

4.7.4 Mitigation Measures/Conditions

No mitigation measures related to recreation resources are warranted.

4.8 Noise

4.8.1 Regulatory Setting

Noise may be defined as unwanted sound. Noise is usually objectionable because it is disturbing or annoying. Several noise measurement scales are used to describe noise in a particular location. A decibel (dB) is a unit of measurement that indicates the relative amplitude of a sound. The zero on the decibel scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Sound levels in decibels are

calculated on a logarithmic basis. An increase of 10 dB represents a 10-fold increase in acoustic energy, while 20 dB is 100 times more intense, 30 dB is 1,000 times more intense, etc. There is a relationship between the subjective noisiness or loudness of a sound and its intensity. Each 10-dB increase in sound level is perceived as approximately a doubling of loudness over a fairly wide range of intensities.

There are several methods of characterizing sound. The most common is the A-weighted sound level, or dBA. This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This energy- equivalent sound/noise descriptor is called Leq. The most common averaging period is hourly, but Leq can describe any series of noise events of arbitrary duration.

Because the sensitivity to noise increases during the evening and at night—excessive noise interferes with the ability to sleep—24-hour descriptors have been developed that incorporate artificial noise penalties added to quiet-time noise events. The Community Noise Equivalent Level (CNEL) is a measure of the cumulative noise exposure in a community, with a 5-dB penalty added to evening (7:00 p.m. to 10:00 p.m.) and a 10-dB addition to nocturnal (10:00 p.m. to 7:00 a.m.) noise levels. The Day/Night Average Sound Level (Ldn) is essentially the same as CNEL, with the exception that the evening time period is dropped and all occurrences during this 3-hour period are grouped into the daytime period.

The Noise Control Act of 1972 acknowledges that “inadequately controlled noise presents a growing danger to the health and welfare of the Nation’s population, particularly in urban areas” (EPA, 2021). Major noise sources include vehicles and equipment associated with transportation, machinery, appliances, and other commerce-related products. The act means to “promote an environment for all Americans free from noise that jeopardizes their health and welfare,” although primary noise control rests with State and local governments.

According to the IHS Environmental Review Manual (2007), the EPA identifies 24-hour exposure levels in excess of 45 dB(A) indoors and 55 dB(A) outdoors as interfering with activities and causing annoyance.

4.8.2 Affected Environment

Due to the undeveloped nature of the Site and surrounding area, there are no significant noise sources in the vicinity of the Proposed Action. Vehicle noise from Indian Reservation Drive and operational noise from the WWTP are the main sources of noise at the Site; however, these noise sources would not be considered significant due to the fairly low volume of traffic and the low level of activity at the WWTP. There are no public airports or railroads within close vicinity of the Site. Additionally, the nearest residence is approximately 2,000 feet southeast of Indian Reservation Drive, upslope of the WWTP. There are no hospitals, schools, or other sensitive uses in the vicinity of the Site.

4.8.3 Environmental Consequences

4.8.3.1 No Action Alternative

Under the No Action Alternative, no changes to the noise environment would occur as no construction noises would be generated, and current operational ambient sound would remain unchanged.

4.8.3.2 Proposed Action

Noise from construction of the Proposed Action would be generated by general construction equipment and noise levels would fluctuate depending on the particular type, number, and duration of various construction activities. Installation of the spray fields would require trenching for the proposed water lines, while installation of the water tank would require excavation and grading work. These activities would require

construction equipment such as a mini excavator, an excavator, and a backhoe. Construction-related activities and truck traffic to and from the Site may raise ambient noise levels during construction. However, these activities would be temporary in nature and no sensitive receptors are located in close vicinity of the Site. Since the nearest sensitive receptor is over 2,000 feet from the closest portion of the Site, no mitigation would be warranted. Once constructed, operational noise of the expanded wastewater effluent disposal system would not cause a significant change in the noise environment of the surrounding area. Maintenance of the proposed improvements would not require an increase in traffic to the Site as maintenance would be managed by the existing WWTP operators.

The Proposed Action would not lead to cumulative impacts as construction activities would be localized to the project area, temporary in nature, and there are no sensitive receptors in the vicinity of the project area that would be impacted by construction. There are no additional known construction projects that would occur in the project vicinity on a similar schedule that would cumulatively increase noise to a significant level. No increase in operational noise due to the Proposed Action is anticipated.

4.8.4 Mitigation Measures/Conditions

No mitigation measures related to noise are warranted.

4.9 Visual Resources

4.9.1 Regulatory Setting

No regulations relating to visual resources are applicable to the Proposed Action.

4.9.2 Affected Environment

The Site is characterized by hilly terrain, with limited flat areas generally near the South Fork Tule River and alongside existing development associated with the WWTP. The surrounding area is similar to the Site as it is characterized by grassland with scattered oak trees and rock outcrops on hilly and mountainous terrain. The WWTP and associated disposal facilities are situated on steep terrain and surrounded from the west, south, and east by hills.

The Site is visible from Indian Reservation Drive but is largely obscured from other public vantage points due to the topography of the surrounding area. The only unobstructed views of the majority of the Site are from the hillside above the WWTP, where a cluster of spray fields is proposed. Portions of the Site are additionally visible from Chimney Road. No residence has a direct view of the WWTP. The closest residence is located approximately 2,000 feet south of the WWTP site on Chimney Road.

4.9.3 Environmental Consequences

4.9.3.1 No Action Alternative

The No Action Alternative would have no effect on visual resources in the project area or vicinity as no changes to existing conditions would occur.

4.9.3.2 Proposed Action

Development associated with the Proposed Action would be visible to travelers on Indian Reservation Drive and Chimney Road. The proposed water tank would be installed adjacent to the WWTP and would therefore be compatible with the surrounding development.

Construction of the proposed improvements may cause minor negative impacts due to the earthwork proposed and the construction equipment needed; however, this would be similar to typical construction sites in the surrounding area and would be temporary in nature. Upon completion of construction, all areas affected by the installation of the water lines for the spray fields would be restored to their former conditions.

Once operational, views of the Site and surrounding hillsides would remain obstructed; however, a minor change may occur in the areas of the spray fields due to increased watering from sprayed effluent. If visible, the grasslands affected by the watering would be greener in the areas receiving water. This is not anticipated to generate a negative impact on visual resources.

Implementation of the Proposed Action would not impact visual resources in the area as the proposed improvements would be visually unobtrusive and similar to the existing conditions in the area. In accordance with the Tribe's long-term plan for Reservation development, all Tribal development has been designed to complement the rural scenic resources of the Reservation and surrounding vicinity. Therefore, the Proposed Action, when considered in combination with other past and possible future actions, would not lead to a significant cumulative impact to visual resources.

4.9.4 Mitigation Measures/Conditions

No mitigation measures related to visual resources are warranted.

4.10 Historic Properties

4.10.1 Regulatory Setting

National Historic Preservation Act of 1966

The National Historic Preservation Act of 1966 (NHPA) is the primary federal legislation governing preservation of historic property in the United States. Section 106 of the NHPA as amended, and its implementing regulations found in 36 CFR Part 800, require federal agencies to identify historic properties that may be **affected by actions involving federal lands, funds, or permitting**. A historic property is defined as: **...any prehistoric or historic district, site, building, structure or object included in, or eligible for inclusion in the National Register of Historic Places (NRHP), including artifacts, records, and material remains related to such a property...**(NHPA Sec. 301 [5]). The criteria for evaluation of NRHP eligibility for a historic property must be at least 50 years old to be considered as a historic property as outlined at 36 CFR Part 60.4. If a resource is determined to be a historic property, Section 106 of the NHPA requires that effects of the federal undertaking on the resource be determined. The significance of the resources must be evaluated using established criteria outlined in 36 CFR 60.4. If the historic property will be adversely affected by development, then feasible measures to avoid, minimize, or mitigate adverse effects must be taken. The State Historic Preservation Officer (SHPO) and other consulting parties must be provided an opportunity to review and comment on these measures prior to project implementation.

Archaeological Resources Protection Act

The Archaeological Resources Protection Act (ARPA) requires that federal agencies provide for the preservation of historical and archeological data (including relics and specimens) which might otherwise be irreparably lost or destroyed as the result of any alteration of the terrain caused as a result of federal projects, activities, and programs. It authorizes federal agencies to fund activities to mitigate the impacts of their projects and ensures archaeologists consulting on federal actions meet professional standards.

4.10.2 Affected Environment

A Cultural Resources Survey (Cultural Survey) was prepared by ASM Affiliates (ASM), Inc. January 2023 with Peter A. Carey, M.A., RPA, serving as principal investigator. The purpose of the Cultural Survey was to fulfill the requirements of Section 106 of the NHPA. While the project area is 24.7 acres, an APE totaling 55 acres was used for the Cultural Survey to encompass all proposed project components while allowing for unanticipated changes in spray field and pipeline locations. The Cultural Survey included a background records search and preliminary assessment and an on-foot, intensive inventory of the APE to identify and record previously undiscovered historic properties and to examine any known sites. Background records search included an archival records search by the Southern Joaquin Valley Information Center (IC),

California State University, Bakersfield, and a site files records search through the BIA. The IC records showed that five (5) previous surveys had been completed that covered the APE. Based on the records searches and field survey, no historic properties were found within the APE. Additionally, IHS attempted to complete a Native American Heritage Commission (NAHC) sacred sites and contacts search; however, a NAHC reply was received on April 14, 2023 indicating no responses would be received by IHS for an estimated 4 weeks. IHS sent a letter to the SHPO on April 19, 2023, to request concurrence **with IHS's finding that the proposed improvements will have "No Historic Properties Affected"** at the Site. A letter response from the SHPO was received on May 19, 2023, concluding that pursuant to 36 CFR §800.4(d), the SHPO agrees with IHS's finding of "No Historic Properties Affected." The letter received from the SHPO has been included as Appendix F.

4.10.3 Environmental Consequences

4.10.3.1 No Action Alternative

No impacts to Historic Properties would occur because the Proposed Action would not be implemented.

4.10.3.2 Proposed Action

According to the Cultural Resources Survey no historic properties were identified within the APE, and the SHPO agrees with IHS's finding of "No Historic Properties Affected" at the Site. However, based upon past survey reports, historic and ethnographic information, consideration of settlement patterns, and the presence of known historic properties in the vicinity of the APE, there is a potential for discovery of unrecorded or unknown subsurface resources during construction and grading activities. Therefore, to avoid potential adverse effects to historic properties during construction, **at the discretion of the Tribe's Department of Environmental Protection**, a tribal monitor provided may be retained to be on-site to flag avoidance areas and monitor all project-related ground-disturbing construction activities within previously undisturbed soils. Additionally, construction documents shall include a measure for the actions to take should a resource be discovered during construction activities. These measures have been included as mitigation measures, below.

Cumulative effects to historic properties typically occur when sites that contain historic features or artifacts are disturbed by development. As these resources are destroyed or displaced, important information is lost and connections to past events, people and culture is diminished. Significant cumulative impacts to unknown historic properties could occur if sites continued to be lost, damaged, or destroyed without appropriate recordation or data recovery. The proposed improvements have been sited and designed to avoid impacts to all known resources, and mitigation measures are included below to ensure that any inadvertent discovery of subsurface historic properties would not adversely affect those resources. Similar measures would be implemented, as needed, for other development projects in the area, with professional oversight and monitoring provided through the Tule River Environmental Department. Additionally, IHS will consult with the SHPO for the Proposed Action.

4.10.4 Mitigation Measures/Conditions

IHS shall implement the following measures during construction of the improvements proposed under the Proposed Action:

- If requested by the Tule River Indian Tribe's Department of Environmental Protection, a Tribal Archaeological Monitor provided by the Tule River Indian Tribe's Department of Environmental Protection shall be retained to be on-site to flag avoidance areas and monitor all project-related ground-disturbing construction activities within previously undisturbed soils. Tribal monitoring may be reduced or halted at the discretion of the monitor as warranted by conditions such as encountering bedrock, ground disturbance occurring in fill, or negative findings. If monitoring is reduced to spot-checking, spot-checking shall occur when ground-disturbance moves to a new location within the project site and when ground disturbance will extend to depths not previously reached (unless those depths are within bedrock).

- In the event that any prehistoric, historic, or paleontological resources are discovered during construction-related earth moving activities, all work within 50 feet of the resources will be halted and IHS and the Tule River Indian Tribe shall consult with a qualified archaeologist to assess the significance of the find. If any find is determined to be significant by the qualified archaeologist, representatives from IHS and the Tule River Indian Tribe, in coordination with the Tule River Indian Tribe's Department of Environmental Protection, will meet to determine the appropriate course of action. If there is an inadvertent discovery during construction-related earth moving activities, the Tribal Archaeological Monitor will halt all activity, and IHS and the Tule River Indian Tribe's Department of Environmental Protection will coordinate appropriate actions in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA).

4.11 Socioeconomic Issues

4.11.1 Regulatory Setting

No regulations relating to socioeconomic issues are applicable to the Proposed Action.

4.11.2 Affected Environment

According to the U.S. Census Bureau (2020), at the time of the survey, the population of the Tribe was approximately 1,250 people and the Reservation contained 352 housing units. The median household income for the Tribe is estimated to be approximately \$43,750, based on individuals working year-round (U.S. Census, 2020). Based on the 2021 American Community Survey 5-Year Estimates (5-Year Estimates), the employment rate of the Tribe is approximately 40.9 percent. Additionally, It is estimated that 46.8 percent of the employed population is employed by the private sector; 47.1 percent is employed by the local, State, and federal government; 3.2 percent is employed by the private not-for-profit sector; 1.4 percent is self-employed in their own incorporated businesses; and 1.7 percent is self-employed but not in an incorporated business. Based on the 5-Year Estimates, approximately 32.4 percent of all people residing on the Reservation and Off-Reservation Trust Land is at or below the poverty level (U.S. Census, 2020).

Tulare County (County) is located in the San Joaquin Valley and is surrounded by Fresno, Kern, Kings, and Inyo Counties. According to the Tulare County General Plan 2030 Update (2012), the County encompasses 4,439 square miles of land and 52.2 percent of the County is federal lands that include wilderness, national forests, monuments and parks. Over 2,080 square miles, or approximately 43 percent, is utilized for agricultural purposes including row crops, orchards, dairies, and grazing lands. In 2020, the County had an estimated population of 473,117 people (U.S. Census, 2020) with a median household income of \$58,209. The closest city to the Site is Porterville, which is approximately 15 miles northwest of the Reservation. In 2020, the estimated population of the Porterville area was approximately 62,623 people, with a median household income of \$48,420.

4.11.3 Environmental Consequences

4.11.3.1 No Action Alternative

The No Action Alternative would possibly have a negative impact on socioeconomic issues over time, as the Tribe would continue connecting planned residences to the WWTP and the wastewater effluent disposal system would continue failing. With additional planned residences requiring wastewater treatment, the unauthorized discharge may worsen, which could cause the Tribe to incur fines from the EPA, leading to an increase in the operating budget of the WWTP.

4.11.3.2 Proposed Action

The cost estimate for construction for the Proposed Action is approximately \$2,119,000 for the additional spray fields and associated water lines, and \$383,500 for expected annual operating and management costs (IHS, 2020). Funding would be provided by the IHS SFC program. This would result in several beneficial

socioeconomic impacts. The development of the additional facilities would allow needed Tribal housing to be built on the Reservation and would reduce the potential health problems associated with the failure or improper disposal of effluent water of the existing spray field system. It is anticipated that the majority of construction of the additional spray fields and water lines would be constructed and remain under the supervision of the Tribal Public Works Department.

The Proposed Action would not lead to adverse cumulative impacts as the Proposed Action would have a beneficial impact on the socioeconomic conditions of the Tribe.

4.11.4 Mitigation Measures/Conditions

No mitigation measures related to socioeconomic issues are warranted.

4.12 Environmental Justice

4.12.1 Regulatory Setting

Minority populations, low-income populations, and Native Americans often experience greater exposure and disease burdens than the general population as a whole, which can increase the risk to adverse health effects from environmental stressors (EPA, 2016).

Environmental justice issues encompass a broad range of impacts covered by NEPA, including impacts on the natural and physical environment and related social, cultural, and economic effects. Environmental justice concerns may arise from impacts to such things as human health on minority populations, low-income populations, and Indian Tribes. EO 12898 *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (59 Fed. Reg. 7629 [1994]) requires each federal agency to achieve environmental justice by addressing "disproportionately high and adverse human health and environmental effects on minority and low-income populations" to the greatest extent practicable and permitted by law.

4.12.2 Affected Environment

The Tribe is the only low-income or minority population located near the Site and as the Proposed Action would improve the wastewater effluent disposal system of the Tribe, the Proposed Action would serve a minority population. As noted above, the Proposed Action would be implemented on trust land near the Reservation in Tulare County.

4.12.3 Environmental Consequences

4.12.3.1 No Action Alternative

Under the No Action Alternative, existing conditions would remain unchanged. As discussed throughout this EA, existing conditions includes the unauthorized discharge of treated effluent due to failing spray fields. If environmental conditions were to worsen such that the Tribe or the environmental resources of the Reservation was negatively impacted, this could cause an environmental justice issue.

4.12.3.2 Proposed Action

The Proposed Action would not cause disproportionately high and adverse human health or environmental effects on minority or low-income populations. IHS staff designed the Proposed Action in conjunction with members of the Tribe in order to have a positive impact on the health and environment of the Tribe, which is the only low-income and minority population that would be affected by the project. While temporary adverse impacts to air quality, noise, and water quality may occur during construction of project, these impacts would be temporary in nature, would not exceed relevant Tribal or Federal standards, and would not adversely affect members of the Tribe, as no development, aside from the WWTP, is located within close vicinity of the Site.

The Proposed Action would not lead to adverse cumulative impacts as the Proposed Action would have a beneficial impact on the environmental conditions of the Tribe's lands, benefiting the Tribal population.

4.12.4 Mitigation Measures/Conditions

No mitigation measures related to environmental justice are warranted.

4.13 Land Use

4.13.1 Regulatory Setting

No regulations relating to land use are applicable to the Proposed Action.

4.13.2 Affected Environment

The Site is located in unincorporated Tulare County, southeast of the City of Porterville. The Site is trust land adjacent to the Reservation. As such, local land use regulations are not applicable to development at the Site. The Site is bordered to the east by a strip of land owned by BLM, which separates the Site from the Reservation, to the north by Indian Reservation Drive, which separates the Site from the South Fork Tule River, to the west by McCarthy Ranch (owned by the Tribe), and to the south by undeveloped hills. Surrounding land uses include additional livestock grazing, open space, and low-density rural housing. The closest residence is located approximately 2,000 feet south of the Site on Chimney Road. Other scattered residences are located further to the south along Chimney Road. Approximately 2,200 feet to the east of the WWTP site on Indian Reservation Drive, a few residences are clustered near the entrance to the Reservation.

According to the California Important Farmland Finder of the California Department of Conservation (2016), the Site and surrounding lands are classified as "Other Land."

4.13.3 Environmental Consequences

4.13.3.1 No Action Alternative

No impacts to Land Use would occur because the Proposed Action would not be implemented.

4.13.3.2 Proposed Action

Under the Proposed Action, additional spray fields, associated water lines, and a 900,000-gallon storage tank would be installed along Indian Reservation Drive and near the WWTP. Construction and operation of the Proposed Action would be coordinated through the Tribal Public Works Department, which currently operates the WWTP. As the Site is trust land of the Tribe, no impacts related to land use would result.

The Proposed Action would not lead to cumulative impacts as the Proposed Action would be implemented on trust land adjacent to the Reservation that is currently utilized for the WWTP and associated infrastructure.

4.13.4 Mitigation Measures/Conditions

No mitigation measures related to land use are warranted.

4.14 Public Services and Infrastructure

4.14.1 Regulatory Setting

No regulations relating to public services and infrastructure are applicable to the Proposed Action.

4.14.2 Affected Environment

4.14.2.1 Wastewater

As discussed throughout this EA, the Tribe owns and operates a WWTP at the Site. As of the date of this EA, the WWTP serves approximately 230 homes, a limited number of non-residential buildings located on the Reservation, and a few community buildings currently under construction near the northwest corner of the

Site. An additional 81 homes are expected to be connected to the wastewater system by May 2024. At that time, it is anticipated that approximately 155,500 gpd of wastewater will require treatment and disposal at the WWTP.

The WWTP has a total treatment capacity of 195,000 (equivalent to the capacity to support 390 homes at a rate of 500 gpd/house). Treated effluent is currently disposed of using 7.5 acres of spray fields located southeast of the WWTP. While the spray fields were designed to dispose of an estimated 79,500 gpd, the system has been found to be deficient above flows of 40,000 gpd. As a consequence, the spray fields are oversaturated and failing, resulting in the unauthorized discharge of effluent.

4.14.2.2 *Water Supply*

The Tule River Public Works Department maintains a water distribution system within the Reservation that consist of several miles of underground pipeline, several water storage tanks, and service line connections (Tule River Indian Tribe of California, 2018).

4.14.2.3 *Solid Waste*

A variety of licensed haulers provide solid waste services to the unincorporated territory of Tulare County, including Miramonte Sanitation, Pena Disposal, Inc., Mid Valley Disposal, USA Waste Management, South Tulare-Richgrove, and Tule Trash (County of Tulare, 2022). These licensed haulers provide a variety of different services, including collection of trash, recyclables, and organic waste.

4.14.2.4 *Telecommunications*

Telecommunications in Tulare County, including broadband internet services, are provided by various telecommunication providers (County of Tulare, 2012).

4.14.2.5 *Gas and Electricity*

According to the Tulare County General Plan 2030 Update (2012), electric services in the south and central areas of Tulare County, where the Site is located, are provided by Southern California Edison. Additionally, The Gas Company is the primary provider of natural gas throughout Tulare County.

4.14.2.6 *Law Enforcement*

Law enforcement services at the Site are provided by the Tule River Tribal Policy Department (TRTPD), which is comprised of five (5) Police Officers/High Country Rangers. All officers have been trained as Special Law Enforcement Commission (SLEC) through the Bureau of Indian Affairs (BIA), recognizing them as federal police officers. The TRTPD works collaboratively with the Tulare County Sheriff's Office (TCSO) as well as other municipal/state agencies/federal agencies i.e. (Probation/Parole, California Fish and Game, US Forestry (Tule River Indian Tribe of California, 2018).

4.14.2.7 *Fire Protection*

Fire protection services at the Site are provided by the Tule River Fire Department. The Tule River Fire Department is staffed by 14 full-time personnel: one (1) Fire Chief, one (1) Battalion Chief (B.C.), three (3) Fire Captains (F.C.), three (3) Fire Apparatus Engineers (F.A.E.), and six (6) Firefighters (F.F.). Each trained as a Firefighter and Emergency Medical Technician. The Tule River Fire Department also contains a Wildland branch that includes four (4) full time positions: one (1) Fire Management Officer, one (1) Assistant Fire Management Officer, and two (2) Wildland Fire Captains; and five (5) to seven (7) seasonal employees during the wildland fire season (Tule River Indian Tribe of California, 2018).

4.14.3 Environmental Consequences

4.14.3.1 No Action Alternative

Under the No Action Alternative there would be no significant impacts on water supply, solid waste, communications, gas and electricity, law enforcement, and fire protection, as no development would occur.

Under the No Action Alternative, the Tribe's wastewater effluent disposal system would continue to have inadequate capacity to serve the Reservation. The WWTP has a treatment capacity of 195,000 gpd, which is sufficient to treat the estimated 155,500 gpd of wastewater generated. However, the WWTP does not have adequate capacity to dispose of treated effluent as the existing spray fields are failing and causing an unauthorized discharge of treated effluent. Therefore, the No Action Alternative would result in the Tribe continuing to not have adequate wastewater disposal facilities.

4.14.3.2 Proposed Action

Under the Proposed Action, there would be no significant impacts on water supply, solid waste, communications, gas and electricity, law enforcement, and fire protection, as the proposed project involves expansion of existing wastewater disposal facilities to effectively dispose of current and planned wastewater effluent treated at the WWTP.

Under the Proposed Action, the disposal capacity of the WWTP would be increased to approximately 115,500 gpd, bringing the total disposal capacity to approximately 155,500 gpd. This would allow the WWTP to have the capacity to treat and dispose of the estimated 155,500 gpd needed to serve the 311 homes and few non-residential buildings that will be connected to the WWTP by May 2024. Additionally, the 900,000-gallon storage tank would allow the Tribe to store up to 1,200,000 gallons of treated effluent, which would provide the Tribe with the capacity to store up to seven (7) days' worth of treated effluent. This would provide the Tribe the flexibility to store treated effluent on days when the Tribe is unable to utilize the spray fields, due to rain or other factors. Furthermore, the proposed location of the new storage tank, adjacent to the WWTP would keep all the pumps and controls centralized. The booster pumps would have the ability to draw directly from either tank, providing redundancy to the system. Therefore, the Proposed Action would result in a benefit to infrastructure.

The Proposed Action would not lead to cumulative impacts as the project involves improvements to the disposal capacity and operability of the Tribe's existing wastewater system. The Proposed Action would allow the Tribe to connect the residences and non-residential facilities planned to be served by the wastewater system and would not increase the capacity of the system.

4.14.4 Mitigation Measures/Conditions

No mitigation measures related to public services and infrastructure are warranted.

4.15 Hazardous Materials

4.15.1 Regulatory Setting

A material is considered hazardous if it appears on a list of hazardous materials prepared by a federal, state, or local agency, or if it has characteristics defined as hazardous. Factors that influence the health effects of exposure to hazardous material include the dose to which the person is exposed, the frequency of exposure, the exposure pathway, and individual susceptibility.

A hazardous material is defined as a substance that, because of physical or chemical properties, quantity, concentration, or other characteristics, may either (1) cause an increase in mortality or an increase in serious, irreversible, or incapacitating, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of, or otherwise managed (CCR, Title 22, Division 4.5, Chapter 10, Article 2, Section 66260.10).

Hazardous wastes are defined in the same manner. Hazardous wastes are hazardous materials that no longer have practical use, such as substances that have been discarded, discharged, spilled, contaminated, or are being stored prior to proper disposal. Hazardous materials and hazardous wastes are classified according to four properties: toxicity, ignitability, corrosivity, and reactivity (CCR, Title 22, Chapter 11, Article 3).

