RICHGROVE COMMUNITY SERVICES DISTRICT
WASTEWATER TREATMENT PLANT IMPROVEMENT PROJECT

DRAFT INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

MAY 2024

PREPARED FOR:

Richgrove Community Services District
20986 Grove Drive
Richgrove, CA 93261

PREPARED BY:

PROVOST&PRITCHARD
CONSULTING GROUP

TABLE OF CONTENTS

LIST OF APPENDICES

LIST OF FIGURES

LIST OF TABLES

ACRONYMS AND ABBREVIATIONS

AB ..... Assembly Bill
Act ..... Fish and Wildlife Conservation Act
APE ..... Area of Potential Effect
BMP ..... Best Management Practices
BPS ..... Best Performance Standards
BUOW ..... burrowing owl
CAA ..... Clean Air Act
CalEEMod ..... California Emissions Estimator Modeling (software)
CalFire ..... California Department of Forestry and Fire Protection
CARB ..... California Air Resources Board
CBC ..... California Building Code
CCAA ..... California Clean Air Act
CDFW ..... California Department of Fish and Wildlife
CEQA ..... California Environmental Quality Act
CFC ..... Chlorofluorocarbons
CFR ..... Code of Federal Regulations
CH_4 ..... Methane
CHRIS ..... California Historical Resources Information System
CNDDB ..... California Natural Diversity Database
CNPS ..... California Native Plant Society
CO ..... Carbone Monoxide
CO_2 ..... Carbon dioxide
CO_2e ..... carbon dioxide-equivalents
County ..... Tulare County
CWA ..... Clean Water Act
dB ..... decibel
DEID ..... Delano-Earlimart Irrigation District
DOC ..... Department of Conservation
DTSC ..... Department of Toxic Substances Control
EFH ..... Essesntial Fish Habitat
EIR ..... Environmental Impact Report

EO ..... Executive Order
FEMA ..... Federal Emergency Management Agency
FMMP ..... Farmland Mapping and Monitoring Program
FPPA ..... Farmland Protection and Policy Act
fps ..... feet per second
GAMAQI ..... Guide for Assessing and Mitigating Air Quality Impacts
GHG ..... Greenhouse Gas
gpm ..... gallons per minute
GSA ..... Groundwater Sustainability Agency
GSP ..... Groundwater Sustainability Plan
GWP ..... Global Warming Potential
HFC ..... Hydrofluorocarbons
HMBP ..... Hazardous Materials Business Plan
HP ..... horsepower
IPaC ..... U.S. Fish and Wildlife Service's Information for Planning and Consultation system
IS ..... Initial Study
IS/MND ..... Initial Study/Mitigated Negative Declaration
MBTA ..... Migratory Bird Treaty Act
MGD ..... million gallons per day
MMRP ..... Mitigation Monitoring and Reporting Program
MND ..... Mitigated Negative Declaration
MRZ ..... Mineral Resource Zones
MSL ..... Mean Sea Level
MT CO2e ..... Metric Tons of Carbon Dioxide Equivalent
NAHC ..... Native American Heritage Commission
ND ..... Negative Declaration
NEPA ..... National Environmental Policy Act
NMFS ..... National Marine Fisheries Service
NOx ..... Nitrogen Oxides
NO_2 ..... Nitrogen Dioxide
N_2O ..... Nitrous oxide
O_3 ..... Ozone
Pb ..... Lead

PFC ..... Perfluorocarbons
PM_{10} ..... particulate matter 10 microns in size
$PM_{2.5}$ ..... particulate matter 2.5 microns in size
ppb ..... parts per billion
ppm ..... parts per million
Project ..... Wastewater Treatment Plant Improvement Project
RCSD ..... Richgrove Community Services District
ROG ..... Reactive Organic Gases
RWQCB ..... Regional Water Quality Control Board
SDWA ..... Safe Drinking Water Act
SHPO ..... State Office of Historic Preservation
SIP ..... State Implementation Plan
SJVAB ..... San Joaquin Valley Air Basin
SJVAPCD ..... San Joaquin Valley Air Pollution Control District
SJKF ..... San Joaquin Kit Fox
SO_X ..... Sulfur Oxides
SO_2 ..... Sulfur Dioxide
SO_4 ..... Sulfates
SR ..... State Route
SRA ..... State Responsibility Area
SSA ..... Sole Source Aquifer
SSJVIC ..... Southern San Joaquin Valley Information Center
SWPPP ..... Storm Water Pollution Prevention Plan
SWRCB ..... State Water Resources Control Board
TPY ..... tons per year
USPS ..... United States Postal Service
U.S. ..... United States
USACE ..... United States Army Corp of Engineers
USC ..... United States Code
USEPS ..... United States Environmental Protection Agency
USFWS ..... United States Fish and Wildlife Service
USGS ..... United States Geological Survey
UST ..... underground storage tanks

µg/m3 ..... micrograms per cubic meter

VdB ..... Vibration Velocity Levels in Decibels

VMT ..... vehicle miles traveled

WDR ..... Waste Discharge Requirements

WEAP ..... Worker Environmental Awareness Program

WWTP ..... wastewater treatment plant

CHAPTER 1 INTRODUCTION

Provost & Pritchard Consulting Group (Provost & Pritchard) has prepared this Initial Study/Mitigated Negative Declaration (IS/MND) on behalf of the Richgrove Community Services District (RCSD) to address the environmental effects of the Wastewater Treatment Plant Improvement Project (Project). This document has been prepared in accordance with the California Environmental Quality Act (CEQA), Public Resources Code Section 21000 et seq. RCSD is the CEQA lead agency for this Project.

The site and the Project are described in detail in Chapter 2 Project Description.

1.1 REGULATORY INFORMATION

An Initial Study (IS) is a document prepared by a lead agency to determine whether a project may have a significant effect on the environment. In accordance with California Code of Regulations Title 14 (Chapter 3, Section 15000, *et seq.*)-- also known as the CEQA Guidelines--Section 15064 (a)(1) states that an environmental impact report (EIR) must be prepared if there is substantial evidence in light of the whole record that the Project under review may have a significant effect on the environment and should be further analyzed to determine mitigation measures or project alternatives that might avoid or reduce project impacts to less than significant levels. A negative declaration (ND) may be prepared instead if the lead agency finds that there is no substantial evidence in light of the whole record that the project may have a significant effect on the environment. An ND is a written statement describing the reasons why a proposed Project, not otherwise exempt from CEQA, would not have a significant effect on the environment and, therefore, why it would not require the preparation of an EIR (CEQA Guidelines Section 15371). According to CEQA Guidelines Section 15070, a ND or *mitigated* ND shall be prepared for a project subject to CEQA when either:

a. The IS shows there is no substantial evidence, in light of the whole record before the agency, that the proposed Project may have a significant effect on the environment, or
b. The IS identified potentially significant effects, but:
    1. Revisions in the project plans or proposals made by or agreed to by the applicant before the proposed MND and IS is released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur is prepared, and
    2. There is no substantial evidence, in light of the whole record before the agency, that the proposed Project as *revised* may have a significant effect on the environment.

1.2 DOCUMENT FORMAT

This IS/MND contains six chapters. Chapter 1 Introduction, provides an overview of the Project and the CEQA process. Chapter 2 Project Description, provides a detailed description of proposed Project components and objectives. Chapter 3 Determination, the Lead Agency's determination based upon this initial evaluation. Chapter 4 Environmental Impact Analysis presents the CEQA checklist and environmental analysis for all impact areas, mandatory findings of significance, and feasible mitigation measures. If the Project does not have the potential to significantly impact a given issue area, the relevant section provides a brief discussion of the reasons why no impacts are expected. If the Project could have a potentially significant impact on a resource, the issue area discussion provides a description of potential impacts, and appropriate mitigation measures and/or permit requirements that would reduce those impacts to a less than significant level. Chapter 5 Mitigation, Monitoring, and Reporting Program (MMRP), provides the

proposed mitigation measures, implementation timelines, and the entity/agency responsible for ensuring implementation. Chapter 6 References details the documents and reports this document relies upon to provide its analysis.

The California Emissions Estimator Modeling software or CalEEMod Output Files, Biological Evaluation, and Class III Inventory/Phase I Survey are provided as technical Appendix A, Appendix B, and, Appendix C respectively, at the end of this document.

CHAPTER 2 PROJECT DESCRIPTION

2.1 PROJECT BACKGROUND

2.1.1 Project Title

Wastewater Treatment Plant Improvement Project

2.1.2 Lead Agency Name and Address

Richgrove Community Services District
20986 Grove Drive
Richgrove, CA 93261

2.1.3 Contact Person and Phone Number

Lead Agency Contact
Richgrove Community Services District
Diego Paniagua
General Manager
(661) 725-5632

CEQA Consultant
Provost & Pritchard Consulting Group
Briza Sholars
Environmental Project Manager
(559) 449-2700

2.1.4 Project Location

The Project is located northeast of the community of Richgrove, approximately seven miles east of the City of Delano, and along the eastern side of the San Joaquin Valley in Tulare County, California. (see Figure 2-1 and Figure 2-2). The Project site spans approximately 92 acres and is located on Assessor's Parcel Numbers 339-130-024 and -025. The centroid of the Project site is 35° 42' 42.57" N, 119° 05' 37.17" W.

2.1.5 General Plan Designation and Zoning

Project Area	General Plan Designation	Zoning District
ONSITE	Valley Agricultural	AE-20 (Exclusive Agricultural, 20-acre minimum)
ADJACENT LANDS	Valley Agricultural	AE-20 (Exclusive Agricultural, 20-acre minimum)

2.1.6 Description of Project

Project Background and Purpose

The Richgrove Community Services District (RCSD) received a Clean Water State Revolving Fund planning grant from the State Water Resources Control Board (SWRCB) to study and plan improvements for the existing wastewater collection and treatment system in Richgrove.

RCSD currently owns and operates a wastewater treatment plant (WWTP) located northeast of the community of Richgrove. The WWTP, which serves the community, currently operates under a permit issued by the Central Valley Regional Water Quality Control Board (RWQCB), Waste Discharge Requirements (WDR) Order No. 83-088. The permitted capacity of the existing pond based WWTP is 0.22 million gallons per day (MGD). The WWTP is an aerated pond system that was constructed in the 1980s. WWTP flows have been reported near the design capacity, and the treatment system is aging.

The objectives of the Project are to provide the necessary capacity expansion and treatment process upgrades to provide more reliable biological treatment and to accommodate projected growth and development.

Project Description

The Project proposes to make necessary improvements to the existing WWTP in order to effectively serve its existing and planned population. The proposed Project would construct a standard aeration pond system, an influent lift station and headworks structure, new electrical and control facilities, and minor improvements to the existing effluent disposal site. These Project components are described in more detail below.

Aeration Ponds

The proposed aeration ponds consist of three lined aeration ponds within the footprint of the two existing treatment ponds. The ponds would be equipped with surface aerators designed to provide aeration and mixing. The ponds would include one complete mix pond, followed by a partial mix pond and an oxidation pond in series. The complete mix pond would be designed to be intensely aerated and mixed, which would eliminate the risk of temperature overturn or algae growth.

Each existing treatment pond is approximately 4.85 million gallons (MG). The complete mix pond footprint would be reduced to approximately 0.9 MG and would be equipped with four to five (4-5) 10 HP aerators. The remaining area of the existing Pond 1 would be converted to a partial mixed pond equipped with four (4) 10 HP aerators. The second existing pond would be kept as an oxidation pond with an option of two (2) 5 HP aerators. The complete mix pond would be concrete lined, such that it could potentially be used for a Biolac system in the future. The partial mix pond and oxidation pond would have a polyethylene liner.

The new treatment facilities would be constructed by temporarily isolating one of the treatment ponds at a time to complete the work while still allowing the existing facilities to process and treat wastewater.

Lift Station and Headworks

A new lift station would be installed at the southwest corner of the existing WWTP site. The new lift station would be designed with three lift pumps rated to provide the peak hour flow of 730 gallons per minute (gpm), and capable of providing the maximum daily flow with one pump out of service. Each lift pump is anticipated to have a design capacity of approximately 350 gpm. Typically, only one pump would operate at any given time, with a second pump to meet peak flows. The third pump would provide redundancy and firm capacity during peak flow events.

The associated sewer force main would have a minimum velocity of approximately 2.0 feet per second (FPS) to keep solids suspended so as not to accumulate at the bottom of the pipe. A peak flow velocity of at least 3.5 FPS is desirable to re-suspend solids that have settled within the pipe. The force main sizing would be re-evaluated once actual pump performance is known. The new sewer force main from the lift station to the treatment system would be 8-inch diameter constructed of C900 PVC pipe.

The proposed headworks structure would be constructed to accommodate the hydraulic requirements of the other Project features. A new automatically cleaned screen and a bypass channel with a manual bar screen would be installed. A new flow meter would be installed on the influent pipeline, after the influent lift station to measure influent flows to the WWTP.

Electrical and Controls

New electrical service would be required and coordinated with Southern California Edison. A new motor control center and standby generator would be included. In addition, the Project would include a radio or cellular based monitoring and control system to provide remote monitoring and alarm capabilities, as well as providing automatic reporting of critical information.

Storage and Disposal Facilities

Continued storage and use of effluent for alfalfa irrigation is planned, with some improvements to the existing disposal site.

Area of Project Ground Disturbance

The majority of ground disturbance will be at the existing WWTP site, which is approximately 9.2 acres. This would involve earthwork to modify and construct new treatment ponds, construction of new lift station and headworks, and onsite piping. Work on the 80-acre disposal site is limited to constructing a small berm along the eastern side of the property, and the potential addition of a second effluent storage pond. The area of ground disturbance for the berm would be approximately 25,000 square feet.

Area of Potential Effect

The Area of Potential Effect (APE) is identified for the Project biological and cultural surveys. The APE is approximately 92.2 acres.

Construction Schedule

Construction of the Project is anticipated to be completed within 15 months. Generally, construction would occur between the hours of 7am and 7pm, Monday through Saturday, excluding holidays.

Equipment

Construction equipment would likely include excavators, backhoes, graders, loaders, skid steers, and dump trucks.

Operation and Maintenance

As mentioned, the Project proposes a radio or cellular-based monitoring and control system to provide remote monitoring and alarm capabilities. Installation of a remote control or monitoring system would not relieve the operator of the need to visit the WWTP on a daily basis; however, it would provide the ability to view operations and receive alarm indications when away from the WWTP, which would improve response time when problems arise. Operation and maintenance of the WWTP would continue to be performed by existing RCSD staff.

2.1.7 Other Public Agencies Whose Approval May Be Required

- County of Tulare – Building Permit, Grading Permit
- State Water Resources Control Board – National Pollution Discharge Elimination System Construction General Permit
- Regional Water Quality Control Board, Central Valley Region – Waste Discharge Requirements

2.1.8 Consultation with California Native American Tribes

Public Resources Code Section 21080.3.1, *et seq. ((codification of Assembly Bill (AB) 52, 2013-14)*) requires that a lead agency, within 14 days of determining that it will undertake a project, must notify in writing any California Native American Tribe traditionally and culturally affiliated with the geographic area of the project if that Tribe has previously requested notification about projects in that geographic area. The notice must briefly describe the project and inquire whether the Tribe wishes to initiate request formal consultation. Tribes have 30 days from receipt of notification to request formal consultation. The lead agency then has 30 days to initiate the consultation, which then continues until the parties come to an agreement regarding necessary mitigation or agree that no mitigation is needed, or one or both parties determine that negotiation occurred in good faith, but no agreement will be made.

RCSD has not received any written correspondence from a Tribe pursuant to Public Resources Code Section 21080.3.1 requesting notification of proposed project.

2.1.9 "CEQA–Plus" Assessment

RCSD may be applying for financial assistance to implement the Project through State or federal funding in the future.

In addition to meeting the requirements of CEQA, and because the financial assistance originates from the Federal government (SWRCB, in this case), the Project could be subject to "federal cross-cutting authority" requirements of other federal laws and Executive Orders that apply in federal financial assistance programs. (This process is frequently referred to as "CEQA-Plus".) Therefore, RCSD must also complete certain studies and analyses to satisfy various federal environmental requirements.

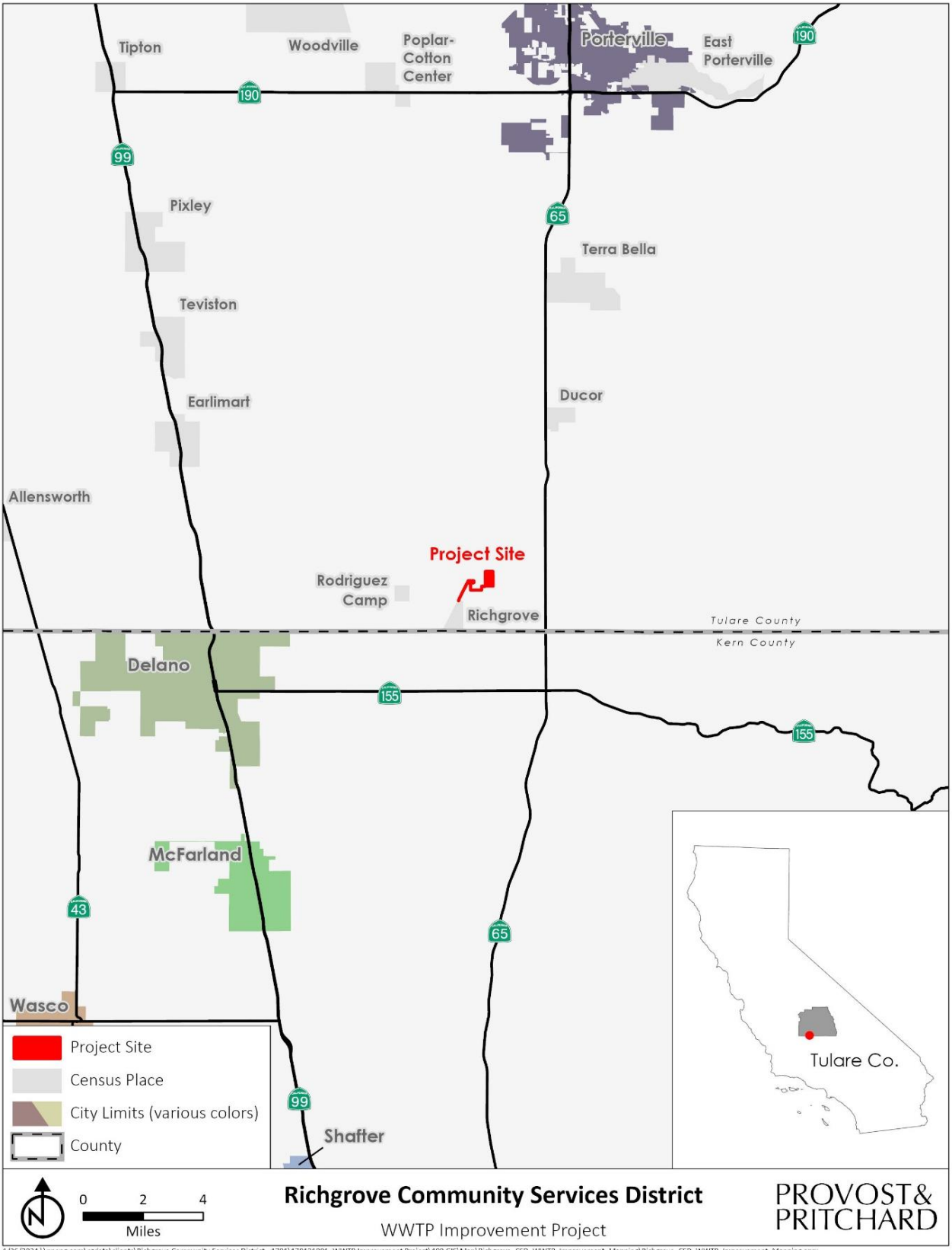


Figure 2-1: Regional Location Map

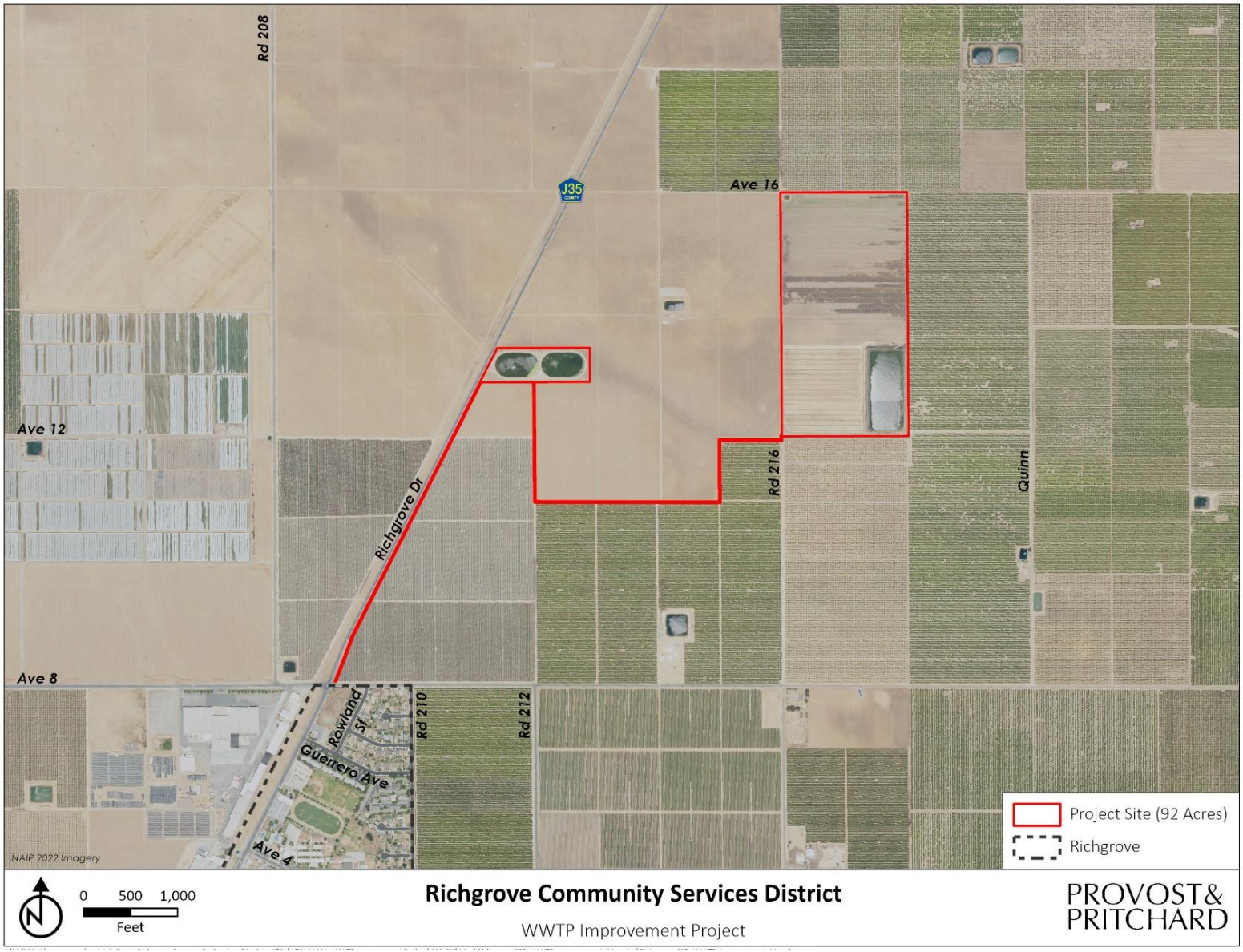


Figure 2-2: Aerial Map

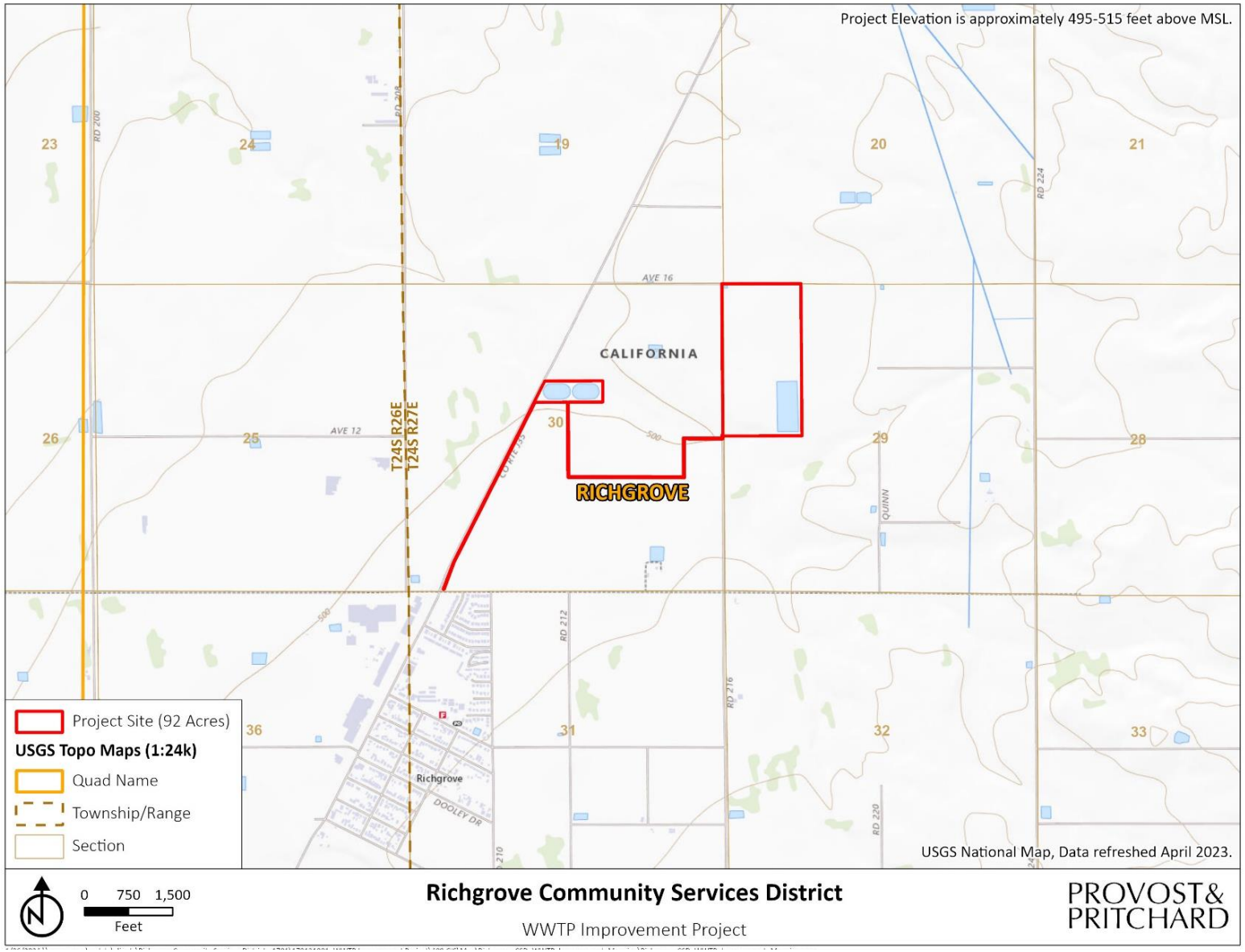


Figure 2-3: Topo Quad Map

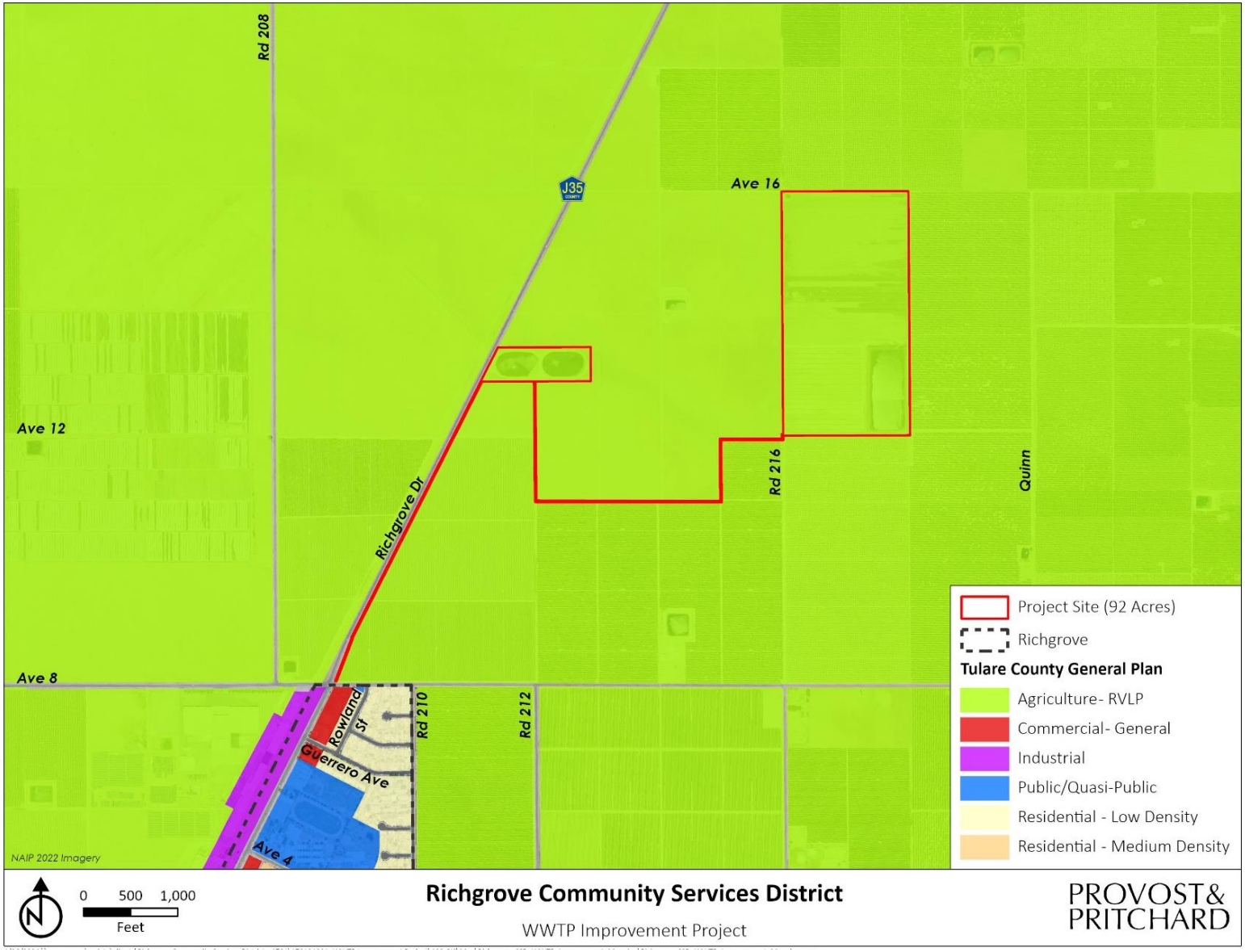


Figure 2-4: General Plan Land Use Designation Map

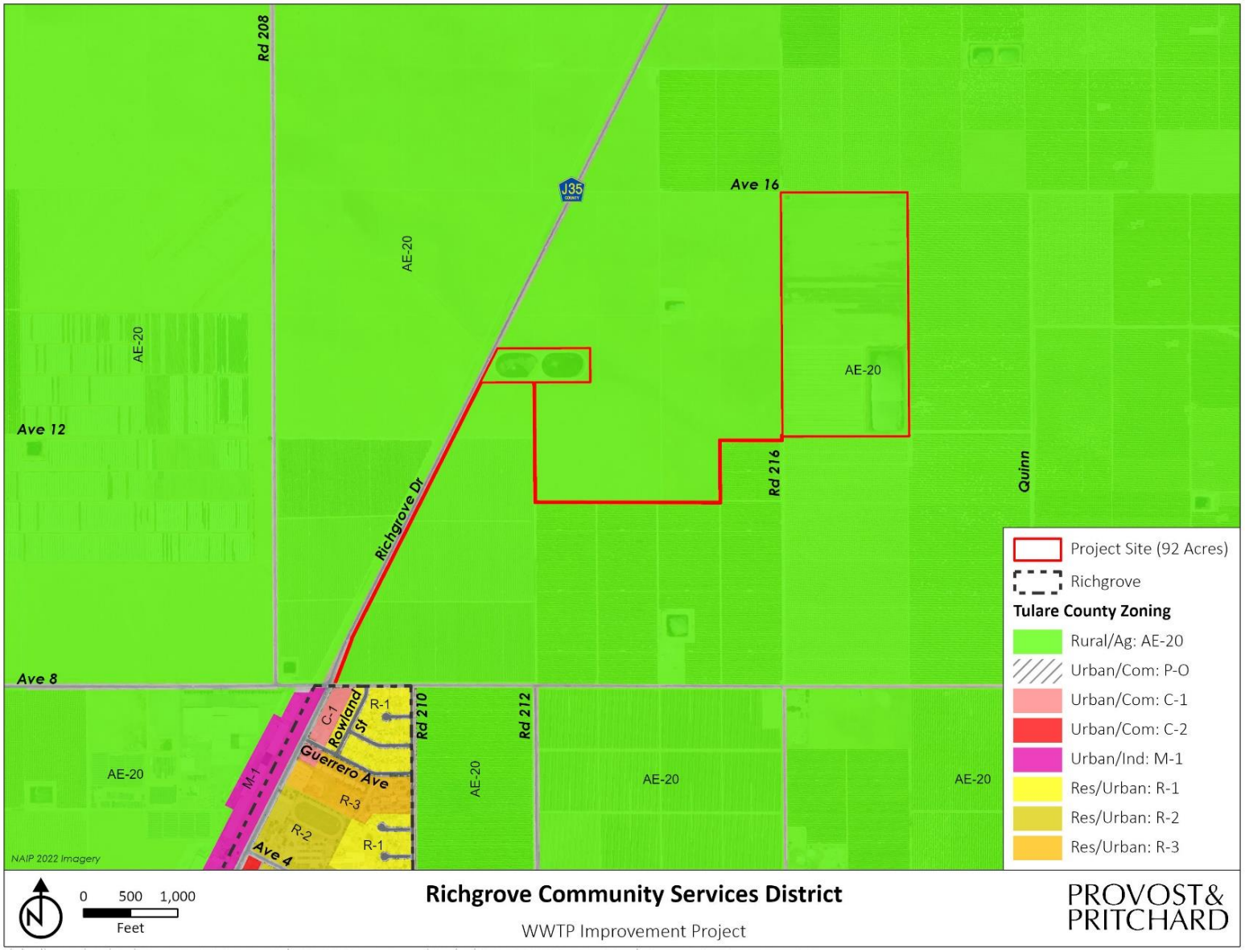


Figure 2-5: Zone District Map

CHAPTER 3 DETERMINATION

3.1 POTENTIAL ENVIRONMENTAL IMPACTS

As indicated by the discussions of existing and baseline conditions, and impact analyses that follow in this Chapter, environmental factors not checked below would have no impacts or less than significant impacts resulting from the project. Environmental factors that are checked below would have potentially significant impacts resulting from the project. Mitigation measures are recommended for each of the potentially significant impacts that would reduce the impact to less than significant.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☒ Biological Resources	☒ Cultural Resources	☐ Energy
☐ Geology/Soils	☐ Greenhouse Gas Emissions	☐ Hazards and Hazardous Materials
☐ Hydrology / Water Quality	☐ Land Use/Planning	☐ Mineral Resources
☐ Noise	☐ Population/Housing	☐ Public Services
☐ Recreation	☐ Transportation	☒ Tribal Cultural Resources
☐ Utilities and Service Systems	☐ Wildfire	☒ Mandatory Findings of Significance

The analyses of environmental impacts in Chapter 4 Impact Analysis result in an impact statement, which shall have the following meanings.

Potentially Significant Impact. This category is applicable if there is substantial evidence that an effect may be significant, and no feasible mitigation measures can be identified to reduce impacts to a less than significant level. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

Less than Significant with Mitigation Incorporated. This category applies where the incorporation of mitigation measures would reduce an effect from a "Potentially Significant Impact" to a "Less than Significant Impact." The lead agency must describe the mitigation measure(s), and briefly explain how they would reduce the effect to a less than significant level (mitigation measures from earlier analyses may be cross-referenced).

Less than Significant Impact. This category is identified when the proposed Project would result in impacts below the threshold of significance, and no mitigation measures are required.

No Impact. This category applies when a project would not create an impact in the specific environmental issue area. "No Impact" answers do not require a detailed explanation if they are adequately supported by the information sources cited by the lead agency, which show that the impact does not apply to the specific project (e.g. the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g. the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

3.2 DETERMINATION

On the basis of this initial evaluation (to be completed by the Lead Agency):

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature

05/06/2024
Date

Diego Paniagua / General Manager
Printed Name/Position

CHAPTER 4 ENVIRONMENTAL IMPACT ANALYSIS

4.1 AESTHETICS

Table 4-1: Aesthetics Impacts

Except as provided in Public Resources Code Section 21099, would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Have substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

4.1.1 Baseline Conditions

The Project is located in the unincorporated community of Richgrove in Tulare County, California. Tulare County is located within the southern San Joaquin Valley, which is known for its large expanse of farmland and agricultural operations. The Project site contains the existing Richgrove WWTP and is surrounded by farmland to the west, north, and south, while the southern portion borders the community of Richgrove. The topography of the land is virtually flat with little to no relief. Elevations within the community range between. The ground surface elevation at the WWTP site ranges from 482 feet to 492 feet above mean sea level (MSL). To the east lies the Sierra Nevada Mountains, which can be seen on a clear day from the Project site. The Project site is nowhere near a California State Scenic Highway. The nearest state scenic highway is State Route (SR) 180, located approximately 63 miles north of the of the Project site.[1] According to the Tulare County General Plan and the Richgrove Community Plan, the Project site does not contain any designated scenic vistas.[2]

[1] (California State Scenic Highway System Map 2018)
[2] (Tulare County 2030 General Plan Update 2010); (Tulare County Resources Management Agency 2017)

4.1.2 Impact Analysis

a) Have substantial adverse effect on a scenic vista?

No Impact. The Project site and the community of Richgrove is virtually flat with little to no topographic relief. Elevations at the WWTP site ranges from 482 feet to 492 feet MSL. The Project site does not contain any scenic vistas as the underlying terrain lacks significant elevation changes. Therefore, there would be no impact to a scenic vista as a result of implementing the Project.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact. The Project site does not contain, nor is it near a state scenic highway. The nearest one, SR 180, is located over 60-miles away. Therefore, there would be no impact.

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Less than Significant Impact. The Project would include improvements to the existing WWTP that serves the community of Richgrove. The Project is mostly surrounded by farmland and includes upgrades to an existing facility. The Project area is already accustomed to the existing facility and additional improvements would be consistent with the existing infrastructure and use in place. The Project would not include any feature that would be inconsistent or out of character with what presently exists. Therefore, the Project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings. Impacts would be less than significant.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Less than Significant Impact. The existing WWTP is primarily surrounded by farmland with the community of Richgrove directly south. Implementation of the Project would include upgrades to the existing WWTP; however, no additional onsite lighting than what is already existing would be proposed, and the operation of the upgraded WWTP would not result in an increased number of maintenance trips or staff members. Therefore, the Project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area or be inconsistent with existing conditions. Impacts would be less than significant.

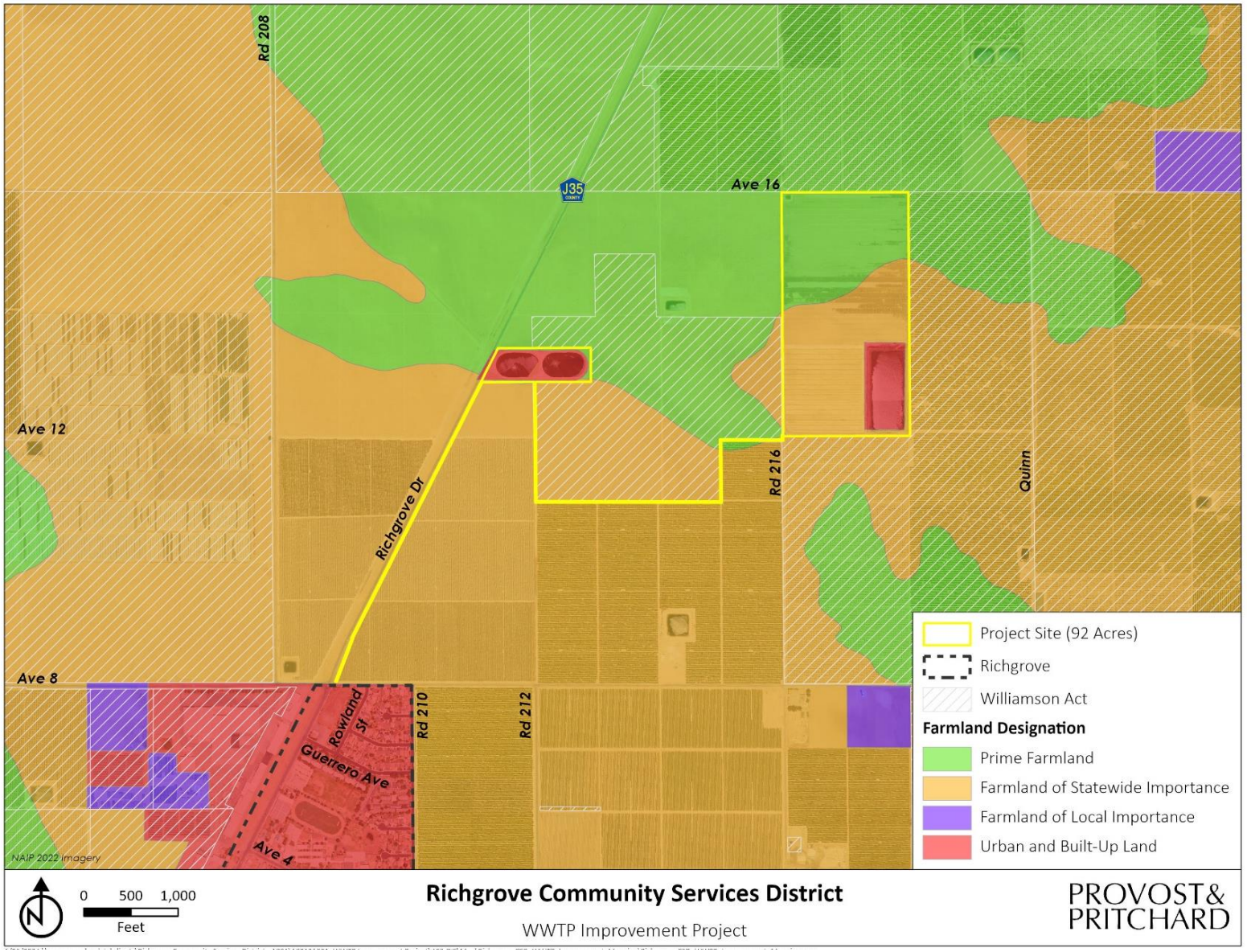


Figure 4-1: FMMP Map

4.2 AGRICULTURE AND FORESTRY RESOURCES

Table 4-2: Agriculture and Forest Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☒	☐
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

4.2.1 Baseline Conditions

The Project is located in California's San Joaquin Valley in Tulare County. Tulare County is known for its agricultural production as it was the number one agriculture producing county in the United States for 2020.[3] In 2022, Tulare County's agriculture production grossed 8.6 billion dollars, an increase in 6.5% from the previous year.[4] The WWTP Project site itself is located northeast of the community of Richgrove. The Project site is planned and zoned for agricultural uses. The community and the Project site is surrounded with vineyards, citrus, berry, and deciduous fruit/nut trees.

Presently, effluent is pumped from the WWTP to an effluent storage lagoon located about one-half mile to the east for storage prior to being recycled. This effluent is used to irrigate alfalfa on 60 acres of adjacent farmland.

Farmland Mapping and Monitoring Program: The Farmland Mapping and Monitoring Program (FMMP) produces maps and statistical data used for analyzing impacts to California's agricultural resources.

[3] (University of California Agriculture and Natural Resources 2022)
[4] (Tulare County Agricultural Commissioner/Sealer 2022)

Agricultural land is rated according to soil quality and irrigation status; the best quality land is called Prime Farmland. The maps are updated every two years with the use of a computer mapping system, aerial imagery, public review, and field reconnaissance. The California Department of Conservation's 2018 FMMP is a non-regulatory program that produces "Important Farmland" maps and statistical data used for analyzing impacts on California's agricultural resources. The Important Farmland maps identify eight land use categories, five of which are agriculture related: prime farmland, farmland of statewide importance, unique farmland, farmland of local importance, and grazing land — rated according to soil quality and irrigation status. Each is summarized below:

- PRIME FARMLAND (P): Farmland with the best combination of physical and chemical features able to sustain long term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- FARMLAND OF STATEWIDE IMPORTANCE (S): Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- UNIQUE FARMLAND (U): Farmland of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated but may include non- irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.
- FARMLAND OF LOCAL IMPORTANCE (L): Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.
- GRAZING LAND (G): Land on which the existing vegetation is suited to the grazing of livestock. The minimum mapping unit for Grazing Land is 40 acres.
- URBAN AND BUILT-UP LAND (D): Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, institutional, public administrative purposes, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.
- OTHER LAND (X): Land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry, or aquaculture facilities; strip mines, borrow pits; and water bodies smaller than 40 acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.
- WATER (W): Perennial water bodies with an extent of at least 40 acres.