Clean Water Act

The Spill Prevention Control and Countermeasures requirements (Title 40 CFR §112) were developed pursuant to the CWA. Spill Prevention Control and Countermeasures are intended to reduce the threat of spills of hydrocarbons to navigable waters of the United States.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) established a tax on chemical and petroleum industries to fund cleaning up abandoned/uncontrolled hazardous waste sites, referred to as Superfund sites.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (42 U.S.C. §6922) (RCRA) establishes requirements for the management of hazardous wastes from the time of generation to the point of ultimate treatment or disposal. 42 U.S.C. Section 6922 requires generators of hazardous waste to comply with record keeping requirements relating to the identification of quantities of hazardous wastes generated and their disposition, labeling practices and use of appropriate containers, use of a manifest system for transportation, and submission of periodic reports to the EPA or authorized state.

Title 40, CFR §260

These regulations were promulgated by the EPA to implement the requirements of RCRA as described above. The regulations define the characteristics of hazardous waste in terms of ignitability, corrosivity, reactivity, and toxicity and list specific types of wastes deemed hazardous.

Hazardous Materials

Title 22 of the CCR, Division 4.5 of Chapter 11 contains regulations for the classification of hazardous wastes. A waste is considered a hazardous waste if it is toxic (causes human health effects), ignitable (has the ability to burn), corrosive (causes severe burns or damage to materials), or reactive (causes explosions or generates toxic gases) in accordance with the criteria established in Article 3 Characteristics of Hazardous Waste. Article 4 lists specific hazardous wastes, and Article 5 identifies specific waste categories, including RCRA hazardous wastes, non-RCRA hazardous wastes, extremely hazardous wastes, and special wastes.

Occupational Safety and Health Act of 1970

The Occupational Safety and Health Act of 1970 establishes regulations for site safety procedures, worker or employee training, and worker safety and health standards. Provisions include occupational safety and health standards; inspections, investigations, and record keeping; citations; procedures for enforcement; training; and employee education.

Hazardous Materials Databases

GeoTracker is an online database that provides state-wide data of authorized or unauthorized discharges of waste to land, or unauthorized releases of hazardous substances from underground storage tanks. This system consists of a relational database, on-line compliance reporting features, a geographical information system (GIS) interface, and other features that are utilized by the State Water Resources Control Board, regional boards, local agencies, regulated industry, and the public to input, manage, or access compliance and regulatory tracking data. Additionally, EnviroStor, managed by the Department of Toxic Substances Control (DTSC), is an online database for tracking cleanup, permitting, enforcement, and investigation efforts at

hazardous waste sites with known or suspected contamination. Through CERCLA, also known as “Superfund,” the EPA oversees the cleanup of contaminated sites that include manufacturing facilities, processing plants, landfills, and mining sites.

4.15.2 Affected Environment

The databases listed above were queried and no active sites were listed on or within 1,000 feet of the Site (DTSC, EnviroStor Site/Facility Search; SWRCB, GeoTracker; EPA, Superfund Site Search, 2022c). The nearest sites from these databases include a school investigation approximately 4.5 miles west of the Site and three (3) closed LUST cleanup sites approximately 5 to 6 miles north and northwest of the Site. Additionally, a Superfund site used to be located approximately 11 miles west of the Site, but it was recently deleted from the Superfund National Priorities List on March 22, 2022.

4.15.3 Environmental Consequences

4.15.3.1 No Action Alternative

Under the No Action Alternative, the effluent disposal system would not be expanded and conditions at the Site would remain unchanged. The Tribe would continue to operate the WWTP as-is.

4.15.3.2 Proposed Action

Project construction would require the use of hazardous materials such as fuels, lubricants, paints, and solvents. Construction activities for the project would be short-term and one-time in nature, and would involve the limited transport, storage, use, or disposal of hazardous materials. Project operation may also involve minimal use of hazardous materials, including but not limited to general cleaning supplies. These types of materials; however, are not acutely hazardous, and all storage, handling, and disposal of these materials are regulated by DTSC, the EPA, and the Occupational Safety & Health Administration (OSHA). Because the construction and operational activities would be implemented in compliance with existing hazardous materials laws and regulations for the transport, use, and disposal of hazardous materials, the impacts associated with the project having the potential to create a significant hazard to the public or the environment would be less than significant. Furthermore, the Site is not located within 1,000 feet of any active cleanup sites or hazardous waste facilities.

The Proposed Action would result in a minor, localized potential for impacts associated with hazards or hazardous materials and would not contribute to a cumulative impact in combination with other reasonably foreseeable projects.

4.15.4 Mitigation Measures/Conditions

No mitigation measures related to hazardous materials are warranted.

4.16 Summary of Impacts and Mitigation Measures/Conditions

As discussed in previous sections, the Proposed Action would have potential impacts on Air Quality, Water Resources, Soils and Geologic Resources, Biological Resources, and Historic Properties. To reduce these potential impacts to a less than significant level, mitigation measures or conditions are recommended to be implemented by the Tribe and IHS.

Table 4 – Impact and Condition/Mitigation Summary (Proposed Action)

Environmental Factor	Impact Summary	Condition/Mitigation Measure
Air Quality	Short term impacts to air quality may occur during the construction period.	<ul style="list-style-type: none"> All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized to suppress dust emissions using water, a chemical stabilizer/

		<p>suppressant, coverage with a tarp or other suitable material, or vegetative ground cover.</p> <ul style="list-style-type: none"> • All unpaved roads utilized during construction shall be effectively stabilized to suppress dust emissions using water or a chemical stabilizer/suppressant. • All excavation, grading, demolition, or other earth-moving activities shall be effectively controlled of fugitive dust emissions utilizing application of water and/ or by presoaking. • When soil or similar materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained. • All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly prohibited. • Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized to suppress fugitive dust emissions utilizing sufficient water or a chemical stabilizer/suppressant.
Water Resources	Design and construction of the project would comply with relevant federal regulations related to hydrology and water quality, reducing potential impacts.	<ul style="list-style-type: none"> • The Tule River Indian Tribe shall consider modifying Ordinance No. 02-99 to allow for, at a minimum, discharges to surface waters during emergency situations; and • Should Ordinance No. 02-99 be modified to allow for discharges, the Tule River Indian Tribe shall consider applying for a NPDES wastewater discharge permit for emergency use.
Soils and Geologic Resources	No impacts to soils and geologic resources are anticipated. There may be short-term impacts to soils during the construction period that would be limited through compliance with existing regulations.	A geotechnical investigation shall be prepared by a qualified engineering geologist or geotechnical engineer prior to construction of the proposed water tank. Any recommended measures shall be implemented during construction.
Biological Resources	Due to proximity of the proposed construction activities to trees that may offer habitat for nesting birds, a pre-construction nesting bird survey may be necessary to avoid potential impacts to migratory birds.	<ul style="list-style-type: none"> • If construction activities occur between February 1 and August 31 (raptor and bird breeding season), a qualified biologist shall conduct pre-construction surveys for active bird nests within seven (7) days prior to the start of construction activities. The survey area shall encompass the site and accessible surrounding lands within 250 feet for nesting migratory birds and 500 feet for raptors (i.e., birds of prey). • Additional nesting bird surveys shall occur within 200-feet of the anticipated active work area no more than seven (7) days before project activity

		<p>occurs in the anticipated active work area during the breeding season.</p> <ul style="list-style-type: none"> Should any active nests be discovered in or near proposed construction zones, a qualified biologist shall identify a suitable construction-free buffer around the nest. This buffer shall be identified on the ground with flagging or fencing and shall be maintained until the biologist has determined that the young have fledged and are capable of foraging independently.
Recreation Resources	No impacts to recreation are anticipated.	None
Noise	Short-term increases in noise may occur at the Site during the construction period. No impacts to sensitive receptors are anticipated.	None
Visual Resources	Short-term, minor visual impact to the public in the immediate vicinity of the active portion of construction due to equipment, construction materials, and workers.	None
Historic Properties	Although no historic properties were found within the project area, as the project involves ground disturbance in an area in proximity to known historic properties, a standard condition is recommended in the event an archaeological or historic property is inadvertently discovered during project construction.	<ul style="list-style-type: none"> In the event that any prehistoric, historic, or paleontological resources are discovered during construction-related earth moving activities, all work within 50 feet of the resources will be halted and IHS and the Tule River Indian Tribe shall consult with a qualified archaeologist to assess the significance of the find. If any find is determined to be significant by the qualified archaeologist, representatives from IHS and the Tule River Indian Tribe, in coordination with the Tule River Indian Tribe's Department of Environmental Protection, will meet to determine the appropriate course of action. If there is an inadvertent discovery during construction-related earth moving activities, the Tribal Archaeological Monitor will halt all activity, and IHS and the Tule River Indian Tribe's Department of Environmental Protection will coordinate appropriate actions in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA). A Tribal Archaeological Monitor provided by the Tule River Indian Tribe's Department of Environmental Protection shall be retained to be on-site to flag avoidance areas and monitor all project-related ground-disturbing construction activities within previously undisturbed soils. Tribal monitoring may be reduced or halted at the discretion of the monitor as warranted by conditions such as encountering bedrock, ground disturbance occurring in fill, or negative findings. If monitoring is reduced to spot-

		checking, spot-checking shall occur when ground-disturbance moves to a new location within the project site and when ground disturbance will extend to depths not previously reached (unless those depths are within bedrock).
Socioeconomic Issues	No impacts to socioeconomic issues are anticipated.	None
Environmental Justice	No disproportionately high or adverse effects on minority or low-income populations are anticipated.	None
Land Use	No impacts to land use are anticipated.	None
Public Services and Infrastructure	No impacts to public services are anticipated. A beneficial impact is anticipated to the Tribe's wastewater system as the Proposed Action would expand the effluent disposal capacity of the system.	None
Hazardous Materials	Use of hazardous materials such as fuels and lubricant during construction activities would be temporary and handled in accordance with existing regulations.	None

4.17 Unavoidable Adverse Effects

No unavoidable adverse effects would occur under the Proposed Action as all potential impacts could be mitigated to less-than-significant levels by the implementation of the measures recommended in this Chapter and summarized in Section 4.16. Adverse effects could occur under the No Action Alternative; however, these would be avoided by implementation of the Proposed Action.

4.18 Irreversible or Irrecoverable Commitments of Resources

No irreversible or irretrievable commitments of resources would occur under either the No Action Alternative or the Proposed Action.

4.19 The Relationship Between Short-Term Use of the Environment and the Maintenance and Enhancement of Long-Term Productivity

The No Action Alternative would result in significant adverse long-term effects on the quality of the environment, as the Tribe's wastewater effluent disposal system would continue to have inadequate capacity to serve the Reservation, and treated effluent would continue to discharge to an adjacent seasonal drainage and ultimately, the South Fork Tule River. The quantity of discharged effluent would most likely increase, exacerbating the violation.

The Proposed Action would result in a significant beneficial long-term effect on the quality of the environment, as the Tribe's wastewater effluent disposal system would have adequate capacity to serve the Reservation, and treated effluent would no longer discharge into the South Fork Tule River. Additionally, the Proposed Action would not result in any significant long-term adverse effects, as the mitigation measures recommended in Section 4.16 would reduce impacts to less-than -significant.

Chapter 5 Consultation and Coordination

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Chapter 6 References

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Appendices

Appendix A IHS Full Environmental Information and Documentation, August 18, 2021

Appendix B Preliminary Engineering Report, IHS, June 10, 2020

Appendix C Photo Log, November 29, 2022

Appendix D Biological Resource Survey, Live Oak Associates, February 13, 2023

Appendix E Cultural Resources Survey, ASM Affiliates, January 2023 (under separate cover)

Appendix F SHPO Section 106 Consultation Letter

Appendix G FEMA FIRM panel number 06107C1690E (effective 6/16/2009)

Appendix H NRCS Soil Map, December 1, 2022

Appendix A

IHS Full Environmental Information and Documentation, August 18, 2021

INDIAN HEALTH SERVICE
Full Environmental Information and Documentation

Tribe: Tule River Tribe	Action on Reservation/Rancheria (Mark with an "X"): Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Project Number: CA21-N80 Project Recipient: Tule River	Project Location: Tule River Reservation, Porterville, Tulare County. (Center 36.014675, -118.829789). The tank will be located near the water treatment plant and the sprayfields will be on the south side of Reservation Road to the east and west of the Treatment plant.
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Need for Proposed Action: The current effluent disposal is undersized resulting in illegal discharges into the nearby creek.	

Consideration	<u>How will the proposed action/activity affect the Consideration? THIS SECTION WILL IDENTIFY ANY POTENTIAL IMPACTS EXPECTED FROM A CONSTRUCTION AND/OR OPERATIONAL STANDPOINT OF THE PROPOSED ACTION</u> Mitigation measures/BMPs to be implemented identified in BOLD and RED.
1. Does the proposed action have the potential to change the existing environment where such change violates directives/controls imposed by any governmental body having jurisdiction for protecting the environment?	Impact possible. The proposed project will change the existing environment but whether the proposed action will violate any directives by any governmental body having jurisdiction will be determined during preparation of the Environmental Assessment (EA).
2. Does the proposed action result in a potential or known violation or continued violation of applicable (Federal, Tribal, State or local) laws or regulations imposed for protection of the environment or to ensure public health and safety?	Impact possible. The proposed project may result in a potential violation of applicable laws or regulations for protection of the environment or to ensure public health and safety. Any potential impacts will be identified during preparation of the Environmental Assessment (EA).
3. Is there a controversy with respect to environmental effects of the proposed action based on reasonable and substantial environmental issues?	No impact is expected.
4. Does the proposed action involve the use of technology where the possible effects are highly uncertain or involve unique or unknown risks where such technology has not been assessed for environmental impact?	No impact is expected. The technology has been in used without uncertain, unique or unknown risks that have been previously assessed for impact.

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5. Would the proposed action have an adverse effect on unique geographic characteristics? a. National Historic Landmarks? b. wilderness areas? c. wild and scenic rivers? d. sole source aquifers? e. wildlife refuges? f. important farmland (exceed 160-point score)? g. coastal zones?	No impact. There are no National Historic Landmarks, no wilderness areas, no wild and scenic rivers, no sole source aquifers, no wildlife refuges, no important farmland and is not located within the coastal zone boundary.
6. Does the proposed action establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects?	No impact.

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7. Does the proposed action involve the destruction, damage, alteration, renovation, reconstruction, removal from location, change in use, add visual, audible or atmospheric elements, transfer, sale or lease of a historic property (district, site, building, structure or object) listed or eligible for listing to the National Register of Historic Places?	Impact Analysis Pending. The undertaking will be reviewed pursuant to Section 106 of the National Historic Preservation Act for effects on properties listed or eligible for listing in the National Register and consultation with the Tribe, SHPO and other interested parties will be completed at that time and compliance with Section 106 documented. A Cultural Resources Survey will be required as part of the EA for Section 106 consultation with the Office of Historic Preservation (SHPO).
8. Is the proposed action likely to affect a plant or animal species listed on the USFWS or NOAA list of endangered or threatened species or critical habitat of an endangered or threatened species? Discovering an endangered or threatened species in the project area will stop the project, and the Endangered Species Act has significant fines and penalties for violations.)	Impact Analysis Pending. The proposed action will be reviewed pursuant to Section 7 of the Endangered Species Act for effects on threatened and endangered species. The proposed action will be reviewed for impacts to listed species. A Biological Resource Survey will be completed as part of the EA and if the proposed action has the potential to impact a listed species, consultation with the USFWS would be completed at that time and compliance with Section 7 of the ESA documented.

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9. Will the proposed action require an assessment in accordance with <i>Executive Order 11988 Floodplain Management</i> by endangering people who occupy the property, purchasing, constructing, or leasing a property in a floodplain, or encouraging floodplain development? (May be applicable to construction in or near any wet or dry waterway, stream crossings, intake structures, outfalls, etc.)	No impact expected. The proposed action is located in a Zone X, an area of minimal flood hazards. The proposed action will not endanger people or property, encourage development nor affect the natural and beneficial functions and values of a floodplain.
10. Will the proposed action require an assessment in accordance with <i>Executive Order 11990 Protection of Wetlands</i> ?	No impact. There are no wetlands or "waters of the U.S." at or in close proximity to the proposed action area.
11. Does the proposed action involve the use, transfer, or lease of real property that has been determined, after investigation in accordance with the provisions of CERCLA 120(h), to have been used as a storage facility for hazardous waste for more than 1 year?	No impact.
12. Does the proposed action involve construction greater in scope or size than normally experienced for a particular type of project?	Impact possible. The proposed action is considered a large project.
13. Does the proposed action involve the construction of a new solid waste disposal site?	No impact.
14. Will the proposed action create a need for additional capacity at solid waste disposal facilities?	No impact.

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15. Does the proposed action involve construction of a new wastewater treatment facility with direct discharge of treated sewage to surface waters?	Impact possible. The WWTP was previously constructed; however, 22 acres may be impacted from direct discharge. Any potential impacts will be identified during preparation of the EA.
16. Will the proposed action create a need for additional capacity at wastewater treatment facilities?	No impact anticipated.
17. Will the proposed action remove vegetation that could affect migratory birds and bats protected by the Migratory Bird Treaty Act?	Impact possible. Any potential impacts will be identified during preparation of the EA.
18. Will the proposed action involve work in, over, or adjacent to wetlands, and other water resources regulated pursuant to Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act?	No impact anticipated.
19. Will the proposed action create a need for additional and/or significant capacity in the drinking water supply?	No impact.
20. Will the proposed action require major sedimentation and erosion control measures as a result of increased erosion from clearing, grading and excavation? (Consider earth disturbing activities including construction or expansion of a parking lot.)	Impact possible. Any potential impacts will be identified during preparation of the EA.

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21. Will the proposed action violate the applicable storm water permit or NPDES permit? (Earth disturbing activities may require permits from the EPA or other agency and a storm water control plan, including parking lot construction activities)	Impact possible. Any potential impacts will be identified during preparation of the EA.
22. Will the proposed action violate Federal, Tribal, state or local regulations on the use and storage of hazardous substances or the transportation, storage, and disposal of hazardous wastes or medical wastes? (Activities that generate those items include air conditioning repair and service, pesticide application, motor pools, automobile repair, welding, landscaping, agricultural activities, print shops, hospitals, clinics, medical centers, etc. Repair, renovation, or demolition activities can generate waste that has asbestos-containing materials, asbestos, lead-based paint, PCBs, CFCs, etc.)	Impact possible. Any potential impacts will be identified during preparation of the EA.
23. Is the proposed project in a non-attainment area or maintenance area for criteria air pollutants? Will the proposed project increase emission levels of regulated air pollutants and exceed de minimis standards?	Emissions expected. Tulare County is in a moderate non-attainment area for PM2.5 and an extreme non-attainment for 8-HR Ozone. Construction and operation emissions will be assessed during preparation of the EA.
24. Will the proposed action affect sensitive noise receptors within ¼ mile of the action area? (Consider residences, churches, hospitals, schools)	Minor impact possible. Any potential impacts will be assessed during preparation of the EA.

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25. Will the proposed action have a disproportionately high and adverse human health or environmental impact on the Tribe, low-income populations, or minority populations?	No impact.
26. Will the proposed action create a need for additional energy supply or generation?	No impact.
27. Will the proposed action create a need for additional capacity in transportation systems?	No impact.
28. Does the proposed action involve the purchase, construction or lease of building(s) on more than 5 acres of land?	No impact.
29. Does this proposed action involve the purchase, construction or lease of a building(s) which will total more than 12,000 square feet? (Include portable and modular facilities and trailers.)	No impact.
30. Will the proposed action create a need for additional capacity in health care facilities and for health care services?	No impact.
31. Will the proposed action result in any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste?	No impact.

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NEPA Finding;

Class I Action – Categorically Excluded. No further NEPA review required.

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Class II Action – An Environmental Assessment is required to determine whether to prepare a Finding of No Significant Impact (FONSI) or to prepare an Environmental Impact Statement (EIS). A Draft EA was prepared in 2009 that is now obsolete.

IHS Federal Register Citation: Federal Register, Vol 58, No. 3, page 571, Class of action: **K** : **Extraordinary or Exceptional circumstances possible.**

I certify that to the best of my knowledge and ability the information presented herein is true and correct:

(1)	<i>Michelle Roy</i>	8-18-21
Signature (Grantee or responsible, knowledgeable person who completed this document)	LT Michelle Roy, P.E. Project Manager	
(2)	<i>J. David Mazorra</i>	8/18/21
Signature District Engineer	Captain J. David Mazorra, P.E.	Date
(3) <i>Donna M Meyer</i>	Donna M. Meyer, CEM/HPS	18 AUG 2021
Signature Area Environmental Coordinator	Area Environmental-Historic Coordinator	Date

Appendix B

Preliminary Engineering Report, IHS, June 10, 2020

Preliminary Engineering Report



Indian Health Service
California Area
Sanitation Facilities Construction
Public Law 86-121

Project Name:	Tule River Wastewater Effluent Disposal Improvements
Community:	Tule River Indian Reservation
Tribe:	Tule River Indian Reservation
SDS Project Number:	CA54512-1601

Prepared by (signature): Michelle Roy	A circular professional engineer seal for Michelle J. Roy. The outer ring contains the text "LICENSED PROFESSIONAL ENGINEER" at the top and "STATE OF CALIFORNIA" at the bottom. The inner circle contains the name "MICHELLE J. ROY" at the top, the license number "NO. C 90983" in the center, and the word "CIVIL" at the bottom.
Name of Engineer: Michelle Roy	
Date: 6/10/20	

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1. EXECUTIVE SUMMARY

The Tribe requested the IHS to conduct a preliminary evaluation for expanding the waste water eluent capabilities at the waste water treatment plant. Currently the spray fields are inadequate and water is dripping down the hillsides into the nearby tributary which is in violation of EPA discharge requirements. In November 2019, Project Engineer Michelle Roy, met with the operators and confirmed the spray fields were failing. EPA has funded sewer collection expansion projects to connect more homes to the treatment plant, which is going to make the spray field issue worse.

To address this concern IHS recommends expanding the spray fields with limited storage to store water during rain events (7-days). This would add 23 acres of additional spray field area, constructing a 900,000 gallon treatment water storage tank, and help with the planning to apply for an emergency NDPEs discharge permit. The recommended alternative has a total capital cost of \$2,021,900.

Along with the preferred alternative, IHS also looked into utilizing a larger storage area to balance the hydraulic loading rate throughout the year, which had a higher capital cost and more operational and maintenance. It also considered only applying for an NDPEs discharge permit. This option would have minimal capital costs, but there is no guarantee of the timeframe and that Tribe would be granted a discharge permit so this option does not immediately address the deficiency. The no option alternative also does not immediately address the deficiency. Therefore, none of these alternatives are recommended.

2. INTRODUCTION

The Tribe requested the IHS to conduct a preliminary engineering evaluation for expanding their effluent capabilities at the wastewater treatment plant that currently serves 159 homes, soon to be 311 homes. The effluent water is disposed of through 8 sprinkler heads covering approximately 7.5 acres of spray fields and about 7,075 LF of underground drainfield. IHS performed a site visit on November 21, 2019 and determined that the spray fields were indeed failing. The water is ponding near the spray fields and running down the hillside and into the nearby stream and down the road back to the treatment plant.



Figure 1: Failing Spray Field

The Tribe currently does not have an NDPEs discharge permit so is in violation of EPA regulations. IHS has determined that the failing of the spray fields is due to several factors including significant slope of fields, intermediate rock/confining layers, lack of redundancy to allow for rest cycles, and actual infiltration rates less than expected from original soil investigation. See Section 6: Alternative 2 design criteria for a detailed discussion on the design of spray fields.

The existing system is deficient above flows of 40,000 gallons per day, which is below the current design flow of 79,500 gallons per day. The Tribe is concerned the current deficiency will become more of an issue as the funded sewer expansion projects connect 152 additional homes to the waste water treatment plant. The North Reservation Road (NRR) Sewer Extension (CA17-E60) is currently under construction and will connect 31 homes by summer 2020. The Scattered Sewer Site Connections (CA18-E68) and Apple Valley Sewer Extension (CA18-E68) projects will be completed to connect 18 and 22 homes respectively by May of 2021. NRR phase 2 has been awarded and is expected to bring an additional 81 homes onto the system by May of 2024. The effluent disposal needs to be improved to handle the 311 funded homes (155,500 gpd)

Preliminary design development activities that have been completed include:

- Reconnaissance surveys and site investigations
- Records review of previous projects in the area for cultural properties, other environmental considerations, and subsurface soil conditions
- Records review of Tribal operation and maintenance costs
- Discussions with the operators about current sprinkler use

3. PROJECT PLANNING AREA

- A. Location:** Figure 2 provides imagery of the project planning area near the wastewater treatment plant. The potential area for waste water effluent discharge is primarily along Indian Reservation Dr and Chimney Road as outlined in red. The area between the existing spray fields and the waste water treatment plant was also considered.



Figure 2: Project Planning Area

- B. Environmental Resources Present:** Based on a cultural report conducted for project CA 09-094, it is known that two cultural sites within the project boundary are on record. Analytical Environmental Services reported that during a field survey in 2009, they found outcrops containing mortars and slicks at one location. They could not find the rock cairns that were previously recorded to be at the other location and suspect they were removed when a new firebreak road was constructed. The Tribe confirmed that they were only aware of the one cultural resource in the area and any work will be designed as to not disturb this area.
- C. Growth Areas and Population Trends:** Based on Tribal records and the U.S. Census, the population growth rate for communities on the Reservation is assumed to be 2%.

4. EXISTING FACILITIES

- A. Location Map:** Figure 3 provides a scale map of the existing major facilities for the Tule River Sewer Collection System.



Figure 3: Scale Map of Existing Facilities

B. History: The Tribe wanted a wastewater treatment plant that would treat 300,000 gpd, but due to funding restraints the project was phased with modular units. The original facility with a capacity 75,000 gpd has been operational since July 2014. In November 2016, a second unit with a maximum capacity of 120,000 gpd was added increasing the total capacity 195,000 gpd. At a wastewater generation rate of the 500 gpd/house, the existing treatment facility has the capacity to support 390 homes. The generation rate of 500 gpd was reduced from the initial feasibility study rate of 540 gpd based on actual waste water generation at Tule River.