As demonstrated in Figure 4-1, the FMMP for the Project site is designated as Prime Farmland, Farmland of Statewide Importance, and Urban and Built-Up Land.[5]

4.2.2 Impact Analysis

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

[5] (California Department of Conservation 2023)

Less than Significant Impact. As seen in Figure 4-1, the Project site contains farmland designations of Prime Farmland and Farmland of Statewide Importance. Although these designations are located within the Project site, the Project would not convert Project lands to a different use. The WWTP already exists, and the Project would construct improvements to increase capacity and efficiency of the facility. In addition, the WWTP's effluent currently irrigates approximately 60-acres of alfalfa, and the Project would not make any changes to the facilities' effluent irrigation operations. Therefore, impacts would be less than significant.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. The Project would not conflict with existing zoning for agricultural use, or a Williamson Act contract. Project improvements would be located on the current WWTP parcels that are owned by RCSD. In addition, the Project would support continued agricultural operation as no changes would be made to the effluent irrigation operations. There would be no impact.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

No Impact. The Project would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production. The Richgrove Community Plan has not designated any place in the Project area or surrounding lands as Forest Land, Timberland, or timberland zoned for Timberland Production.[6] The Project would have construction activities in areas that have previously been disturbed and would not be in or near a forest or timberland environment. Therefore, there would be no impact.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. The Project is not located in or near any forest land. Therefore, the Project would not result in the loss of forest land or conversion of forest land to non-forest use. There would be no impact.

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

No Impact. As discussed above in Impact Assessments a-d, the Project would involve improvements to the existing WWTP and would not result in any type of land use conversion, either directly or indirectly. There would be no impact.

4.2.3 Federal Cross-Cutting Topic

Farmland Protection Act

The Farmland Protection and Policy Act (FPPA) was enacted in 1981 to minimize the loss of prime farmland and unique farmlands because of federal actions that converted these lands to nonagricultural uses. The act assures that federal programs are compatible with state and local governments, and private programs and policies to protect farmland.

[6] (Tulare County Resources Management Agency 2017)

As defined by the FPPA, prime farmland is farmland that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and also is available for these uses. A unique farmland is land other than prime farmland that is used for production of specific, high-value food and fiber crops; it has the special combination of soil quality, location, growing season, and moisture supply needed to economically produce sustained high quality or high yields of specific crops.

As previously concluded, the proposed project is not located on land classified by the Department of Conservation (DOC) as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance. These classifications recognize a land' s suitability for agricultural production by considering the physical and chemical characteristics of the soil, such as soil temperature range, depth of the groundwater table, flooding potential, rock fragment content, and rooting depth. The classifications also consider location, growing season, and moisture available to sustain high-yield crops. Together, Important Farmland and Grazing Land are defined by the DOC as "Agricultural Land."

The proposed project would be on land that is classified as “Urban and Built-up Land” and “Vacant and Disturbed Land” neither of which support agricultural uses. Therefore, no farmland would be converted as a result of the Project. Therefore, the Project would not conflict with the Farmland Protection and Policy Act or adversely affect prime or unique farmland.

4.3 AIR QUALITY

Table 4-3: Air Quality Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☐	☒

4.3.1 Baseline Conditions

The Project site is located within the boundaries of the San Joaquin Valley Air Pollution Control District (SJVAPCD) and the San Joaquin Valley Air Basin (SJVAB). The SJVAB is positioned within the San Joaquin Valley of California. The San Joaquin Valley is bounded by the Sierra Nevada Mountain Range to the east and the Coastal Mountain Range to the west. Wind within the SJVAB typically channels south-southwest during the summer months, while wind flows to the north-northwest during the winter months. Wind velocity for the region is considered low for an area of such size.[7] Due to a lack of strong wind and the natural confinement of the mountain ranges surrounding the SJVAB, the region experiences some of the worst air quality in the world.

Regulatory Attainment Designations

Under the California Clean Air Act (CCAA), the California Air Resources Board (CARB) is required to designate areas of the State as attainment, nonattainment, or unclassified with respect to applicable standards. An "attainment" designation for an area signifies that pollutant concentrations did not violate the applicable standard in that area. A "nonattainment" designation indicates that a pollutant concentration violated the applicable standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. Depending on the frequency and severity of pollutants exceeding applicable standards, the nonattainment designation can be further classified as serious nonattainment, severe nonattainment, or extreme nonattainment, with extreme nonattainment being the most severe of the classifications. An "unclassified" designation signifies that the data does not support either an attainment or nonattainment designation. The CCAA divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The United States Environmental Protection Agency (USEPA) designates areas for ozone, CO, and NO_2 as "does not meet the primary standards," "cannot be classified," or "better than national standards." For

[7] (San Joaquin Valley Air Pollution Control District 2012)

SO_2, areas are designated as "does not meet the primary standards," "does not meet the secondary standards," "cannot be classified," or "better than national standards." However, the CARB terminology of attainment, nonattainment, and unclassified is more frequently used. The USEPA uses the same sub-categories for nonattainment status: serious, severe, and extreme. In 1991, USEPA assigned new nonattainment designations to areas that had previously been classified as Group I, II, or III for PM_{10} based on the likelihood that they would violate national PM_{10} standards. All other areas are designated "unclassified."

According to the USEPA the SJVAPCD was in non-attainment for two pollutant concentrations, with $PM_{2.5}$ (2012) being classified as in serious non-attainment, and 8-hour Ozone (2015) classified as being in extreme non-attainment as of December 26, 2023.[8]

Table 4-4: Summary of Ambient Air Quality Standards and Attainment Designation

Pollutant	Averaging Time	California Standards*		National Standards*	
		Concentration*	Attainment Status	Primary	Attainment Status
Ozone (O_3)	1-hour	0.09 ppm	Nonattainment/ Severe	–	No Federal Standard
	8-hour	0.070 ppm	Nonattainment	0.075 ppm	Nonattainment (Extreme)**
Particulate Matter (PM_{10})	AAM	20 µg/m^3	Nonattainment	–	Attainment
	24-hour	50 µg/m^3		150 µg/m^3	
Fine Particulate Matter ($PM_{2.5}$)	AAM	12 µg/m^3	Nonattainment	12 µg/m^3	Nonattainment
	24-hour	No Standard		35 µg/m^3	
Carbon Monoxide (CO)	1-hour	20 ppm	Attainment/ Unclassified	35 ppm	Attainment/ Unclassified
	8-hour	9 ppm		9 ppm	
	8-hour (Lake Tahoe)	6 ppm		–	
Nitrogen Dioxide (NO_2)	AAM	0.030 ppm	Attainment	53 ppb	Attainment/ Unclassified
	1-hour	0.18 ppm		100 ppb	
Sulfur Dioxide (SO_2)	AAM	–	Attainment	--	Attainment/ Unclassified
	24-hour	0.04 ppm		--	
	3-hour	–		0.5 ppm	
	1-hour	0.25 ppm		75 ppb	
Lead (Pb)	30-day Average	1.5 µg/m^3	Attainment	–	No Designation/ Classification
	Calendar Quarter	–		--	
	Rolling 3-Month Average	–		0.15 µg/m^3	
Sulfates (SO_4)	24-hour	25 µg/m^3	Attainment	No Federal Standards	
Hydrogen Sulfide (H_2S)	1-hour	0.03 ppm (42 µg/m^3)	Unclassified		
Vinyl Chloride (C_2H_3Cl)	24-hour	0.01 ppm (26 µg/m^3)	Attainment		

[8] (United States Environmental Protection Agency 2023)

Pollutant	Averaging Time	California Standards*		National Standards*	
		Concentration*	Attainment Status	Primary	Attainment Status
Visibility-Reducing Particle Matter	8-hour	Extinction coefficient: 0.23/km-visibility of 10 miles or more due to particles when the relative humidity is less than 70%.	Unclassified		

** For more information on standards visit: https://ww3.arb.ca.gov/research/aaqs/aaqs2.pdf*
*** No Federal 1-hour standard. Reclassified extreme nonattainment for the Federal 8-hour standard (December 26, 2023).*
****Secondary Standard*
µg/m3: micrograms per cubic meter
Source: http://www.valleyair.org/aginfo/attainment.htm. Accessed 2023.

Construction-Generated Emissions

Construction of the Project is assumed to be completed over approximately 15 months. Emissions associated with the Project were calculated using CalEEMod Air Quality Model, Version 2020.4.0. The emissions modeling includes emissions generated by off-road equipment, haul trucks, and worker commute trips. Emissions were quantified based on anticipated construction schedules and the default parameters contained in the model. Localized air quality impacts associated with the Project would be minor and were qualitatively assessed. Modeling assumptions and output files are included in Appendix A.

Thresholds of Significance

Air pollutant emissions have regional effects and localized effects. This analysis assesses the regional effects of the Project's criteria pollutant emissions in comparison to SJVAPCD thresholds of significance for short-term construction activities and long-term operation of the Project. Localized emissions from Project construction and operation are also assessed using concentration-based thresholds that determine if the Project would result in a localized exceedance of any ambient air quality standards or would make a cumulatively considerable contribution to an existing exceedance.

The primary pollutants of concern during Project construction and operation are ROG (reactive organic gases), NO_X, PM_{10}, and $PM_{2.5}$. The SJVAPCD Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI) adopted in 2015 contains thresholds for ROG and Nitrogen Oxides (NO_X); Sulfur Oxides (SO_X), CO, PM_{10}, and $PM_{2.5}$.

Ozone is a secondary pollutant that can be formed miles away from the source of emissions through reactions of ROG and NOX emissions in the presence of sunlight. Therefore, ROG and NOx are termed ozone precursors. The SJVAB often exceeds the state and national ozone standards. Therefore, if the Project emits a substantial quantity of ozone precursors, the Project may contribute to an exceedance of the ozone standard. The SJVAB also exceeds air quality standards for PM_{10}, and $PM_{2.5}$; therefore, substantial Project emissions may contribute to an exceedance for these pollutants.

The SJVAPCD adopted significance thresholds for construction-related and operational ROG, NO_X, PM, CO, and SO_X, these thresholds are included in Table 4-5.

Table 4-5: Project-Level Air Quality CEQA Thresholds of Significance

Pollutant	Significance Threshold	
	Construction Emissions (tons/year)	Operational Emissions (tons/year)
ROG	10	10
NO_X	10	10
CO	100	100
SO_X	27	27
PM_{10}	15	15
$PM_{2.5}$	15	15

Source: SJVAPCD. 2015. Guidance for Assessing and Mitigating Air Quality Impacts. Website: https://www.valleyair.org/transportation/GAMAQI-2015/FINAL-DRAFT-GAMAQI.PDF. Accessed December 26, 2023.

4.3.2 Impact Analysis

Project Related Emissions

Estimated construction-generated emissions are summarized in Table 4-6 and Table 4-7. Operational emissions of the proposed Project would be considered negligible due to the type of improvements proposed. These negligible amounts of operational emissions would result from pumping and conveyance related activities.

Table 4-6: Unmitigated Short-Term Construction Generated Emissions of Criteria Air Pollutants

Source	Annual Emissions [Tons per Year (TPY)]					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Maximum Annual Project Construction Emissions	0.2487	1.9090	2.6709	6.6700e-003	0.4185	0.2148
SJVAPCD Threshold	*10*	*10*	*100*	*27*	*15*	*15*
Threshold Exceeded?	No	No	No	No	No	No

Table 4-7: Maximum Daily Construction Related Emissions of Criteria Air Pollutants

Source	Daily Emissions Maximum (in pounds)					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Construction – Summer	2.5512	25.2792	23.4447	0.0579	20.1793	11.0783
Construction – Winter	2.5460	25.2869	22.2551	0.0558	20.1793	11.0783
SJVAPCD Threshold	*100*	*100*	*100*	*100*	*100*	*100*
Threshold Exceeded?	No	No	No	No	No	No

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

No Impact. The Project would not conflict with or obstruct implementation of any applicable air quality plan. The proposed Project would not exceed any threshold for air quality emissions that has been set by the SJVAPCD. Therefore, there would be no impact.

b) Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Less than Significant Impact. The proposed Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is in non-attainment. As shown in Table 4-6

and Table 4-7, the Project would not exceed an emissions threshold which has been set by the SJVAPCD for construction related emissions. The proposed Project would result in negligible quantities of operational emissions. Therefore, impacts would be less than significant.

c) Would the project expose sensitive receptors to substantial pollutant concentrations?

No Impact. The proposed Project would not expose sensitive receptors to substantial pollutant concentrations. Emissions generated by the proposed Project would not exceed the set thresholds by the SJVAPCD. Additionally, construction would occur approximately 225 feet from the nearest potential sensitive receptor, which is a residence. Therefore, there would be no impact.

d) Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

No Impact. During construction activities, construction equipment exhaust and application of asphalt, structural coating and other construction applications would temporarily emit odors. Construction would be completed within rural Tulare County, northeast of the Community of Richgrove. The proposed Project would result in ground disturbance over a half mile from the nearest residence. Regardless, construction of the Project would be temporary, and emission odors would not remain after Project completion. Therefore, there would be no impacts.

4.3.3 Federal Cross-Cutting Topic

Clean Air Act (CAA)

Under the federal CAA, federal actions conducted in air basins that are not in attainment with the federal ozone standard (such as the SJVAB) must demonstrate conformity with the State Implementation Plan (SIP). Conformity to a SIP is defined in the federal CAA as meaning conformity to a SIP's purpose of eliminating or reducing the severity and number of violations of the national standards and achieving an expeditious attainment of such standards. The SJVAPCD has published Regulation IX, Rule 9110 (referred as the General Conformity Rule) that indicates how most federal agencies can make such a determination.[9]

The SJVAPCD specifies that a project is conforming to the applicable attainment or maintenance plan if it:

- complies with all applicable SJVAPCD rules and regulations,
- complies with all applicable control measures from the applicable plans, and
- is consistent with the growth forecast in the applicable plans.

The SJVAPCD does not require a detailed quantification of construction emissions unless the project's indirect source emissions are expected to increase pollutant emissions of ROG or NO_X in excess of 10 tons per year. Because proposed Project construction would not exceed this threshold, the proposed Project would comply with the conformity criteria.

[9] The SJVAPCD's Rule 9110 is consistent with USEPA 's General Conformity Rule, Determining Conformity of General Federal Actions to State or Federal Implementation Plans (40 CFR, Part 93), available online at http://www.valleyair.org/rules/currntrules/r9110.pdf.

4.4 BIOLOGICAL RESOURCES

Table 4-8: Biological Resources Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

4.4.1 Baseline Conditions

General

The Project is located northeast of the community of Richgrove, approximately seven miles east of the City of Delano, and along the eastern side of the San Joaquin Valley in Tulare County, California. The Project site includes the existing Richgrove WWTP and associated facilities (transmission mains, two aerating ponds, an effluent storage pond, and an alfalfa field). The topography of the WWTP site is relatively flat with elevations ranging from 482 feet to 492 feet MSL.

Like most of California, the Project site experiences a Mediterranean climate. Warm, dry summers are followed by cool, moist winters. In the summer, average high temperatures range between 90- and 100-degrees Fahrenheit (°F), but often exceed 100°F, and the humidity is generally low. Winter temperatures are often below 60°F during the day and rarely exceed 70°F. On average, Richgrove receives approximately nine inches of precipitation in the form of rain yearly, most of which occurs between October and March.[10] The Project site would be expected to receive similar amounts of precipitation.

Soils

Three soils were identified within the project site and are listed in Table 4-9 (see Appendix D of Appendix B for the full Web Soil Survey Report). The soils are displayed with their core properties in the Table 4-9, according to the Major Land Resource Area of California. The soil types are generally used for irrigated cropland, dairy cattle production, building site development, and grazing.

Table 4-9: List of Soils Located on the Project Site and Their Basic Properties

Soil	Soil Map Unit	Percent of Project Site	Hydric Soil Category	Drainage	Permeability	Runoff
Centerville clay	Clay, 2 to 5 percent slopes	53.1%	Predominantly hydric	Well drained	Very slow	Medium
Colpien loam	Loam, 0 to 2 percent slopes	43.7%	Non-hydric	Moderately well drained	Slow	Low
Exeter loam, 0 to 2 percent slopes	Loam, 0 to 2 percent slopes	3.2%	Predominantly Non-hydric	Moderately well drained	Moderately slow	Medium

Hydric soils are defined as soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions such that under sufficiently wet conditions, hydrophytic vegetation can be supported. Centerville clay is identified as predominantly hydric soil, meaning that at least one major component listed for a given map unit is rated as hydric, and at least one contrasting minor component is not rated hydric. Colpien loam is identified as non-hydric soil, meaning no major or minor components for the map unit are rated hydric. Exeter loam is predominantly a non-hydric soil.

Biotic Habitats

The Project contains several habitats, including agricultural, agriculture pond, ruderal, artificial treatment pond, and lagoon (see Figure 4-2). These habitats and their constituent plant and animal species are described in more detail in the following sections after Figure 4-2.

[10] (Best Places 2023)

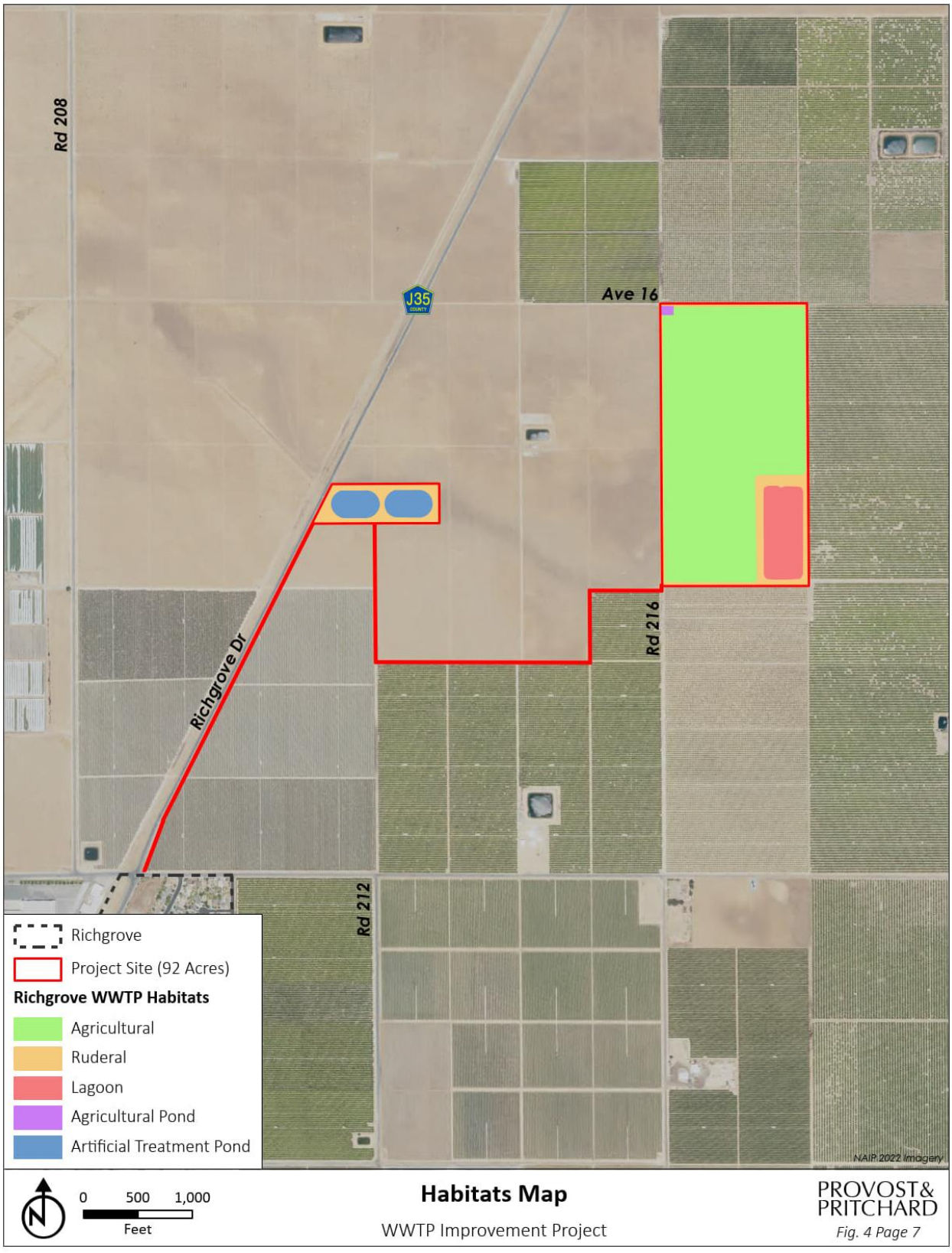


Figure 4-2: Habitat Map

Agricultural

The agricultural habitat within the Project site consisted of recently fallowed field that was previously an alfalfa field that had been regularly irrigated by effluent water from the adjacent agricultural lagoon (see Figure 4-3). This habitat contained vegetation including remnants of scattered alfalfa (*Medicago sativa*), Bermuda grass (*Cynodon dactylon*), black mustard (*Brassica nigra*), cheeseweed mallow (*Malva parviflora*), wheat (*Triticum sp.*), dove weed (*Croton setiger*), field bindweed (*Convolvulus arvensis*), hairy fleabane (*Erigeron bonariensis*), Johnson grass (*Sorghum halepense*), barnyard grass (*Echinochloa colona*), white stemmed filaree (*Erodium moschatum*), oats (*Avena* sp.), Russian thistle (*Kali tragus*), and silverleaf nightshade (*solanum elaeagnifolium*).

Agricultural habitat provides foraging habitat for a variety of avian species. Common avian species observed foraging within the agricultural habitat included mourning dove (*Zenaida macroura*), northern mockingbird (*Mimus polyglottos*), house finch (*Haemorhous mexicanus*), American crow (*Corvus brachyrhynchos*), and common raven (*Corvus corax*).

Small mammals that can forage within the agricultural habitat include deer mice (*Peromyscus maniculatus*), Botta's pocket gopher (*Thomomys bottae*), and California ground squirrel (*Otospermophilus beecheyi*). Mammalian predators potentially occurring within agricultural habitat would most likely be racoon (*Procyon lotor*), coyote (*Canis latrans*), and striped skunk (*Mephitis mephitis*).

Ruderal

The ruderal habitat within the site included dirt access roads, the shoulder of California SR 65, and the outside banks of the wastewater treatment pond, and effluent lagoon habitats (see Figure 4-4). Vegetation observed within this habitat included scattered weedy vegetation including cheeseweed mallow, foxtail brome (*Bromus madritensis*), Russian thistle, wild radish (*Raphanus raphanistrum*), crabgrass (*Digitaria ischaemum*), dove weed, false daisy (*Eclipta prostrata*), hairy fleabane, Canada horseweed (*Erigeron canadensis*), white stemmed filaree, puncture vine (*Tribulus terrestrius*), Russian thistle, spotted spurge (*Euphorbia maculata*), silverleaf nightshade, Mexican fan palm (*Washingtonia robusta*), and coyote melon (*Cucurbita palmata*), common cocklebur (*Xanthium orientale*), curly dock (*Rumex crispus*), sunflower (*Helianthus sp.*), prickly lettuce (*Lactuca serriola*), and puncture vine (*Tribulus terrestris*).

The ruderal field survey within the Project site resulted in the identification of numerus bird, small mammal, and reptile species such as American pipit (*Anthus rubescens*), black phoebe (*Sayornis nigricans*), common raven (*Corvus corax*), house finch, hooded merganser (*Lophodytes cucullatus)*, killdeer (*Charadrius vociferus*), red-tailed hawk, deer mice, Botta's pocket gopher, California ground squirrel, common side-blotched lizard (*Uta stansburiana*) and western fence lizard (*Sceloporus occidentalis*). Other bird species that can be expected to roam and forage within this habitat include northern mockingbirds *(Mimus polyglottos)*, and mourning doves *(Zenaida macroura).* The presence of rodents, reptiles and small birds can likely attract foraging raptors (i.e., red-tailed hawk (*Buteo jamaicensis*)) into the ruderal habitat. Coyotes (*Canis latrans*), and other nocturnal animals (i.e., opossums (*Didelphis virginianus*)) could occasionally pass through the ruderal habitat on their way to more suitable habitats elsewhere.

Artificial Treatment Pond

An artificial treatment pond habitat was present within the existing wastewater treatment ponds (see Figure 4-5). Vegetation within this habitat was sparse, but included cheeseweed mallow, puncture vine, barnyard grass, and whitestem filaree (*Erodium moschatum*). Both of these treatment ponds also contained common duckweed (*Lemna minor*) floating on the water's surface. No amphibians or fish were observed within the ponds.

Bird species observed within this habitat during the field survey included American pipit and killdeer.

Lagoon

Lagoon habitat was present within the existing WWTP lagoon and banks, located along the eastern side of the project site (see Figure 4-6). Moderate amounts of vegetation were found within the lagoon habitat and included curly dock, willow, and other species. This habitat was visually scanned for aquatic species (fish and amphibians) during the survey, however none were observed. Based on a conversation with RCSD personnel there is a possibility for mosquito fish (*Gambusia affinis*) to be present in the lagoon habitat.

Observations within the agricultural lagoon resulted in the identification of numerous birds including American pipit, hooded merganser, and killdeer. The lagoon habitat can also provide a habitat for aquatic migrating birds (i.e., ducks and mallards) enroute to a more suitable habitat elsewhere. Ground nesting birds, such as killdeer, could nest within this habitat. Songbird species such as house finches could nest in the willows.

Agricultural Pond

Adjacent to the northwest corner of the agricultural habitat was an agricultural pond habitat, which contained minimal stagnant water with algae (see Figure 4-7). The lower banks of the pond contained ground cover vegetation such as Canadian horseweed, curly dock, cheeseweed mallow, foxtail brome, barnyard grass, and Johnson grass.

During the field survey the agricultural pond habitat was visually scanned for aquatic species, and none were observed. However, this habitat could potentially provide value to wildlife. Some native amphibian species that have the potential to occur within this habitat include western toads (*Anaxyrus boreas*). These species can breed and forage in this habitat.

Figure 4-3: Project Site Agricultural Habitat Photo

Figure 4-4: Project Site Ruderal Habitat Photo

Figure 4-5: Project Site Artificial Treatment Pond Habitat Photo

Figure 4-6: Project Site Lagoon Habitat Photo

Figure 4-7: Project Site Agricultural Pond Habitat Photo

Natural Communities of Special Concern and Riparian Habitat

Natural communities of special concern are those that are of limited distribution, distinguished by significant biological diversity, or home to special status species. CDFW has classified and mapped all-natural communities in California. Just as the special status plant and animal species, these natural communities of special concern can be found within the California Natural Diversity Database (CNDDB). There is no recorded observation of a natural community of special concern within the project site. Additionally, no natural communities of special concern were observed during the biological survey.

Riparian habitat is composed of plant communities that occur along the banks, and sometimes over the banks, of most waterways and is an important habitat for numerous wildlife species. CDFW has jurisdiction over most riparian habitats in California. No natural waterways were observed within or adjacent to the Project site.

Designated Critical Habitat

The United States Fish and Wildlife Service (USFWS) often designates areas of "critical habitat" when it lists species as threatened or endangered. Critical habitat is a specific geographic area that contains features essential for the conservation of a threatened or endangered species, which may require special management and protection. According to the Information for Planning and Consultation system (IPaC), designated critical habitat is absent from the Project site and vicinity.

Wildlife Movement Corridors and Native Wildlife Nursery Sites

Wildlife movement corridors are routes that animals regularly and predictably follow during seasonal migration, dispersal from native ranges, daily travel within home ranges, and inter-population movements. Movement corridors in California are typically associated with valleys, ridgelines, and rivers and creeks supporting riparian vegetation. The habitats of the Project site are common to the area, and it is unlikely that the project site is utilized as a wildlife movement corridor.

Native wildlife nursery sites are areas where a species or group of similar species raise their young in a concentrated place, such as maternity bat roosts. No native wildlife nursery sites were found within the Project site.

Special Status Plant and Animal

A query of the CNDDB for occurrences of special status plant and animal species was conducted for the *Richgrove* 7.5-minute U.S. Geological Survey (USGS) quadrangle that contains the project site, and for the 8 surrounding USGS quadrangles: *Sausalito school, Ducor, Fountain Springs, Delano East, Quincy school, McFarland, Deepwell Ranch,* and *Sand Canyon*. A query of the IPaC was also completed for the project site. These species, and their potential to occur within the project site, are listed in Table 4-10 and Table 4-11 on the following pages. Other special status species that did not show up in the CNDDB query, but have the potential to occur in the vicinity, are included in Table 4-11. Species lists obtained from CNDDB and IPaC are available in Appendix B and Appendix C of Appendix B: Biological Evaluation, respectively. All relevant sources of information, as discussed in the Study Methodology section of this report, as well as field observations, were used to determine if any special status species have the potential to occur within the Project site.

Table 4-10: List of Special Status Plants with Potential to Occur Onsite and/or in the Vicinity

Species	Status*	Habitat	Occurrence within the Site
Alkali-sink goldfields (*Lasthenia chrysantha*)	CNPS 1B	Found in vernal pool and wet saline flat habitats in the San Joaquin Valley region at elevations below 700 feet. Blooms February – April.	**Absent.** Habitats required by this species are absent from the project site.
Brittlescale (*Atriplex depressa*)	CNPS 1B	Found in Chenopod scrub, meadows and seeps, playas, valley and foothill grassland, vernal pools in alkaline, clay soils. Found at elevations between 3 and 1,050 feet. Blooms May to October.	**Absent.** Suitable habitats for this species are absent from the project site and surrounding areas.
Calico monkeyflower (*Diplacus pictus*)	CNPS 1B	Found in the Sierra Nevada foothills and the Tehachapi mountains in bare, sunny, shrubby areas, around granite outcrops within foothill woodland communities. Found at elevations between 450 and 4,100 feet. Blooms March – May.	**Absent.** Suitable habitats for this species were absent from the project site and surrounding areas.
California jewelflower (*Caulanthus californicus*)	FE, CE, CNPS 1B	Found in the San Joaquin Valley and western Transverse Ranges in sandy soils. Occurs on flats and slopes, generally in non-alkaline grassland at elevations between 200 and 6,100 feet. Blooms February – April.	**Absent.** Suitable habitat is absent from the project site and surrounding areas. The project site appears to be regularly maintained for agricultural use.
Earlimart orache (*Atriplex cordulata* var. *erecticaulis*)	CNPS 1B	Found in the San Joaquin Valley in saline and alkaline soils, typically within valley grasslands at elevations below 400 feet. Blooms August – September.	**Absent.** Suitable habitat and outside known elevational range required by this species were absent within the project site and surrounding areas.
Lost Hills crownscale (*Atriplex cordulata var. erecticaulis*)	CNPS 1B	Found in the San Joaquin Valley in dried ponds and vernal pools with alkaline soils in alkali scrub, and valley and foothill grasslands at elevations below 2,900 feet. Blooms April – September.	**Absent.** Suitable habitat required by this species were absent within the project site and surrounding areas.
Recurved larkspur (*Delphinium recurvatum*)	CNPS 1B	Occurs in chenopod scrub, cismontane woodland, and grassland habitats on poorly drained, fine, alkaline soils; often in valley saltbush or valley chenopod scrub communities at elevations between 100 and 2,600 feet. Blooms March – June.	**Absent.** Suitable habitats required by this species were absent within the project site and surrounding areas.
San Joaquin adobe sunburst (*Pseudobahia peirsonii*)	FT, CE, CNPS 1B	Found in the San Joaquin Valley and the Sierra Nevada foothills in bare, dark clay soils in valley and foothill grassland and cismontane woodland communities at elevations between 300 and 3,000 feet. Blooms March – May.	**Absent.** Suitable habitats and soils required by this species were absent within the project site and surrounding areas.
San Joaquin woollythreads (*Monolopia congdonii*)	FE, CNPS 1B	Occurs in the San Joaquin Valley in sandy soils on alkaline or loamy plains in valley and foothill grassland and alkali scrub communities at elevations between 150 and 2,800 feet. Blooms February – May.	**Absent.** The habitats required by this species were absent within the project site and surrounding areas.

Species	Status*	Habitat	Occurrence within the Site
Spiny-sepaled button-celery (*Eryngium spinosepalum*)	CNPS 1B	Found in the Sierra Nevada foothills and the San Joaquin Valley. Occurs in vernal pools, swales, and roadside ditches. Often associated with clay soils in vernal pools within grassland communities. Occurs at elevations between 50 and 4,200 feet. Blooms April – July.	**Absent.** Suitable habitats required by this species were absent within the project site and surrounding areas.
Subtle orache (*Atriplex subtilis*)	CNPS 1B	Found in the San Joaquin Valley in saline depressions in alkaline soils within valley and foothill grassland communities at elevations below 300 feet. Blooms June – October.	**Absent.** Suitable habitat and outside known elevational range required by this species were absent within the project site and surrounding areas.
Vernal pool smallscale (*Atriplex persistens*)	CNPS 1B	Occurs in the Central Valley in alkaline vernal pools at elevations below 400 feet. Blooms June – September.	**Absent.** Suitable habitat and outside known elevational range required by this species were absent within the project site and surrounding areas.

Table 4-11: List of Special Status Animals with Potential to Occur Onsite and/or in the Vicinity

Species	Status*	Habitat	Occurrence within the Site
American badger (*Taxidea taxus*)	CSSC	Occurs most abundantly in drier open stages of shrub, forest, and herbaceous habitats with friable soils to burrow, but can be found within numerous habitats throughout California, including the margins of agricultural lands. Needs a sufficient prey base of burrowing rodents.	**Unlikely.** The project site and surrounding areas are frequently cultivated agricultural lands that are unsuitable for this species. An American Badger could potentially pass through the project site, but it is unlikely they would forage or live within the project site. The nearest recorded observation of this species within the vicinity was found deceased along Highway 65 in section 9, approximately 8.8 miles southeast of the project site in 1989.
Blunt-nosed leopard lizard (*Gambelia sila*)	FE, CE, CFP	Occurs in the San Joaquin Valley region in expansive, arid areas with scattered vegetation. Today they inhabit non-native grassland and alkali sink scrub communities of the Valley floor marked by poorly drained, alkaline, and saline soils. In the foothills of the southern San Joaquin Valley and Carrizo Plain, they occur in the chenopod community, which is associated with non-alkaline, sandy soils. They can be found at elevations ranging from 98 to 2,600 feet above sea level. They are absent from areas of steep slopes and dense vegetation, and areas subject to seasonal flooding. Known to bask on kangaroo rat mounds and often seeks shelter at the base of shrubs, in small mammal burrows, or in rock piles. Adults may excavate shallow burrows but rely on deeper	**Unlikely.** The site and surrounding areas are regularly disturbed and maintained. The habitat of the project site is unsuitable for this species. The nearest recorded observation of this species within the vicinity was approximately 10 miles southwest of the project site in 1959.

Species	Status*	Habitat	Occurrence within the Site
		pre-existing rodent burrows for hibernation and reproduction.	
Burrowing owl (*Athene cunicularia*)	CSSC	Resides in open, dry grasslands, deserts, scrublands, and other areas with low growing vegetation. Nests and roosts underground in existing burrows created by mammals, most often ground squirrels, and human-made structures.	**Possible**. The soil embankments of the agricultural lagoon contain small mammal burrows that this species can occupy. Evidence of feathers left behind near the entrance of the burrow. The nearest recorded observation of this species within the vicinity was approximately 6.3 miles northeast of the project site in 2007.
California condor (*Gymnogyps californianus*)	FE, CE, CFP	Typically nests in cavities in canyon or cliff faces but has also been recorded nesting in giant sequoias in Tulare County. Requires vast expanse of open savannah, grassland, and/or foothill chaparral in mountain ranges of moderate altitude. Forages for carrion up to 100 miles from their roost/nest site.	**Absent**. Suitable habitats required by this species were absent within the project site and surrounding areas.
Crotch bumble bee (*Bombus crotchii*)	CCE	Occurs throughout coastal California, as well as east to the Sierra Nevada-Cascade crest, and south into Mexico. Food plant genera include *Antirrhinum*, *Phacelia*, *Clarkia*, *Dendromecon*, *Eschscholzia*, and *Eriogonum*.	**Unlikely**. Suitable habitats required for this species are absent from the project site. Unlikely because suitable forage plant species are absent from the project site. The project site is surrounded by agricultural orchards. The nearest recorded observation of this species within the vicinity was approximately 10 miles southeast of the project site in the Deepwell Ranch topographic quadrangle in 1965.
Kern brook lamprey (*Lampera hubbsi*)	CSSC	Inhabits silty backwaters of large rivers in the foothills region. Requires slight flow and shallow pools with sand, gravel, rubble, and mud substrate in areas where summer temperatures rarely exceed 77°F.	**Absent**. The habitats required by this species are absent from the site.
San Joaquin kit fox (*Vulpes macrotis mutica*)	FE, CT	Opportunistically forages in a variety of habitats. Dens in burrows within alkali sink, valley grassland, and woodland habitats in valleys and adjacent foothills and in human-made structures in cities, rangeland, and agricultural areas.	**Possible.** The site and surrounding areas are regularly maintained for agricultural purposes and are unsuitable for this species. This species is not expected to occur except, perhaps, as a transient. However, several potential dens were observed along the embankments of the agricultural lagoon. The dens meet the required size dimensions that a SJKF could use. The nearest recorded observation of this species occurred approximately 0.5 miles northwest of the project site in 1975.
Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*)	FE, CE	Inhabits saltbush scrub and sink scrub communities in the Tulare Lake Basin of the southern San Joaquin Valley. This species needs soft friable soils to burrow. Current distribution is not completely known, occurrences of the Tipton	**Unlikely**. The project site and surrounding areas are regularly maintained for agricultural purposes and are unsuitable for this species. The nearest recorded observation of this species occurred approximately 13.4

Species	Status*	Habitat	Occurrence within the Site
		kangaroo rats are limited to scattered, isolated clusters west of Tipton, Pixley, and Earlimart and in areas in southern Kern County.	miles southeast of the project site in 1993.
Tricolored blackbird (*Agelaius tricolor*)	CT, CSSC	Nests colonially near fresh water in dense cattails or tules, or in thickets of riparian shrubs. Forages in grassland and cropland. Large colonies are often found foraging in dairy farm feed fields.	**Unlikely**. The project site and surrounding areas lack suitable habitat for this species. The nearest recorded observation of this species occurred approximately 11 miles northwest of the project site in 1935.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	Occupies vernal and seasonal pools, with clear to tea-colored water, in grass or mud-bottomed swales, and basalt depression pools.	**Unlikely.** The project site and surrounding areas are regularly maintained for agricultural purposes and are unsuitable for this species. The nearest recorded observation of this species occurred approximately 5.3 miles northeast of the project site in 2002.
Western spadefoot (*Spea hammondii*)	CSSC	The majority of the time this species is terrestrial and occurs in small mammal burrows and soil cracks, sometimes in the bottom of dried pools. Prefers open areas with sandy or gravelly soils, in a variety of habitats including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Vernal or seasonal pools, that hold water for a minimum of three weeks, are necessary for breeding.	**Unlikely.** The project site and surrounding areas are regularly maintained for agricultural purposes and are unsuitable for this species. The nearest recorded observation of this species within the vicinity was approximately 4.1 miles northwest of the project site in 2005.

***EXPLANATION OF OCCURRENCE DESIGNATIONS AND STATUS CODES**

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

STATUS CODES

FE	Federally Endangered	CE	California Endangered
FT	Federally Threatened	CCE	California Endangered (Candidate)
FC	Federal Candidate	CT	California Threatened
FPT	Federally Threatened (Proposed)	CFP	California Fully Protected
		CSSC	California Species of Special Concern

CNPS LISTING

1B	Plants rare, threatened, or endangered in California and elsewhere.
2B	Plants rare, threatened, or endangered in California, but more common elsewhere.

4.4.2 Impact Analysis

a) Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Less than Significant Impact with Mitigation Incorporated. Of the 12 regionally occurring special status plant species, all are considered absent from or unlikely to occur within the Project site due to past or ongoing disturbance and/or the absence of suitable habitat. Since it is unlikely that these species would occur onsite, implementation of the Project should have no impact on these 12 special status plant species through construction mortality, disturbance, or loss of habitat. Mitigation measures are not warranted.

Of the 11 regionally occurring special status animal species, nine are considered absent from or unlikely to occur within the Project site due to past or ongoing disturbance and/or the absence of suitable habitat. These species include: American badger, blunt-nosed leopard lizard, California condor, crotch bumble bee, Kern brook lamprey, Tipton kangaroo rat, tricolored blackbird, vernal pool fairy shrimp and western spadefoot. Since it is unlikely that these species would occur onsite, implementation of the project should have no impact on these eight special status species through construction mortality, disturbance, or loss of habitat. Mitigation measures are not warranted.

General Project-Related Impacts

The Project, in general, has the potential to impact a number of sensitive resources that are further discussed in the following paragraphs. Impacts to these resources could be a violation of state and federal laws or considered a potentially significant impact under CEQA and the National Environmental Policy Act (NEPA). In addition to specific mitigation discussed in the following paragraphs, implementation of mitigation measures **BIO-1** and **BIO-2** will help reduce potential impacts to these resources to a less than significant level under CEQA and NEPA and will help with complying with state and federal laws protecting these resources. These mitigation measures are identified in Section 4.4.4 below.

Project-Related Mortality and/or Disturbance to Burrowing Owl

The Project site contained suitable burrowing owl (BUOW) nesting and roosting features, in the form of small mammal burrows, within the soft soils of the outside embankments of the agricultural lagoon habitat. Some of the burrows had twists and turns with an opening of at least four to six inches wide. During the field survey, feathers were observed within the opening of a burrow which may have been from a burrowing owl. Construction activities that adversely affect the nesting success of burrowing owl or result in the mortality of individuals constitute a violation of state and federal laws and would be considered a significant impact under CEQA and NEPA. Suitable foraging habitat for BUOW was also present within the agricultural field habitat. While this habitat is suitable, implementation of the Project would not significantly reduce foraging habitat for this species. Therefore, mitigation measures are not warranted for loss of BUOW foraging habitat. Implementation of mitigation measures **BIO-3** through **BIO-5** would reduce potential impacts to nesting or roosting BUOW to a less than significant level under CEQA and NEPA and help comply with State and federal laws protecting this avian species. These mitigation measures are identified in Section 4.4.4 below.

Project-Related Mortality and/or Disturbance of Nesting Migratory Raptors and Birds

The Project site contains suitable nesting and foraging habitat for a variety of migratory bird species, including raptors. It is anticipated that during the nesting bird season, birds could nest on the ground or in shrubs, trees, or structures within the project site and forage within the project site. Migratory birds nesting within the Project site during construction have the potential to be injured or killed by Project-related activities. In addition to the direct "take" of migratory nesting birds, nesting birds within the Project site or adjacent areas could be disturbed by Project-related activities resulting in nest abandonment. Projects that adversely affect the nesting success of raptors and migratory birds or result in the mortality of individual birds are considered a violation of state and federal laws and are considered a potentially significant impact under CEQA and NEPA.

While foraging habitat for migratory birds and raptors is present on the site, suitable foraging habitat is located adjacent to the Project site and within the vicinity of the Project site and there will be no loss of foraging habitat from implementation of the Project. Loss of foraging habitat for migratory birds and raptors is not considered a significant impact.

Implementation of mitigation measures BIO-6 through BIO-8 will reduce potential impacts to nesting raptors, migratory birds, and special status birds to a less than significant level under CEQA and NEPA and will help the Project comply with state and federal laws protecting these avian species. These mitigation measures are identified in Section 4.4.4 below.

Project-Related Mortality and/or Disturbance to San Joaquin Kit Fox

The Project site contains suitable denning habitat for San Joaquin kit fox (SJKF). Several potential dens were observed along the embankments of the agricultural lagoon. The dens met the required size dimensions (greater than four inches wide) that a SJKF could use. San Joaquin kit fox denning within the Project site during construction have the potential to be injured or killed by project-related activities. Projects that result in the mortality of individuals would be considered a violation of State and federal laws and considered a potentially significant impact under CEQA. Implementation of mitigation measures BIO-9 through BIO-11 will reduce potential impacts to SJKF to a less than significant level under CEQA and NEPA and will comply with state and federal laws protecting this species.

b) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

No Impact. There was no riparian habitat or natural communities of special concern within the Project site. There are no CNDDB-designated "natural communities of special concern" recorded within the Project site or surrounding lands. There would be no impact and mitigation is not warranted.

c) Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less than Significant Impact. Four aquatic features were observed onsite during the field survey and included two aerating ponds, an effluent storage pond, and an agricultural pond. All aquatic features on site are artificial, do not have a connection to a navigable water or a natural drainage channel with a bed or bank, and would not fall under the jurisdiction of State or federal agencies. Also, there are no designated wild and scenic rivers within the Project site. Therefore, Project activities would not result in direct impacts to regulated waters, wetlands, and water quality.

Since construction would involve ground disturbance over an area greater than one acre, the Project would be required to obtain a Construction Stormwater General Permit under the Storm Water Program administered by the RWQCB. A prerequisite for this permit is the development of a Storm Water Pollution Prevention Plan (SWPPP) so construction activities do not adversely affect water quality. Impacts would be less than significant.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

No Impact. The Project site does not have any features that would be used as wildlife movement corridors. While the project does have suitable features (agricultural pond and lagoon) that may be used as native wildlife nursery sites, the project will not impact these features and these features will continue to function during and after Project implementation. No mitigation is warranted.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact. The Project appears to be consistent with the goals and policies of the Tulare County General Plan. There are no known Habitat Conservation Plans or Natural Community Conservation Plans in the project vicinity. There would be no impact and mitigation measures are not warranted.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Impact. The Project is not located within the boundaries of an adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other approved local, regional, or state habitat conservation plan. There would be no impact and mitigation measures are not warranted.