Originally, drainfields were designed and built by HydroScience Engineers, a subcontractor during construction, to dispose of the effluent water. They selected an infiltration rate of 0.45 gpd/sq-ft based on a percolation test in the area and installed 7,075 LF of drainfield with a width of 20 ft for 141,500 sq-ft of application area (63,675 gpd). The Tribe began to experience problems with the drainfield almost immediately. While the Tribe and contractors tried to optimize the drainfields by dividing them into different zones, there was constant ponding around the treatment plant. The maximum capacity of the drainfields was determined to be about 10,000 gallons per day. It is believed HydroScience overestimate the infiltration rates, used a width wider than they should have, and decreased capacity by disturbing the soil on the hillsides that the drainfields were built into.

In January 2015, the Tribe added approximately 7.5 acres (8 sprinkler heads) to provide an alternative way to discharge the effluent. IHS utilized a slightly more conservative infiltration rate of 0.3 gpd/sqft in the sizing of the spray fields. At the time of construction, the majority of the land around the wastewater treatment plant was not in trust limiting the locations that the Tribe could install spray fields. The spray fields were installed farther from the plant on a hill to keep it in on Trust land where the Tribe is allowed to discharge via a spray field. Now, more land around the treatment plant has been converted to Trust giving more options as to possible spray field areas.

In 2014, IHS recommended the Tribe apply for an NDPES discharge permit. The Tribe was in contact with the EPA and Tulare County and made progress in obtaining a permit, but at that time the Tribe decided to forego the permit due to concerns they had. The Tribe would have to overturn a Tribal ordinance that prohibited discharge to the River of any form. There were also concerns that the County would not approve of the action. Now that the land is in Trust, moving forward the Tribe would only have to deal directly with the EPA.

The WWTP has a history of providing high quality effluent and has treatment capabilities to chlorinate water for reuse. Results from early 2015 and effluent limits allowed to other Tribes in California are shown in Table 1.

Table 1: Effluent Quality Compared to Discharge Permit Requirements

	Tule 2/25/15	Tule 4/8/15	Tribe A	Tribe B
BOD (mg/L)	< 2	< 2	30	10
Nitrate as N (mg/L)	0.7	2.8	30	10
Total Suspended Solids	1	1	10	10

C. Condition of Facilities: The condition of the facilities is as follows:

Community Sewer Collection System: The community collection system is being constructed in phases and is a mix of gravity fed section with force main sections. The existing sewer collection system consists of over 38,000 feet of sewer mains, 135 manholes, 21,500 feet of 4-inch service lines, 6,000 feet of 4-inch sewer force main, and 4,000 feet of 2-inch sewer force main, and eight E-one duplex pump stations. The Tribe has not reported any issues with the sewer collection system.

Wastewater Treatment Plant: The Membrane Bioreactor (MBR) system consists of two packaged units which have a total capacity of 195,000 GPD. The existing flows for 155 homes connected and community buildings was approximately 70,000 GPD during the winter months when the Tribe experiences issues with the Spray Fields. This is an average of 451 GPD per home which is below the available capacity.

Effluent Disposal System: The waste water treatment plant has a treated water holding tank that is 300,000 gallons. This flows into the existing drainfields and spray fields.

The existing effluent disposal system has 7,075-ft of drainfield. The drainfields have a history of failure and at best can only support 10,000 gpd and the days cannot be consecutive. Therefore, the drainfield capacity will not be included in the overall capacity.

The Tribe has 8 sprinkler heads, Rain Birds 80EHD with 11/16” nozzles that have radius of 116-ft radius (1-acre) at a pressure of 100 psi. One sprinkler is limited so it only rotates 180 degrees for a total of 7.5 acres (326,700 sqft). The design infiltration rate utilized was 0.3 gpd/sqft (Trench bottom infiltration rate. USEPA Table 1-Infiltration rates, sandy loam, sandy clay loam, sandy clay, blocky, BOD5 less than 30 mg/L). However based upon observance of performance of spray fields it is evident that the actual infiltration rate is lower. Based on experience operating the spray fields for the past 6 years, it is estimated that the actual capacity is

40,000-45,000 GPD when all spray fields are in operation. The reduction in capacity is due to slope, rock/confining layers, and lack of extended periods of rest. Further compounding the issue, is that there have been numerous times when sections of the spray fields must be removed from service to maintain the system and there is no redundancy.

Discussion on how to calculate the capacity of a spray field is provided in the Section 6 Alternative 2 Design Guidelines. This design analysis calculates a hydraulic loading rate of 0.2 gpd/sqft and gives a conservative 75% slope reduction factor for hillsides with slopes greater than 20%. The entire area of the spray fields is not at 20% and experience shows that the spray fields operate without issues at higher application rates. Therefore, it is recommended to use a rate reduction of 40% or 0.12 gpd. Using these values, the existing spray fields only have a capacity of 39,200 gallons which is below the current expected effluent flow of 77,500 gpd.

Effluent Sprinkler System Controls: Each sprinkler head sprays 100 gpm and has a solenoid valve allowing the sprinklers to run one-at-a-time for a set amount of time per hour for the 8-hours the operators are at the plant. The Tribe restricts the spray field usage for when someone is present in case something malfunctions.

The Tribe has reported issues keeping all the spray fields in use further reducing its capacity. In the summer of 2019, when the Tribe first reported issues with the spray fields, it was discovered that the Tribe was only able to utilize 5 spray fields for a short period of time due to solenoid valve malfunctions. While the Tribe repaired them quickly after the discovery, the Tribe could not restore the spray fields to normal use due to lack of redundancy in the system. The spray fields that stayed in operation had become over saturated and needed time to rest before more effluent could be applied. Providing a sufficient area of spray fields will give the Tribe more control of the spray fields. It will allow spray fields to rest when needed.

Booster Pump: Currently the Tribe has a simplex variable speed constant pressure irrigation booster package. It can pump 100 GPM with a 207 PSI boost to provide 100 psi at the sprinkler heads. This booster pump lacks redundancy.

Overflow Pond: The Tribe has a lined 800,000 gallon emergency storage pond just east of the waste water treatment plant. This storage pond is intended to provide emergency storage for untreated wastewater in case the plant ever goes offline and cannot treat the influent wastewater. The Tribe has discharged treated water into this pond when the rainfall prevents them from using the existing spray field system. This puts the Tribe at risk if the plant were to ever go down.

Effluent Treatment: The plant is equipped with chlorination equipment to treat the effluent. This is required in order to reuse the water. In the summer months, the Tribe chlorinates the water and uses it for dust control on the roads. When the Tribe is not reusing the water, the Tribe does not chlorinate it in order to save money on chlorine.

5. NEED FOR PROJECT

- A. Deficiency Level:** S3.1-Individual or community sewer facilities that violate code requirement(s) or advisories established for the protection of public health (e.g.

discharge permit violations, contamination of drinking water aquifers, inadequate drain field separation to groundwater or well, inadequate sludge disposal facilities). The Tribe does not currently have a discharge permit, but the water is running off from the spray fields into the nearby stream. The Tribe is also in violation of CA State Water Resources Control Board Order WQ 2014-01530DWQ, “When land application of wastewater is selected adequate acreage must be available to allow application rates that will not create nuisance conditions (... off-site discharge)”.

B. Health Impact: 15 points: Wastewater system or individual septic system not in compliance with applicable health-based code requirements (i.e. geographically relevant State or County code violations that are health-cased, even if they are not jurisdictional). The wastewater treatment does not have an adequate way to discharge their effluent water and is flowing into the nearby stream.

6. ALTERNATIVES CONSIDERED

Four technically feasible options were considered in this report which include: 1) no action, 2) spray field expansion with limited storage 3) spray field expansion with a storage pond and 4) NDPES discharge permit. Expanding the subsurface drainfield system was not given a full analysis because the original drain field system failed almost immediately.

6.1 ALTERNATIVE 1: No Action

A. Description: This no-action alternative continues utilizing the existing wastewater system without addressing the needs to properly dispose of treated effluent wastewater. The Tribe will not be able dispose of treated waste water fast enough without violating discharge requirements.

B. O&M Cost Estimates:

Table 2 provides the current operating budget for the wastewater treatment plant. This is expected in increase this year as more homes are added.

Table 2: 2019/2020 Budget

Line Item	Cost
Labor and Benefits	\$105,800
Waste Disposal	\$108,000
Professional Consultant	\$36,000
Misc. Maintenance	\$40,000
Training	\$2,000
Electricity	\$65,000
Vehicle	\$1,200
Fuel	\$2,000
TOTAL	\$360,000

The no action alternative will not immediately affect the operation and maintenance costs of the facility. The Tribe is at risk of incurring fines for the illegal discharge into the Tributary, which would increase their operating budget.

6.2 ALTERNATIVE 2: Spray Field Expansion with Limited Storage

- A. Description:** This alternative uses the lowest monthly infiltration rate (0.2 gpd) to calculate the need for spray field expansion. It only provides limited storage for effluent water to prevent discharge during unfavorable conditions.

Alternative 2 would expand the existing spray fields by adding an additional 23 acres of spray fields and install 2 booster stations pump with controls. It also would construct a 900,000 gallon storage tank to provide storage for 7 days. Lastly, it provides planning funds to help the Tribe obtain an emergency NDPEs discharge permit.

- B. Design Criteria:** The design evaluation was primarily based on California Water Boards order WQ 2012-01530 DWQ “General Waste Discharge Requirements for Small Domestic Wastewater Treatment Systems” and EPA’s “Process Design Manual: Land Treatment of Municipal Wastewater Effluents.”

Soil Types: The soil types around the water treatment plant are Blasingame-rock outcrop (108), Coarsegold loam (118), and Coarsegold-rock outcrop complex (120) as shown in Figure 4. All three have moderately slow permeability rates. In previous studies, two tests pits were done in the Coarsegold loam areas and it was determined that the permeability rate was 0.21 in/hr.

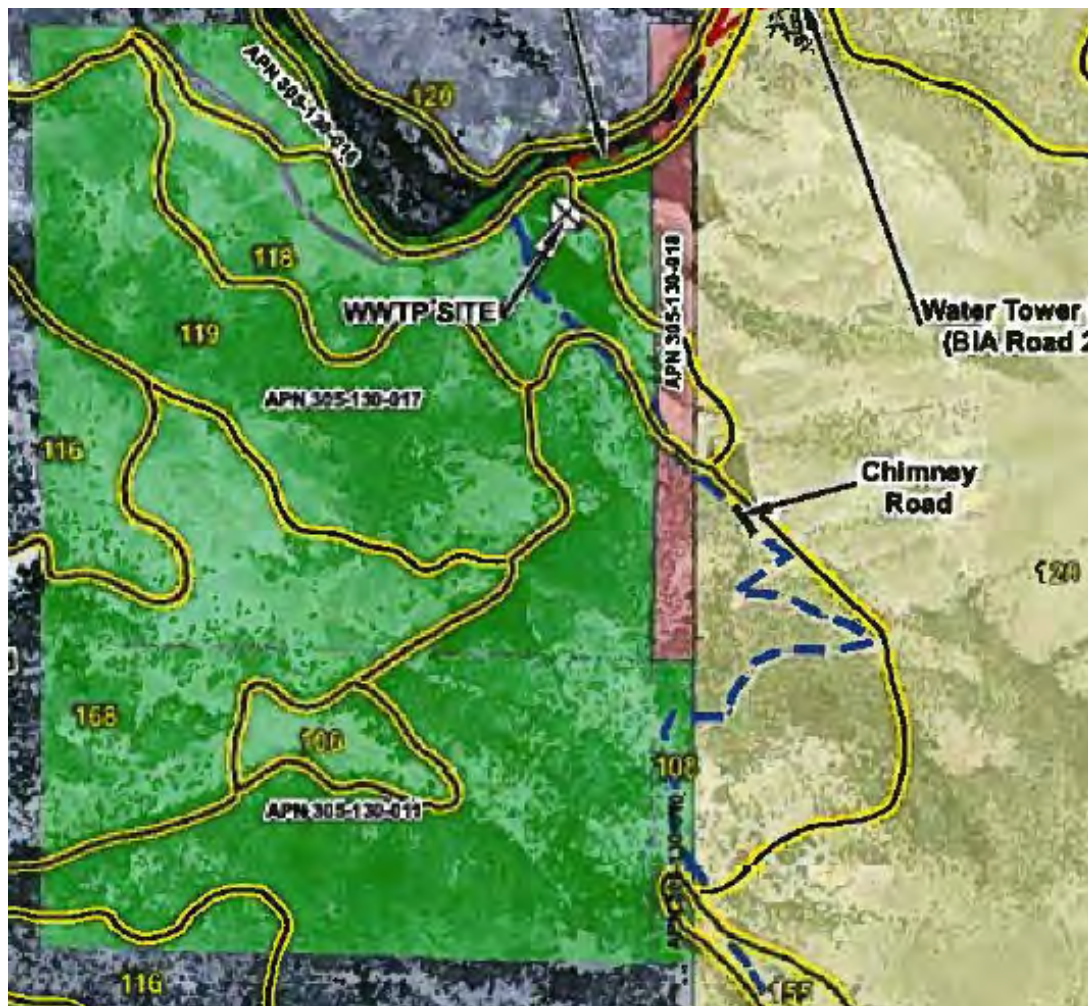


Figure 4: Soil Types around the WWTP Site

- i. **Hydraulic Loading Rates:** It is recommended for expanding spray fields to determine hydraulic loading by performing a water balance based on the permeability of the limiting layer in the soil profile, precipitation and evapotranspiration rates, and by applying a conservative wet/dry ratio to adjust for drying times. With this conservative factor, it allows some of the spray field area to rest while applying a slightly higher rate to other areas if needed. A permeability rate (K) of 0.21 in/hr was used corresponding to the Coarsegold loam.

$$L_w = ET - P_r + P_w$$

Where:

- L_w = wastewater hydraulic loading rate
- ET = evapotranspiration rate
- P_r = precipitation rate
- P_w = percolation rate
- P_w (daily) = (K)(24 hr/day)*adjustment factor

Where:

- P_w = design percolation rate, inches/day
- K = permeability of limiting soil layer, inches/hr (used 0.21 inches/hr)
- Adjustment factor= typically between 0.4 and 0.7 to account for wet/dry ratio and ensure a conservative value for infiltration of wastewater; a value of 0.07 was used to calculate P_w

Table 3: Water Balance to Determine Hydraulic Loading Rates

Month	Evapo- transpiration (in/mo.)	Percolation (in/mo.)	Precipitation (in/mo.)	Hydraulic Loading (in/mo.)	Monthly Hydraulic Loading (gpd/sq-ft)
January	1.04	10.58	2.17	9.45	0.20
February	1.88	10.58	1.99	10.47	0.22
March	3.65	10.58	2.33	11.90	0.25
April	5.53	10.58	0.87	15.24	0.32
May	7.20	10.58	0.42	17.36	0.36
June	8.00	10.58	0.11	18.47	0.38
July	8.40	10.58	0.01	18.97	0.39
August	7.46	10.58	0.02	18.02	0.37
September	5.56	10.58	0.35	15.79	0.33
October	3.89	10.58	0.65	13.82	0.29
November	1.89	10.58	1.14	11.33	0.24
December	1.05	10.58	1.43	10.20	0.21
Total Annual (in/yr.)	55.55	105.84	11.49	171.02	0.29 (yearly hydraulic loading rate)

Table 3 calculates the monthly hydraulic loading rate as well as a yearly hydraulic loading rate. Alternative 2 will not provide storage to balance out the loading rates throughout the year, therefore the lowest monthly hydraulic loading rate will need to

be used for this alternative. This occurs in January at 0.20 gpd/sqft. Alternative 3 will provide a storage pond to store water when the monthly loading rate is below the yearly rate, so the yearly hydraulic loading rate of 0.29 gpd/sq-ft may be used.

- ii. **Spray Field Area:** Spray field effectiveness declines as slope increases so the application rate needs to reduce on sleeper slopes based on guidelines in the Table 4.

Table 4: Application Rate Reduction based on Slope

Percent Grade (%)	Application Rate Reduction (%)
0-5	0
6-8	20
9-12	40
13-20	60
Over 20	75

Looking at the project area, it is estimated that the average slope of the spray fields will be around 15%.

This table is very conservative based on application rates seen on the existing spray fields that have slopes exceeding 20%. Actual practice showed these spray fields operating at 40,000 gpd which would correspond to only requiring a 40% reduction. Therefore, a reduction rate of 40% will be used instead of 60%. This corresponds to a hydraulic loading rate of 0.12 gpd/sq-ft. The required area of spray fields is 29.7 acres (311 homes * 500 gpd/home/0.12gpd/sq-ft/43560 sq-ft/acres=29.7 acres) or 23 new acres.

In 20 years, at 2% population growth the Tribe can expect about 435 connections requiring a total of 42.5 acres. There is sufficient area to continue to expand the spray fields as the Tribe connects more homes.

- iii. **Storage:** Currently the Tribe relies on the existing 300,000 gallon storage tank to store effluent wastewater on the rainy days where the Tribe cannot spray effluent into the spray fields. EPA guidelines show that depending on location, storage will be needed for approximately 7-14 days. Reviewing rainfall data for Porterville from March 2020-March 2017, it has rained 6 consecutive days twice. Therefore, this report recommends providing 7 days of storage (7 days * 311 homes * 500 gpd/home=1,088,500 gallons).

Alternative 2A-Storage Tank: A 900,000 gallon storage tank could be built directly behind the plant adjacent to the other tank. Its proximity to the system keep all the pumps and controls centralized. The booster pumps could draw directly from either tank providing redundancy to the system. It is easier to maintain as other containments cannot get in and it will be easy to fence off to prevent other humans from entering the area. While it has a higher initial cost than a storage pond it is the preferred alternative.

Alternative 2B-Storage Pond: A storage pond may have a lower construction, cost but this does not make up for its other disadvantages. The storage pond would need to be built at the lowest point away from the plant and require a fairly flat area.

Assuming a depth of 8-ft the storage pond would need a surface area of about 0.35 acres. While this is treated water, it would not need to be lined, but it would need to be monitored to ensure an excess amount of water is seeping to the river causing a violation to discharge requirements. Having the pond farther away increase complexity in operating the system as at least 1 more additional pump station will be needed. More maintenance will be required to prevent erosion and to fix potential wall collapse. The area would require fencing to prevent people from entering the pond. This alternative is not recommended due to these disadvantages.

- iv. **Emergency Back-Up:** This option provides adequate drainfield area and storage that discharge into the river is not expected. However, it is recommended the Tribe obtain an emergency NDPES discharge permit. This way the Tribe could discharge, in case of unforeseen circumstances.

- C. **Environmental Impacts:** This alternative is likely to have no impacts to the environment based on information from previous projects in or nearby the proposed project area.

Information provided in the Environmental Assessment in 2009, show that there are some sensitive habitats that construction activities could result in adverse potential effects. Mitigation measures have already been outlined to eliminate the potential adverse effects and most of them are not relevant to the spray field area. A pre-bid survey with a qualified biologist will take place to ensure these mitigation measures are still the only ones required before construction takes place. It is not expected that environmental considerations will impact construction.

Information provided in the Environmental Assessment in 2009, show that there are two recorded cultural sites in the potential spray field expansion area. One of them (4236) could not be found and the other one can (4235) be avoided with ground disturbing activities.

Information from FEMA stay dry google earth application show that the proposed area is not in a flood zone.

- D. **Land Status and Requirements:** Consultations with the Tribe indicate that the land is in Tribal Trust. There is an approximate a strip of land that was BLM land when the majority of land was converted into Trust. This land took longer to convert into Trust. Everything has been done to convert this land into Trust, but the Tribe still does not have the deed. To avoid any possible issues, it is recommended that the spray fields are not placed on this land. The strip is narrow enough that it will not have any large implications on the design, but it will need to be surveyed to ensure the spray fields are not on land that the Tribe does not have the deed.
- E. **Potential Construction Problems:** No potential construction problems are anticipated.
- F. **Construction Cost Estimates:** The cost estimate with a breakdown of the major items for construction and non-construction for this alternative is provided in Table 5:

Table 5: Preliminary Construction Cost-Spray Field Expansion with Limited Storage.

Item	Total cost
Planning	\$85,000.00
Construction	\$1,633,900.00
Post-construction support	\$1,000.00
Project technical support and administration	\$302,100.00
Total	\$2,022,000.00

- G. O&M Cost Estimates:** The annual estimated O&M budget was provided in Table 2 above and reflects the requirements for the existing system. Table 6 only reflects the changes to these costs based on the proposed facilities under the alternative.

Table 6: O&M Costs-Spray Field Expansion with Limited Storage.

Item	Yearly O&M Cost
Booster Pump Electricity	\$20,000.00
Sprinkler Head/Solenoid Maintenance	\$2,500.00
Tank Maintenance	\$1,000.00
Total	\$23,500.00

- H. Life Cycle Cost Estimates:** The life cycle cost estimate for the alternative is provided below. The analysis converts all costs to present day dollars and calculates the net present value of the alternative. The analysis is based on a planning period of 20 years and a discount (interest) rate of 2.7% (based on current OMB published values).

Table 7: Life Cycle Cost-Spray Field Expansion with Limited Storage

Description	One-time cost	Annual recurring cost	Present value
Capital cost	\$2,022,000.00	\$0.00	\$2,022,000.00
O&M cost	\$0.00	\$23,500.00	\$359,500.00
Salvage value	\$0.00	\$0.00	\$0.00
Total			\$2,381,500.00

- I. Capacity of Tribe to Operate and Maintain:** The Tribe has the capacity to operate and maintain the facilities. The additional spray fields do not add complexity to the system, but rather will make them easier to maintain as there will be more flexibility with run times. With the additional storage, the operators will not need to try and utilize the spray fields continuously.

The Tribe is currently conducting a technical, managerial, and financial analysis of its utility organization. The Tribe currently does not have a user fee structure in place to cover its operational costs. Instead expenses are covered by Public Works' general budget. The system has enough money to maintain the existing waste water treatment system and initial findings show they will be able to cover additional costs associated with additional spray fields.

6.3 ALTERNATIVE 3: Spray Field Expansion with Storage Pond

- A. Description:** This alternative uses the yearly hydraulic loading rate (0.29 gpd/sq-ft) to design the spray field expansion and provides enough storage to store effluent water during the winter months when the infiltration rates are lower to apply during the

summer months when infiltration rates are higher. It would expand the existing spray fields by 13 acres and install 2 more booster station pump with controls. It also would construct a 5,600,000 gallon storage pond for winter storage and help with the planning to obtain a NDPES emergency discharge permit.

- B. Design Criteria:** The design evaluation was primarily based on California Water Boards order WQ 2012-01530 DWQ “General Waste Discharge Requirements for Small Domestic Wastewater Treatment Systems” and EPA’s “Process Design Manual: Land Treatment of Municipal Wastewater Effluents.”
- i. Hydraulic Loading Rates:** Since this option provides storage to hold effluent in the winter months when the hydraulic loading rate is below the yearly hydraulic loading rate, the yearly loading rate should be used. This was calculated previously as 0.29 gpd/sqft in Table 2.
 - ii. Spray Field Area:** Using the yearly hydraulic loading rate (0.29 gpd/sqft) and the same application rate reduction, the area of spray fields required for this alternative is 20.5 total acres or 13 additional acres.
 - iii. Storage:** Most slow-rate systems require some storage for periods when cold/wet weather or crop planting harvesting stop or reduce wastewater applications. Storage of wastewater will be required whenever the quantity of available wastewater exceeds the design hydraulic loading rate.

This is determined by using a monthly water balance. The storage volume was calculated using the reduced application rate over a 12.2 acre area to be 5,600,100 gallons. If the pond is assumed to be 8 ft deep it would require an area of 2.2 acres.

- i. Emergency Back-Up:** As with Alternative 2, it is still recommended the Tribe pursue obtaining an emergency NDPES discharge permit even though it is less likely they will need it with the large storage pond.
- C. Environmental Impacts:** This alternative could have impacts on the environment. If the pond is unlined and is relatively close the stream, the water could seep into the tributaries and eventually make it into the river. This would need to be assessed in detail to ensure compliance with NDPES permits or the pond would need to be lined adding an extra cost.

Information provided in the Environmental Assessment in 2009, show that there are some sensitive habitats that construction activities could result in adverse potential effects. Mitigation measures have already been outlined to eliminate the potential adverse effects and most of them are not relevant to the spray field area. A pre-bid survey with a qualified biologist will take place to ensure these mitigation measures are still the only ones required before construction takes place. It is not expected that environmental considerations will impact construction.

Information provided in the Environmental Assessment in 2009, show that there are two recorded cultural sites in the potential spray field expansion area. One of them (4236) could not be found and the other one can (4235) be avoided with ground disturbing activities. Have a Tribal member take me out there and verify this.

Information from FEMA stay dry google earth application show that the proposed area is not in a flood zone.

- D. Land Status and Requirements:** Consultations with the Tribe indicate that the land is in Tribal Trust. There is an approximate a strip of land that was BLM land when the majority of land was converted into Trust. This land took longer to convert into Trust. Everything has been done to convert this land into Trust, but the Tribe still does not have the deed. To avoid any possible issues, it is recommended that the spray fields are not placed on this land. The strip is narrow enough that it will not have any large implications on the design, but it will need to be surveyed.
- E. Potential Construction Problems:** No potential construction problems are anticipated.
- F. Construction Cost Estimates:** The cost estimate with a breakdown of the major items for construction and non-construction for this alternative is provided below:

Table 8: Construction Cost-Spray Field Expansion with Storage Pond

Item	Total cost
Planning	\$50,000.00
Construction	\$3,764,000.00
Post-construction support	\$2,000.00
Project technical support and administration	\$692,200.00
Total	\$4,508,200.00

- G. O&M Cost Estimates:** The annual estimated O&M budget is provided below and reflects the requirements for the existing system and the changes associated with the proposed facilities under the alternative.

Adding the spray fields would minimally effect O&M costs. There would be an increase in electricity costs due to the additional pump station and extra maintenance on the solenoid valves. There will also be regular maintenance on the storage pond.

Table 9: O&M Costs-Spray Field Expansion with Storage Pond

Item	Yearly O&M Cost
Booster Pump Electricity	\$20,000.00
Pond Maintenance	\$2,000.00
Sprinkler Head/Solenoid Maintenance	\$2,500.00
Total	\$24,500.00

- H. Life Cycle Cost Estimates:** The life cycle cost estimate for the alternative is provided below. The analysis converts all costs to present day dollars and calculates the net present value of the alternative. The analysis is based on a planning period of 20 years and a discount (interest) rate of 2.7% (based on current OMB published values).