4.4.3 Federal Cross-Cutting Topic

Federal Endangered Species Act

Regulations in the federal Endangered Species Act of 1973 and subsequent amendments govern the conservation of endangered and threatened species and the ecosystems on which they depend. USFWS and the National Marine Fisheries Service (NMFS) oversee the act. USFWS has jurisdiction over plants, wildlife, and resident fish, and NMFS has jurisdiction over anadromous fish, marine fish, and mammals. Section 7 requires federal agencies to consult with USFWS and NMFS if they determine that a proposed project may affect a listed species or destroy or adversely modify designated critical habitat. Under Section 7, the federal lead agency must obtain incidental take authorization or a letter of concurrence, stating that the project is not likely to adversely affect federally listed species. Section 7 requirements do not apply to nonfederal actions. Because the SWRCB is the source of SRF monies that may be distributed to the District, its distribution is a federal action covered by Section 7.

Appendix B presents a Biological Evaluation intended to provide the basis for compliance with Section 7 of the Endangered Species Act.

Section 9 prohibits take of any fish or wildlife species listed as endangered, including the destruction of habitat that prevents the species' recovery. "Take" is defined as any action or attempt to hunt, harm, harass, pursue, shoot, wound, capture, kill, trap, or collect a species. Section 9 prohibitions also apply to threatened species unless a special rule governing take was defined at the time the species became listed.

The take prohibition in Section 9 applies only to fish and wildlife species. However, Section 9 also prohibits the unlawful removal and possession, or malicious damage or destruction, of any endangered plant from federal land. Section 9 prohibits acts to remove, cut, dig up, damage, or destroy an endangered plant species in non-federal areas in knowing violation of any State law or in the course of criminal trespass. Candidate species and species that are proposed for or under petition for listing receive no protection under Section 9.

See discussion under checklist item a.

Fish and Wildlife Conservation Act

The Fish and Wildlife Conservation Act (Act), approved September 29, 1980, declares that fish and wildlife are of ecological, educational, esthetic, cultural, recreational, economic, and scientific value to the Nation. The Act acknowledges that historically, fish and wildlife conservation programs have focused on more recreationally and commercially important species within any particular ecosystem, without provisions for the conservation and management of nongame fish and wildlife. The purposes of this Act are to encourage all federal departments and agencies to utilize their statutory and administrative authority, to the maximum extent practicable and consistent with each agency's statutory responsibilities and to conserve and to promote conservation of non-game fish and wildlife and their habitats. The Act authorizes financial and technical assistance to the States for the development, revision, and implementation of conservation plans and programs for nongame fish and wildlife. The Act defines "nongame fish and wildlife" as wild vertebrate animals in an unconfined state, that are not ordinarily taken for sport, fur, or food, not listed as endangered or threatened species, and not marine mammals within the meaning of the Marine Mammal Protection Act. The original Act authorized $5 million for each of Fiscal Years 1982 through 1985, for grants for development and implementation of comprehensive State nongame fish and wildlife plans and for administration of the Act.

See discussions under checklist items a, b, and d above.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (Title 16, Section 703 and following sections of the United States Code [16 USC 703 et seq.]), first enacted in 1918, provides protection of international migratory birds and authorizes the Secretary of the Interior to regulate the taking of migratory birds. The MBTA states that it is unlawful, except as permitted by regulations, to pursue, take, or kill any migratory bird, or any part, nest, or egg of any such bird. The current list of species protected by the MBTA is found under Title 50, Section 10.13 of the Code of Federal Regulations (CFR) (50 CFR 10.13). The list includes nearly all birds native to the United States.

In December 2017, the U.S. Department of the Interior's Office of the Solicitor issued a revised legal interpretation (Opinion M-37050) of the MBTA's prohibition on the take of migratory bird species. Opinion M-37050 concludes that "consistent with the text, history, and purpose of the MBTA, the statute's prohibitions on pursuing, hunting, taking, capturing, killing, or attempting to do the same apply only to affirmative actions that have as their purpose the taking or killing of migratory birds, their nests, or their eggs" (DOI 2017). According to Opinion M-37050, “take” of a migratory bird, its nest, or eggs that is incidental to another lawful activity does not violate the MBTA, and the MBTA's criminal provisions do not apply to those activities. Opinion M-37050 may affect how the MBTA is interpreted but does not legally change the regulation itself.

The U.S. Court of Appeals for the Ninth Circuit, the controlling federal appellate court for California, also has held that habitat modification that harms migratory birds "does not 'take' them within the meaning of the MBTA (Seattle Audubon Soc. v. Evans, 952 F.2d 297, 303, 1981).

See discussion under checklist item a.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act affords additional legal protection to bald eagles and golden eagles. This law prohibits the take, sale, purchase, barter, offer of sale, purchase, or barter, transport, export or import, at any time or in any manner of any bald or golden eagle, alive or dead, or any part, nest, or egg thereof (16 United States Code [USC] 668---668d). The Bald and Golden Eagle Protection Act also defines take to include "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb," and includes criminal and civil penalties for violating the statute. USFWS further defines the term "disturb" as agitating or bothering an eagle to a degree that causes or is likely to cause injury, or either a decrease in productivity or nest abandonment by substantially interfering with normal breeding, feeding, or sheltering behavior.

See discussion under checklist item a).

Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act, as amended (16 USC 180 l), requires that Essential Fish Habitat (EFH) be identified and described in federal fishery management plans. Federal agencies must consult with NMFS on any activity that they fund, permit, or carry out that may adversely affect EFH. The EFH regulations require that federal agencies obligated to consult on EFH also provide NMFS with a written assessment of the effects of any action on EFH (50 CFR 600.920). NMFS is required to provide EFH conservation and enhancement recommendations to federal agencies. The statute also requires federal agencies receiving NMFS EFH conservation recommendations to provide a detailed written response to NMFS within 30 days of receipt, detailing how they intend to avoid, mitigate, or offset the impact of activity on EFH (Section 305[b][4][B]).

EFH is defined as those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity. For the purposes of interpreting the definition of EFH, "waters" includes aquatic areas and their associated physical, chemical, and biological properties that are used by fish, and may include areas historically used by fish where appropriate; "substrate" includes sediment, hard bottom, structures underlying the waters, and associated biological communities; "necessary" means habitat required to support a sustainable fishery and a healthy ecosystem; and "spawning, breeding, feeding, or growth to maturity" covers all habitat types used by a species throughout its life cycle. No EFH is on the project site.

Clean Water Act

Section 404

Section 404 of the Clean Water Act (CWA) requires project proponents to obtain a permit from the United States Army Corps of Engineers before performing any activity involving a discharge of dredged or fill material into waters of the U.S. Waters of the U.S. include:

- Navigable waters of the U.S.;
- Interstate waters;
- All other waters where the use or degradation or destruction of the waters could affect interstate or foreign commerce;
- Tributaries to any of these waters; and
- Wetlands that meet any of these criteria, or that are adjacent to any of these waters or their tributaries.

Many surface waters and wetlands in California meet the criteria for waters of the U.S.

Section 402

CWA Section 402 regulates construction-related stormwater discharges to surface waters through the National Pollutant Discharge Elimination System program, which is administered by USEPA. In California, the State Water Resources Control Board is authorized by USEPA to oversee the program through the Regional Water Quality Control Boards (RWQCBs)-in this case, the Central Valley (Region 5) RWQCB.

Section 401

Under CWA Section 401(a)(1), the applicant for a federal license or permit to conduct an activity that may result in a discharge into waters of the U.S. must provide the federal licensing or permitting agency with a certification that any such discharge will not violate state water quality standards. The RWQCBs administer the Section 401 program to prescribe measures for projects that are necessary to avoid, minimize, and mitigate adverse effects on water quality and ecosystems.

No State or federally protected wetlands or waters are on the proposed project site.

4.4.4 Mitigation

General Project-Related Impacts

BIO-1 **(WEAP Training):** Prior to initiating construction activities (including staging and mobilization), all personnel associated with project construction will attend a mandatory Worker Environmental Awareness Program (WEAP) training, conducted by a qualified biologist, to aid workers in identifying special status resources that may occur in the project site. The specifics of this program will include identification of the sensitive species and suitable habitats, a description of the regulatory status and general ecological characteristics of sensitive resources, and review of the limits of construction and mitigation measures required to reduce impacts to biological resources within the work area. This training will discuss special status species, describe the laws and regulations in place to provide protection of these species, identify the penalties for violation of applicable environmental laws and regulations, and include a list of required protective measures to avoid "take." A fact sheet summarizing this information, along with photographs or illustrations of sensitive species with potential to occur on the project site, will also be prepared for distribution to all contractors, their employees, and all other personnel involved with construction of the project. All trainees will sign a form documenting that they have attended WEAP training and understand the information presented to them.

BIO-2 **(BMPs):** The project proponent will require that all workers employ the following best management practices (BMPs) in order to avoid and minimize potential impacts to special status species:

- Vehicles will observe a 15-mph speed limit while on unpaved access routes.
- Workers will inspect areas beneath parked vehicles, equipment, and materials prior to mobilization. If special status species are detected, the individual will either be allowed to leave of its own volition or will be captured by the qualified biologist (must possess appropriate collecting/handling permits) and relocated out of harm's way to the nearest suitable habitat beyond the influence of the project work area. "Take" of a state or federal special status (rare, California Species of Special Concern, threatened, or endangered) species is prohibited.

The presence of any special status species will be reported to the project's qualified biologist who will submit the occurrence to the CNDDB. If necessary, the biologist will report the occurrence to CDFW and/or USFWS.

Project-Related Mortality and/or Disturbance To Burrowing Owl

BIO-3 (Pre-construction Take Avoidance Survey): A qualified biologist will conduct a single pre-construction take avoidance survey for BUOW and suitable burrows, in accordance with CDFW's Staff Report on Burrowing Owl Mitigation (2012), within seven days prior to the start of construction activities. The survey shall include the proposed work area and surrounding lands up to 500 feet. If no BUOW individuals or active burrows are observed, no further mitigation is required.

BIO-4 (Avoidance): If an active BUOW burrow is detected, the occurrence will be reported to the CNDDB, and avoidance buffers shall be implemented. A qualified biologist will determine appropriate avoidance buffer distances based on applicable CDFW guidelines, the biology of the species, conditions of the burrow(s), and the level of project disturbance. If necessary, avoidance buffers will be identified with flagging, fencing, or other easily visible means, and will be maintained until the biologist has determined that the nestlings have fledged and all BUOW have left the project site.

BIO-5 (Passive Relocation): If avoidance of an active BUOW burrow is not feasible, passive relocation during the non-breeding season (September 1 through January 31) could be utilized or during the breeding season (February 1 through August 31) if a qualified biologist determines that there are no young in the burrow. Prior to completion a qualified biologist will prepare a passive relocation plan that will detail the methods to be used. It will include the tools to exclude the BUOW from its burrow (i.e., one-way doors or other devices) and excavate the burrow (hand tools and machinery, if needed). Following completion of passive relocation, a report will be prepared that will document the methods and results of these efforts.

Project-Related Mortality and/or Disturbance of Nesting Migratory Raptors and Birds

BIO-6 (Avoidance): The project's construction activities will occur, if feasible, between August 31 and January 31 (outside of the nesting bird season) to avoid impacts to nesting birds.

BIO-7 (Pre-construction Surveys): If activities must occur within the nesting bird season (February 1 to August 31), a qualified biologist will conduct a pre-construction survey for active migratory bird nests no more than seven days prior to the start of the construction within the project site and surrounding lands up to 100 feet from the project site and for active raptor nests within the project site and all accessible lands up to 500-feet from the project site. All raptor nests would be considered "active" upon the nest-building stage.

BIO-8 (Avoidance Buffers): On discovery of any active nests near work areas, the biologist will determine appropriate construction setback distances (avoidance buffers) based on applicable CDFW and/or USFWS guidelines, the biology of the species, and work and site conditions. If necessary, avoidance buffers will be identified with flagging, fencing, or other easily visible means, and will be maintained until the biologist has determined that the nestlings have fledged.

Project-Related Mortality and/or Disturbance San Joaquin Kit Fox

BIO-9 (Pre-Construction Survey): Within seven days prior to the start of construction a pre-construction survey for San Joaquin kit fox will be conducted on and within 200 feet of proposed work areas.

BIO-10 (Establish Buffers): On discovery of any SJKF dens near the project area a qualified biologist will determine appropriate construction setback distances (buffer zones) based on applicable CDFW and/or USFWS guidelines (see below). If needed, construction buffers will be identified with flagging, fencing, or other easily visible means. They will be maintained until the biologist has determined that the den will no longer be impacted by construction. The buffer zones shall be at least 100 feet around den(s), at least 200 feet around natal dens (which SJKF young are reared), and at least 500 feet around any natal dens with pups (except for any portions of the buffer zone that is already fully developed).

BIO-11 (Avoidance and Minimization): The project will observe all avoidance and minimization measures in the USFWS's *Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance* (2011), including, but not limited to: maintaining buffer zones, construction speed limits, covering of pipes, installation of escape structures, restriction of herbicide and rodenticide use, proper disposal of food items and trash, prohibition of pets and firearms, and completion of an employee education program (see BIO-1).

4.5 CULTURAL RESOURCES

Table 4-12: Cultural Resources Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to in § 15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

4.5.1 Baseline Conditions

Phase 1 Cultural Resources Survey

An intensive Class III inventory/Phase I survey of the RCSD Wastewater Treatment Plant Improvement Project APE was conducted by ASM Archaeologist on March 21, 2024. The field methods employed included intensive pedestrian examination of the ground surface for evidence of archaeological sites in the form of artifacts, surface features (such as bedrock mortars, historical mining equipment), and archaeological indicators (e.g., organically enriched midden soil, burnt animal bone); the identification and location of any discovered sites, should they be present; tabulation and recording of surface diagnostic artifacts; site sketch mapping; preliminary evaluation of site integrity; and site recording, following the California Office of Historic Preservation Instructions for Recording Historic Resources and the BLM 8100 Manual, using DPR 523 forms. Parallel survey transects spaced 15-m apart were employed for pedestrian survey of the Project APE.

The Project APE includes the existing Richgrove WWTP and associated facilities (transmission mains, two aerating ponds, an effluent storage pond, and an alfalfa field). The topography of the site is relatively flat.

No cultural resources of any kind were identified within the Project APE.

Records Search

A records search from the Southern San Joaquin Valley Information Center (SSJVIC) of the California Historical Resources Information System (CHRIS), located at California State University, Bakersfield was conducted on January 29, 2024. The SSJVIC records search includes a review of all recorded archaeological and built-environment resources as well as a review of cultural resource reports on file. In addition, the California Points of Historical Interest, the California Historical Landmarks, the California Register of Historical Resources, the National Register of Historic Places, and the California State Built Environment Resources Directory listings were reviewed for the above referenced APE and an additional ¼-mile radius. Due to the sensitive nature of cultural resources, archaeological site locations are not released. (Appendix C)

Additional sources included the State Office of Historic Preservation (SHPO) Historic Properties Directory, Archaeological Determinations of Eligibility, and the California Inventory of Historic Resources.

Native American Outreach

The Native American Heritage Commission (NAHC) in Sacramento was completed on January 26, 2024. They were provided with a brief description of the Project and a map showing its location and requested a search of the Sacred Lands File (SLF) to determine if any Native American resources have been recorded in the immediate APE. The NAHC identifies, catalogs, and protects Native American cultural resources -- ancient places of special religious or social significance to Native Americans and known ancient graves and cemeteries of Native Americans on private and public lands in California. The NAHC is also charged with ensuring California Native American tribes' accessibility to ancient Native American cultural resources on public lands, overseeing the treatment and disposition of inadvertently discovered Native American human remains and burial items, and administering the California Native American Graves Protection and Repatriation Act, among many other powers and duties. NAHC provide a current list of Native American Tribal contacts to notify of the Project. The two tribal representatives identified by NAHC were contacted in writing via United States Postal Service (USPS) in a letter dated February 6, 2024, informing each Tribal contact of the Project.

The following is a list of the tribal representatives that were notified of the Project:

1. Tule River Indian Tribe, Neil Peyron, Chairperson
2. Wuksache Indian Tribe/Eshom Valley Band, Kenneth Woodrow, Chairperson

4.5.2 Impact Analysis

a) Would the project cause a substantial adverse change in the significance of a historical resource pursuant to in § 15064.5?

b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?

a and b) Less than Significant Impact with Mitigation Incorporated. A CHRIS records search, from the SSJVIC, was conducted January 29, 2024. According to the SSJVIC, one previous study (TU-00046) has been conducted within the Project APE, and five previous studies (TU-01228, TU-01279, TU-01764, TU-01771, and TU-01831) were identified within the 0.5 mi. buffer. The SSJVIC results identified no previously recorded cultural resources within the APE. Three historic-era built environment resources (P-54-004626, P-54-004832, and P-54-004833) were identified within the 0.5 mi. buffer, with the nearest resource located less than 0.1 mi. from the Project APE. It is unlikely that the Project has the potential to result in significant impacts or adverse effects to cultural or historical resources, such as archaeological remains, artifacts, or historic properties. However, in the improbable event that cultural resources are encountered during Project construction, implementation of mitigation measure **CUL-1** outlined below would reduce impacts to less than significant.

c) Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

Less than Significant Impact with Mitigation Incorporated. There is no evidence or record that the Project has the potential to be an unknown burial site, or the site of buried human remains. In the unlikely event of such a discovery, mitigation shall be implemented. With incorporation of mitigation measure **CUL-2** outlined below, impacts resulting from the discovery of remains interred on the Project site would be less than significant.

4.5.3 Federal Cross-Cutting Topic

National Historic Preservation Act

The National Historic Preservation Act of 1966 as amended created the National Register of Historic Places and extended protection to historic places of State, local, and national significance. It established the Advisory Council on Historic Preservation, State Historic Preservation Officer (SHPO), Tribal Preservation Officers, and a preservation grants-in-aid program. Section 106 directs federal agencies to take into account effects of their actions ("undertakings") on properties in or eligible for the National Register. Section 106 of the act is implemented by regulations of the Advisory Council on Historic Preservation (36 Code of Federal Regulations [CFR] Part 800).

The U.S. Department of the Interior criteria and procedures for evaluating a property's eligibility for inclusion in the National Register are at 36 CFR Part 60. The 36 CFR Part 800 regulations, implementing Section 106, call for consultation with the SHPO, Native American tribes, and interested members of the public throughout the Section 106 compliance process. The four principal steps are to:

- Initiate the Section 106 process (36 CFR Part 800.3);
- Identify historic properties, cultural resources that are eligible for inclusion in the National Register of Historic Places (36 CFR Part 800.4);
- Assess the effects of the undertaking to historic properties within the area of potential effect (36 CFR Part 800.5); and
- Resolve adverse effects (36 CFR Part 800.6).

Adverse effects on historic properties often are resolved through preparation of a Memorandum of Agreement (MOA), developed in consultation with Reclamation, the SHPO, Native American tribes, the Advisory Council on Historic Preservation, and interested members of the public. The MOA stipulates procedures that treat historic properties to mitigate adverse effects (36 CFR Part 800.14[b]).

No historic properties have been identified within the area of potential effects. Therefore, the proposed project would not have an adverse effect on historic properties.

4.5.4 Mitigation

CUL-1 Should archaeological remains or artifacts be unearthed during any stage of project activities, work in the area of the discovery shall cease until the area is evaluated by a qualified archaeologist. If mitigation is warranted, the project proponent shall abide by recommendations of the archaeologist.

CUL-2 In the event that human remains are discovered on the Project site, the Tulare County Coroner must be notified of that discovery (Health and Safety Code Section 7050.5) and all activities in the immediate area if the find or in any nearby area reasonably suspected of overlie adjacent human remains must cease until appropriate and lawful measures have been implemented. If the Coroner determines that the remains are not recent, but rather of Native American origin, the Coroner shall notify the NAHC in Sacramento within 24 hours to permit the NAHC to determine the most likely descendent of the deceased Native American.

4.6 ENERGY

Table 4-13: Energy Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

4.6.1 Baseline Conditions

The Project would be located in rural Tulare County, northeast of the Community of Richgrove. The Project area is served by Southern California Edison for its energy needs, while Southern California Gas Company is the natural gas provider for the area.

4.6.2 Impact Analysis

a) Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less than Significant Impact. Fuel consumed by construction equipment would be the primary energy resource expended over the course of Project construction. For heavy-duty construction equipment, horsepower and load factor were assumed using default data from the CalEEMod model. Fuel use associated with construction vehicle trips generated by the Project was also estimated; trips include construction worker trips, haul trucks trips for material transport, and vendor trips for construction material deliveries. Fuel use from these vehicles traveling to the Project was based on (1) the projected number of trips the Project would generate (CalEEMod default values), (2) default average trip distance by land use in CalEEMod, and (3) fuel efficiencies estimated in the ARB 2017 Emissions Factors model (EMFAC2017) mobile source emission model.

Construction is estimated to consume a total of 72.180.90 gallons of diesel fuel and 17,284.24 gallons of gasoline fuel (See Appendix A). California Code of Regulations Title 13, Motor Vehicles, Section 2449(d)(2), Idling, limits idling times of construction vehicles to no more than 5 minutes, thereby precluding unnecessary and wasteful consumption of fuel because of unproductive idling of construction equipment. In addition, the energy consumption for construction activities would not be ongoing as they would be limited to the duration of Project construction.

Energy consumption of non-residential uses is currently governed by the 2022 California Building Code, Part 6 for structures, and Title 20 of the California Code of Regulations for appliances. Energy consumption is anticipated to decrease over time as more energy efficient standards take effect and energy-consuming equipment reaches its end-of-life and necessitates replacement. Therefore, impacts would be less than significant.

b) Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

No Impact. State and local authorities regulate energy use and consumption. These regulations at the State level are intended to reduce energy use and greenhouse gas (GHG) emissions. These include, among others, Assembly Bill (AB) 1493 – Light-Duty Vehicle Standards; California Code of Regulations Title 24, Part 6 – Energy Efficiency Standards; and California Code of Regulations Title 24, Parts 6 and 11 – California Energy Code and Green Building Standards. The Project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. Therefore, there would be no impact.

4.7 GEOLOGY AND SOILS

Table 4-14: Geology and Soils Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii. Strong seismic ground shaking?	☐	☐	☒	☐
iii. Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv. Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994) creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?	☐	☐	☐	☒

4.7.1 Baseline Conditions

Geology and Soils

The Project is located in southwestern Tulare County, in the southern section of California's Great Valley Geomorphic Province, or Central Valley. The Sacramento Valley makes up the northern third and the San Joaquin Valley makes up the southern two-thirds of the geomorphic province.[11] Both valleys are watered by large rivers flowing west from the Sierra Nevada Range, with smaller tributaries flowing east from the Coast Ranges. Most of the surface of the Great Valley is covered by Quaternary (present day to 1.6 million years ago) alluvium. The sedimentary formations are steeply upturned along the western margin due to

[11] (California Department of Conservation 2002)

the uplifted Sierra Nevada Range. From the time the Valley first began to form, sediments derived from erosion of igneous and metamorphic rocks and consolidated marine sediments in the surrounding mountains have been transported into the Valley by streams.

Three soil mapping units representing three soil types were identified within the Project site. The three soil types are Centerville clay, Colpien loam, and Exeter loam. Additional soils information can be found in Appendix B: Biological Evaluation.

Faults and Seismicity

The Project site is not located within the Alquist-Priolo Earthquake Fault Zone and no known faults cut through the soil at the site. The nearest major fault is the San Andreas Fault, located approximately 58 miles southwest of the Project site.[12] The San Andreas Fault is the dominant active tectonic feature of the Coast Ranges and represents the boundary of the North American and Pacific plates. A smaller fault zone, the Pond Fault, is located approximately 13 miles southwest.[13]

Liquefaction

The potential for liquefaction, which is the loss of soil strength due to seismic forces, is dependent on soil types and density, the groundwater table, and the duration and intensity of ground shaking. Although no specific liquefaction hazard areas have been identified in the County, this potential is recognized throughout the San Joaquin Valley where unconsolidated sediments and a high-water table coincide. It is reasonable to assume that due to the depth to groundwater within the southern portion of Tulare County, liquefaction hazards would be negligible.

Soil Subsidence

Subsidence occurs when a large land area settles due to over-saturation or extensive withdrawal of ground water, oil, or natural gas. These areas are typically composed of open-textured soils that become saturated, high in silt or clay content. A portion of the Project site's soils contain clay, derived from Centerville clay, which supports subsidence.

Dam and Levee Failure

The nearest reservoir to the Project site is Lake Success, located approximately 19 miles northeast. However, the Project site is entirely outside of the inundation zone for the Richard L. Schafer Dam (formerly Success Dam).

4.7.2 Impact Analysis

a) Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

ii. Strong seismic ground shaking?

[12] (California Department of Conservation 2023)
[13] Ibid.

a-i – a-ii) Less than Significant Impact. The Project site is located in an area traditionally characterized by relatively low seismic activity. The Project site is not located in an Alquist-Priolo Earthquake Fault Zone as established by the Alquist-Priolo Fault Zoning Act. The nearest major fault is the San Andreas Fault, located approximately 58 miles southwest of the Project site. All proposed Project features would be constructed in a manner to handle seismic events, as required by the California Building Code (CBC). This would result in less than significant impacts. In addition, the Project would not include habitable structures; therefore, the Project would not result in potential substantial adverse effects, including the risk of loss, injury, or death. Impacts would be less than significant.

iii. Seismic-related ground failure, including liquefaction?

Less than Significant Impact. Liquefaction occurs when loose, water-saturated sediments lose strength and fail during strong ground shaking. Generally, liquefiable areas are generally confined to the Valley floor covered by Quaternary-age alluvial deposits, Holocene soil deposits, current river channels, and active wash deposits and their historic floodplains, marshes, and dry lakes. Specific liquefaction hazard areas have not been identified in Tulare County. The Project site is not located within a wetland area, and it is located in the southwestern portion of the County where liquefaction risk is considered low to moderate. Impacts would be less than significant.

iv. Landslides?

No Impact. The Project is located on the Valley floor where no major geologic landforms exist on or near the site that could result in a landslide event. The potential landslide impact at this location is minimal as the site is more than five miles from the foothills and the local topography is essentially flat. There would be no impact.

b) Would the project result in substantial soil erosion or the loss of topsoil?

Less than Significant Impact. Earthmoving activities associated with the Project would include excavation and pond construction. These activities could expose soils to erosion processes and the extent of erosion would vary depending on slope steepness/stability, vegetation/cover, concentration of runoff, and weather conditions. Dischargers whose projects disturb one (1) or more acres of soil, or whose projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity Construction General Permit Order 2009-0009-DWQ. Construction activity subject to this permit includes clearing, grading, and disturbances to the ground such as stockpiling or excavation but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development of a SWPPP by a certified Qualified SWPPP Developer. Since the Project site has relatively flat terrain with a low potential for soil erosion, and would comply with the SWRCB requirements, the impact would be less than significant.

c) Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Less than Significant Impact. The Project site and the surrounding areas do not contain any substantial grade changes to the point where the Project would expose people or structures to potential substantial adverse effects on- or offsite such as landslides, lateral spreading, subsidence, liquefaction, or collapse. Liquefaction risk is considered low to moderate at the site. The Project site soils contain clay material which is susceptible to liquefaction. In order to ensure impacts would not be significant, the Project would implement specifications that are best suitable for the prevention of significant impacts from subsidence. In addition, the Project would be constructed in a manner that meets all CBC requirements. Any impact would be less than significant.

d) Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Less than Significant Impact. The Project would not contain any facilities that could be affected by expansive soils, nor would substantial grading change the topography such that the Project would generate substantial risks to life or property. In addition, the Project would be consistent with the CBC requirements; therefore, impacts would be less than significant.

e) Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact. The proposed Project is for upgrades to an existing WWTP for processing wastewater. The Project site is located in an area with a significant depth to saturation, consistent with the southern portion of Tulare County. New septic installation or alternative wastewater disposal systems are not necessary for the Project. There would be no impact.

f) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geological feature?

No Impact. No known paleontological resources have been identified at the Project site to date. Therefore, there would be no impact.

.

4.8 GREENHOUSE GAS EMISSIONS

Table 4-15: Greenhouse Gas Emissions Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

4.8.1 Baseline Conditions

Commonly identified GHG emissions and sources include the following:

Carbon dioxide (CO_2) is an odorless, colorless natural greenhouse gas. CO_2 is emitted from natural and anthropogenic sources. Natural sources include the following: decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic out gassing. Anthropogenic sources include the burning of coal, oil, natural gas, and wood.

Methane (CH_4) is a flammable greenhouse gas. A natural source of methane is the anaerobic decay of organic matter. Geological deposits, known as natural gas fields, also contain methane, which is extracted for fuel. Other sources are from landfills, fermentation of manure, and ruminants such as cattle.

Nitrous oxide (N_2O), also known as laughing gas, is a colorless greenhouse gas. Nitrous oxide is produced by microbial processes in soil and water, including those reactions that occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load.

Water vapor is the most abundant, and variable greenhouse gas. It is not considered a pollutant; in the atmosphere, it maintains a climate necessary for life.

Ozone (O_3) is known as a photochemical pollutant and is a greenhouse gas; however, unlike other greenhouse gases, ozone in the troposphere is relatively short-lived and, therefore, is not global in nature. O_3 is not emitted directly into the atmosphere but is formed by a complex series of chemical reactions between volatile organic compounds, nitrogen oxides, and sunlight.

Aerosols are suspensions of particulate matter in a gas emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light.

Chlorofluorocarbons (CFCs) are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). CFCs were first synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. CFCs destroy stratospheric ozone; therefore, their production was stopped as required by the Montreal Protocol in 1987.

Hydrofluorocarbons (HFCs) are synthetic chemicals that are used as a substitute for CFCs. Of all the greenhouse gases, HFCs are one of three groups (the other two are perfluorocarbons and sulfur hexafluoride) with the highest global warming potential (GWP). HFCs are human-made for applications such as air conditioners and refrigerants.

Perfluorocarbons (PFCs) have stable molecular structures and do not break down through the chemical processes in the lower atmosphere; therefore, PFCs have long atmospheric lifetimes, between 10,000 and 50,000 years. The two main sources of PFCs are primary aluminum production and semiconductor manufacture.

Sulfur hexafluoride (SF_6) is an inorganic, odorless, colorless, nontoxic, nonflammable gas. It has the highest GWP of any gas evaluated. Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

There are uncertainties as to exactly what the climate changes will be in various local areas of the earth, and what the effects of clouds will be in determining the rate at which the mean temperature will increase. There are also uncertainties associated with the magnitude and timing of other consequences of a warmer planet: sea level rise, spread of certain diseases out of their usual geographic range, the effect on agricultural production, water supply, sustainability of ecosystems, increased strength and frequency of storms, extreme heat events, air pollution episodes, and the consequence of these effects on the economy.

Emissions of GHGs contributing to global climate change are largely attributable to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. About three-quarters of human emissions of CO_2 to the global atmosphere during the past 20 years are due to fossil fuel burning. Atmospheric concentrations of CO_2, CH_4, and N_2O have increased by at least 40 percent, 150 percent, and 20 percent respectively since the year 1750. GHG emissions are typically expressed in carbon dioxide-equivalents (CO_2e), based on the GHG's GWP. The GWP is dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. For example, one ton of CH_4 has the same contribution to the greenhouse effect as approximately 25 tons of CO_2. Therefore, CH_4 is a much more potent GHG than CO_2. In accordance with SJVAPCD's *CEQA Greenhouse Gas Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects*[14], proposed projects complying with Best Performance Standards (BPS) would be determined to have a less-than-significant impact. Projects not complying with BPS would be considered less than significant if operational GHG emissions would be reduced or mitigated by a minimum of 29 percent, in comparison to business-as-usual (year 2004) conditions. In addition, project-generated emissions complying with an approved plan or mitigation program would also be determined to have a less-than-significant impact.

4.8.2 Impact Analysis

Project Related Emissions

Short-term construction emissions associated with the Project were calculated using CalEEMod, Version 2020.4.0. The emissions modeling includes emissions generated by off-road equipment, haul trucks, and worker commute trips. Emissions were quantified based on an anticipated construction schedule of approximately 15 months. Remaining assumptions were based on the default parameters contained in the model. Modeling assumptions and output files are included in Appendix A. Estimated construction-generated emissions are summarized in Table 4-16. GHGs impact the environment over time as they

[14] (San Joaquin Valley Air Pollution Control District 2009)

increase and contribute to climate change. As discussed in Section 4.3 the amount of operational related emissions generated would be considered negligible.

Table 4-16: Short Term Construction Related GHG Emissions

	Emissions (MT CO2e) in TPY
Maximum Annual Construction CO2e Emissions	608.7068
AB 32 Consistency Threshold for Land-Use Development Projects*	1,1OO
AB 32 Consistency Threshold for Stationary Source Projects*	10,000
Threshold Exceeded?	No

* As published in the Bay Area Air Quality Management District's CEQA Air Quality Guidelines. Available online at http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en Accessed 12/26/23.

Construction related generation of GHGs would be a maximum of 608.7068 Metric Tons of Carbon Dioxide Equivalent (MT CO2e) per year. While some operational emissions could result from the proposed Project, this quantity would be negligible. The Project would not exceed the AB 32 consistency threshold for land use projects for both short term construction emissions and long-term operational emissions as a result.

a) Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less than Significant Impact. The Project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. As shown in Table 4-16, the Project is not expected to result in the generation of GHG emissions that would exceed the AB 32 consistency threshold of 1,100 MT CO2e annually during both construction and operational activities. Long term operational activities would result in negligible quantities of GHG emissions being generated due to use of pumps, valves, and associated infrastructure. Therefore, impacts would be less than significant.

b) Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

No Impact. The Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. The Project would be in compliance with all SJVAPCD policies and regulations and would not exceed an applicable threshold for GHG emissions. Therefore, there would be no impacts.

4.9 HAZARDS AND HAZARDOUS MATERIALS

Table 4-17: Hazards and Hazardous Materials Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g) Expose people or structures, either directly or indirectly to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☒	☐

4.9.1 Baseline Conditions

Hazardous Materials

The Hazardous Waste and Substances Sites (Cortese) List is a planning document used by the State, local agencies, and developers to comply with CEQA requirements in providing information about the location of hazardous materials release sites. Government Code Section 65962.5 requires the California Environmental Protection Agency to develop at least annually an updated Cortese List. The Department of Toxic Substances Control (DTSC) is responsible for a portion of the information contained in the Cortese List. Other State and local government agencies are required to provide additional hazardous material release information for the Cortese List. DTSC's EnviroStor database provides DTSC's component of Cortese List data. In addition to the EnviroStor database, the SWRCB Geotracker database provides information on

regulated hazardous waste facilities in California, including underground storage tank (UST) cases and non-UST cleanup programs, including Spills-Leaks-Investigations-Cleanups sites, Department of Defense (DOD) sites, and Land Disposal program. A search of the DTSC EnviroStor database and the SWRCB Geotracker performed on November 27, 2023, determined that there are no known active hazardous waste generators or hazardous material spill sites within the Project sites or immediate surrounding vicinity.[15]

Airports

The nearest airport, which is the Delano Municipal Airport, is located approximately 8.6 miles southwest of the Project.

Emergency Response Plan

The Tulare County Office of Emergency Services coordinates the development and maintenance of the Tulare County Operational Area Master Emergency Services Plan. Tulare County offers an alert system called "AlertTC". AlertTC is Tulare County's public mass notification system, designed to keep those who live or work in Tulare County informed of important information during emergency events. The system is administered by the County of Tulare and is operated in partnership with many Tulare County cities.[16]

Sensitive Receptors

Common sensitive receptors typically consist of residences, schools, day care centers, hospitals, and nursing homes. The nearest sensitive receptors to the Project site would be the residential neighborhood located south of Avenue 8 at the north end of the community of Richgrove. The closest residence in this neighborhood is located approximately 225 feet southeast of the Project.

4.9.2 Impact Analysis

a) Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

b) Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

a and b) Less than Significant Impact. Construction of the Project would potentially require the use of various types and quantities of hazardous materials. Hazardous materials that are typically used during construction include, but are not limited to, hydraulic oil, diesel fuel, grease, lubricants, solvents, paint, asphalt, and adhesives. Although equipment used during construction activities has the potential to contain various hazardous materials, these materials would be used in accordance with the manufacturers' specifications and all applicable regulations, including California Department of Occupational Safety and Health Administration regulations regarding regular maintenance and inspection of equipment, spill prevention, and spill remediation in order to reduce the potential for incidental release of pollutants or hazardous substances on-site. Furthermore, any potential accidental hazardous materials spills during construction are the responsibility of the contractor to remediate in accordance with industry BMPs and State and county regulations.

During Project operations, there would be the transport, storage, use, or disposal of hazardous materials. The Project would be required to continue to conform to local, State, and federal laws regarding the

[15] (California Department of Toxic Substances Control 2022); (California State Waterboards 2023)
[16] (Tulare County 2023)

transport, storage, use, and disposal of hazardous materials. RCSD is required to comply with local laws and submit a Hazardous Materials Business Plan (HMBP) to the County Environmental Health Department. As the WWTP is an existing facility, RCSD's existing HMBP would suffice and would continue to be followed. Based on compliance with existing standards and requirements, impacts would be less than significant.

c) Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact. Richgrove School District is the nearest school facility to the Project, located approximately 0.45 miles south. In addition, there is no publicly known information about a proposed school within a quarter-mile of the Project site. Therefore, the Project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. There would be no impact.

d) Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact. The Project would not involve land that is actively listed as a hazardous materials site pursuant to Government Code Section 65962.5 and is not included on a list compiled by the DTSC. Both the SWRCB's GeoTracker and DTSC's EnviroStor websites were checked for contaminated groundwater or sites in the area and the results came up negative. There would be no impact.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

No Impact. The Project is not located within an airport land use plan or within two miles of a public or public use airport. Therefore, there would be no impact.

f) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

No Impact. The Project would not provide any physical barriers or disturb any roadways in such a way that would impede emergency or hazards response; therefore, the Project would not interfere with implementation of any existing or future emergency response plans or evacuation plans of the area. There would be no impact.

g) Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

Less than Significant Impact. According to the California Department of Forestry and Fire Protection (Cal Fire), the Project site is not located in a State Responsibility Area (SRA) or a Very High Fire Hazard Severity Zone; therefore, the likelihood of a fire hazard is low. The Project would include additional WWTP infrastructure that could be impacted by a wildland fire; however, as mentioned, the likelihood for a wildland fire in the area is low. Therefore, impacts would be less than significant.

4.10 HYDROLOGY AND WATER QUALITY

Table 4-18: Hydrology and Water Quality Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i. result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	☐	☐	☒	☐
iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
iv. impede or redirect flood flows?	☐	☐	☒	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

4.10.1 **Baseline Conditions**

The Project lies within the Lower White River watershed and the Hocket Well subwatershed.[17] A watershed is the topographic region that drains into a stream, river, or lake. Watersheds are made up of many smaller subwatersheds that drain into a particular stream, river, or lake. The nearest surface water to the Project is an unidentified stream/river, which bisects the Project site.[18]

[17] (United States Environmental Protection Agency (USEPA) 2023)
[18] (United States Environmental Protection Agency (USEPA) 2023)

The Project is located within the Tule Subbasin of the San Joaquin Valley Groundwater Basin.[19] The portion of the underlying basin is managed by the Delano-Earlimart Irrigation District (DEID) Groundwater Sustainability Agency (GSA), a Joint Powers Authority formed together by the District, DEID, and Earlimart Public Utility District, in accordance with the Sustainable Groundwater Management Act. The DEID GSA has prepared a Groundwater Sustainability Plan (GSP) to achieve sustainable groundwater management within the basin within 20 years of plan implementation. The GSP describes the DEID GSA and the areas it manages, establishes the quantifiable management objectives for beneficial groundwater uses and users, and identifies a group of projects and management actions that will allow the DEID GSA and all Tule Subbasin GSAs to achieve sustainability by year 2040.[20]

4.10.2 **Impact Analysis**

a) Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Less than Significant Impact. Construction of the Project could introduce sediments and other contaminants typically associated with construction into stormwater runoff. Stormwater flowing over the Project features during construction could carry various pollutants downstream such as sediment, nutrients, bacteria and viruses, oil and grease, heavy metals, organics, pesticides, and miscellaneous waste. These pollutants could originate from soil disturbances, construction equipment, building materials, and workers. Erosion potential and water quality impacts are always present during construction and occur when protective vegetative cover is removed, and soils are disturbed. In the case of the Project, it is primarily grading, and the cut and fill associated with facility improvements.

As discussed in Section 4.7 Geology and Soils, the Project would require coverage under the SWRCB Construction General Permit. In accordance with the requirements of the Construction General Permit, prior to construction of the Project, a risk assessment must be prepared and submitted to the Central Valley RWQCB to determine the Project's risk level and associated water quality control requirements. These requirements would include the preparation and implementation of a SWPPP identifying specific BMPs to be implemented and maintained on the site in order to comply with the applicable effluent standards. The Construction General Permit requires construction sites to be inspected before and after storm events and every 24 hours during extended storm events. Inspections identify any BMP maintenance requirements and determine the effectiveness of the BMPs. Other than the potential minor drainage changes and minor additional sources of runoff when compared baseline conditions, the Project would not include activities that would substantially degrade water quality. Compliance with the SWRCB requirements would ensure that water quality impacts during the construction phase of the Project would be less than significant.

Implementation of the Project would benefit the environment. Proposed improvements would improve effluent quality and meet the expected flow requirements. There have been occurrences of the influent flow exceeding the currently permitted flow, causing a potential for spills or inadequate treatment. Spillage of untreated flows have detrimental effects, including degradation of the local groundwater, spread of harmful viruses and pathogens to the public, and unpleasant odors. Implementation of the Project would result in less than significant impacts as it would assist in preventing water quality issues.

[19] (California Department of Water Resources 2018)
[20] (Delano-Earlimart Irrigation District Groundwater Sustainability Agency 2022)

b) Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

No Impact. The Project would not require the consumption of groundwater that would potentially substantially decrease groundwater supplies such that would impede sustainable groundwater management. The Project proposes improvements to an existing WWTP which would not necessitate significant groundwater supplies. In addition, the WWTP would continue to utilize effluent to irrigate adjacent farmland. Therefore, there would be no impact.

c) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i. result in substantial erosion or siltation on- or off-site;

ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;

iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

iv. impede or redirect flood flows?

a-i – a-iv) Less than Significant Impact. As previously mentioned, the Project would require the construction contractor to prepare and adhere to a SWPPP. Implementation of the SWPPP would minimize the potential for the Project to substantially alter the existing drainage pattern in a manner that would result in substantial erosion or siltation onsite or offsite. Use of chemicals or surfactants would not be generated through the maintenance or operation of the Project and as such, there would be no discharge directly associated with Project implementation that could impact water quality standards. Additionally, there would be no discharge to any surface source. Except during possible temporary alterations during construction of Project facilities, drainage patterns would remain more or less the same post-construction as they are now. Flood flows would not be impeded or redirected. Due to these factors, impacts would be less than significant.

d) Would the project in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundations?

Less than Significant Impact. The Project is not located in a tsunami or seiche zone. According to the Federal Emergency Management Act (FEMA) Flood Insurance Rate Maps, the Project is located in a flood hazard zone (see Figure 4-8).[21] The Project site is raised approximately 2 feet above natural grade to minimize the chance of flooding. The natural ground surface elevation at the WWTP site prior to construction of the plant ranged from about 484 to 490 feet. The bottom elevation for the two existing treatment ponds is 482 feet. The design pond water depth is seven feet, for a design water surface elevation of 489 feet. The design elevation for the top of the dikes around the ponds was 492 feet, to maintain at least 2 feet above the adjacent natural ground elevation. Implementation of the Project

[21] (United States Federal Emergency Management Agency (FEMA) 2023)

would not reduce the elevation above the natural grade; therefore, the Project would also endure minimal risk of flooding. Impacts would be less than significant.

e) Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less than Significant Impact. The Project would not involve withdrawals from an aquifer or groundwater table and would not interfere with groundwater recharge. In addition, any potential impacts to water quality have been discussed and the Project would be subject to a SWRCB National Pollutant Discharge Elimination System General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit and all of its requirements. Therefore, the Project would not be in conflict with sustainable groundwater management plans such as the DEID GSA GSP. Impacts would be less than significant.

4.10.3 Federal Cross-Cutting Topic

Flood Plain Management- Executive Order Numbers 11988, 12148, and 13690

FEMA designates flood hazard and frequency for cities and counties on its Flood Insurance Rate Maps. The proposed Project area is not within a designated 100-year floodplain, on a floodplain map, or otherwise designated by FEMA.

Rivers and Harbors Act

The Rivers and Harbors Act of 1899 prohibits construction of any bridge, dam, dike, or causeway over or in navigable waterways of the U.S., without Congressional approval. Under Section 10 of the Act, the building of any wharfs, piers, jetties, and other structures is prohibited without Congressional approval, and excavation or fill within navigable waters requires the approval of the Chief of Engineers. The United States Army Corps of Engineers (USACE) is authorized to issue permits for the discharge of refuse matter into or affecting navigable waters under Section 13 of the act.

The proposed Project would not be constructed in a location that would affect a navigable waterway, requiring permit or approval by USACE.

Safe Drinking Water Act, Sole Source Aquifer Protection

The Safe Drinking Water Act (SDWA) required USEPA to establish criteria through which an aquifer may be declared a critical aquifer protection area. Since 1977, it has been used by communities to help prevent contamination of groundwater from federally funded projects. These aquifers are defined as "sole source aquifers." USEPA's Sole Source Aquifer (SSA) Program was established under Section 1424(e) of the SDWA. These are, essentially, aquifers that are the only drinking water supply for the population of a region.

SSA designation protects an area's groundwater resources by requiring USEPA to review all proposed projects within the designated area that will receive federal financial assistance. The SSA Program states that if USEPA determines an area to have an aquifer which is the sole or principal drinking water source for the area, that if contaminated would create a significant hazard to public health, a notice of that determination needs to be published in the Federal Register. After publication of any such notice, no commitment for federal financial aid may be applied for any project that the Administrator determines may contaminate the aquifer through a recharge zone, so as to create a significant hazard to public health (US EPA 2019).