Table 10: Life Cycle Cost-Spray Field Expansion with Storage Pond

Description	One-time cost	Annual recurring cost	Present value
Capital cost	\$4,508,200.00	\$0.00	\$4,508,200.00
O&M cost	\$0.00	\$24,500.00	\$374,800.00
Salvage value	\$0.00	\$0.00	\$0.00
Total			\$4,883,000.00

- I. **Capacity of Tribe to Operate and Maintain:** The Tribe has the capacity to operate and maintain the facilities. The additional spray fields and storage should make it easier to properly operate the facility. Since the spray fields are sized based on annual hydraulic loading, every month the controls will need to be adjusted to ensure the correct loading based on that month’s rainfall and evapotranspiration rates making this alternative slightly more complicated than alternative 2. Also, the storage pond will need to be located at a lower elevation than the wastewater treatment plant increasing the complexity of the booster pump stations.
- J. **Other Factors:** The Tribe expressed desire to not have storage ponds when the plant was first built due to the fact that they are not aesthetically pleasing.

6.4 ALTERNATIVE 4: NDPES Discharge Permit

- A. **Description:** This alternative would help the Tribe apply for a NDPES discharge permit to utilize year-round that would enable them to put the effluent wastewater into the nearby stream. It would help construct a spillway to safely discharge water without creating erosion.
- B. **Design Criteria:** The design evaluation was primarily based on EPA standards for discharge. Previous conversations with the EPA and the effluent from the MBR wastewater treatment plant show that the Tribe is below the limit.
- C. **Environmental Impacts:** This alternative is likely to have minimal impacts to the environment based on allowable discharge permits guidance. The effluent water is of high quality and safe to discharge into the stream.

Information provided in the Environmental Assessment in 2009, show that there are two recorded cultural sites in the potential spray field expansion area. Discharging into the stream would avoid any ground disturbance around these cultural sites.

A full NEPA review would be required to obtain the permit.

- D. **Land Status and Requirements:** Consultations with the Tribe indicate that the land is in Tribal Trust making them eligible to apply for a discharge permit.
- E. **Construction Cost Estimates:** The cost estimate with a breakdown of the major items for construction and non-construction for this alternative is provided below:

Table 11: Construction Costs-NDPES Discharge Permit

Item	Total cost
Planning	\$50,000.00
Construction	\$50,000.00
Post-construction support	\$2,000.00
Project technical support and administration	\$18,360.00
Total	\$120,360.00

- F. **O&M Cost Estimates:** The annual estimated O&M budget is provided below and reflects the requirements for the existing system and the changes associated with the proposed facilities under the alternative.

Applying for a discharge permit would increase O&M costs significantly due to the required weekly monitoring estimated at about 3k more a month.

Table 12: O&M Costs: NDPES Discharge Permit

Item	Yearly O&M Cost
Weekly Testing	\$36,000.00
Total	\$36,000.00

- G. Life Cycle Cost Estimates:** The life cycle cost estimate for the alternative is provided below. The analysis converts all costs to present day dollars and calculates the net present value of the alternative. The analysis is based on a planning period of 20 years and a discount (interest) rate of 2.7% (based on current OMB published values).

Table 13: Life Cycle Costs-NDPES Discharge Permit

Description	One-time cost	Annual recurring cost	Present value
Capital cost	\$120,360.00	\$0.00	\$120,360.00
O&M cost	\$0.00	\$36,000.00	\$550,751.32
Salvage value	\$0.00	\$0.00	\$0.00
Total			\$671,111.32

- H. Capacity of Tribe to Operate and Maintain:** The Tribe has the capacity to operate and maintain the facilities even with a discharge permit in place. The lead operator, Richard Rodriguez who also works for Table Mountain has experience with discharging under a discharge permit and is familiar with the testing and additional reporting process. However, he does think this extra work would put additional stress on the operators. He would prefer the simpler option of utilizing more spray fields.

Dave Wallis from RCAC, recommends against it relying on a discharge permit. While the plant meets minimal operator requirements now, he is worried that the Tribe has had problems in the past retaining operators once they reach the higher operator grades. If Richard Rodriguez ever leaves/retires, the Tribe may not be able to keep an operator on staff capable of keeping up with the more rigorous discharge requirements.

- I. Potential Problems:** The current Tule River ordinance, a document required by the EPA, does not allow for discharge into the river. Kerri Vera, the environmental director suggested that this could potentially be changed, but if there is resistance in the Tribe, the actual timeframe for this to happen is unknown. While the water is safe, there are still stigmas that are associated with wastewater that will need to be overcome before a permit can be obtained.

As part of the NEPA environmental assessment, it is necessary to open the action for public comment. While the land is now in Trust and the Tribe has no obligations to work with Tulare County on obtaining a permit, the county still might object during this public comment period. The original agreement for the Tribe to build the wastewater treatment facility between the Tribe and the County specified that the Tribe could not discharge into the river. In 2015, a complaint was filed with the Tribe for installing the spray fields. This complaint was dropped since the Tribe was not actually in violation, but it is reasonable to expect public concern if a discharge permit is obtained. The timeframe for this option is uncertain and is not guaranteed.

7. EVALUATION AND SELECTION OF AN ALTERNATIVE

The analysis and evaluation of alternatives was based primarily on considerations to economically and quickly address the system deficiencies and reduce the public health risk.

Under alternative 1, the no-action alternative, 311 homes would be connected to a water treatment plant without a proper way to discharge the effluent. The Tribe will stay in violation of the EPA discharge permit requirements and as the problem becomes more obvious it is bound to raise concern of the EPA and the County. The only advantage of the no-action alternative is there would be no capital costs needed for the project. Based on these considerations, the no-action alternative is not recommended.

Alternative 4, applying for a NDPES discharge permit to use year round would have the lowest capital cost, it is not recommended. There is no guarantee that the permit would be awarded so it does not immediately address the deficiency. The Tribe operation and maintenance costs of this alternative is also the highest adding economic stress on the Tribe and making this alternative the one with the highest life-cycle cost. Therefore, IHS does not recommend this alternative in itself. There are benefits to obtaining an NDPES discharge permit and it is recommended the Tribe pursue this as an emergency measure along with another option.

Alternative 3, to construct a large storage pond with the spray field expansion results in a higher capital cost and added responsibility when it comes to operation and maintenance of the system.

Alternative 2, spray field expansion with limited storage is the recommended alternative. It addresses the immediate deficiency at a reasonable capital cost without overcomplicating the operation and maintenance of the system.

8. PROPOSED PROJECT (RECOMMENDED ALTERNATIVE)

A. Project Design: The proposed project would construct 23 acres of spray fields and a 900,000 gallon storage tank to provide 7 days storage. It would also add 2 booster pump stations with a controls and start the planning process to obtain an NDPES emergency permit.

Each spray field will be an acre in size to reduce initial piping and solenoid valves. It will have approximately 3,500 4" pipe. Each spray field will connect to the new or existing 4" line with 1" water line resulting in approximately and 6,000 LF of 1" water line. The preliminary layout of the spray fields and main line is shown in Figure 5.

A standard tank at 24.5 ft tall will have a diameter of 80ft-2 in with a nominal capacity of 911,988 gallons. This will fit to the East of the plant as seen in Figure 6. The section farthest east has an elevation approximately 10-ft higher than the current elevation of the plant and would require some earthwork and blasting.

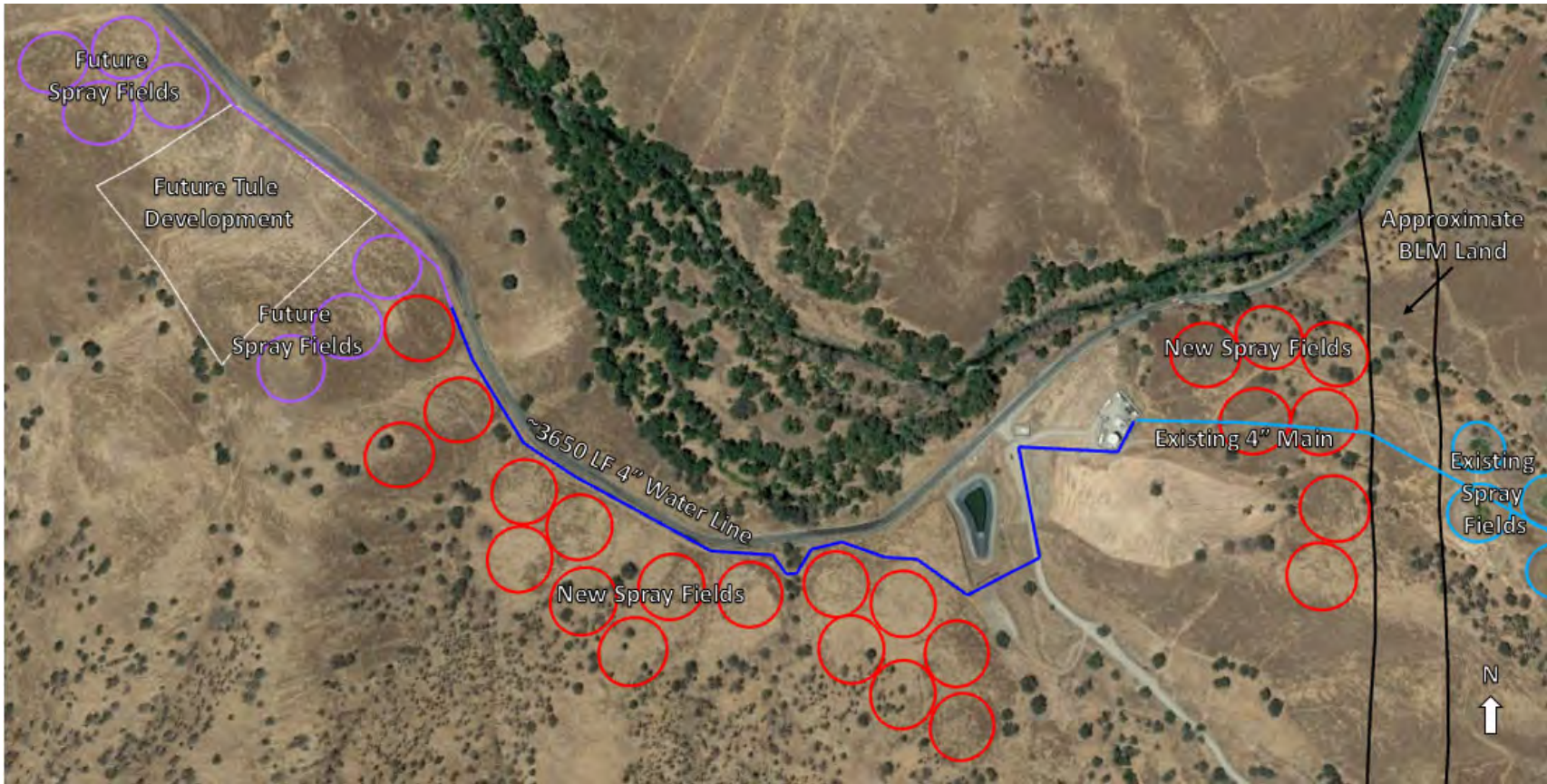


Figure 5: Spray Field Layout



Figure 6: Storage Tank Location

- B. Project Schedule:** Although the report is developed in advance of potential funding, the Table 9 provides anticipated dates for critical events including. The planning activities for the NDPES Discharge permit are not included in the schedule because they can occur at the same time as design and construction of the spray fields.

Table 9: Project schedule

Task	Start date	Duration
Project documents	June 2021	1 month
Environmental related activities	July 2021	3 months
Land and easement acquisition	N/A	
Permit applications	N/A	
Design and project manual	October 2023	6 months
Budget Agreement	April 2024	2 months
Contract award and construction	June 2024	6 months
Substantial completion	December 2024	

- C. Permit Requirements:** Preliminary consultations with the Tribe and the BIA Central California Agency, indicate that the spray fields will be built in land that is in Trust so no permits are required.
- D. Total Project Cost Estimate:** An itemized estimate of the project cost based on the stated period of construction is provided in Table 14:

Table 14: Detailed Cost Estimate for Recommended Alternative

Item	Description	Quantity	Unit	Unit Cost	Total Cost
I. Planning: (Tribal Procurement)					
1	Biological review	1	LS	\$5,000.00	\$5,000.00
2	Geotechnical Investigation for tank	1	LS	\$10,000.00	\$10,000.00
3	Aerial Mapping	1	LS	\$15,000.00	\$15,000.00
4	Surveying of BLM land Strip	1	LS	\$5,000.00	\$5,000.00
5	NDPES Permit Planning	1	LS	\$50,000.00	\$50,000.00
Sub-Total I.:					\$85,000.00
II. Construction: (Tribal Procurement and Tribal Force Account)					
A. Wastewater Facilities Tribal Procurement					
1	900,000 gallon Storage Tank	1	LS	\$1,000,000.00	\$1,000,000.00
2	Construction contingencies	15%	of	\$1,000,000.00	\$150,000.00
B. Wastewater Facilities TFA					
1	Mob/Demobilization	1	LS	\$10,000.00	\$10,000.00
2	Effluent Distribution Main 4"	3,650	LF	\$35.00	\$127,750.00
3	Effluent Distribution Lateral 1"	6,000	LF	\$9.00	\$54,000.00
4	Booster Pump	2	ea.	\$25,000.00	\$50,000.00
5	Spray field (sprinkler head, solenoid valve)	23	ea.	\$5,000.00	\$115,000.00
6	Straw and sod	1	LS	\$30,000.00	\$30,000.00
7	Control upgrades	1	LS	\$50,000.00	\$50,000.00
8	Earth Work/Blasting	1	LS	\$30,000.00	\$30,000.00
Sub-Total					\$466,750.00
10	Construction contingencies	15%	of	\$466,750.00	\$70,012.50
Sub-Total II:					\$1,686,762.50
Estimated labor for construction		33%	of	\$1,686,762.50	\$561,691.91
III. Post-Construction Support (Tribal Procurement)					
1	O&M manual development	1	LS	\$1,000.00	\$1,000.00
Sub-Total Section III:					\$1,000.00

IV. Project Technical Support and Administration

1	Tribal procurement admin fees	3%	LS	\$1,236,000.00	\$37,080.00
2	Tribal force account support fees of labor	10%	LS	\$561,691.91	\$56,169.19
3	IHS project technical support (PTS)	15%	LS	\$1,686,762.50	\$253,014.38
Sub-Total Section IV:					\$346,263.57

V. Summary

1	Planning total				\$85,000.00
2	Construction total				\$1,686,762.50
3	Post-construction support				\$1,000.00
4	Engineering and administration				\$346,263.57
Total Project Cost (Rounded to Nearest \$100):					\$2,119,000.00

IHS Contribution:					\$0.00
EPA CWISA or USDA-RD	97%	of	\$2,119,000.00		\$2,055,400
Tribal Contribution	3%	of	\$2,119,000.00		\$63,600
Unit Cost:	311	Homes	Unit Cost:		\$6,609.00

E. Annual O&M Budget

The annual operating budget is expected to increase once the spray fields are built, by approximately \$23,500. The O&M costs from the preferred alternative (Table 6) has been added to the existing annual budget (Table 2) to show the expect O&M costs once the project is completed and is shown in Table 15.

Table 15: Expected Annual O&M Costs after Project Completion

Line Item	Cost
Labor and Benefits	\$105,800
Waste Disposal	\$108,000
Professional Consultant	\$36,000
Misc. Maintenance	\$43,500
Training	\$2,000
Electricity	\$65,000
Vehicle	\$1,200
Fuel	\$2,000
TOTAL	\$383,500

G. Permit Requirements:

No permits are required to move forward with construction of the spray fields and storage tank. IHS will start working with the Tribe to determine the requirements to move forward with obtaining an NDPES emergency discharge permit so the Tribe can apply for one at a later time.

In order to comply with NEPA and other environmental statutes, an updated biological survey will be conducted to ensure new species that require protection have not moved into the area.

9. CONCLUSIONS AND RECOMMENDATIONS

The results of the analysis of the alternatives and associated considerations clearly indicate that the recommended alternative to expand the existing spray field system and install a new storage tank to provide 7 days of storage is the preferred option.

There are no significant requirements for special coordination. In addition, this project has no urgent or critical milestones other than having the construction completed within 3 years of signing the MOA.

The proposed project to improve the waste water discharge options at the treatment plant is highly recommended as it will ensure the Tribe is not in violation of EPA requirements. It will significantly improve the operability of the plant and the health of the community.

Appendix C

Photo Log, November 29, 2022

Site Photographs

Wastewater Effluent Disposal Improvement Project
November 29, 2022



Unused existing drain field, looking south from WWTP



Existing untreated wastewater emergency storage pond



Approx. location for 900,000 gallon treated wastewater storage tank (foreground), looking southeast



Hillside proposed for northeasterly spray fields, looking northeast



WWTP, location of future 900,000 gallon tank (behind existing tank), looking northwest



Drain fields left, WWTP center, new spray fields right, looking northwest (western edge of BLM land)



Existing spray fields in background, looking southeast (near west edge of BLM land/new spray fields)



Looking towards hillside for new spray fields southwest of pond (access road between pond & WWTP)



Pond & WWTP left, drain fields center foreground, new spray fields center background



Hillside for new spray fields southwest of pond (access road between pond & hillside)



Hillside for new spray fields, looking southeast towards drainage ((from existing access road)



Hillsides for new spray fields, looking northwest (from existing access road)



Drainage near westerly new spray fields, 2 spray fields to be on left hillside



Reservation Dr & access road on left, hillsides for spray fields, looking southeast



Westernmost hillsides for new & future spray fields, looking southwest



Westernmost hillsides for new & future spray fields, looking southwest

Appendix D

Biological Resource Survey, Live Oak Associates, February 13, 2023



LIVE OAK

ASSOCIATES, INC.

**BIOLOGICAL RESOURCE SURVEY
TULE RIVER TRIBE
WASTEWATER TREATMENT EXPANSION PROJECT
TULARE COUNTY, CA**



By:

LIVE OAK ASSOCIATES, INC.

Austin Pearson, Vice President
Jeff Gurule, Senior Project Manager

For:

Rebecca Dalske, AICP
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February 13, 2023

Project No. 2752-01

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EXECUTIVE SUMMARY

The Tule River Tribe proposes to expand an existing wastewater treatment plant (WWTP) within 111 acres of Tribal Trust Land (“project site” or “site”) near Porterville in Tulare County, California. The project will include the installation of piping to 23 proposed 1-acre spray fields, as well as the installation of a 900,000-gallon supplemental treated wastewater storage tank. The area of total ground disturbance will be 1.7 acres, almost all of which will be temporary.

Live Oak Associates, Inc. conducted an investigation of the biotic resources of the project site and prepared a technical report in support of National Environmental Policy Act review. This document provides a general description of the project site’s regional setting and identifies in more detail the existing conditions of the project site itself, describing its characteristics, features, and resources. Specifically, this document identifies: (1) the biotic habitats of the site, including those that may be used by special status plant and animal species; (2) known and/or possible waters of the United States that may be present; and (3) other significant biotic resources that may be affected by site development. This document also identifies likely effects associated with the proposed project, including those that may be considered significant, recommends feasible ways to minimize project impacts, where appropriate, and identifies environmental review requirements necessary for the project’s compliance with other federal environmental protection laws.

The project site is located in the southern Sierra Nevada foothills. Three biotic habitats/land uses were identified on the site: blue oak savannah, developed, and seasonal drainage.

Potentially significant project impacts to biological resources, and mitigation measures to reduce impacts are as follows:

- *Special Status Plants.* One special status plant species, the Munz’s iris, potentially occurs on the project site. If present, populations of this species may be reduced or eliminated by project implementation. Appropriately-timed surveys are required, and any populations determined to be present will be avoided to the extent possible. If populations of this plant species are found on site and cannot be avoided, then a salvage/relocation/monitoring plan shall be prepared and implemented by a qualified botanist.
- *Monarch Butterfly.* Habitat for the monarch butterfly, a Candidate species for listing under the Federal Endangered Species Act, is present on the project site. Project construction has the potential to remove larval habitat (i.e. milkweed). If project construction removes milkweed at the time of year when monarch eggs or larvae are present, mortality of eggs and/or larvae would occur. This would be considered a significant project impact. Prior to the start of construction, a qualified biologist will survey all proposed work areas for milkweed plants. If feasible, no milkweed plants will be removed during the period when monarchs are most likely to breed in the project vicinity, March to August. Any milkweed plants that are removed by the project will be replaced at a 3:1 ratio in accordance with a revegetation plan prepared by a qualified biologist. These measures would minimize impacts to this species and the project would be not likely to adversely affect this species.
- *Crotch Bumble Bee.* Habitat for the Crotch bumble bee, a Candidate species for listing under the California Endangered Species Act, is present on the project site. Project construction has the potential to impact this species through nest destruction and/or mortality of individual bees. This would be considered a significant project impact. Prior to the start of construction, a qualified



biologist will survey all proposed work areas for Crotch bumble bee nests. If a nest is observed, project construction will avoid impacts to the nest, as advised by the qualified biologist.

- *Nesting birds.* Project construction during the avian nesting season could result in nest failure and bird mortality, a violation of the Migratory Bird Treaty Act and a significant project impact. Should project construction occur during the nesting season (February through August), construction activities shall be preceded by preconstruction surveys for active nests. Construction activities shall avoid active nests with appropriate buffers until the young have fledged.

The proposed project will either have no impact or a less than significant impact on the following biotic resources:

- Special status animal species that would not likely use the site (i.e., the project site is outside their typical range or habitats of the site are not suitable for them)
- Special status animal species that may occasionally use habitats of the project site for cover and foraging
- California condors
- Roosting bats
- Wildlife movement corridors
- Designated critical habitat and other sensitive habitats
- Waters of the United States (i.e. drainages with an ordinary high water mark and wetlands). Although the project may require the temporary impact of two potentially jurisdictional drainages from pipe installation, such small impacts to jurisdictional waters are less than significant. However, a Clean Water Act permit could be needed to lawfully impact onsite drainages.



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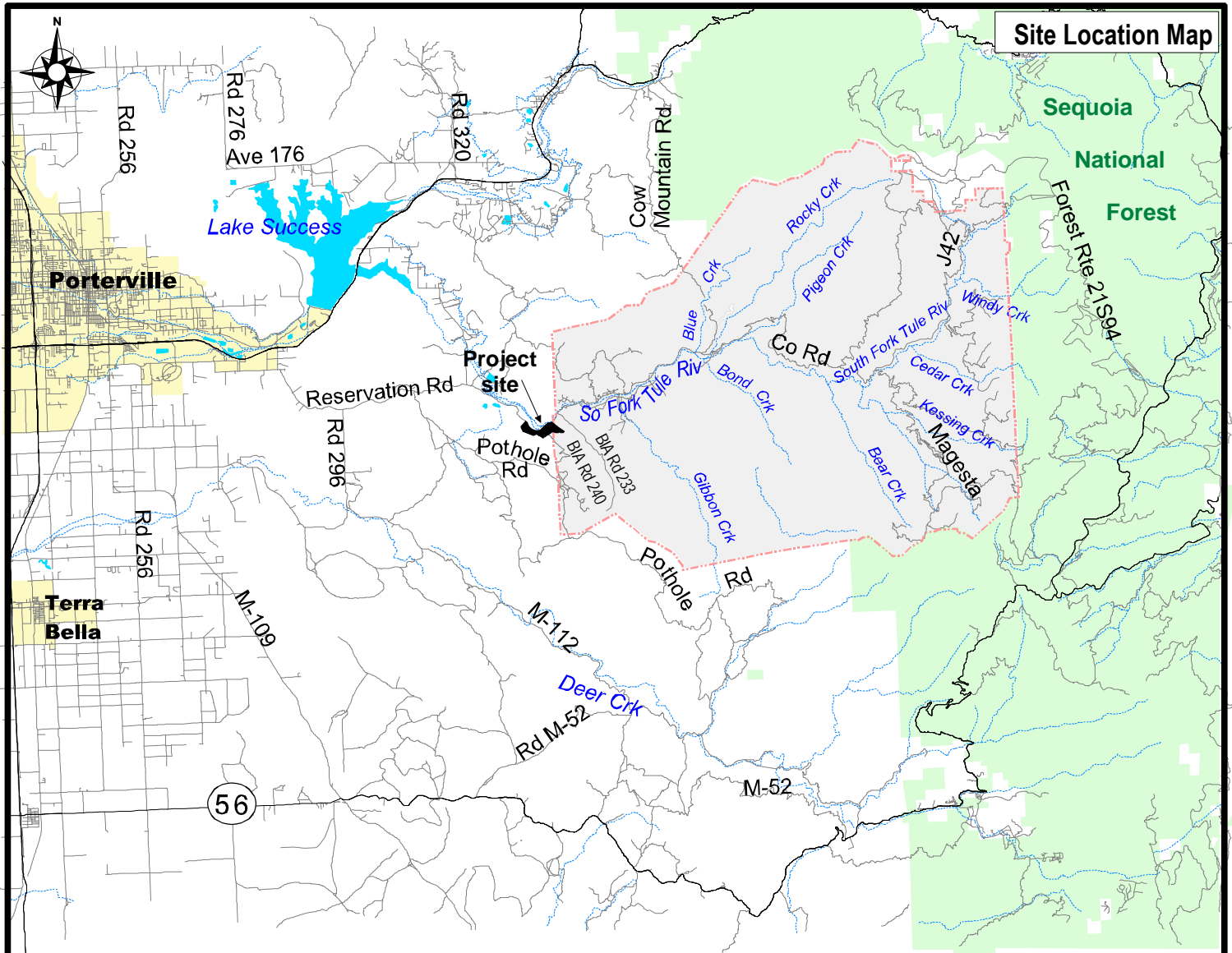


1.0 INTRODUCTION

The technical report that follows identifies the sensitive biological resources associated with the Tule River Tribe Wastewater Treatment Expansion Project (“project”) and addresses possible impacts to such resources that could result from the proposed project. The project site (or “site”) is located on Tule River Indian Tribe of California (Tribe) trust land on the south side of Reservation Road, approximately 10 miles southeast of the City of Porterville and 0.20 miles southwest of the Tule River Indian Reservation (TRIR) in Tulare County, California (Figure 1). The project site can be found on the *Globe* U.S. Geological Survey (U.S.G.S.) 7.5-minute quadrangle in Sections 14 and 15, Township 22 south, Range 29 east, Mount Diablo Base and Meridian (Figure 2).

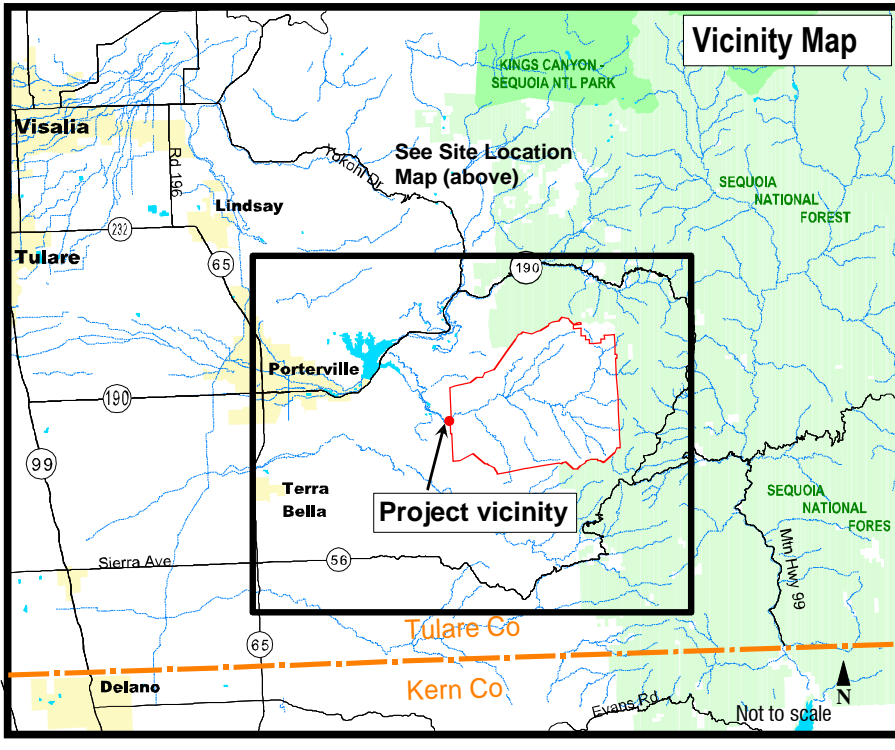
1.1 PROJECT DESCRIPTION

The Tribe proposes improvements to its existing wastewater system to be funded by the Indian Health Service (IHS) division of the U.S. Department of Health and Human Services (HHS) under the Sanitation Facilities Construction (SFC) program. The proposed action would occur on portions of an approximately 111-acre site, which is currently partially developed with a small wastewater treatment plant (WWTP) and spray fields. The project would improve the Tribe’s existing wastewater effluent disposal system in order to expand effluent disposal capabilities and increase treated wastewater storage capacity at the WWTP. The proposed improvements, including 23 new 1-acre spray fields and an approximately 900,000-gallon supplemental treated wastewater storage tank, would augment the current effluent disposal system that is inadequate and failing, allowing the Tribe to properly dispose of treated wastewater and prevent off-site discharge. To connect the proposed spray fields to the WWTP, approximately 3,650 linear feet (LF) of 4-inch pipe (main line) would be installed within the existing access road to convey treated wastewater to each cluster of spray fields (the number of spray fields per cluster to be determined during final engineering design). Approximately 6,000 LF of 1-inch pipe would be installed to connect spray field clusters to the 4-inch main line. The new water lines would be buried to a depth of approximately 3 feet.

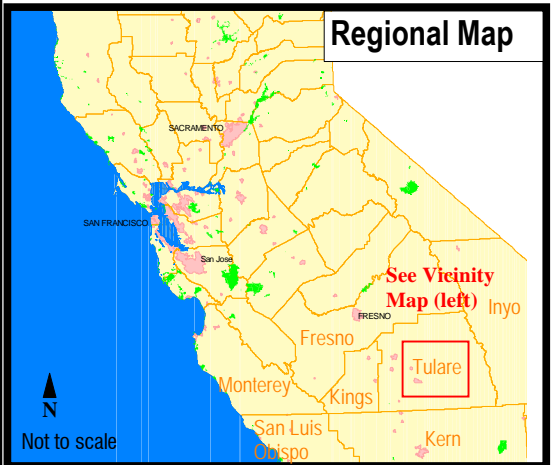


Site Location Map

5 0 5 miles



Vicinity Map

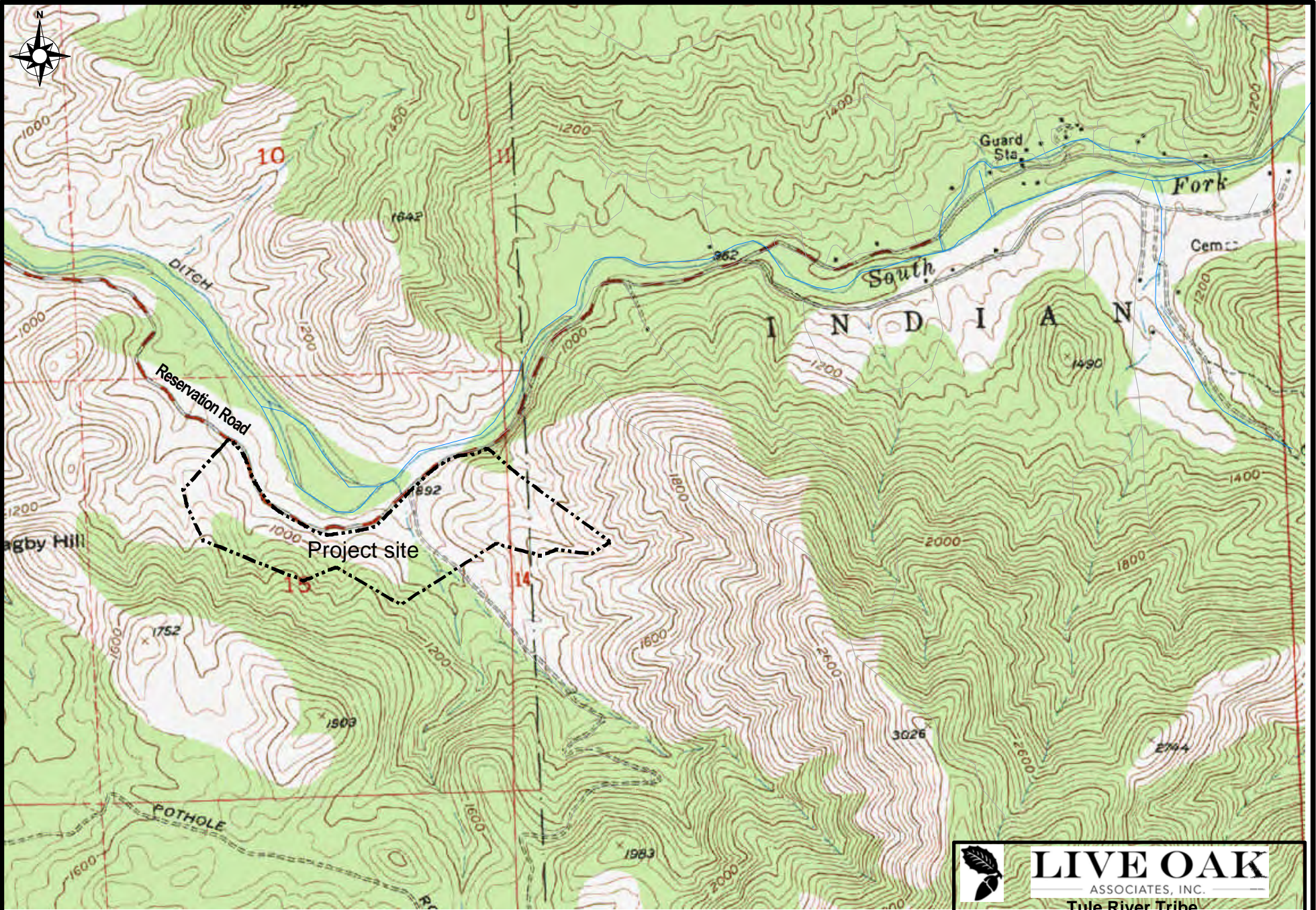


Regional Map

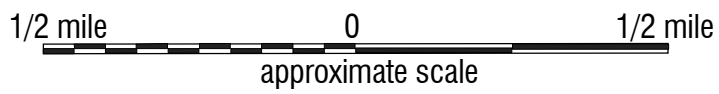
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Tule River Tribe
Wastewater Treatment Expansion Project

Vicinity Map
Date 12/23/2022
Project # 2752-01
Figure # 1



Source
U.S.G.S. Globe Quadrangle 1956



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Tule River Tribe		
Wastewater Treatment Expansion Project		
U.S.G.S. Quadrangle		
Date 12/23/2022	Project # 2752-01	Figure # 2



Installation of the 900,000-gallon tank would require excavation in an area of approximately 15,500 square feet (SF) to an average depth of 10 feet. Approximately 1.7 acres would be disturbed during construction. A conceptual site plan can be found in Appendix A.

Additionally, the Tribe proposes to evaluate the possibility of applying for a National Pollutant Discharge Elimination System (NPDES) discharge permit for emergency use through the U.S. Environmental Protection Agency (EPA).

1.2 REPORT OBJECTIVES

The National Environmental Policy Act (NEPA) requires federal agencies to assess the environmental effects of their proposed actions prior to making decisions. Because the TRIR is held in trust by the Bureau of Indian Affairs (BIA), a federal agency, most development proposals on TRIR land are subject to BIA oversight and associated NEPA review. Projects on TRIR land are also subject to other federal environmental protection laws including the Clean Water Act (CWA), Endangered Species Act (ESA), and Migratory Bird Treaty Act (MBTA). State and local environmental protection laws are not applicable on TRIR land.

This report evaluates the project's potential impacts to biological resources from the standpoint of NEPA and other applicable laws. As such, the objectives of this report are to:

- Summarize information related to the project's existing biological resources
- Make reasonable inferences about the special status species that could occur on site based on habitat suitability and the proximity of the site to a species' known range
- Summarize all federal natural resource protection laws that may be relevant to future development of the project site
- Identify and discuss potential project-related impacts to the site's biological resources within the context of NEPA and other federal laws
- Identify avoidance, minimization, and mitigation measures that would reduce the magnitude of project-related impacts to sensitive resources



1.3 STUDY METHODOLOGY

Live Oak Associates, Inc. (LOA) investigated the site's biological resources, and evaluated the potential for these resources to be significantly impacted by project development. Sources of information used in the preparation of this analysis included:

- **Literature and Database Search.** Literature and databases that were reviewed included the following: U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) system (USFWS 2022), *California Natural Diversity Data Base* (CNDDB) (CDFW 2022), The California Native Plant Society's *Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2022), a previous biological study report completed by LOA that included the current project site titled *Biological Assessment, Tule River Indian Tribe, Lowe Property* (LOA 2004), U.S. Geological Survey (USGS) topographic maps, and soils information (California Soil Resource Lab 2008).
- **Floristic Survey.** A walking survey of the project site and immediate vicinity was conducted, during which all biotic habitats were described, and vascular plants recorded. Particular attention was given to habitats of the project site that would be suitable, or potentially suitable, for special-status plant species. The timing of the site visit allowed for observations of habitat suitable for special status plants occurring in the project vicinity, but did not coincide with the blooming period of any special status plants documented within the region.
- **Wildlife Survey.** A walking survey of the project site and immediate vicinity was conducted, during which all terrestrial vertebrates and their sign were recorded. Particular attention was given to habitats of the project site that would be suitable, or potentially suitable, for special status animal species. Comprehensive or protocol level surveys for individual special-status wildlife species were not conducted.
- **Aquatic Resources Survey.** A preliminary walking survey of the project site and immediate vicinity was conducted, during which the site's aquatic resources were noted. A formal aquatic resources delineation was not conducted.



The surveys described above were conducted at a reconnaissance level by LOA ecologist Jeff Gurule on December 9, 2022.



2.0 EXISTING CONDITIONS

2.1 REGIONAL SETTING

The project site is located within the low foothills of the southern Sierra Nevada, in a transition zone from the Central Valley to the Sierra Nevada. The topography of the area consists of gentle to steeply sloped terrain.

Like most of California, this region of the Sierra Nevada foothills has a Mediterranean climate. Warm dry summers are followed by cool moist winters with spring and fall as transitional seasons. Summer temperatures commonly exceed 100 degrees Fahrenheit, and the relative humidity is generally very low. Winter temperatures rarely rise much above 70 degrees Fahrenheit, and daytime high temperatures are often below 60 degrees Fahrenheit. Annual precipitation within the project site is about 13 inches, almost 85% of which falls between the months of November and April.

The biotic habitats of the region have been somewhat fragmented by roads and development; however, large tracts of undeveloped land dominate the regional landscape. The natural biotic habitats within the vicinity of the site consist of riverine with associated riparian habitat, annual grassland, blue oak (*Quercus douglasii*) savannah, and mixed oak woodland.

2.2 PROJECT SITE

The project site is located on the southern side of the South Fork Tule River, at elevations between 910 and 1,320 feet above sea level. The sloped terrain contains a number of ephemeral drainages that are expected to carry very brief flows, if any, after significant rain events; an intermittent drainage that is expected to carry longer periods of flow after rain events and is a blue-line stream on the USGS topo map; and a seasonal drainage, which carried water at the time of the survey and supported a vegetation community differing from the surrounding blue oak savannah. All of these drainages are tributary to the adjacent South Fork Tule River. The site has historically been used as rangeland for grazing cattle, with a portion of the site containing existing WWTP facilities. Outside fenced WWTP facilities, the project site continues to be utilized for grazing. Five soil-mapping units were identified within the site. These soils include:



-
- Coarsegold-Rock outcrop complex, 15 to 50 percent slopes
 - Coarsegold loam, 15 to 30 percent slope
 - Coarsegold loam, 30 to 50 percent slopes
 - Blasingame-Rock outcrop complex, 9 to 50 percent slopes
 - Xerofluvents, flooded

All of these soil-mapping units, aside from Xerofluvents, flooded, are classified as well drained, with no hydric soil rating, meaning these soils do not have the propensity to support wetlands. Approximately two acres of Xerofluvents, flooded soils occur in the northeast corner of the site on steeply sloped terrain. This soil-mapping unit is poorly drained and is considered hydric.

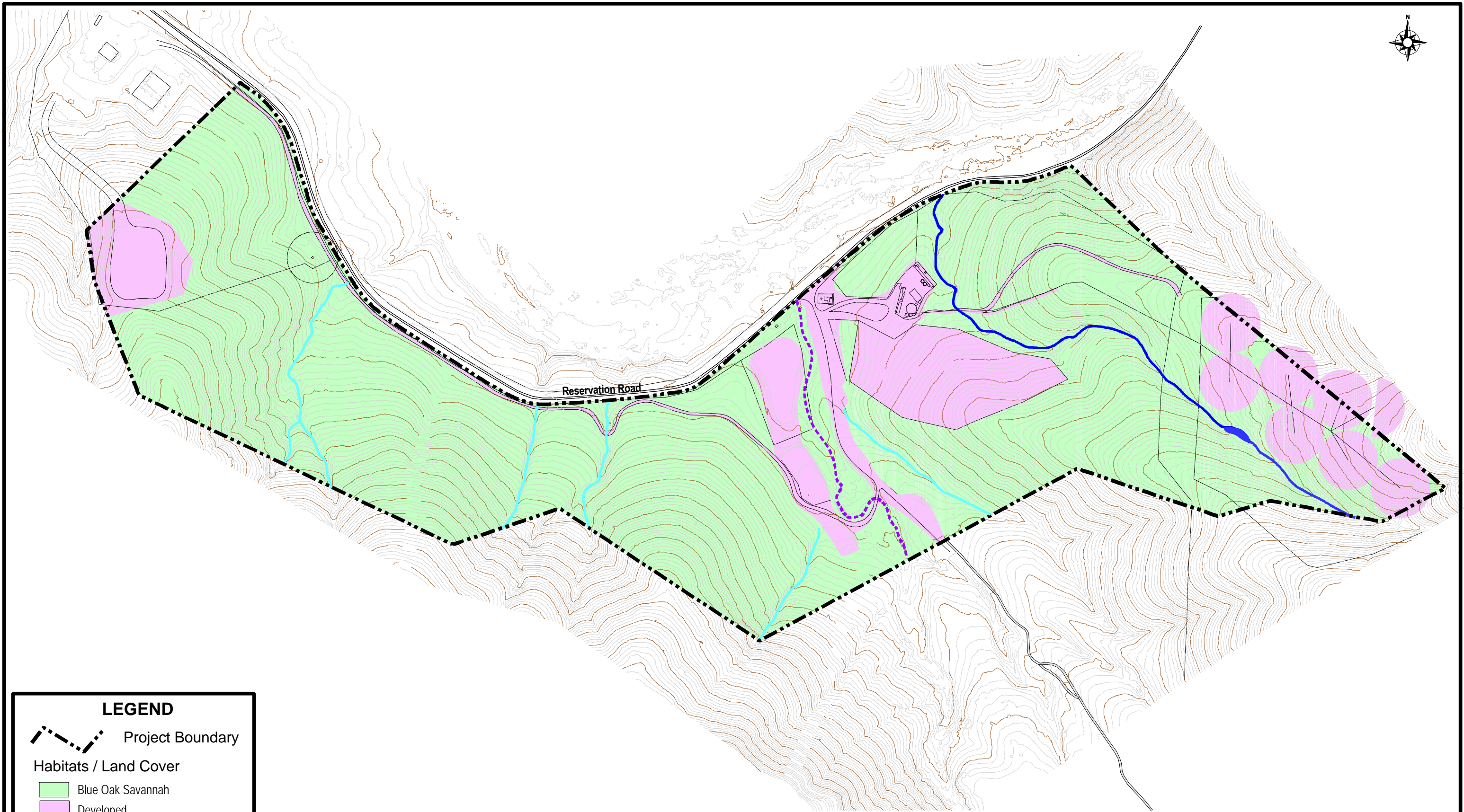
2.3 BIOTIC HABITATS

Three biotic habitats and/or land uses were identified on the project site during the site survey: Blue oak savannah, developed, and seasonal drainage (Figure 3). A comprehensive list of the vascular plants observed on the project site is provided in Appendix B. A list of the terrestrial vertebrates observed and those that likely use habitats on and adjacent to the project site is provided in Appendix C. Photos taken during the site visit are presented in Appendix D.


2.3.1 Blue Oak Savannah

Blue oak savannah on the site generally consists of widely spaced blue oaks with an understory of non-native grassland. Geographic features within this habitat include rock outcrops and ephemeral and intermittent drainages. While the dominant trees were blue oak, occasional interior live oak (*Quercus wislizenii*) and California buckeye (*Aesculus californica*) trees occurred on steeper slopes. Poison oak (*Toxicodendron diversilobum*) shrubs were found within rocky outcrop areas. The dominant non-native grasses associated with this habitat included ripgut (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), and wild oats (*Avena sp.*). Forbs associated with the non-native grasses included broad leaf filaree (*Erodium botrys*), red-stemmed filaree (*Erodium cicutarium*), Heermann's tarweed (*Holocarpha heermannii*), vinegar weed (*Trichostema lanceolatum*), and dove weed (*Croton setiger*), among others. A diversity of native forbs are expected in the spring.


Amphibians such as the California toad (*Anaxyrus boreas halophilus*) and Sierran treefrog




LEGEND


 Project Boundary


Habitats / Land Cover


 Blue Oak Savannah

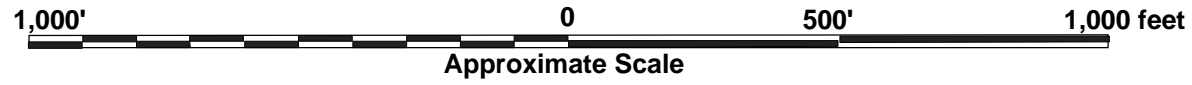
 Developed

Drainages

 Seasonal Drainage

 Ephemeral Drainage

 Intermittent Drainage



 **LIVE OAK**
ASSOCIATES, INC.

Tule River Tribe
Wastewater Treatment Expansion Project
Habitats / Land Cover

Date: 12/23/2022 Project #: 2752-01 Figure #: 3



(*Pseudacris sierra*) may utilize this habitat for foraging and cover. Reptiles such as the western fence lizard (*Sclerophorus occidentalis*) are attracted to rock outcrops, logs, and tree trunks. Brush and downed branches and leaves provide habitat for more reclusive lizards such as the Gilbert's skink (*Eumeces gilberti*) and southern alligator lizard (*Gerrhonotus multicarinatus*). Other reptiles that may be present include the gopher snake (*Pituophis melanoleucus*), common kingsnake (*Lampropeltis getulus*) and western rattlesnake (*Crotalus viridis*).

The blue oak savannah found on the site provides habitat for many bird species. Winter and resident species observed here during the December survey included the house wren (*Troglodytes aedon*), oak titmouse (*Baeolophus inornatus*), California quail (*Callipepla californica*), acorn woodpecker (*Melanerpes formicivorus*), California scrub jay (*Aphelocoma californica*), yellow-rumped warbler (*Setophaga coronata*), hermit thrush (*Catharus guttatus*), mourning dove (*Zenaida macroura*), common raven (*Corvus corax*), American kestrel (*Falco sparverius*), red-tailed hawk (*Buteo jamaicensis*), ferruginous hawk (*Buteo regalis*), and turkey vulture (*Cathartes aura*), among others.

The site would be used by a diversity of mammal species. California ground squirrels (*Otospermophilus beecheyi*) and their burrows were observed throughout the site. Other small mammals expected in this habitat include the Botta's pocket gopher (*Thomomys bottae*), California mouse (*Peromyscus californicus*), deer mouse (*Peromyscus maniculatus*), California vole (*Microtus californicus*), and western gray squirrel (*Sciurus griseus*). Other mammals likely to occupy or occasionally occur on the site include the mule deer (*Odocoileus hemionus*), coyote (*Canis latrans*), gray fox (*Urocyon cinereoargenteus*), cougar (*Puma concolor*), bobcat (*Lynx rufus*), raccoon (*Procyon lotor*), and striped skunk (*Mephitis mephitis*). Various bat species would be expected to forage and possibly roost in this habitat, as well.

2.3.2 Developed

The developed portion of the project area includes the existing WWTP facilities that include buildings or structures, pavement, graded areas, roads, spray fields, lined treatment pond, failed leach fields, and minimal landscaping. At the time of the survey, landscaped vegetation was limited to several small oleander shrubs (*Nerium oleander*). Naturally occurring vegetation in



these areas included weedy non-native grasses and forbs such as barnyard barley (*Hordeum murinum*), red-stemmed filaree, broad leaf filaree, and prickly lettuce (*Lactuca serriola*). Spray field areas supported an abundance of rough cocklebur (*Xanthium strumarium*).

It is expected that wildlife would primarily use the developed area incidentally, while traveling to adjacent higher-quality habitats. However, certain disturbance-tolerant animals may be attracted to the site's developed lands. Avian species such as the house finch (*Haemorhous mexicanus*), Brewer's blackbird (*Euphagus cyanocephalus*), and mourning dove, as well as the non-native house sparrow (*Passer domesticus*) and European starling (*Sturnus vulgaris*), are often found in developed areas and could occur in this area of the site.

Amphibians found elsewhere on the site may migrate to the spray fields during summer to find moisture. Reptiles found in the blue oak savannah may move through the developed area but are not expected to utilize this area for long periods of time. Rodent species likely to occur in association with onsite buildings include the house mouse (*Mus musculus*) and Norway rat (*Rattus norvegicus*), and Botta's pocket gophers and California ground squirrels may burrow in less-frequently maintained areas surrounding the buildings. Larger mammals expected to occasionally scavenge or hunt within this land use include the disturbance-tolerant raccoon, Virginia opossum (*Didelphis virginianus*), and coyote.

2.3.3 Seasonal Drainage

A seasonal drainage occurs at the eastern end of the project site. This drainage carried flowing water at the time of the December field survey and was found to collect sheet-flow from the existing spray fields and possibly natural drainage water from the watershed above the spray fields. A small impoundment occurs within this drainage near the existing spray fields. The seasonal drainage flows to the South Fork Tule River north of the project site, through a culvert across Reservation Road. Based on aerial imagery and the observed vegetation community, this drainage may carry flows year-round. If so, flows are expected to decrease during the dry season.

Wetland vegetation associated with the drainage included curly dock (*Rumex crispus*), watercress (*Nasturtium officinale*), stinging nettle (*Urtica dioica*), and common knotweed (*Persicaria lapathifolia*). Common fig trees (*Ficus carica*) and willow (*Salix sp.*) were found in some areas of



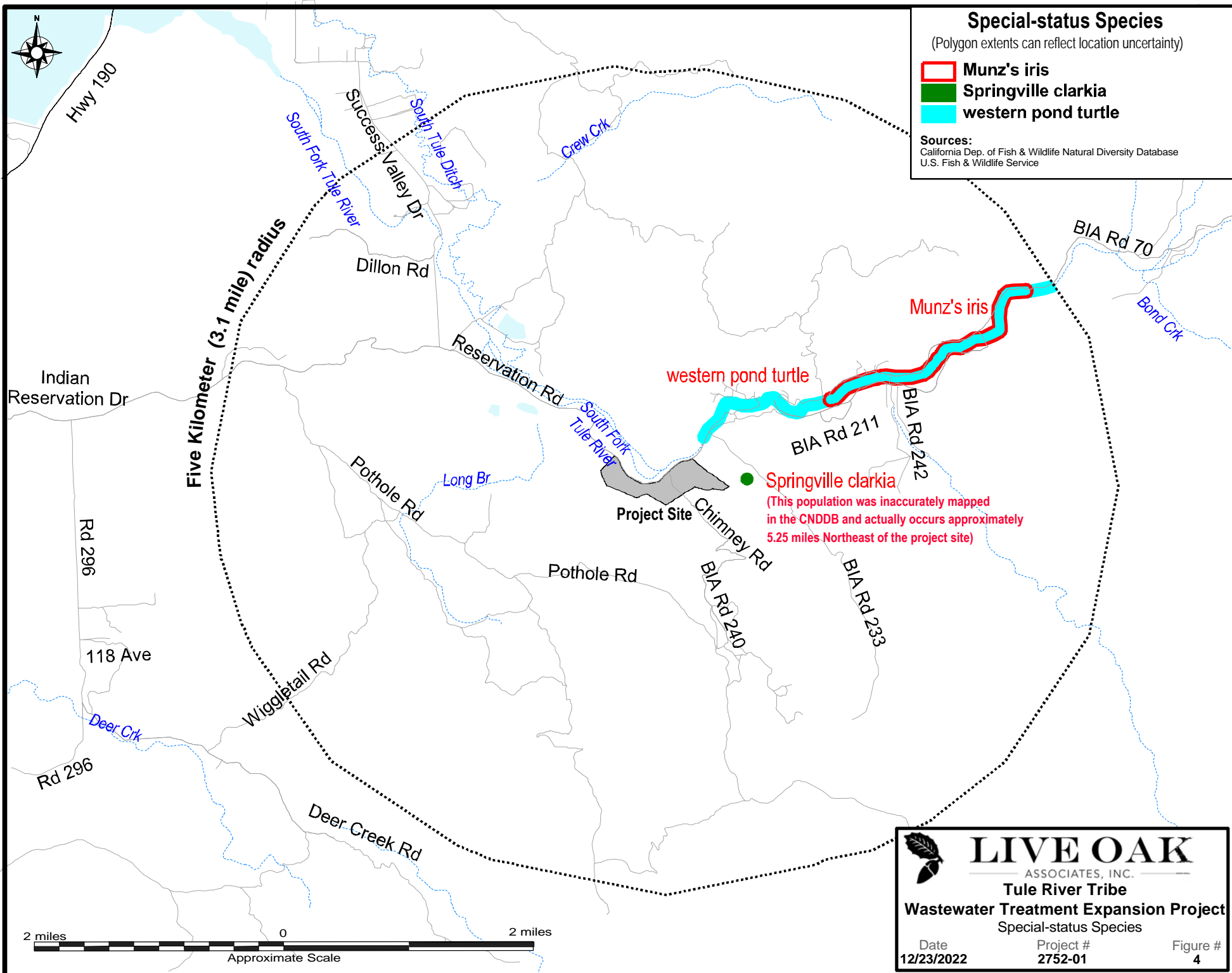
this drainage, as well.