The Project is not located in a Sole Source Aquifer (SSA). There are no SSA's in Tulare County.

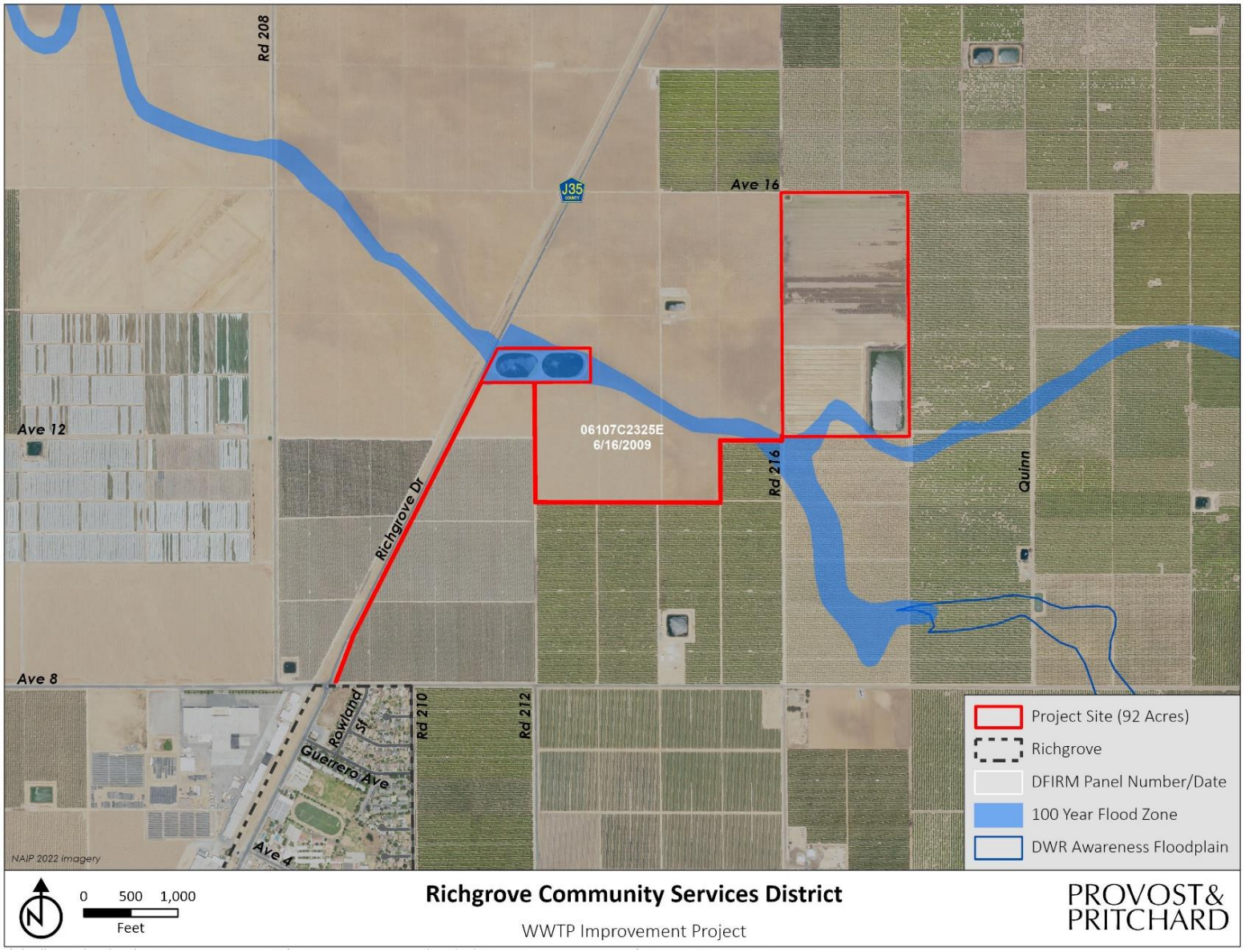


Figure 4-8: FEMA Flood Map

4.11 LAND USE AND PLANNING

Table 4-19: Land Use and Planning Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

4.11.1 Baseline Conditions

The proposed Project is located at the existing Richgrove WWTP just outside of the unincorporated community of Richgrove. As seen in other cities and communities throughout the Central Valley in California, Richgrove is an agricultural community surrounded by farms and open space outside of the urban planned area. However, the community of Richgrove itself contains various urban land uses such as residential, commercial, industrial, and public-quasi-public. As seen in Section 2.1.5, the Project site is planned for Valley Agricultural and zoned for AE-20. Under the Tulare County Zoning Ordinance, the existing WWTP is a permitted use under Section 9.6.E. Use Permits.[22]

4.11.2 Impact Analysis

a) Would the project physically divide an established community?

No Impact. The Project would not physically divide an established community. The Project would include upgrades to the existing WWTP located northeast of the developed area of the community of Richgrove. There would be no impact.

b) Would the project cause a significant environmental conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact. The Project site is zoned and planned agricultural purposes. The existing Richgrove WWTP was approved via a Tulare County Use Permit when it was originally constructed. Upgrades to the WWTP are a permitted use permitted within the AE-20 zone district, which is the method of carrying out the goals of the agriculturally planned land use. The Project would not conflict with any land use plan, policy, or regulation adopted and therefore would not result in any impacts. There would be no impact.

[22] (Tulare County Resource Management Agency 1972)

4.11.3 Federal Cross-Cutting Topic

Coastal Zone Management Act

The Coastal Zone Management Act was enacted in 1972. This act, administered by the National Oceanic and Atmospheric Administration, provides management of the nation' s coastal resources. The California coastal zone generally extends 1,000 yards inland from the mean high tide line. The Project site is more than 100 miles from the coastline. Therefore, the proposed project would not conflict with the Coastal Zone Management Act.

4.12 MINERAL RESOURCES

Table 4-20: Mineral Resources Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

4.12.1 Baseline Conditions

The bulk of Tulare County's mineral extraction activities focus on aggregate (sand, gravel, and crushed stone), which is primarily used in building materials. Historically, the Kaweah River, Lewis Creek, and the Tule River have provided the main sources of high-quality sand and gravel in Tulare County. The highest quality deposits are located at the Kaweah and Tule Rivers. According to the Tulare County General Plan Background Report, all of the known potential mineral resource locations are mapped within the foothills and/or along major water courses. Similarly, the only active oil and gas fields are located in the foothills along Deer Creek.[23] These sources do not identify any known potential mineral resource locations within or adjacent to the Project site, or elsewhere in Richgrove. The Project site is not delineated on a local land use plan as a locally important mineral resource recovery site. The California Geological Survey Division of Mines and Geology has not classified the Project site as a Mineral Resource Zone (MRZ) under the Surface Mining and Reclamation Act.[24] California's Division of Oil, Gas and Geothermal Resources has no records of active oil or gas wells on the Project site or in the immediate area.[25]

4.12.2 Impact Analysis

a) Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

b) Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

a and b) No Impact.. No known mineral resources are within the Project site nor has the site been classified as an MRZ. Therefore, implementation of the Project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents, nor would it result in the loss of availability of a locally important mineral resource recover site delineated on a local general plan, specific plan or other land use plan since no known mineral resources occur in this area. There would be no impact.

[23] (Environmental Science Associates 2010)
[24] (California Department of Conservation 2022)
[25] (California Department of Conservation 2022)

4.13 NOISE

Table 4-21: Noise Impacts

Would the project result in:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Generation of excessive ground borne vibration or ground borne noise levels?	☐	☐	☒	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

4.13.1 Baseline Conditions

The Project is located northeast of the community of Richgrove and is situated within a region dominated by agricultural uses and operations which may require diesel-powered equipment or other relatively loud machinery. Rural traffic is also a source of noise in the Project's vicinity with Avenue 8 to the south and Road 208 to the west. While much of unincorporated Tulare County is composed of small, scattered communities and remote rural residences, other major noise generators include highways, airports, and industrial operations. Maximum noise levels generated by farm-related tractors typically range from 77 to 85 dB at a distance of 50 feet from the tractor, depending on the horsepower of the tractor and the operating conditions. Due to the seasonal nature of the agricultural industry, there are often extended periods of time when little to no noise is generated near the Project site, followed by short-term periods of intensive mechanical equipment usage and corresponding noise generation. The Tulare County General Plan identifies the normally acceptable noise range for agricultural land uses between 50 and 75 dB.

4.13.2 Impact Analysis

a) Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less than Significant Impact. The nearest sensitive receptors to the Project site are the neighborhood located south of Avenue 8 at the north end of the community of Richgrove approximately 225 feet away. Project construction-related activities would involve temporary, short-term, and intermittent noise sources including site preparation and activities related to the WWTP improvements. The construction phase of the Project would involve temporary noise sources originating predominantly from off-road equipment, such as backhoes, drilling rigs, scrapers, and tractors. Construction-related noise levels would

be higher than existing ambient noise levels in the Project site but would not occur after construction-related activities are completed. Operation and maintenance noise would be similar in character to existing noise in the area resulting from existing activity such as traffic noise and farm equipment noise associated with the surrounding agricultural operations. Tulare County General Plan Policies HS-8.18 and HS-8.19 address noise generated from construction-related activities. Policy HS-8.18 limits noise-generating activities (such as construction-related activities) to hours of normal business operation unless specific County approval is given. Construction-related activities would be restricted to daytime hours and would be short-term, temporary, and intermittent in nature. Policy HS-8.19 requires the County to ensure contractors implement best practices as appropriate to reduce the construction-related noise impacts. By complying with Tulare County General Plan Policies HS-8.18 and HS-8.19, the Project would have a less than significant impact.

b) Would the project result in generation of excessive ground borne vibration or ground borne noise levels?

Less than Significant Impact. There are no federal or State standards that address construction noise or vibration. Additionally, Tulare County does not have regulations that define acceptable levels of vibration. However, the Federal Transit Administration (FTA) publication concerning noise and vibration impact assessment from transit activities has vibration standards suggestions. Although the FTA guidelines are to be applied to transit activities and construction, they may be reasonably applied to the assessment of the potential for annoyance or structural damage resulting from other activities. To prevent vibration annoyance in residences, a level of 80 VdB (vibration velocity level in dB) or less is suggested when there are fewer than 70 vibration events per day. A level of 100 VdB or less is suggested by the FTA guidelines to prevent damage to fragile buildings. Table 4-22 describes the typical construction equipment vibration levels. While these construction-related activities would result in ground borne vibration, such ground borne noise or vibration would attenuate rapidly from the source and would not be generally perceptible outside of the construction-related areas. In addition, there would not be any vibrational impacts from operation and maintenance activities.

Table 4-22. Typical Construction Equipment Vibration Sources Levels

Typical Construction Equipment Vibration Sources Levels		
Equipment	PPV at 25 ft, in/sec	Approximate Lv* at 25 ft
Large bulldozer	0.089	87
Caisson drilling	0.089	87
Loaded trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58
*RMS velocity in decibels, VdB re 1 micro-in/sec Source: (John A. Volpe National Transportation Systems Center 2018)		

Construction-related activities in general can have the potential to create ground borne vibrations. However, based on the soil types found in the general Project vicinity, there would not be any blasting or pile-driving in connection with construction of the Project. Therefore, the potential for ground borne vibrations to occur as part of construction-related activities of the Project would not be significant. Additionally, operation of the Project would not contain any activities that would create excessive ground borne vibrations. The Project would not result in exposure of persons to, or generation of excessive ground borne vibration or ground borne noise levels. Therefore, impacts would be less than significant.

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. The Project would not be located within an airport land use plan or within two miles of an airport. The nearest airport, Delano Municipal, is located approximately 8.6-miles southwest of the Project. Furthermore, the Project would not involve the development of habitable structures or require the presence of permanent staff onsite. There would be no impact.

4.14 POPULATION AND HOUSING

Table 4-23: Population and Housing Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

4.14.1 Baseline Conditions

According to the 2020 Census, the community of Richgrove has an estimated population of 2,358.[26] Additionally, it is estimated that Richgrove contains approximately 518 households.[27] The Project site is strategically disconnected from the built community of Richgrove and is primarily surrounded by agricultural land. The nearest incorporated city to the Project is the City of Delano, located approximately 6.8 miles west-southwest.

4.14.2 Impact Analysis

a) Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Less than Significant Impact. The Project proposes upgrades to the existing WWTP to meet its current and foreseeable planned demand. Although the Project would provide additional sewage capacity, the additional capacity is needed to meet the existing and planned population that the Richgrove Community Plan and the Tulare County General Plan has projected. Therefore, the Project would not result in unplanned growth, but would allow for future planned growth in addition to its existing population. Impacts would be less than significant.

b) Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact. The Project would not result in the displacement of existing people or housing. Therefore, there would be no impact.

4.14.3 Federal Cross-Cutting Topic

[26] (United States Census Bureau 2020)
[27] Ibid.

Environmental Justice Executive Order 12898

Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, was issued in 1994. The EO directs federal agencies to identify and address the disproportionately high and adverse human health or environmental effects of their actions on minority and low-income populations, to the greatest extent practicable and permitted by law.

USEPA has developed a mapping and screening tool called EJSCREEN that uses nationally consistent data to identify minority or low-income communities. According to EJSCREEN, the proposed project site is not in an environmental justice community (USEPA 2015). In addition, the purpose of the project would be to supply clean, reliable water to residents of RCSD. Because the proposed project would directly benefit the local community only, no disproportional health or environmental effect would be imposed on minority or low-income populations. The proposed project would not conflict with the purpose and objectives of EO 12898.

4.15 PUBLIC SERVICES

Table 4-24: Public Services

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i. Fire protection?	☐	☐	☐	☒
ii. Police protection?	☐	☐	☐	☒
iii. Schools?	☐	☐	☐	☒
iv. Parks?	☐	☐	☐	☒
v. Other public facilities?	☐	☐	☐	☒

4.15.1 Baseline Conditions

Fire Protection: The Project area would be served by the Tulare County Fire Department. The closest fire station is Tulare County Fire Station No. 10, located approximately 0.43 miles south.

Police Protection: Police protection is provided by the Tulare County Sheriff's Department. The closest sheriff's station is Tulare County Sheriff Pixley Substation, located approximately 15.4 miles northwest.

Schools: Richgrove School District is the nearest school facility to the Project, located approximately 0.45 miles south.

Parks: The nearest park to the Project site is Richgrove Park, located approximately 0.68 miles south.

Landfills: The nearest landfill to the Project site is the Woodville Landfill, located approximately 24 miles northeast.

4.15.2 Impact Analysis

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

i. Fire Protection:

ii. Police Protection:

iii. Schools:

iv. Parks:

v. Other public facilities:

a-i – a-iv) No Impact. The Project would not require new or altered governmental facilities in order to maintain acceptable service ratios, response times, or other performance objectives for public services. The Project involves the construction of improvement facilities to RCSD's WWTP to provide additional capacity for water collection and treatment. Currently, RCSD's WWTP is at or near its existing capacity. The Project would not result in unplanned population growth. There would be no impact to the listed public services.

4.16 RECREATION

Table 4-25: Recreation Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

4.16.1 Baseline Conditions

Kern County contains several parks and recreational facilities. Kern County Department of Parks and Recreation maintains over 4,700-acres of parks and open space within the County. The 4,700-acres are comprised of seven regional parks, 40 local parks, and 23 public buildings providing recreational opportunities.[28] The closest park to the Project is Richgrove Park, located approximately 0.68-miles south.

4.16.2 Impact Analysis

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No Impact. The Project would construct improvements to RCSD's WWTP. Project features would not increase the use or demand of any existing neighborhood park, regional park, or any other recreational facilities of any kind. Unplanned population growth is not anticipated or associated with the Project. Therefore, there would be no impact.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Less than Significant Impact. The Project would not include recreational facilities, nor would it propose the expansion of any existing recreational facilities. The Project's objective is to provide the community of Richgrove with additional wastewater treatment capacity. There would be no impact.

[28] (MIG, Inc. 2010)

4.17 TRANSPORTATION

Table 4-26: Transportation Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☐	☒
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d) Result in inadequate emergency access?	☐	☐	☒	☐

4.17.1 Baseline Conditions

The Project is located northeast of the community of Richgrove in Tulare County. The Project site is located 8.5-miles east of SR 99 and 1.75-miles west of SR 65. The Project site is generally bounded by Avenue 6 to the south, Avenue 16 to the north, Richgrove Drive to the west, and Road 224 to the east.

4.17.2 Impact Analysis

a) Would the project conflict with a plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Less than Significant Impact. The Project involves improvements to an existing WWTP located northeast of the community of Richgrove. Primary access to the site would be through Richgrove Drive. Richgrove Drive is a two-lane road located in a rural agricultural region that is not heavily trafficked. Construction traffic associated with the Project would be minimal and temporary, lasting approximately 15 months. Although construction would temporarily result in an increase in worker vehicle trips, Project activities do not propose any lane closures or traffic diversions. Operations would not require additional staffing or maintenance, and therefore operational traffic would be unchanged from existing conditions. There would not be a significant adverse effect to existing roadways in the area. Impacts would be less than significant.

b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3 subdivision (b)?

No Impact. Section 15064.3 of the State CEQA Guidelines establishes specific considerations for evaluating a project's transportation impacts. The State CEQA Guidelines identify vehicle miles traveled (VMT), which is defined as the amount and distance of automobile travel attributable to a project, as the most appropriate measure of transportation impacts. Other relevant considerations may include the effects of a project on transit and nonmotorized travel. A temporary increase in construction related traffic would occur but said traffic would not result in permanent impacts. No structures are proposed that would permanently change the number of VMT by persons traveling the Project area. The Project proposes improvements to the existing WWTP. These Project features would not result in an increase in

VMT. The Project would not be inconsistent or conflict with CEQA Guidelines section 15064.3 subdivision (b). There would be no impact.

c) Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Impact. No new roadway design features are associated with the Project that could increase hazards. The Project would require construction equipment to be transported to the Project site using hauling trucks. Project area roadways are suitable for the transporting of heavy-duty construction equipment as it is common for tractors to travel along these roadways. Therefore, there would be no impact.

d) Would the project result in inadequate emergency access?

Less than Significant Impact. The Project would not propose new roadway design features or permanent alterations to roadways. All potential disturbances to roadways during construction would be temporary and repaired to baseline conditions. No road closures or detours are anticipated as part of the construction phase of the Project. Any disturbances to traffic patterns, such as a potential lane diversions, would be temporary and minimal in nature as there would be alternate routes available for emergency vehicles. The operational phase of the Project would have no effect on roadways or emergency access. Therefore, overall potential Project-related impacts to emergency access on local roadways would be considered less than significant.

4.18 TRIBAL CULTURAL RESOURCES

Table 4-27: Tribal Cultural Resources Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i. Listed or eligible for listing in the California Register of Historical Resources, or in the local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☒	☐	☐
ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

4.18.1 Baseline Conditions

Penutian-speaking Yokuts tribal groups occupied the southern San Joaquin Valley region and much of the nearby Sierra Nevada. For a variety of historical reasons, existing research information emphasizes the central Yokuts tribes who occupied both the valley and particularly the foothills of the Sierra. The northernmost tribes suffered from the influx of Euro-Americans during the Gold Rush and their populations were in substantial decline by the time ethnographic studies began in the early twentieth century. In contrast, the southernmost tribes were partially removed by the Spanish to missions and eventually absorbed into multi-tribal communities on the Sebastian Indian Reservation (on Tejon Ranch), and later the Tule River Reservation and Santa Rosa Rancheria to the north. The result is an unfortunate scarcity of ethnographic detail on southern Valley tribes, especially in relation to the rich information collected from the central foothills tribes where native speakers of the Yokuts dialects are still found. Regardless, the general details of indigenous life-ways were similar across the broad expanse of Yokuts territory, particularly in terms of environmentally influenced subsistence and adaptation and with regard to religion and belief, which were similar everywhere.

A search of the NAHC SLF was completed on January 26, 2024. They were provided with a brief description of the Project and a map showing its location and requested a search of the Sacred Lands File to determine

if any Native American resources have been recorded in the immediate APE. The NAHC identifies, catalogs, and protects Native American cultural resources -- ancient places of special religious or social significance to Native Americans and known ancient graves and cemeteries of Native Americans on private and public lands in California. The NAHC is also charged with ensuring California Native American tribes' accessibility to ancient Native American cultural resources on public lands, overseeing the treatment and disposition of inadvertently discovered Native American human remains and burial items, and administering the California Native American Graves Protection and Repatriation Act, among many other powers and duties. NAHC provide a current list of Native American Tribal contacts to notify of the Project. The two tribal representatives identified by NAHC were contacted in writing via USPS in a letter February 6, 2024, informing each Tribal contact of the Project.

As discussed in Section 2.1.8, RCSD has not received any written correspondence from a Tribe pursuant to Public Resources Code Section 21080.3.1 requesting notification of proposed project.

4.18.2 Impact Assessment

a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

i. Listed or eligible for listing in the California Register of Historical Resources, or in the local register of historical resources as defined in Public Resources Code section 5020.1(k), or

ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

a-i – ii) Less than Significant Impact with Mitigation Incorporated. A search of the NAHC Sacred Lands File was completed for the Project APE. Results of this file search were negative, and no tribal cultural resources were identified in the Project APE. A records search was also conducted at the SSJVIC, California State University, Bakersfield. The search results determined that tribal cultural resources were not discovered. Although there is little or no chance the Project would cause a substantial adverse change to the significance of a tribal cultural resource as defined, mitigation measures **CUL-1** and **CUL-2,** described in Section 4.5.4 are recommended in the event cultural materials or human remains are unearthed during excavation or construction.

4.18.3 Mitigation

See **CUL-1** and **CUL-2** in Section 4.5.4.

4.19 UTILITIES AND SERVICE SYSTEMS

Table 4-28: Utilities and Service Systems Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

4.19.1 Baseline Conditions

The Project site is located just northeast of the community of Richgrove in Tulare County, which is served by the existing WWTP. The surrounding area of the Project site contains both farmland and fully developed lands containing urban residential, commercial, and industrial uses.

Water Supply

The RCSD is responsible for providing domestic water service within its service area. The RCSD water system consists of two active wells and a water distribution system.

Wastewater Collection and Treatment

The RCSD is responsible for providing sanitary sewer service to residents within its service area. Water is treated at the existing WWTP via an existing aerated lagoon system.