Amphibian species potentially occurring in the drainage include common species such as the California toad and Sierran treefrog. Avian species expected to frequent the drainage would be much the same as those species found in the blue oak savannah. One species, the Lincoln's sparrow (*Melospiza lincolnii*), was found to be closely associated with this drainage. Reptile and mammalian species likely to use this drainage are also expected to be similar to those described for the blue oak savannah.

2.4 SPECIAL-STATUS PLANTS AND ANIMALS

Many species of plants and animals within the state of California have low populations, limited distributions, or both. Such species may be considered “rare” and are vulnerable to extirpation as the state's human population grows and the habitats these species occupy are converted to agricultural and urban uses. A sizable number of native plants and animals have been formally listed as threatened or endangered under the federal or state Endangered Species Acts, with others proposed for listing or identified as future candidates for listing. Still others have been designated as “species of special concern” by the California Department of Fish and Wildlife (CDFW). The California Native Plant Society (CNPS) has developed a list of native plants considered rare, threatened or endangered (CNPS 2022) and given these species a California Rare Plant Rank (CRPR). Collectively, these plants and animals are referred to as “special-status species.”

Special-status plants and wildlife of the project vicinity, and their potential for occurrence on the project site, have been identified in Table 2. The list of species for Table 2 was obtained using the USFWS IPaC system (USFWS 2022; see Appendix E) and CNDDDB (CDFW 2022); the latter entailed a records search for the nine 7.5-minute quadrangles containing and surrounding the project site (*Globe, Success Dam, Lindsay, Frazier Valley, Springville, Porterville, Ducor, Fountain Springs, and Gibbon Peak*). Other sources of information for this table included The California Native Plant Society's *Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2022), Calflora (Calflora 2022), eBird (eBird 2022), and California Herps (Nafis 2022). The locations of documented special status species occurrences in the project vicinity are depicted on Figure 4.



Special-status Species

(Polygon extents can reflect location uncertainty)

- Munz's iris**
- Springville clarkia**
- western pond turtle**

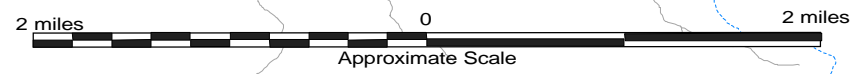
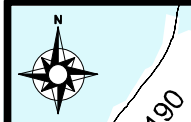
Sources:
 California Dep. of Fish & Wildlife Natural Diversity Database
 U.S. Fish & Wildlife Service

Five Kilometer (3.1 mile) radius

Munz's iris

western pond turtle

Springville clarkia
 (This population was inaccurately mapped in the CNDDDB and actually occurs approximately 5.25 miles Northeast of the project site)



LIVE OAK
 ASSOCIATES, INC.
 Tule River Tribe

Wastewater Treatment Expansion Project
 Special-status Species

Date	Project #	Figure #
12/23/2022	2752-01	4



TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY.

Special-Status Plant Species (CDFW 2022, CNPS 2022, and USFWS 2022)

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act

Species	Status	Habitat	Occurrence on the Project Site
Kaweah brodiaea (<i>Brodiaea insignis</i>)	CE, CRPR 1B	Found on grassy, south and southwest facing slopes in blue oak woodland habitat, most commonly granite or clay soils at elevations between 800 and 1,600 feet. Blooms April-June.	Unlikely. Suitable slope aspect does not occur on the project site, as slopes on the site are facing north.
Springville clarkia (<i>Clarkia springvillensis</i>)	FT, CE, CRPR 1B	Found on decomposed granite loam on cutbanks and openings in blue oak woodland at elevations between 805 and 4005 feet. Blooms May-July.	Unlikely. Suitable soils are absent from the project site. Soils of the site are derived from mica schist and not of granitic origin. While an apparent CNDDDB occurrence (Occ # 26) of this species is adjacent to the site, the coordinates of the CNDDDB submission were inaccurate. This population actually occurs elsewhere on the TRIR approximately 5.25 miles northeast of the project site (Kerri Vera, pers. com.).
Striped adobe-lily (<i>Fritillaria striata</i>)	CT, CRPR 1B	Heavy clay adobe soils in oak grassland at elevations between 445 and 4775 feet. Blooms February to April.	Absent. Clay soils required by this species are absent from the project site.
San Joaquin woollythreads (<i>Monolopia congdonii</i>)	FE, CRPR 1B	Chenopod scrub, valley and foothill grassland with alkaline or loamy plains; sandy soils, often with grasses and within chenopod scrub. Although this species is known from elevations up to 2,600 feet in Santa Barbara and San Luis Obispo Counties, its upper elevation limit in the San Joaquin Valley and surrounding hills is approximately 850 feet (ESRP 2022). Blooms February-May.	Absent. The project site is above the elevational range of this species in the region. Furthermore, the site's steep, grazed slopes and loamy soils provide marginal to unsuitable habitat for this species.
San Joaquin adobe sunburst (<i>Pseudobahia peirsonii</i>)	FT, CE, CRPR 1B	Grows in grasslands and in the transition zone between grassland and blue oak woodland at elevations between 390 and 2,600 feet. All known occurrences are associated with Cibo clay, Porterville clay, Centerville clay, or Mt. Olive clay soils. Blooms March- April.	Absent. Clay soils required by this species are absent from the project site.
Keck's checkerbloom (<i>Sidalcea keckii</i>)	FE, CRPR 1B	Cismontane woodland, valley grassland and foothill woodland on grassy slopes in blue oak woodland. Sometimes on serpentine-derived, clay soils at elevations between 250 and 2,100 feet. Blooms April-May. Presently known from only three population locations in the southern Sierra foothills (CNPS 2022).	Unlikely. Extant populations of this species are no longer considered present in Tulare County. The nearest extant population of this species is at Tivy Mountain in Fresno County approximately 62 miles to the northwest.



TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

PLANTS (cont'd)

CNPS Listed Species

Species	Status	Habitat	Occurrence on the Project Site
Abrams' onion (<i>Allium abramsii</i>)	CRPR 1B	Granitic sand between 4,600 and 6,500 feet in elevation. Blooms May-July.	Absent. The project site is well below the elevation range of this species.
Shirley Meadows star-tulip (<i>Calochortus westonii</i>)	CRPR 1B	Broad-leaved upland forest, lower montane coniferous forest, meadows and seeps at elevations between 4920 and 6905 feet. Blooms May-June.	Absent. The project site is well below the elevation range of this species.
Bolander's woodreed (<i>Cinna bolanderi</i>)	CRPR 1B	Meadows and seeps in upper montane coniferous forest at elevations between 5480 and 8005 feet. Blooms July-Sept.	Absent. The project site is well below the elevation range of this species.
Tulare cryptantha (<i>Cryptantha incana</i>)	CRPR 1B	Gravelly or rocky areas of lower montane coniferous forest at elevations between 4690 and 7055 feet. Blooms June-Aug.	Absent. The project site is well below the elevation range of this species.
Unexpected larkspur (<i>Delphinium inopinum</i>)	CRPR 4.3	Occurs on open rocky ridgetops; on metamorphics in red fir and western white pine forest at elevations between 6200 and 9185 feet. Blooms May-July.	Absent. The project site is well below the elevation range of this species.
Rose-flowered larkspur (<i>Delphinium purpusii</i>)	CRPR 1B	Chaparral, cismontane woodland, limestone, pinion and juniper woodland habitats with talus slopes or cliffs at elevations between 900 and 1,200 feet. Blooms April-May.	Absent. Suitable habitat is absent from the project site. The soil composition and general habitat components required by the rose-flowered larkspur are not present on the project site.
Recurved larkspur (<i>Delphinium recurvatum</i>)	CRPR 1B	Poorly drained, fine, and alkaline soils in shadescale scrub, valley grassland, and foothill woodland at elevations between 100 and 2,000 feet. Blooms March-June.	Absent. Suitable habitat is absent from the project site. Soils and associated plants required by this species are absent from the project site.
Calico monkeyflower (<i>Diplacus pictus</i>)	CRPR 1B	Foothill woodland in bare ground around gooseberry bushes or around granite rock outcrops at elevations between 450 and 4,100 feet. Blooms March-May.	Absent. Habitat required by this species is not present within the project site.
Pierpoint Springs dudleya (<i>Dudleya cymosa</i> ssp. <i>costifolia</i>)	CRPR 1B	Chaparral and cismontane woodlands on carbonate soil at elevations between 4710 and 5250 feet. Blooms May-July	Absent. The project site is well below the elevation range of this species.
Tracy's eriastrum (<i>Eriastrum tracyi</i>)	CRPR 3.2	Gravelly shale or clay; often in open areas within chaparral, cismontane woodland, and valley and foothill grassland at elevations between 1035 and 5840 feet. Blooms May-July.	Absent. The project site is below the elevation range of this species. Suitable soil substrate is absent from the project site.
Keil's daisy (<i>Erigeron inornatus</i> var. <i>keilii</i>)	CRPR 1B	Lower montane coniferous forest, meadows and seeps at elevations between 5905 and 7220 feet. Blooms June-Sept.	Absent. The project site is well below the elevation range of this species.
Spiny-sepaled button celery (<i>Eryngium spinosepalum</i>)	CRPR 1B	Vernal pools and swales within valley and foothill grasslands, at elevations between 260 and 3,200 feet. Blooms April-July.	Absent. Suitable habitat is absent from the project site.



TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

PLANTS (cont'd)

CNPS Listed Species

Species	Status	Habitat	Occurrence on the Project Site
Greenhorn fritillary (<i>Fritillaria brandegeei</i>)	CRPR 1B	Lower montane coniferous forest generally on granitic soils at elevations between 4365 and 6890 feet. Blooms April-June	Absent. The project site is well below the elevation range of this species.
Munz's iris (<i>Iris munzii</i>)	CRPR 1B	Cismontane woodland with granitic moist sandy loam soil, often along streams at elevations 1,100-2,400 feet. Blooms March-April.	Possible. Suitable habitat is present on the project site. A documented occurrence of this species is known within the TRIR approximately 2.0 miles northeast of the project site.
Madera leptosiphon (<i>Leptosiphon serrulatus</i>)	CRPR 1B	Oak woodland, cismontane woodland, and coniferous forest at elevations between 1,000 and 4,300 feet. Blooms April-May.	Unlikely. While potentially suitable habitat is present on the project site, records of this species within Tulare and Kern Counties are only from collections made in 1907, 1928, and 1935. Modern known occurrences of this species are located well north of the project site in Fresno and Madera Counties.
Shining navarretia (<i>Navarretia nigelliformis</i> ssp. <i>radians</i>)	CRPR 1B	Cismontane woodland, valley and foothill grassland, vernal pools; sometimes in clay at elevations 450-3,300 feet. Blooms May- July.	Unlikely. A single outlier population is known in Tulare County located east of the Lake Success Dam in heavy clay soils. Clay soils and vernal pools are absent from the project site.
Chaparral ragwort (<i>Senecio aphanactis</i>)	CRPR 2B	Chaparral, cismontane woodland, coastal scrub with drying alkaline flats at elevations 30-1,200 feet. Blooms January-April.	Absent. Suitable habitat in the form of drying alkali flats is absent from the project site.
Grey-leaved violet (<i>Viola pinetorum</i> ssp. <i>grisea</i>)	CRPR 2B	Dry mountain peaks and slopes at elevations 4920 - 11155 feet. Blooms April-July.	Absent. The project site is well below the elevation range of this species.

ANIMALS (adapted from CDFW 2022 and USFWS 2022)

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act

Monarch butterfly (<i>Danaus plexippus</i>)	FC	A large conspicuous butterfly that overwinters in coastal California and Baja California and breeds throughout California in the spring and summer along its annual migration north and east. The adult monarch lays its eggs on obligate milkweed (<i>Asclepias</i> spp.) host plants, which the resultant larvae feed on before pupating and emerging as adults to continue the migratory journey. In addition to milkweed, this species requires abundant nectar resources to nourish migrating adults, and trees for roosting during migratory stopovers.	Possible. Suitable breeding, foraging, and roosting habitat is present on the project site. At the time of the surveys, a single dried milkweed plant was observed, a plant required for the egg, larva, and pupa of this species. There could be more milkweed plants but are not likely to be abundant on the site. The site also contained trees within which migrating adults could roost, and other plant resources for foraging. See expanded discussion below.
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TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

ANIMALS (cont'd)

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act

Species	Status	Habitat	Occurrence on the Project Site
Valley elderberry longhorn beetle (<i>Desmocerus californicus dimorphus</i>)	FT	Blue elderberry shrubs at elevations up to 3,000 feet, in a small portion of Fresno and Madera Counties and all Central Valley and foothill counties north of Madera County. This species' range does not include Tulare, Kern, or Kings Counties.	Absent. The site is outside the range of this species. Moreover, no blue elderberry shrubs were observed on the site.
Crotch bumble bee (<i>Bombus crotchii</i>)	CCE	Inhabits open grassland and scrub habitats of the southern 2/3 of California. Historically in, but largely extirpated from the Central Valley. Constructs nests underground in animal burrows. Overwintering sites are likely in soft soils or in debris or leaf litter. Food plant genera include <i>Antirrhinum</i> , <i>Phacelia</i> , <i>Clarkia</i> , <i>Dendromecon</i> , <i>Eschscholzia</i> , and <i>Eriogonum</i> .	Possible. Although little is known about this species' current population extent, suitable habitat is present on the project site.
Delta smelt (<i>Hypomesus transpacificus</i>)	FT, CE	Mainly freshwater-saltwater mixing zone of the upper Sacramento-San Joaquin Estuary. Migrates upstream into the freshwater portions of the Sacramento and San Joaquin Rivers to spawn.	Absent. The project area is well outside of this species' range.
Foothill yellow-legged frog - south Sierra DPS (<i>Rana boylei</i> pop. 5)	FE, CSC	Partly shaded shallow streams and riffles with a rocky and cobble sized substrate at elevations up to 6,000 feet.	Absent. The seasonal drainage on the site provides unsuitable habitat due to its small size and the fact that water in this drainage is largely due to recent spray field runoff. All other drainages provide unsuitable habitat for this species. This species has not been documented in the South Fork Tule River watershed (CNDDDB 2022).
California condor (<i>Gymnogyps californianus</i>)	FE, CE, CFP	Vast expanses of open savannah, grasslands, and foothill chaparral in mountain ranges of moderate altitude. Nests in deep canyons containing clefts in rocky walls.	Possible. While nesting habitat is absent from the site, there is potential foraging habitat due to the potential for dead livestock on site and roosting habitat in the trees and rocks on the site. This species has been tracked flying over the project site in recent years (USFWS 2020).
Southern mountain yellow-legged frog (<i>Rana muscosa</i>)	FE, CE, CSC	Inhabits streams in ponderosa pine, montane hardwood-conifer, and montane riparian habitats at elevations from 4,500 to over 12,000 feet in the Sierra Nevada.	Absent. The project site is well below the elevation range for this species.



TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

ANIMALS (cont'd)

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act

Species	Status	Habitat	Occurrence on the Project Site
Southwestern willow flycatcher (<i>Empidonax traillii extimus</i>)	FE, CE	Nests in and forages near willow thickets, usually near meadows and bodies of water.	Absent. Suitable habitat is absent from the project site. Although there are a few willow trees on site, they are not thickets. Modern occurrences of this species are absent from Tulare County. The nearest CNDDB observation is from 2016, located approx. 40 miles to the southeast at Lake Isabella (CDFW 2022).
Tricolored blackbird (<i>Agelaius tricolor</i>)	CT, CSC	Forages in grasslands and irrigated agricultural lands. Breeds near fresh water, primarily emergent wetlands.	Possible. This species could potentially forage on the site from time to time, but breeding habitat is absent from the site.
Wolverine (<i>Gulo gulo</i>)	CT, CFP	Occurs primarily in mixed and red fir and subalpine and wet meadow habitats at high elevations. Requires huge tracts of land for its extensive home range movements.	Absent. Modern wolverine detections in California are limited to a single male sighted in the Lake Tahoe area between 2008 and 2017. The project site lacks suitable habitat and is outside the range of this species.
Fisher – southern Sierra Nevada ESU (<i>Pekania pennanti pop. 2</i>)	FE, CT	Uses cavities, snags, logs and rocky areas for cover and denning in intermediate to large-tree stages of coniferous forests and deciduous-riparian areas with high percent canopy closure between 3,000 and 7,000 feet in elevation.	Absent. The project site is below the elevational range of the species and lacks suitable habitat for this species.
San Joaquin Kit Fox (<i>Vulpes macrotis mutica</i>)	FE, CT	Open, level areas with loose-textured soils supporting annual grasslands or grassy open stages of vegetation dominated by scattered brush, shrubs, and scrub. Most common in areas with little human disturbance.	Absent. The project site is outside the historic and current range of the species.

California Species of Special Concern

Western spadefoot (<i>Spea hammondi</i>)	CSC	Ranges throughout the Central Valley and adjacent foothills. Occurs primarily in grassland situations. Reproduction occurs in shallow, temporary ponds.	Absent. Suitable breeding habitat is absent from the project site and surrounding lands. The project site is outside the range of the species.
Western pond turtle (<i>Emys marmorata</i>)	CSC	Associated with permanent bodies of water for breeding. Requires partially submerged rocks or logs for basking sites. Eggs are deposited in a variety of soil types near water's edge. Seasonal hibernation/estivation includes use of upland habitat from water sources including ground squirrel burrows and loose substrate for burying themselves.	Unlikely. Suitable aquatic habitat is absent from the project site. Suitable aquatic habitat associated with the nearby South Fork Tule River is separated from the project site by Reservation Road and steep road shoulders along most of the northern boundary of the site.



TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

ANIMALS (cont'd)

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act

Species	Status	Habitat	Occurrence on the Project Site
Northern California legless lizard (<i>Aniella pulchra</i>)	CSC	Occurs in sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks.	Absent. Suitable habitat is absent from the site. No sandy or loose soils are present.
California legless lizard (<i>Anniella spp.</i>)	CSC	Occurs in a variety of habitats; generally in moist, loose soil. They prefer soils with a high moisture content.	Absent. Suitable habitat is absent from the site. No sandy or loose soils are present.
Loggerhead shrike (<i>Lanius ludovicianus</i>)	CSC	Frequents open habitats with sparse shrubs and trees, other suitable perches, bare ground, and low herbaceous cover. Can often be found in cropland.	Possible. Suitable foraging and breeding habitat is present on the site.
Black swift (<i>Cypseloides niger</i>)	CSC	Migrants found in many habitats of the state; in the Sierra Nevada range this species is known to breed. Breeding habitat is typically near waterfalls or seeps, with steep rocks and moss.	Unlikely. There is no breeding habitat on the site or within the vicinity of the site. At most this species may occasionally fly over the site during migration.
Pallid bat (<i>Antrozous pallidus</i>)	CSC	Forages over open shrub-steppe grasslands, oak savannah grasslands, open Ponderosa pine forests, talus slopes, gravel roads, lava flows, fruit orchards and vineyards. Roosts in rocky outcrops, cliffs, and crevices, caves, mines, trees, and various human structures.	Possible. Suitable foraging habitat occurs on the site. Suitable breeding/roosting habitat also occurs on the site within cracks, crevices, or cavities of trees.
Townsend's big-eared bat (<i>Corynorhinus townsendii</i>)	CSC	Forages over mesic habitats such as watercourses and riparian habitats. Roosts in the open, hanging from walls and ceilings of caves, tunnels, bridges, and sometimes buildings. Extremely sensitive to human disturbance.	Possible. Suitable roosting habitat is absent from the project site. Suitable foraging habitat is present on the site.
Western mastiff bat (<i>Eumops perotis californicus</i>)	CSC	Forages over dry washes, flood plains, chaparral, oak woodland, open ponderosa pine forest, grassland, and agricultural areas. Roosts in crevices in cliff faces, high buildings, trees, and tunnels.	Possible. Suitable breeding and roosting habitat are present within cracks or crevices of trees on the project site.

OCCURRENCE TERMINOLOGY

- Present:** Species observed on the site at time of field surveys or during recent past.
- Likely:** Species not observed on the site, but it may reasonably be expected to occur there on a regular basis.
- Possible:** Species not observed on the site, but it could occur there from time to time.
- Unlikely:** Species not observed on the site, and would not be expected to occur there except, perhaps, as a transient.
- Absent:** Species not observed on the site and precluded from occurring there because habitat requirements not met.



STATUS CODES

FE	Federally Endangered	CE	California Endangered
FT	Federally Threatened	CT	California Threatened
FPE	Federally Endangered (Proposed)	CFP	California Fully Protected
FPT	Federally Threatened (Proposed)	CSC	California Species of Special Concern
FC	Federal Candidate	CC	California Candidate
CRPR	California Rare Plant Ranks		
1A	Plants Presumed Extinct in California	0.1	Seriously Threatened in California
1B	Plants Rare, Threatened, or Endangered in California and elsewhere	0.2	Moderately Threatened in California
2	Plants Rare, Threatened, or Endangered in California, but more common elsewhere	0.3	Not Very Threatened in California

2.5 ENDANGERED, THREATENED, OR SPECIAL STATUS ANIMAL SPECIES MERITING FURTHER DISCUSSION

2.5.1 Expanded Discussion Of The Monarch Butterfly

Natural History of Species: The monarch butterfly is a candidate species and is not yet listed or proposed for listing. Consultation under Section 7 of the Endangered Species Act is not required but is recommended by the USFWS for impacts to candidate species.

The western North American population of monarchs undertakes long-distance migration each year from their overwintering sites in coastal California and Baja California toward the Pacific Northwest and Rocky Mountains, producing successive generations of offspring en route. During their spring and summer breeding season, monarchs lay their eggs on milkweed plants (*Asclepias* spp.), the obligate host for this species. The larvae then emerge and consume the plant using the toxins of the plant as defense against predators. The larva, or caterpillar, then pupates into a chrysalis on the milkweed plant, until it emerges as an adult butterfly and resumes the northward migration. In addition to milkweed for reproduction, adult monarchs require abundant nectar resources and trees within which to roost during migration. Most monarch adults live approximately two to five weeks; however, the last generation of adults in any given year enters into reproductive diapause (suspended reproduction) and will live six to nine months.

It is during diapause that the monarchs make their return migration of up to 2,500 miles to their respective wintering sites. In California, the only monarch wintering sites are located in the coastal areas. When the monarchs are ready to leave their wintering grounds (February-March), they break diapause and mate, and the migratory breeding cycle begins anew.



For decades monarch populations have been observed in decline, with the number of monarchs counted at overwintering sites steadily decreasing (USFWS 2022). This species' largest threats are loss of habitat from development of grassland to agriculture or urban development, widespread use of herbicides and insecticides, logging/thinning at overwintering sites (typically in Mexico), mismanagement of overwintering groves in California, and drought.

Occurrence on Project Site: A single milkweed plant was observed on the project site, which was located outside project development areas. Other undetected milkweed plants may occur on the site. However, due to the lack of observations during LOA's field survey, the density of milkweed on the site is expected to be low. The site is theoretically suitable for monarch reproduction including the egg, larvae, and pupae life stages. Monarchs may use the site for foraging, breeding, and/or roosting during the spring and summer, following which they would presumably migrate farther into their breeding range. Monarch adults may also forage or roost on site during fall migration. The project site is outside this species' overwintering range.

2.5.2 Expanded Discussion Of The California Condor

Natural History of Species: California condors are obligate scavengers, feeding on the carcasses of livestock, mule deer, California ground squirrels, and in coastal areas, marine mammals. Typical inland foraging habitats are foothill grassland and oak savannah. To meet their foraging needs, condors have large home ranges and are capable of extremely long flight distances. Once entirely absent from the wild, condors have begun to recover thanks to captive breeding and reintroduction efforts. Condors have been documented traveling between the central and southern California flocks, a distance of approximately 150 miles, and condors from the southern California flock are increasingly being sighted in the southern Sierra Nevada, as far north as Mariposa County (USFWS 2020). Condors from the southern California flock have become increasingly common in the project vicinity, with numerous flight paths each year logged over the Tule River basin via GPS tracking, with flight paths crossing above the project site and vicinity (USFWS 2020). While historically known to nest on the TRIR, condors have not yet resumed nesting in the vicinity. The closest condor nest to the TRIR is one that was established in 2018 in the Kern River Canyon, some 35 miles south of Reservation boundaries (USFWS 2021).



Occurrence on Project Site: The project site offers potential foraging habitat for condors. Possible sources of carrion would include livestock, California ground squirrels, and other mammalian species. Roosting habitat is also present at the site in trees and low rocks. Condors typically “roost and sleep on horizontal limbs of tall trees, on ledges, or in cliff potholes” (Finkelstein, Snyder, and Schmitt 2020). There is also a potential for condors to stay grounded after feeding.

Suitable nesting habitat for California condors is absent from the project site and condors have not yet resumed nesting on the TRIR or elsewhere in the vicinity.

2.6 JURISDICTIONAL WATERS

Jurisdictional waters include rivers, creeks, and drainages that may carry, at most, ephemeral flows and that exhibit an ordinary high-water mark, as well as lakes, ponds, reservoirs, and wetlands. Such waters may be considered waters of the U.S. subject to the regulatory authority of the U.S. Army Corps of Engineers (USACE).

The project site contains a number of ephemeral drainages, an intermittent drainage, and a seasonal drainage, all of which are hydrologically connected to the South Fork Tule River via culverts under Reservation Road. In general, the ephemeral drainages did not exhibit a well-defined or consistent ordinary high-water mark. In the absence of an ordinary high water mark, these drainages do not appear to meet the USACE definition of a jurisdictional water. The seasonal drainage carried flowing water and the intermittent drainage exhibited ordinary high water marks. As such, these drainages would likely fall under the jurisdiction of the USACE as tributary waters to the Tule River, which has traditionally been considered a water of the U.S.

2.7 CRITICAL HABITAT

Critical habitat is habitat that contains features essential to conservation of federal threatened or endangered species which may require special management and protection. Designated critical habitat is absent from the project site and immediately surrounding lands.



2.8 SENSITIVE NATURAL COMMUNITIES

Sensitive natural communities are those that are of limited distribution, distinguished by significant biological diversity, home to special status species, etc. CDFW is responsible for the classification and mapping of all natural communities in California. Natural communities are assigned state and global ranks according to their degree of imperilment. Any natural community with a state rank of 3 or lower (on a 1 to 5 scale) is considered sensitive. Examples of sensitive natural communities in the vicinity of the project area include vernal pools and various types of riparian forest.

There are no habitats on the project site that would be considered sensitive natural communities.

2.9 WILDLIFE MOVEMENT CORRIDORS

Wildlife movement corridors are areas where regional wildlife populations regularly and predictably move during dispersal or migration. Movement corridors in California are typically associated with valleys, rivers and creeks supporting riparian vegetation, and ridgelines.

The project site is steeply sloped with little vegetation cover and contains no features that would function as a movement corridor.



3.0 RELEVANT GOALS, POLICIES, AND LAWS

3.1 NATIONAL ENVIRONMENTAL POLICY ACT

Projects that are proposed, funded, or authorized by federal agencies are generally subject to the provisions of NEPA. Signed into law in 1970, NEPA requires federal agencies to evaluate the environmental effects of their proposed actions prior to making decisions, and to provide opportunities for public review and comment during this process.

The Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (40 CFR Parts 1500-1508; “CEQ regulations”) define effects as “changes to the human environment from the proposed action or alternatives that are reasonably foreseeable.” Examples include “ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health.” Agencies are explicitly instructed to consider direct, indirect, and cumulative effects; the latter denotes those effects that “result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions” by any agency or entity.”

The level of NEPA review that is required is related to the project’s potential to cause “significant” environmental effects. “Significant” is not explicitly defined under NEPA; however, CEQ regulations offer several guidelines for determining, and discounting, significance. Federal agencies are instructed to base their significance determinations on an analysis “of the potentially affected environment and degree of the effects of the action.” *Potentially affected environment* refers both to the geographic area of the action, and to the resources found within this area; examples of the latter from the statute are listed species and designated critical habitat. Effects need not be far-reaching to be considered significant; for site-specific actions, a determination of significance usually depends only on the effects in the local area.

In considering the *degree* of an action’s effects, federal agencies are instructed to consider the following:

- Both short- and long-term effects



- Both beneficial and adverse effects
- Effects on public health and safety
- Effects that would violate federal, state, tribal, or local law protecting the environment

NEPA requires that federal agencies consider mitigating for the environmental effects of their actions. Suitable measures include the following:

- Avoiding the impact altogether by not taking a certain action or parts of an action.
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- Compensating for the impact by replacing or providing substitute resources or environments.

3.2 THREATENED AND ENDANGERED SPECIES

The federal Endangered Species Act (ESA) has provided the USFWS with a mechanism for conserving and protecting plant and animal species of limited distribution and/or low or declining populations. Incidental take authorization from the USFWS may be required if activities associated with a proposed project are likely to result in the “take” of an ESA-listed fish or wildlife species, where “take” is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect (16 USC 1532(19)). The regulatory definition of “harm” includes significant habitat modification or degradation that kills or injures listed wildlife by impairing their essential behavior patterns. Take of listed plants is not explicitly prohibited under the ESA; however, listed plants may not be imported, exported, sold, or transported across state or international boundaries. In areas under federal jurisdiction, listed plants may not be collected or maliciously damaged or destroyed. On private lands, listed plants may not be removed or destroyed “in knowing violation of any law or regulation of any State.” (Section 9(a)(2)(B)).



3.3 MIGRATORY BIRDS

Federal law also protects most native bird species. The federal Migratory Bird Treaty Act (MBTA: 16 U.S.C., sec. 703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs. Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort may be considered a significant effect under NEPA.

3.4 WETLANDS AND OTHER “JURISDICTIONAL WATERS”

Natural drainage channels and adjacent wetlands may be considered “Waters of the United States” subject to the jurisdiction of the USACE. The extent of jurisdiction has been defined in the Code of Federal Regulations but has also been subject to interpretation of the federal courts. Waters of the U.S. generally include:

- All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide.
- All interstate waters including interstate wetlands.
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce.
- All impoundments of waters otherwise defined as waters of the United States under the definition.
- Tributaries of waters identified in the bulleted items above.

As determined by the United States Supreme Court in its 2001 *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (SWANCC) decision, channels and wetlands isolated from other jurisdictional waters cannot be considered jurisdictional on the basis of their use, hypothetical or observed, by migratory birds. Similarly, in its 2006 consolidated



Carabell/Rapanos decision, the U.S. Supreme Court ruled that a significant nexus between a wetland and other navigable waters must exist for the wetland itself to be considered a navigable and therefore jurisdictional water.

The USACE regulates the filling or grading of Waters of the U.S. under the authority of Section 404 of the Clean Water Act. The extent of jurisdiction within drainage channels is defined by “ordinary high water marks” on opposing channel banks. All activities that involve the discharge of dredge or fill material into Waters of the U.S. are subject to the permit requirements of the USACE. Such permits are typically issued on the condition that the applicant agrees to provide mitigation that result in no net loss of wetland functions or values. No permit can be issued until the U.S. Environmental Protection Agency (EPA) issues a Section 401 Water Quality Certification (or waiver of such certification) for proposed activities in Waters of the U.S.



4.0 IMPACTS AND MITIGATIONS

The following analyses assume that project elements will disturb approximately 24.7 acres of the larger 111-acre project site. Project-related disturbance would occur from the creation of 23 new 1-acre spray fields within blue oak savannah habitat, as well as the installations of a new 900,000-gallon supplemental treated wastewater storage tank, 3,650 linear feet of 4-inch pipe, and 6,000 linear feet of 1-inch pipe. The spray fields would alter the environment by saturating the soils within the 23-acre spray field footprint and alter the vegetation community in these areas to favor wetland plant species. Storage tank and piping installation would result in 1.7 acres of ground disturbance, most of which will be temporary. See Appendix A for a conceptual site plan.

4.1 POTENTIALLY SIGNIFICANT IMPACTS

4.1.1 Project Impacts to Special Status Plant Species

Potential Impact. Of the 24 regionally occurring special status plant species, only the Munz's iris has the potential to occur on the site. If individuals or populations of this species are found in proposed disturbance zones, they may be damaged or destroyed by project activities. This is considered a potentially significant adverse effect of the project.

The project site does not have the potential to support any of the remaining 23 regionally occurring special status plant species due to the absence of suitable habitat and/or the site's being located outside of the species' distribution. Project impacts are less than significant for the 23 regionally occurring plant species that are considered absent from or unlikely to occur on site.

Mitigation. The following measures will be implemented to reduce the magnitude of project-related impacts to the Munz's iris:

Measure 4.1.1a (Protocol-level Surveys). Prior to the start of construction activities, protocol-level rare plant surveys will be conducted for the Munz's iris. The surveys will be conducted during the appropriate blooming period(s) for this species, when they can most readily be detected and identified. The surveys would be limited to project disturbance areas including the footprint of the spray fields.

Measure 4.1.1b (Avoidance). If individuals or populations of the target species are found during the surveys, the plants will be avoided to the maximum extent feasible. Suitable



disturbance-free buffer(s) will be established by a qualified botanist and delineated on the ground with temporary construction fencing and ultimately with permanent fencing.

Measure 4.1.1c (Salvage and Relocation). If it is not feasible to avoid some or all of the plants, those plants that cannot be avoided will be salvaged and relocated to alternative habitat by a qualified botanist following the provisions of a salvage, relocation, and monitoring plan.

Measure 4.1.1d (Compensatory Mitigation). Should substantial numbers of Munz's iris be found within areas that cannot be avoided, compensatory mitigation may be necessary in addition to salvage and relocation. The need for compensatory mitigation will be determined by the qualified botanist following the survey effort, once the extent of target species coverage on site is known, and once any adjustments to project design have been made to avoid the target species.

Implementation of the above measures will reduce impacts to the Munz's iris to a less-than-significant level.

4.1.2 Project Impacts to Monarch Butterfly

Potential Impact. Habitats of the site provide foraging, breeding, and roosting habitat for this species. Construction of the proposed project could potentially impact individuals of this species and would result in the loss of up to 23 acres of potential monarch habitat associated with spray field development. The potential for direct effects to monarchs is greatest during the spring and summer, when individuals of this species may reproduce on site during migration. Monarch eggs, larvae, and pupae would be particularly vulnerable to construction-related mortality, as these life stages are relatively immobile and unable to leave their milkweed host plants. Monarch adults are volant and would presumably have some ability to avoid construction disturbance while foraging or roosting on site. Project-related mortality/destruction of monarch life stages and loss of potential monarch habitat constitute potentially significant effects to this species.

Mitigation. In order to minimize impacts to individual monarch butterflies (eggs, larvae, pupae, adults) and compensate for project-related loss of monarch habitat, IHS will implement the following measures:

Mitigation Measure 4.1.2a (Milkweed Survey). Prior to the start of construction, a qualified biologist will survey all proposed work areas for milkweed plants. The survey will be conducted at a time of year when milkweed is readily identifiable. The objective



of the survey will be to tally and map all milkweed plants that could potentially be impacted by project activities.

Mitigation Measure 4.1.2b (Construction Timing). If feasible, no milkweed plants will be removed during the period when monarchs are most likely to breed in the project vicinity, March to August.

Mitigation Measure 4.1.2c (Compensatory Mitigation). Any milkweed plants that are removed by the project will be replaced at a 3:1 ratio in accordance with a revegetation plan prepared by a qualified biologist. The planting site(s) must be in similar or higher quality habitat to the habitat that was impacted, and in area(s) that will not be mowed or treated with pesticides or herbicides.

Implementation of the above measures will reduce potentially significant effects of the project on the monarch butterfly to a less than significant level and will not likely adversely affect this species.

4.1.3 Project Impacts to Crotch Bumble Bee

Potential Impacts. The Crotch bumble bee is a recent candidate for listing under CESA due to a substantial population drop. A number of historic occurrences of this species have been documented in the foothills of the region (CDFW 2019). While LOA's field survey was conducted at a time of year not conducive to observing bumble bees or identifying flowering herbaceous plants potentially utilized for foraging by this species, remnant clarkia plants, a preferred foraging plant by this species, were detected on the site. It is likely that other flowering plants suitable or preferred for foraging by this species would also occur on the site. Numerous ground squirrel burrows observed on the site could provide nesting habitat for this species, and possibly over-wintering habitat. As a result, this species could potentially over-winter, forage, and/or nest within undeveloped areas of the project site. Project activities have the potential to result in the mortality of over-wintering, foraging, and/or nesting Crotch bumble bees. If a nest is destroyed, many bumble bee adults and larvae could be killed. Construction-related destruction of a Crotch bumble bee nest is considered a potentially significant impact of the project.

Project ground disturbance will be almost entirely temporary, some of which will occur within existing dirt roads. Following construction, disturbed surface habitats are expected to return to pre-project conditions and their former level of suitability for this species. However, the 23



acres of spray fields will likely no longer provide habitat for this species. Given the vast amount of available and similar foothill habitat in the region, loss of habitat for this species is not considered to be a significant impact of the project.

Implementation of the following measures would reduce impacts to Crotch bumble bees to a less than significant level.

Mitigation. The following measures will be implemented for the protection of the Crotch bumble bee:

Mitigation Measure 4.1.3a (Preconstruction Surveys). A qualified biologist shall conduct visual surveys of proposed work areas for Crotch bumble bee nests within 10 days prior to starting project activities.

Mitigation Measure 4.1.3b (Avoidance). If a nest is observed, it will be avoided during construction as advised by the qualified biologist.

Implementation of the above measures will reduce any potential project-related impacts to the Crotch bumble bee to a less than significant level.

4.1.4 Disturbance To Active Raptor And Other Migratory Bird Nests From Construction Activities During Project Implementation

Potential Impacts. The project site has the potential to be used for nesting by a variety of birds protected by the Migratory Bird Treaty Act (MBTA), including the loggerhead shrike, a California Species of Special Concern. Birds can nest in or on trees and shrubs on the site, or on the ground. If project construction takes place during the nesting season (generally February 1-August 31), birds nesting on the site could be injured or killed by construction activities or disturbed such that they would abandon their nests. Significant construction-related disturbance is also a possibility for birds nesting adjacent to the project site. Project-related injury, mortality, or disturbance of nesting birds that results in abandonment are potentially significant adverse environmental effects of the project and could be a violation of the MBTA.

Mitigation. To avoid and minimize the potential for construction-related mortality/disturbance of nesting birds, the following measures will be implemented:



Measure 4.1.4a (Construction Timing). If feasible, the project will be implemented outside of the avian nesting season, typically defined as February 1 to August 31.

Measure 4.1.4b (Pre-construction Surveys). If construction is to occur between February 1 and August 31, a qualified biologist will conduct pre-construction surveys for active bird nests within 7 days prior to the start of construction. The survey area will encompass the site and accessible surrounding lands within 250 feet for nesting migratory birds and 500 feet for raptors (i.e., birds of prey).

Measure 4.1.4c (Avoidance of Active Nests). Should any active nests be discovered in or near proposed construction zones, the biologist will identify a suitable construction-free buffer around the nest. This buffer will be identified on the ground with flagging or fencing and will be maintained until the biologist has determined that the young have fledged and are capable of foraging independently.

Implementation of the above measures will reduce potential effects of future development of the project site on nesting migratory birds to a less than significant level, and will ensure that the project will be in compliance with federal laws protecting nesting birds.

4.2 LESS THAN SIGNIFICANT IMPACTS

4.2.1 Project Impacts To Special Status Animal Species Absent From Or Unlikely To Occur On Site

Of the 21 regionally occurring special status animal species (see Table 1), 13 are considered absent or unlikely to occur on the project site due to the absence of suitable habitat and/or the site being located outside of the known distribution of the species. These species include the valley elderberry longhorn beetle, delta smelt, southern mountain yellow-legged frog, foothill yellow-legged frog, western spadefoot, western pond turtle, northern California legless lizard, California legless lizard, southwestern willow flycatcher, black swift, fisher, wolverine, and San Joaquin kit fox. Since there is little to no likelihood that these species occur on site, they have no appreciable potential to be affected through construction-related injury or mortality or loss of habitat. Project impacts to these species are considered less than significant.

Mitigation. Mitigation measures are not warranted.



4.2.2 Project Impact To Special Status Animal Species That May Occur On The Project Site As Occasional Or Regular Foragers But Breed Elsewhere

Potential Impacts. Two special status animals, the tricolored blackbird and Townsend's western big-eared bat, have the potential to forage on the site from time to time but would not breed within the project site or close enough to the project site that they would be vulnerable to project-related disturbance at their breeding sites. These two species would not be vulnerable to construction-related injury or mortality because they are highly mobile and would be expected to simply avoid active work areas. Additionally, the Townsend's western big-eared bat would only potentially be foraging on the site in low light conditions when construction activities are typically not conducted.

The project site does not offer any unique foraging habitat for these species. Similar or higher quality habitats exist on adjacent lands and are relatively abundant in the region. Furthermore, the project is not expected to reduce the availability of foraging habitat for the Townsend's western big-eared bat. Therefore, the project will not result in the significant loss of foraging habitat for these species.

The project is not expected to result in significant impacts to the tricolored blackbird or Townsend's western big-eared bat.

Mitigation. Mitigation is not warranted.

4.2.3 Project Impacts to California Condor

Potential Impacts. As discussed in Section 2.5.2, suitable roosting and foraging habitat occur on the project site and nesting habitat is absent.

It is improbable that one or more of the limited number of condors frequenting the region would find foraging opportunity on the project site during the relatively brief time of project construction. However, in the unlikely event that a condor were to find foraging opportunity during construction it is unlikely that project activities would have any effect on individual condors other than potentially discouraging them from utilizing the site during the construction period, in the first place. Furthermore, condors would simply fly from any potential harm caused



by project construction activities. Development of the proposed spray fields would likely reduce the area of potential foraging habitat on the site by 23 acres; however, this loss of little to unutilized foraging habitat is exceedingly small compared to the many square miles of foraging habitat available in the region. Therefore, direct impact to condors from construction activity and indirect effects from loss of foraging habitat would not constitute a significant impact on California condors and the project is not likely to adversely affect this species.

Mitigation. Mitigation is not warranted.

4.2.4 Project Impacts to Pallid Bat, Western Mastiff Bat, and other Roosting Bats

Potential Impacts. A few native bat species, including the pallid bat and western mastiff bat, have the potential to breed and rear their young within cracks, cavities, and crevices of onsite trees. Since the project will not require tree removal, direct impacts to roosting bats will not occur.

The project will not result in a significant loss of roosting or foraging habitat for the pallid bat and western mastiff bat. Potential roost trees will not be removed, and the foraging value of the site would likely remain consistent with pre-project conditions.

Mitigation. Mitigation is not warranted.

4.2.5 Project Impact To Sensitive Natural Communities And Designated Critical Habitat

No Impact. Sensitive natural communities and designated critical habitat are absent from the project site. Project development would have no impact on sensitive natural communities or designated critical habitat.

Mitigation. No mitigation is warranted.

4.2.6 Project Impact To Wildlife Movement Corridors

No Impact. Wildlife movement corridors are absent from the project site. Project development would have no impact on such corridors.

Mitigation. No mitigation is warranted.



4.2.7 Project Impacts to Waters of the U.S.

Potential Impact. The seasonal and intermittent drainages appear to be the only potentially jurisdictional waters on site. Based on the current site plan it appears that the proposed 4-inch pipe will be installed across the intermittent drainage. While the locations of the 1-inch pipe are not illustrated on the site plan, it appears that the placement of the 1-inch pipe to the spray fields can avoid impacts to the seasonal drainage. The small area of temporary impact to potential waters of the U.S. from the installation of 4-inch pipe across the intermittent drainage and any temporary impacts from possible installations of 1-inch pipe across the seasonal drainage would have an insignificant impact on waters of the U.S. However, it should be noted that any activities resulting in dredge or fill of a water of the U.S., such as trenching, would require the acquisition of a Clean Water Act permit from the USACE.

Mitigation. No mitigation is warranted.



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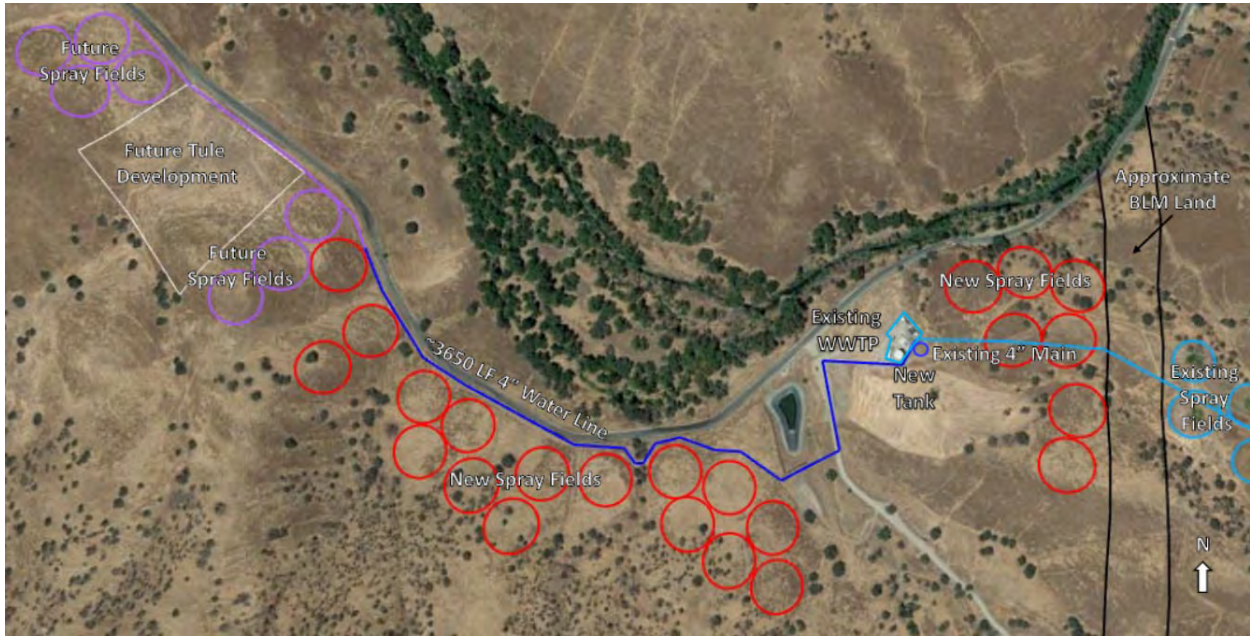
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**APPENDIX A:
SITE PLAN**

ATTACHMENT A

Preliminary Layout Map





**APPENDIX B:
VASCULAR PLANTS OF THE PROJECT SITE**



APPENDIX B: VASCULAR PLANTS OF THE PROJECT SITE

The plants species listed below were observed at on the project site during a survey conducted by Live Oak Associates, Inc. on December 9, 2022. The U.S. Fish and Wildlife Service wetland indicator status of each plant has been shown following its common name.

OBL - Obligate
FACW - Facultative Wetland
FAC - Facultative
FACU - Facultative Upland
UPL - Upland
+/- - Higher/lower end of category
NR - No review
NA - No agreement
NI - No investigation

AMARANTHACEAE — Amaranth Family

Amaranthus albus pigweed amaranth FACU

ANACARDIACEAE — Sumac Family

Toxicodendron diversilobum poison oak UPL

APOCYNACEAE – Milkweed Family

Asclepias sp. milkweed UPL

ASTERACEAE – Sunflower Family

Baccharis salicifolia mule fat FAC

Carduus pycnocephalus Italian thistle UPL

Centaurea melitensis tocalote UPL

Holocarpha heermannii Heermann's tarweed UPL

Hypochaeris glabra smooth cat's ear UPL

Lactuca serriola prickly lettuce FAC

Silybum marianum milkthistle UPL

Xanthium strumarium cocklebur FAC

BORAGINACEAE – Borage Family

Amsinckia sp. fiddleneck UPL

BRASSICACEAE – Mustard Family

Lepidium sp. pepper grass

Nasturtium officinale watercress OBL

Sisymbrium sp. mustard UPL

EUPHORBIACEAE – Spurge Family

Croton setigerus dove weed UPL

FAGACEAE – Beech Family

Quercus douglassi blue oak UPL

Quercus wislizenii interior live oak UPL

GERANIACEAE - Geranium Family

Erodium botrys broad-leaf filaree UPL

Erodium cicutarium red-stemmed filaree UPL



HIPPOCASTANACEAE — Buckeye Family		
<i>Aesculus californica</i>	California buckeye	UPL
LAMIACEAE – Mint Family		
<i>Trichostema lanceolatum</i>	vinegar weed	UPL
MALVACEAE – Mallow Family		
<i>Malva parviflora</i>	cheeseweed	UPL
MORACEAE –Fig Family		
<i>Ficus carica</i>	edible fig	FACU
ONAGRACEAE – Evening Primrose Family		
<i>Clarkia sp.</i>	clarkia	UPL
PLATANACEAE – Plane-tree family		
<i>Plantanus racemosa</i>	California sycamore	FAC
POACEAE – Grass Family		
<i>Avena sp.</i>	wild oats	UPL
<i>Bromus diandrus</i>	ripgut brome	UPL
<i>Bromus hordeaceus</i>	soft-chess brome	FACU
<i>Bromus madritensis ssp. rubens</i>	red brome	UPL
<i>Hordeum murinum</i>	foxtail barley	FACU
<i>Festuca perrenis</i>	Italian ryegrass	FAC
POLYGONACEAE - Buckwheat Family		
<i>Persicaria lapathifolia</i>	common knotweed	OBL
<i>Rumex crispus</i>	curly dock	FAC
PTERIDACEAE — Brake Family		
<i>Pentagrama triangularis ssp. triangularis</i>	goldenback fern	UPL
RUBIACEAE – Madder Family		
<i>Cephalanthus occidentalis</i>	common buttonbush	OBL
SALICACEAE –Willow Family		
<i>Populus fremontii</i>	Fremont’s cottonwood	UPL
<i>Salix laevigata</i>	red willow	FACW
<i>Salix sp.</i>	willow	FACW
SOLANACEAE – Nightshade Family		
<i>Datura wrightii</i>	jimson weed	UPL
URTICACEAE – Nettle Family		
<i>Urtica dioica ssp. holosericea</i>	stinging nettle	FAC



**APPENDIX C:
TERRESTRIAL VERTEBRATES OF THE PROJECT SITE**



APPENDIX C: TERRESTRIAL VERTEBRATE SPECIES THAT POTENTIALLY OCCUR ON THE PROJECT SITE

The species listed below are those that may reasonably be expected to use the habitats of the project site routinely or from time to time. The list was not intended to include birds that are vagrants or occasional transients. Terrestrial vertebrate species observed in or adjacent to the project site during the December 9, 2022 surveys have been noted with an asterisk.

CLASS: AMPHIBIA

ORDER: CAUDATA (Salamanders)

FAMILY: BUFONIDAE (True Toads)

Western Toad (*Bufo boreas*)

FAMILY: HYLIDAE (Treefrogs and Relatives)

Sierran Treefrog (*Pseudacris regilla*)

CLASS: REPTILIA

ORDER: TESTUDINES (Turtles)

ORDER: SQUAMATA (Lizards and Snakes)

SUBORDER: SAURIA (Lizards)

FAMILY: Phrynosomatidae (Spiny, Side-blotched, Horned, and relatives)

San Joaquin Fence Lizard (*Sceloporus occidentalis biseriatus*)

Western side-blotched (*Uta stansburiana elegans*)

FAMILY: SCINCIDAE (Skinks)

Gilbert's Skink (*Plestiodon gilberti*)

FAMILY: ANGUIDAE (Alligator Lizards and Relatives)

California Alligator Lizard (*Elgaria multicarinata multicarinata*)

SUBORDER: SERPENTES (Snakes)

FAMILY: COLUBRIDAE (Colubrids)

Coral-bellied Ring-necked Snake (*Diadophis punctatus pulchellus*)

Western Yellow-bellied Racer (*Coluber constrictor mormon*)

California Striped Racer (*Coluber lateralis lateralis*)

California Kingsnake (*Lampropeltis californiae*)

Pacific Gopher Snake (*Pituophis catenifer catenifer*)

FAMILY: VIPERIDAE

Western Rattlesnake (*Crotalus viridis*)

CLASS: AVES

ORDER: CICONIIFORMES (Hérons, Storks, Ibises, and relatives)

FAMILY: ARDEIDAE (Hérons and Bitterns)

Great Blue Heron (*Ardea herodias*)

ORDER: FALCONIFORMES (Vultures, Hawks, and Falcons)

FAMILY: CATHARTIDAE (American Vultures)

*Turkey Vulture (*Cathartes aura*)

FAMILY: ACCIPITRIDAE (Hawks, Eagles, and Kites)

Cooper's Hawk (*Accipiter cooperi*)

Red-shouldered Hawk (*Buteo lineatus*)



*Red-tailed Hawk (*Buteo jamaicensis*)

*Ferruginous Hawk (*Buteo regalis*)

FAMILY: FALCONIDAE (Caracaras and Falcons)

*American Kestrel (*Falco sparverius*)

Merlin (*Falco columbarius*)

Prairie Falcon (*Falco mexicanus*)

ORDER: GALLIFORMES (Megapodes, Currassows, Pheasants, and Relatives)

FAMILY: PHASIANIDAE (Quails, Pheasants, and Relatives)

California Quail (*Callipepla californica*)

Wild Turkey (*Melegris gallopavo*)

ORDER: GRUIFORMES (Cranes, Rails and Relatives)

ORDER: CHARADRIIFORMES (Shorebirds, Gulls, and relatives)

FAMILY: CHARADRIIDAE (Plovers and relatives)

Killdeer (*Charadrius vociferus*)

ORDER: COLUMBIFORMES (Pigeons and Doves)

FAMILY: COLUMBIDAE (Pigeons and Doves)

Band-tailed Pigeon (*Columba fasciata*)

*Mourning Dove (*Zenaida macroura*)

ORDER: STRIGIFORMES (Owls)

FAMILY: TYTONIDAE (Barn Owls)

Barn Owl (*Tyto alba*)

FAMILY: STRIGIDAE (Typical Owls)

Western Screech Owl (*Otus kennicottii*)

Great Horned Owl (*Bubo virginianus*)

ORDER: APODIFORMES (Swifts and Hummingbirds)

FAMILY: APODIFORMES (Swifts)

Black Swift (*Cypseloides niger*)

White-throated Swift (*Aeronautes saxatalis*)

FAMILY: TROCHILIDAE (Hummingbirds)

Black-chinned Hummingbird (*Archilochus alexandri*)

Anna's Hummingbird (*Calypte anna*)

Calliope Hummingbird (*Stellula calliope*)

Rufous Hummingbird (*Selasphorus rufus*)

ORDER: CORACIIFORMES (Kingfishers and Relatives)

ORDER: PICIFORMES (Woodpeckers and Relatives)

FAMILY: PICIDAE (Woodpeckers and Wrynecks)

*Acorn Woodpecker (*Melanerpes formicivorus*)

Lewis's Woodpecker (*Melanerpes lewis*)

Red-breasted Sapsucker (*Sphyrapicus ruber*)

Nuttall's Woodpecker (*Picoides nuttallii*)

Downy Woodpecker (*Picoides pubescens*)

*Northern Flicker (*Colaptes chrysoides*)

ORDER: PASSERIFORMES (Perching Birds)

FAMILY: TYRANNIDAE (Tyrant Flycatchers)

*Black Phoebe (*Sayornis nigricans*)

Say's Phoebe (*Sayornis saya*)



Ash-throated Flycatcher (*Myiarchus cinerascens*)

Western Kingbird (*Tyrannus verticalis*)

FAMILY: HIRUNDINIDAE (Swallows)

Tree Swallow (*Tachycineta bicolor*)

Violet-green Swallow (*Tachycineta thalassina*)

Northern Rough-winged Swallow (*Stelgidopteryx serripennis*)

Cliff Swallow (*Hirundo pyrrhonota*)

FAMILY: LANIIDAE (Shrikes)

Loggerhead Shrike (*Lanius ludovicianus*)

FAMILY: CORVIDAE (Jays, Magpies, and Crows)

*California Scrub Jay (*Aphelocoma californica*)

*Common Raven (*Corvus corax*)

FAMILY: PARIDAE (Titmice)

*Oak Titmouse (*Baeolophus inornatus*)

FAMILY: AEGITHALIDAE (Bushtit)

*Bushtit (*Psaltriparus minimus*)

FAMILY: SITTIDAE (Nuthatches)

*White-breasted Nuthatch (*Sitta carolinensis*)

FAMILY: TROGLODYTIDAE (Wrens)

*Rock Wren (*Salpinctes obsoletus*)

Bewick's Wren (*Thryomanes bewickii*)

*House Wren (*Troglodytes aedon*)

FAMILY: POLIOPTILIDAE (Gnatcatchers and Gnatwrens)

Blue-gray Gnatcatcher (*Polioptila caerulea*)

FAMILY: REGULIDAE (Kinglets)

Ruby-crowned kinglet (*Corthylio calendula*)

FAMILY: SYLVIIDAE (Slyviid Warblers, Parrotbills, and Allies)

Wrentit (*Chamaea fasciata*)

FAMILY: TURDIDAE (Thrushes)

*Western Bluebird (*Sialia mexicana*)

*Hermit Thrush (*Catharus guttatus*)

American Robin (*Turdus migratorius*)

FAMILY: MIMIDAE (Mockingbirds and Thrashers)

Northern Mockingbird (*Mimus polyglottos*)

FAMILY: PTILOGONATIDAE (Silky Flycatchers)

Phainopepla (*Phainopepla nitens*)

FAMILY: STURNIDAE (Starlings)

European Starling (*Sturnus vulgaris*)

FAMILY: BOMBYCILLIDAE (Waxwings)

Cedar Waxwing (*Bombycilla cedrorum*)

FAMILY: PASSERELLIDAE (New World Sparrows)

Spotted Towhee (*Pipilo maculatus*)

*Lincoln's Sparrow (*Melospiza lincolni*)

California Towhee (*Melospiza crissalis*)

*Dark-eyed Junco (*Junco hyemalis*)

Rufous-crowned Sparrow (*Aimophila ruficeps*)



- *Savannah Sparrow (*Passerculus sandwichensis*)
- Golden-crowned Sparrow (*Zonotrichia atricapilla*)
- White-crowned Sparrow (*Zonotrichia leucophrys*)

FAMILY: PARULIDAE (Wood-Warblers)

- Orange-crowned Warbler (*Vermivora celata*)
- Nashville Warbler (*Vermivora ruficapilla*)
- *Yellow-rumped Warbler (*Dendroica coronata*)
- Black-throated Gray Warbler (*Dendroica nigrescens*)
- Townsend's Warbler (*Dendroica townsendi*)
- Wilson's Warbler (*Wilsonia pusilla*)

FAMILY: ICTERIDAE (Blackbirds, Orioles and Allies)

- *Red-winged Blackbird (*Agelaius phoeniceus*)
- Tricolored Blackbird (*Agelaius tricolor*)
- Brewer's Blackbird (*Euphagus cyanocephalus*)
- Brown-headed Cowbird (*Molothrus ater*)
- Bullock's Oriole (*Icterus bullockii*)

FAMILY: FRINGILLIDAE (Finches)

- *House Finch (*Carpodacus mexicanus*)
- Lesser Goldfinch (*Carduelis psaltria*)

FAMILY: CARDINALIDAE (Cardinals and Allies)

- Black-headed Grosbeak (*Pheucticus melanocephalus*)
- Lazuli Bunting (*Passerina amoena*)
- Western Tanager (*Piranga ludoviciana*)

FAMILY: PASSERIDAE (Old World Sparrows)

- House Sparrow (*Passer domesticus*)

CLASS: MAMMALIA

ORDER: MARSUPIALIA (Opossums, Kangaroos, and Relatives)

FAMILY: DIDELPHIDAE (Opossums)

- Virginia Opossum (*Didelphis virginiana*)

ORDER: INSECTIVORA (Shrews and Moles)

FAMILY: TALPIDAE (Moles)

- Broad-footed Mole (*Scapanus latimanus*)

ORDER: CHIROPTERA (Bats)

FAMILY: VESPERTILIONIDAE (Vespertilionid Bats)

- Little Brown Myotis (*Myotis lucifugus*)
- Yuma Myotis (*Myotis yumanensis*)
- Long-eared Myotis, (*Myotis evotis*)
- Fringed Myotis (*Myotis thysanodes*)
- Long-legged Myotis (*Myotis volans*)
- California Myotis (*Myotis californicus*)
- Small-footed Myotis (*Myotis leibii*)
- Western Pipistrelle (*Pipistrellus hesperus*)
- Big Brown Bat (*Eptesicus fuscus*)
- Hoary Bat (*Lasiurus cinereus*)
- Townsend's Big-eared Bat (*Corynorhinus townsendii*)



Pallid Bat (*Antrozous pallidus*)

FAMILY: MOLOSSIDAE (Free-tailed Bat)

Brazilian Free-tailed Bat (*Tadarida brasiliensis*)

Western Mastiff Bat (*Eumops perotis californicus*)

ORDER: RODENTIA (Squirrels, Rats, Mice, and Relatives)

FAMILY: SCIURIDAE (Squirrels, Chipmunks, and Marmots)

*California Ground Squirrel (*Spermophilus beecheyi*)

FAMILY: GEOMYIDAE (Pocket Gophers)

*Botta's Pocket Gopher (*Thomomys bottae*)

FAMILY: CRICETIDAE (Deer Mice, Voles, and Relatives)

California Pocket Mouse (*Perognathus californicus*)

Western Harvest Mouse (*Reithrodontomys megalotis*)

California Mouse (*Peromyscus californicus*)

Deer Mouse (*Peromyscus maniculatus*)

Brush Mouse (*Peromyscus boylii*)

Dusky-footed Wood Rat (*Neotoma fuscipes*)

Meadow Vole (*Microtus californicus*)

FAMILY: MURIDAE (Old World Rats and Mice)

Norway Rat (*Rattus norvegicus*)

House Mouse (*Mus musculus*)

ORDER: CARNIVORA (Carnivores)

FAMILY: CANIDAE (Foxes, Wolves, and Relatives)

Coyote (*Canis latrans*)

Gray Fox (*Urocyon cinereoargenteus*)

FAMILY: PROCYONIDAE (Raccoons and Relatives)

Raccoon (*Procyon lotor*)

FAMILY: MUSTELIDAE (Weasels, Badgers, and Relatives)

Striped Skunk (*Mephitis mephitis*)

FAMILY: FELIDAE (Cats)

Mountain Lion (*Puma concolor*)

Bobcat (*Lynx rufus*)

ORDER: ARTIODACTYLA

FAMILY: CERVIDAE (Deer, Elk, and Relatives)

Mule Deer (*Odocoileus hemionus*)



**APPENDIX D:
SELECTED PHOTOGRAPHS OF THE PROJECT SITE**



Photo 1. Overview of the eastern end of the site that contains developed areas associated with the existing WWTP. Photo direction northeast.



Photo 2. Seasonal drainage in foreground, WWTP in background. Photo direction north.



Photo 3. One of the existing spray fields. Photo direction southeast.



Photo 4. Intermittent drainage. Photo direction south.



Photo 5. Western end of the site. Photo direction west.



Photo 6. Another view of western end of the site. One of the onsite ephemeral drainages in foreground. Existing WWTP in upper center. Seasonal drainage in treed fold above and right of the WWTP. Photo direction east.



Photo 7. Overview of western end of project site. Reservation Road visible at right. South Fork Tule River riparian corridor at far right. Photo direction west.



**APPENDIX E:
U.S. FISH AND WILDLIFE SERVICE SPECIES LIST**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location


Tulare County, California



Local office

Sacramento Fish And Wildlife Office

☎ (916) 414-6600

 (916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

NOT FOR CONSULTATION

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

-
1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
 2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an

office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Fisher <i>Pekania pennanti</i> There is proposed critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/3651	Endangered
San Joaquin Kit Fox <i>Vulpes macrotis mutica</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2873	Endangered

Birds

NAME	STATUS
California Condor <i>Gymnogyps californianus</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/8193	Endangered
Southwestern Willow Flycatcher <i>Empidonax traillii</i> <i>extimus</i> Wherever found There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/6749	Endangered

Fishes

NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> Wherever found There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <https://www.fws.gov/program/migratory-birds/species>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>

There are no migratory birds of conservation concern expected to occur at this location.

Tell me more about conservation measures I can implement to avoid or minimize impacts to

migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of

data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Coastal Barrier Resources System

Projects within the [John H. Chafee Coastal Barrier Resources System](#) (CBRS) may be subject to the restrictions on Federal expenditures and financial assistance and the consultation requirements of the Coastal Barrier Resources Act (CBRA) (16 U.S.C. 3501 et seq.). For more information, please contact the local [Ecological Services Field Office](#) or visit the [CBRA Consultations website](#). The CBRA website provides tools such as a flow chart to help determine whether consultation is required and a template to facilitate the consultation process.

There are no known coastal barriers at this location.

Data limitations

The CBRS boundaries used in IPaC are representations of the controlling boundaries, which are depicted on the [official CBRS maps](#). The boundaries depicted in this layer are not to be considered authoritative for in/out determinations close to a CBRS boundary (i.e., within the "CBRS Buffer Zone" that appears as a hatched area on either side of the boundary). For projects that are very close to a CBRS boundary but do not clearly intersect a unit, you may contact the Service for an official determination by following the instructions here: <https://www.fws.gov/service/coastal-barrier-resources-system-property-documentation>

Data exclusions

CBRS units extend seaward out to either the 20- or 30-foot bathymetric contour (depending on the location of the unit). The true seaward extent of the units is not shown in the CBRS data, therefore projects in the offshore areas of units (e.g., dredging, breakwaters, offshore wind energy or oil and gas projects) may be subject to CBRA even if they do not intersect the CBRS data. For additional information, please contact CBRA@fws.gov.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Wetland information is not available at this time

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the [NWI map](#) to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth

verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION

Appendix E

Cultural Resources Survey, ASM Affiliates, January 2023 (under separate cover)

Appendix F

SHPO Section 106 Consultation Letter

**DEPARTMENT OF PARKS AND RECREATION
OFFICE OF HISTORIC PRESERVATION**

Armando Quintero, Director

Julianne Polanco, State Historic Preservation Officer
1725 23rd Street, Suite 100, Sacramento, CA 95816-7100
Telephone: (916) 445-7000 FAX: (916) 445-7053
calshpo.ohp@parks.ca.gov www.ohp.parks.ca.gov

May 19, 2023

Reply In Reference To: HHS_2023_0419_002

VIA ELECTRONIC MAIL

Donna M. Meyer - Environmental and Historic Coordinator
Indian Health Service - California Area Office (CAO)
Division of Sanitation Facilities Construction
650 Capitol Mall, Suite 7-100
Sacramento, CA 95814-4708

RE: Section 106 consultation – expand effluent capabilities of wastewater treatment plant on the Tule River Reservation, Tulare County (CA21-N80 Tule River Indian Tribe of California)

Dear Ms. Meyer:

The State Historic Preservation Officer (SHPO) received the Indian Health Service's (IHS) letter of 19 April 2023 initiating consultation on the above referenced undertaking pursuant to 36 CFR Part 800 (as amended 8-05-04) regulations implementing Section 106 of the National Historic Preservation Act (NHPA). IHS requests SHPO agreement on a finding of "No historic properties affected."

IHS proposes to provide technical and financial assistance from the Sanitation Facilities Construction (SFC) program to the Tule River Indian Tribe of California to, as understood, improve the effluent capabilities of a wastewater treatment plant on Tule River Reservation. Proposed improvements were described as including "23 *new one-acre spray fields, an approximately 900,000-gallon supplemental treated wastewater storage tank, and approximately 3,650 linear feet of 4-inch pipe (main line) to connect the new spray fields*" to existing facilities. As too described, proposed improvements would also include "approximately 6,000 linear feet of 1-inch pipe" to "connect (the) spray field clusters to the main line."

The horizontal and vertical Area of Potential Effects (APE) were determined to be 24.7-acres and 10-feet respectively. The APE, as understood, was depicted in Figure-2 of the following study that was submitted by IHS as evidence of a CHRIS record search and survey of a 55-acre parcel that included the APE having been completed in support of Section 106:

- *Cultural Resources Survey, Wastewater Effluent Disposal Improvements Project, Tule River Indian Reservation, Tulare County, California (ASM 2023)*

In addition to the study mentioned above, IHS reported the results of their efforts to complete a Native American Heritage Commission (NAHC) sacred sites and contacts search is their following supplemental document:

- *Documentation – No Historic Properties Affected, CA21-N80, March 17, 2023*

Per the IHS supplemental document, “a NAHC reply was received on April 14, 2023 indicating no responses would be received by IHS for an estimated 4-weeks.” Also, per the IHS supplement, at present “the Tribe does not have a NPDES wastewater discharge permit through the U.S. Environmental Protection Agency (EPA) for off-site discharge of treated effluent and is therefore (currently) in violation of the Federal Clean Water Act (CWA).” Also, per the supplement, “IHS considers the lack of sufficient sewer service to be critical to its mission of protecting the health and safety of our Tribal members and cannot wait 4 weeks for a response” from the NHAC.

Section 106 work completed for the proposed undertaking identified no historic properties in the 55-acre survey area that also included the 24.7-acre APE. My following comments are based on a review of submitted materials:

1. Pursuant to 36 CFR Part 800.4(a)(1), I have no objection to the APE as described.
2. Pursuant to 36 CFR Part 800.4(b)(1), I have no objections to the “*Level of Effort*” identifying historic properties, however IHS should consider continuing its efforts to consult with the NHAC and the contacts they may identify.
3. Pursuant to 36 CFR Part 800.4(d)(1), IHS finds that the proposed undertaking will result in “*no historic properties affected.*” **I agree.**
4. Be aware that consultation with my office on the potential eligibility of any inadvertent discovery of a cultural resource during project implementation should comply with 36 CFR Part 800.11 and 800.13 for “*Documentation standards*” and “*Post Review Discoveries.*”

You may have additional Section 106 responsibilities for the undertaking under conditions such as changes in project scope or design. Please direct questions to Jeff Brooke, Associate State Archaeologist, at (916) 445-7003 or Jeff.Brooke@parks.ca.gov.

Sincerely,



Julianne Polanco
State Historic Preservation Officer

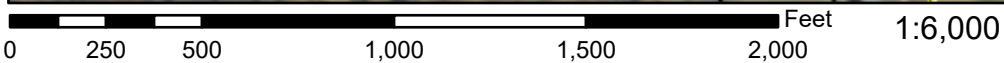
Appendix G

FEMA FIRM panel number 06107C1690E (effective 6/16/2009)

National Flood Hazard Layer FIRMMette



118°49'38"W 36°1'11"N



118°49'W 36°0'42"N

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) <i>Zone A, V, A99</i>
		With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i>
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i>
		Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>
		Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i>
		Area with Flood Risk due to Levee <i>Zone D</i>
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i>
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard <i>Zone D</i>
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance
		17.5 Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
MAP PANELS		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Digital Data Available
		No Digital Data Available
		Unmapped
		The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.



This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **11/30/2022 at 11:27 AM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

National Flood Hazard Layer FIRMette



118°50'W 36°17'N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) <i>Zone A, V, A99</i>
		With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i>
		Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i>
		Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>
		Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i>
		Area with Flood Risk due to Levee <i>Zone D</i>

OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i>
		Effective LOMRs
		Area of Undetermined Flood Hazard <i>Zone D</i>

GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall

OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature

MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **11/30/2022 at 11:16 AM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

National Flood Hazard Layer FIRMMette



118°50'11"W 36°1'10"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) <i>Zone A, V, A99</i>
		With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i>
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i>
		Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>
		Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i>
		Area with Flood Risk due to Levee <i>Zone D</i>
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i>
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard <i>Zone D</i>
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance
		17.5 Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
MAP PANELS		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Digital Data Available
		No Digital Data Available
		Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **11/30/2022 at 11:34 AM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

0 250 500 1,000 1,500 2,000 Feet 1:6,000

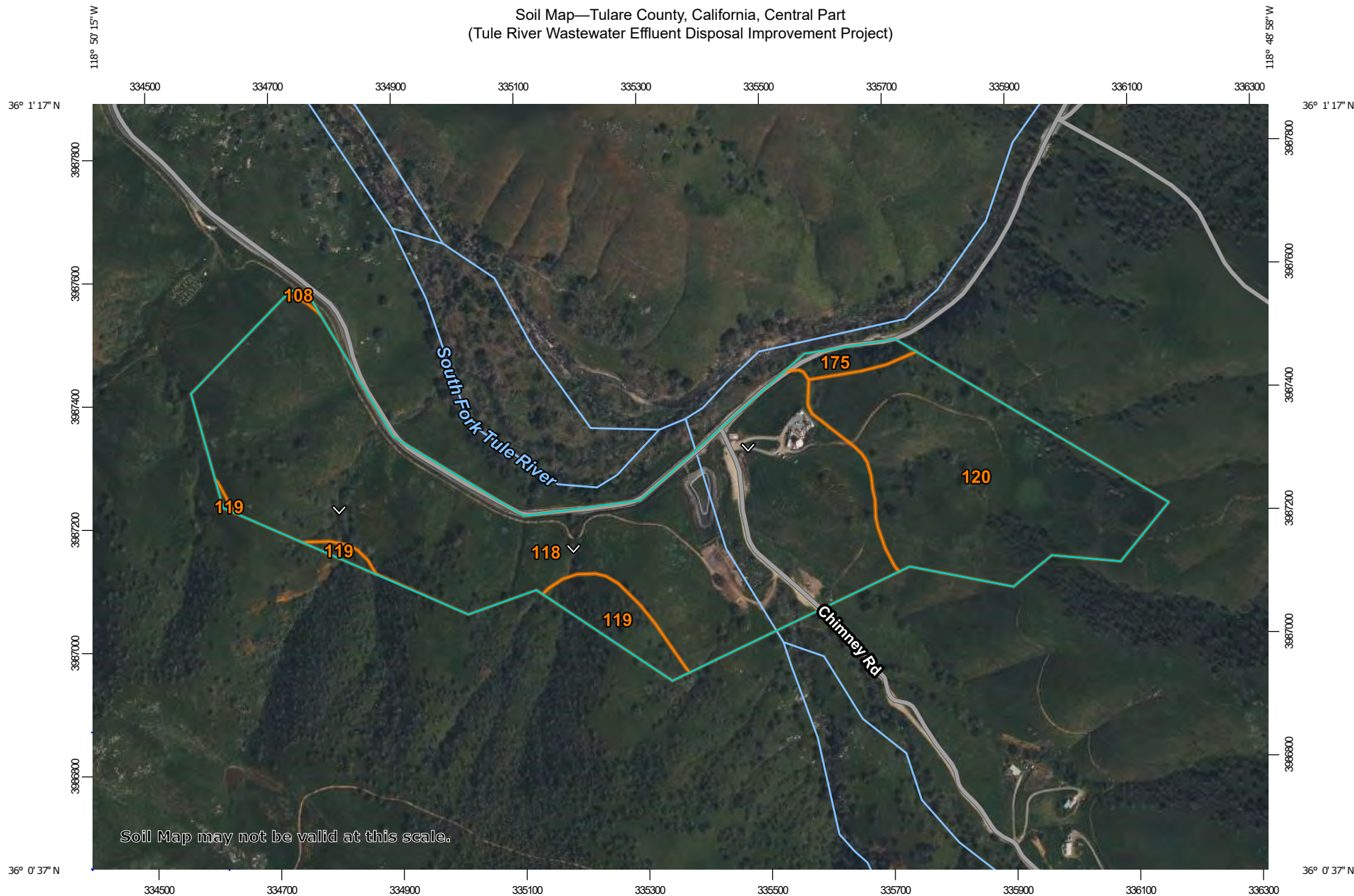
118°49'34"W 36°0'41"N

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

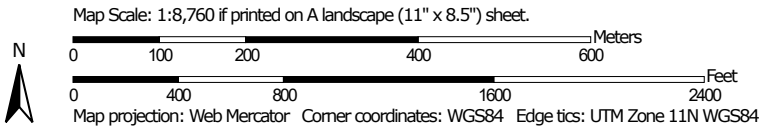
Appendix H

NRCS Soil Map, December 1, 2022

Soil Map—Tulare County, California, Central Part
 (Tule River Wastewater Effluent Disposal Improvement Project)




Soil Map may not be valid at this scale.




Soil Map—Tulare County, California, Central Part
(Tule River Wastewater Effluent Disposal Improvement Project)


MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Tulare County, California, Central Part

Survey Area Data: Version 16, Sep 1, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 26, 2019—Apr 8, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
108	Blasingame-Rock outcrop complex, 9 to 50 percent slopes	0.1	0.1%
118	Coarsegold loam, 15 to 30 percent slope	71.1	65.7%
119	Coarsegold loam, 30 to 50 percent slopes	4.6	4.2%
120	Coarsegold-Rock outcrop complex, 15 to 50 percent slopes	30.6	28.3%
175	Xerofluvents, flooded	1.8	1.7%
Totals for Area of Interest		108.3	100.0%