Solid Waste

Solid Waste services are handled by the Tulare County Solid Waste Department in accordance with the Tulare County Integrated Waste Management Plan. Tulare County currently owns and operates the Teapot Dome and the Woodville landfills.[29]

4.19.2 Impact Analysis

a) Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Less than Significant Impact. The Project involves improvements and an increase in capacity to the existing WWTP. The Project would not require the construction of new water or wastewater treatment facilities or the expansion of existing facilities. The Project has been analyzed in this IS/MND and has been found to not result in any significant or potentially significant impacts. Therefore, impacts would be less than significant.

b) Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

Less than Significant Impact. The Project involves improvements and an increase in capacity to the existing WWTP to better serve Richgrove's existing and planned population. The Project would not propose any uses that would create additional demand for domestic water. Therefore, the Project would have sufficient water supplies. Impacts would be less than significant.

c) Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

No Impact. The Project involves improvements and an increase in capacity to the existing WWTP to better serve Richgrove's existing and planned population. The Project itself would not generate wastewater but would increase the ability to manage and treat wastewater generated from Richgrove. Therefore, there would be no impact.

d) Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Less than Significant Impact. The construction phase of the Project would generate solid waste in the form of construction debris. However, the Project would comply with Section 5.408 of the California Green Building Standards Code, which requires a minimum of 65% of nonhazardous construction and demolition waste be recycled and/or salvaged for reuse. The operational phase of the Project would continue to produce biosolids, which are transferred to a Tulare County recycling and waste facility after treatment. The Project involves improvements to an existing WWTP in order to meet increasingly stringent WDRs and meet existing and planned capacity. Furthermore, operations would not require additional staffing or maintenance, and therefore solid waste associated with employees and vendors onsite would be unchanged from existing conditions. Any Project-related impacts associated with landfill capacity and solid waste disposal would be less than significant.

[29] (Tulare County 2023)

e) Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

No Impact. The Project would continue to comply with all federal, State, and local statutes and regulations related to solid waste. Therefore, there would be no impact.

4.20 WILDFIRE

Table 4-29: Wildfire Impacts

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrollable spread of wildfire?	☐	☐	☐	☒
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

4.20.1 Baseline Conditions

The Project is located in Tulare County within the southern portion of the San Joaquin Valley. The general physical setting of the Project area consists of flat agricultural land containing orchards and water delivery facilities. The Project is located northeast of the unincorporated community of Richgrove, which is a small urban community surrounded by farmland.

According to California Department of Forestry and Fire Protection (CalFire), the Project is not located within an SRA, meaning CalFire does not assume responsibility for wildfire prevention and protection but is managed at the local level.[30] Furthermore, according to CalFire, the Project area is not located within a Very High Fire Hazard Severity Zone, nor is the Project located within a high or moderate fire hazard severity zone.[31]

4.20.2 Impact Analysis

a) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

b) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project due to slope, prevailing winds, and other factors, exacerbate wildfire risks and thereby

[30] (California Department of Forestry and Fire Protection 2022)
[31] (ArcGIS 2023)

expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

c) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

d) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

a-d) No Impact. The Project area is located in a section of Tulare County that has not been designated as either a Very High Fire Hazard Severity Zone or an SRA. Therefore, further analysis is not required and there would be no impact.

4.21 CEQA MANDATORY FINDINGS OF SIGNIFICANCE

Table 4-30: CEQA Mandatory Findings of Significance

Does the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

4.21.1 Statement of Findings

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Less than Significant Impact with Mitigation Incorporated. The analysis conducted in this IS/MND results in a determination that the Project, with incorporation of mitigation measures, would have a less than significant effect on the environment. The potential for impacts to biological resources, cultural resources, and tribal cultural resources from the implementation of the Project would be less than significant with the incorporation of the mitigation measures discussed in Chapter 5 Mitigation, Monitoring, and Reporting Program. Accordingly, the Project would involve no potential for significant impacts through the degradation of the quality of the environment, the reduction in the habitat or population of fish or wildlife, including endangered plants or animals, the elimination of a plant or animal community or example of a major period of California history or prehistory.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

Less than Significant Impact. CEQA Guidelines Section 15064(i) States that a Lead Agency shall consider whether the cumulative impact of a project is significant and whether the effects of the project are cumulatively considerable. The assessment of the significance of the cumulative effects of a project must, therefore, be conducted in connection with the effects of past projects, other current projects, and probable future projects. The Project involves improvements to the existing WWTP in order to upgrade and replace aged or obsolete equipment and to increase the capacity of treatment. No additional roads would be constructed as a result of the Project, nor would any additional public services be required. The Project is intended to improve the municipal wastewater treatment process and would not result in direct or indirect population growth. Therefore, implementation of the Project would not result in significant cumulative impacts and all potential impacts would be reduced to less than significant through the implementation of mitigation measures and basic regulatory requirements incorporated into future Project design.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Less than Significant Impact. The Project would involve improvements to the existing WWTP. The Project in and of itself would not create a significant hazard to the public or the environment. On the contrary, implementation of the Project would improve the quality of effluent discharged and would mitigate odors associated with the wastewater treatment process. Construction-related air quality/dust exposure impacts could occur temporarily as a result of construction. However, implementation of basic regulatory requirements identified in this IS/MND would ensure that impacts are less than significant. Therefore, the Project would not have any direct or indirect adverse impacts on humans. This impact would be less than significant.

CHAPTER 5 MITIGATION, MONITORING, AND REPORTING PROGRAM

This Mitigation Monitoring and Reporting Program (MMRP) has been formulated based upon the findings of the Initial Study/Mitigated Negative Declaration (IS/MND) for the Project in the Tulare County. The MMRP lists mitigation measures recommended in the IS/MND for the Project and identifies monitoring and reporting requirements.

Table 5-1: Mitigation, Monitoring, and Reporting Program presents the mitigation measures identified for the Project. Each mitigation measure is numbered with a symbol indicating the topical section to which it pertains, a hyphen, and the impact number. For example, AIR-2 would be the second mitigation measure identified in the Air Quality analysis of the IS/MND.

The first column of ***Table 5-1: Mitigation, Monitoring, and Reporting*** Program identifies the mitigation measure. The second column, entitled "When Monitoring is to Occur," identifies the time the mitigation measure should be initiated. The third column, "Frequency of Monitoring," identifies the frequency of the monitoring of the mitigation measure. The fourth column, "Agency Responsible for Monitoring," names the party ultimately responsible for ensuring that the mitigation measure is implemented. The last columns will be used by the Lead and Responsible Agencies to ensure that individual mitigation measures have been complied with and monitored.

Table 5-1: Mitigation, Monitoring, and Reporting Program

Mitigation, Monitoring, and Reporting Program						
Item	Mitigation Measure	When Monitoring is to Occur	Frequency of Monitoring	Agency Responsible for Monitoring	Method to Verify Compliance	Verification of Compliance
Biological Resources						
General Project-Related Impacts						
BIO-1	**(*WEAP Training*):** Prior to initiating construction activities (including staging and mobilization), all personnel associated with project construction will attend a mandatory Worker Environmental Awareness Program (WEAP) training, conducted by a qualified biologist, to aid workers in identifying special status resources that may occur in the project site. The specifics of this program will include identification of the sensitive species and suitable habitats, a description of the regulatory status and general ecological characteristics of sensitive resources, and review of the limits of construction and mitigation measures required to reduce impacts to biological resources within the work area. This training will discuss special status species, describe the laws and regulations in place to provide protection of these species, identify the penalties for violation of applicable environmental laws and regulations, and include a list of required protective measures to avoid "take." A fact sheet summarizing this information, along with photographs or illustrations of sensitive species with potential to occur on the project site, will also be prepared for distribution to all contractors, their employees, and all other personnel involved with construction of the project. All trainees will sign a form documenting that they have attended WEAP training and understand the information presented to them.	Prior to the start of any construction activities	As needed for any new construction personnel during construction activities	RCSD with assistance of a qualified biological subconsultant	Biologist Report	
BIO-2	**(BMPs):** The project proponent will require that all workers employ the following best management practices (BMPs) in order to avoid and minimize potential impacts to special status species:	Prior to the start of any construction activities	During Construction	RCSD	Biologist Report	

Mitigation, Monitoring, and Reporting Program						
Item	Mitigation Measure	When Monitoring is to Occur	Frequency of Monitoring	Agency Responsible for Monitoring	Method to Verify Compliance	Verification of Compliance
	• Vehicles will observe a 15-mph speed limit while on unpaved access routes. • Workers will inspect areas beneath parked vehicles, equipment, and materials prior to mobilization. If special status species are detected, the individual will either be allowed to leave of its own volition or will be captured by the qualified biologist (must possess appropriate collecting/handling permits) and relocated out of harm's way to the nearest suitable habitat beyond the influence of the project work area. "Take" of a state or federal special status (rare, California Species of Special Concern, threatened, or endangered) species is prohibited. The presence of any special status species will be reported to the project's qualified biologist who will submit the occurrence to the CNDDB. If necessary, the biologist will report the occurrence to CDFW and/or USFWS.					
	Project-Related Mortality and/or Disturbance to Burrowing Owl					
BIO-3	**(Pre-construction Take Avoidance Survey):** A qualified biologist will conduct a single pre-construction take avoidance survey for BUOW and suitable burrows, in accordance with CDFW's *Staff Report on Burrowing Owl Mitigation* (2012), within seven days prior to the start of construction activities. The survey shall include the proposed work area and surrounding lands up to 500 feet. If no BUOW individuals or active burrows are observed, no further mitigation is required.	7 days prior to construction	Once, Prior to ground disturbing activities and the start of construction	RCSD with assistance of a qualified biological subconsultant	Biologist Report	
BIO-4	**(Avoidance):** If an active BUOW burrow is detected, the occurrence will be reported to the CNDDB, and avoidance buffers shall be implemented. A qualified	During construction activities	As determined needed by qualified biologist	RCSD with assistance of a	Biologist Report	

Mitigation, Monitoring, and Reporting Program						
Item	Mitigation Measure	When Monitoring is to Occur	Frequency of Monitoring	Agency Responsible for Monitoring	Method to Verify Compliance	Verification of Compliance
	biologist will determine appropriate avoidance buffer distances based on applicable CDFW guidelines, the biology of the species, conditions of the burrow(s), and the level of project disturbance. If necessary, avoidance buffers will be identified with flagging, fencing, or other easily visible means, and will be maintained until the biologist has determined that the nestlings have fledged and all BUOW have left the project site.		during construction activities	qualified biological subconsultant		
BIO-5	**(Passive Relocation):** If avoidance of an active BUOW burrow is not feasible, passive relocation during the non-breeding season (September 1 through January 31) could be utilized or during the breeding season (February 1 through August 31) if a qualified biologist determines that there are no young in the burrow. Prior to completion a qualified biologist will prepare a passive relocation plan that will detail the methods to be used. It will include the tools to exclude the BUOW from its burrow (i.e., one-way doors or other devices) and excavate the burrow (hand tools and machinery, if needed). Following completion of passive relocation, a report will be prepared that will document the methods and results of these efforts.	September 1 to January 31 or February 1 to August 31	Once, as determined needed by qualified biologist during construction activities	RCSD with assistance of a qualified biological subconsultant	Biologist Report	
Project-Related Mortality and/or Disturbance of Nesting Migratory Raptors and Birds						
BIO-6	**(Avoidance):** The project's construction activities will occur, if feasible, between August 31 and January 31 (outside of the nesting bird season) to avoid impacts to nesting birds.	August 31 to January 31	Once, as determined needed by qualified biologist during construction activities	RCSD with assistance of a qualified biological subconsultant	Biologist Report	
BIO-7	**(Pre-construction Surveys):** If activities must occur within the nesting bird season (February 1 to August 31), a qualified biologist will conduct a pre-construction survey for active migratory bird nests no more than seven days prior to the start of the	7 days prior to construction	Once, Prior to ground disturbing activities and the start of construction	RCSD with assistance of a qualified biological subconsultant	Biologist Report	

Mitigation, Monitoring, and Reporting Program						
Item	Mitigation Measure	When Monitoring is to Occur	Frequency of Monitoring	Agency Responsible for Monitoring	Method to Verify Compliance	Verification of Compliance
	construction within the project site and surrounding lands up to 100 feet from the project site and for active raptor nests within the project site and all accessible lands up to 500-feet from the project site. All raptor nests would be considered "active" upon the nest-building stage.					
BIO-8	**(Avoidance Buffers):** On discovery of any active nests near work areas, the biologist will determine appropriate construction setback distances (avoidance buffers) based on applicable CDFW and/or USFWS guidelines, the biology of the species, and work and site conditions. If necessary, avoidance buffers will be identified with flagging, fencing, or other easily visible means, and will be maintained until the biologist has determined that the nestlings have fledged.	Prior to construction activities	Once, Prior to ground disturbing activities and the start of construction	RCSD with assistance of a qualified biological subconsultant	Biologist Report	
	Project-Related Mortality and/or Disturbance to San Joaquin Kit Fox					
BIO-9	**(Pre-Construction Survey):** Within seven days prior to the start of construction a pre-construction survey for San Joaquin kit fox will be conducted on and within 200 feet of proposed work areas.	7 days prior to construction	Once, as determined needed by qualified biologist during construction activities	RCSD with assistance of a qualified biological subconsultant	Biologist Report	
BIO-10	**(Establish Buffers):** On discovery of any SJKF dens near the project area a qualified biologist will determine appropriate construction setback distances (buffer zones) based on applicable CDFW and/or USFWS guidelines (see below). If needed, construction buffers will be identified with flagging, fencing, or other easily visible means. They will be maintained until the biologist has determined that the den will no longer be impacted by construction. The buffer zones shall be at least 100 feet around den(s), at least 200 feet around natal dens (which SJKF young are reared), and at least 500 feet around	Upon discovery of SJKF dens	Once, as determined needed by qualified biologist during construction activities	RCSD with assistance of a qualified biological subconsultant	Biologist Report	

Mitigation, Monitoring, and Reporting Program						
Item	Mitigation Measure	When Monitoring is to Occur	Frequency of Monitoring	Agency Responsible for Monitoring	Method to Verify Compliance	Verification of Compliance
	any natal dens with pups (except for any portions of the buffer zone that is already fully developed).					
BIO-11	**(Avoidance and Minimization):** The project will observe all avoidance and minimization measures in the USFWS's *Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance* (2011), including, but not limited to: maintaining buffer zones, construction speed limits, covering of pipes, installation of escape structures, restriction of herbicide and rodenticide use, proper disposal of food items and trash, prohibition of pets and firearms, and completion of an employee education program (see BIO-1).	During construction activities	During construction activities	RCSD with assistance of a qualified biological subconsultant	Biologist Report	
Cultural Resources						
CUL-1	(**Archaeological Remains**) Should archaeological remains or artifacts be unearthed during any stage of project activities, work in the area of the discovery shall cease until the area is evaluated by a qualified archaeologist. If mitigation is warranted, the project proponent shall abide by recommendations of the archaeologist.	During construction	Daily during construction activities	RCSD		
CUL-2	(**Human Remains**) In the event that human remains are discovered on the Project site, the Tulare County Coroner must be notified of that discovery (Health and Safety Code Section 7050.5) and all activities in the immediate area if the find or in any nearby area reasonably suspected of overlie adjacent human remains must cease until appropriate and lawful measures have been implemented. If the Coroner determines that the remains are not recent, but rather of Native American origin, the Coroner shall notify the NAHC in Sacramento within 24 hours to permit the NAHC to determine the most likely descendent of the deceased Native American.	During construction	Daily during construction activities	RCSD		
Tribal Cultural Resources						
TCR-1	See **CUL-1** and **CUL-2** above.					

CHAPTER 6 REFERENCES

ArcGIS. 2023. *Is Your Home in a Fire Hazard Severity Zone?* https://www.arcgis.com/apps/Styler/index.html?appid=5e96315793d445419b6c96f89ce5d153.

Best Places. 2023. *Richgrove, CA Climate.*

California Department of Conservation. 2002. "California Geomorphic Provinces Note 36." https://www.conservation.ca.gov/cgs/Documents/Publications/CGS-Notes/CGS-Note-36.pdf.

—. 2023. *Earthquake Zones of Required Investigation.* https://maps.conservation.ca.gov/cgs/EQZApp/app/.

—. 2023. *Important Farmland Categories.* https://www.conservation.ca.gov/dlrp/fmmp/Pages/Important-Farmland-Categories.aspx.

—. 2022. *Oil & Gas Well Finder.* https://maps.conservation.ca.gov/doggr/.

—. 2022. *SMARA Mineral Land Classification.* https://www.conservation.ca.gov/cgs/minerals/mineral-land-classification-smara.

California Department of Forestry and Fire Protection. 2022. *California State Responsibility Areas.* https://www.arcgis.com/apps/mapviewer/index.html?layers=5ac1dae3cb2544629a845d9a19e83991.

California Department of Toxic Substances Control. 2022. *California Department of Toxic Substances Control EnviroStor.* https://www.envirostor.dtsc.ca.gov/public/.

California Department of Water Resources. 2018. *DWR Groundwater Basin Boundary Assessment Tool.* https://gis.water.ca.gov/app/bbat/.

California State Scenic Highway System Map . 2018. *California State Scenic Highway System Map .* https://www.arcgis.com/apps/webappviewer/index.html?id=2e921695c43643b1aaf7000dfcc19983.

California State Waterboards. 2023. *GeoTracker.* https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=Sacramento.

Delano-Earlimart Irrigation District Groundwater Sustainability Agency. 2022. "Sustainable Groundwater Management Act Groundwater Sustainability Plan." https://www.deid.org/wp-content/uploads/2022/07/deid_gsp_draft_final_20220720.pdf.

Environmental Science Associates. 2010. "Tulare County General Plan Background Report." http://generalplan.co.tulare.ca.us/documents/GeneralPlan2010/BackgroundReport.pdf.

John A. Volpe National Transportation Systems Center. 2018. "FTA Transit Noise and Vibration Impact Assessment Manual ." https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf.

MIG, Inc. 2010. "Kern County Parks and Recreation Master Plan." https://www.kerncounty.com/home/showpublisheddocument/2148/637127126894370000.

San Joaquin Valley Air Pollution Control District. 2012. *Air Quality Attainment Plans.* Accessed December 26, 2023. http://valleyair.org/Air_Quality_Plans/air-quality-plans.htm.

San Joaquin Valley Air Pollution Control District. 2009. "Guidance for Valley Land-use Agencies in Addressing GHG Emissions Impacts for New Projects under CEQA."

Tulare County . 2023. *AlertTC.* https://member.everbridge.net/1772417038942691/ov.

Tulare County 2030 General Plan Update. 2010. "Tulare County 2030 General Plan Update." *Tulare County 2030 General Plan Update.* http://generalplan.co.tulare.ca.us/documents/GeneralPlan2010/GeneralPlan2030Update.pdf.

Tulare County Agricultural Commissioner/Sealer. 2022. "Tulare County Crop and Livestock Report."

Tulare County Resource Management Agency. 1972. *Section 9.6: "AE-20" Exclusive Agricultural Zone 20 Acre Minimum.* August 31. https://tularecounty.ca.gov/rma/rma-documents/planning-documents/tulare-county-zoning-ordinance/chapter-3-section-9-6-ae20/.

Tulare County Resources Management Agency. 2017. "Richgrove Community Plan ." http://generalplan.co.tulare.ca.us/documents/GP/001Adopted%20Tulare%20County%20General%20Plan%20Materials/130Part%20III%20Community%20Plans%202%20of%207/002Richgrove/GPA%2017-11%20RICHGROVE%20COMMUNITY%20PLAN.pdf.

Tulare County. 2023. *Tulare County Solid Waste.* https://tularecounty.ca.gov/solidWaste/.

United States Census Bureau. 2020. *Richgrove CDP.* https://www.census.gov/search-results.html?searchType=web&cssp=SERP&q=Richgrove%20CDP,%20California.

United States Environmental Protection Agency (USEPA). 2023. *Waters GeoViewer.* https://www.epa.gov/waterdata/waters-geoviewer.

United States Environmental Protection Agency. 2023. *Current Nonattainment Counties for All Criteria Pollutants.* Accessed December 26, 2023. https://www3.epa.gov/airquality/greenbook/ancl.html.

United States Federal Emergency Management Agency (FEMA). 2023. *FEMA Flood Map Service Center.* https://msc.fema.gov/portal/home.

University of California Agriculture and Natural Resources. 2022. *Tulare County Cooperative Extension.* https://cetulare.ucanr.edu/.

Appendix A: CalEEMod Output Files

Richgrove WWTP - Tulare County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Richgrove WWTP

Tulare County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	9.80	Acre	9.80	426,888.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	51
Climate Zone	7			**Operational Year**	2026
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Construction Schedule

Grading - Acres Graded

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	60.00
tblConstructionPhase	NumDays	10.00	20.00
tblConstructionPhase	PhaseEndDate	9/25/2026	12/4/2026
tblConstructionPhase	PhaseEndDate	11/7/2025	1/16/2026
tblConstructionPhase	PhaseEndDate	10/10/2025	10/24/2025

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstructionPhase	PhaseStartDate	11/8/2025	1/17/2026
tblConstructionPhase	PhaseStartDate	10/11/2025	10/25/2025
tblGrading	AcresOfGrading	60.00	20.00
tblGrading	AcresOfGrading	30.00	15.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

2.0 Emissions Summary

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2025	0.0849	0.8137	0.7450	1.5500e-003	0.3523	0.0344	0.3867	0.1830	0.0317	0.2148	0.0000	136.3043	136.3043	0.0407	1.7000e-004	137.3713
2026	0.2487	1.9090	2.6709	6.6700e-003	0.3509	0.0676	0.4185	0.1030	0.0635	0.1665	0.0000	599.4742	599.4742	0.0723	0.0249	608.7071
Maximum	**0.2487**	**1.9090**	**2.6709**	**6.6700e-003**	**0.3523**	**0.0676**	**0.4185**	**0.1830**	**0.0635**	**0.2148**	**0.0000**	**599.4742**	**599.4742**	**0.0723**	**0.0249**	**608.7071**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2025	0.0849	0.8137	0.7450	1.5500e-003	0.1426	0.0344	0.1770	0.0728	0.0317	0.1045	0.0000	136.3041	136.3041	0.0407	1.7000e-004	137.3711
2026	0.2487	1.9090	2.6709	6.6700e-003	0.3224	0.0676	0.3900	0.0902	0.0635	0.1537	0.0000	599.4739	599.4739	0.0723	0.0249	608.7068
Maximum	**0.2487**	**1.9090**	**2.6709**	**6.6700e-003**	**0.3224**	**0.0676**	**0.3900**	**0.0902**	**0.0635**	**0.1537**	**0.0000**	**599.4739**	**599.4739**	**0.0723**	**0.0249**	**608.7068**

Richgrove WWTP - Tulare County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**33.87**	**0.00**	**29.58**	**43.03**	**0.00**	**32.28**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**9-1-2025**	**11-30-2025**	0.7009	0.7009
2	**12-1-2025**	**2-28-2026**	0.5611	0.5611
3	**3-1-2026**	**5-31-2026**	0.5875	0.5875
4	**6-1-2026**	**8-31-2026**	0.5851	0.5851
5	**9-1-2026**	**9-30-2026**	0.1908	0.1908
		Highest	0.7009	0.7009

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0365	0.0000	9.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8000e-004	1.8000e-004	0.0000	0.0000	1.9000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0365**	**0.0000**	**9.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.8000e-004**	**1.8000e-004**	**0.0000**	**0.0000**	**1.9000e-004**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0365	0.0000	9.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8000e-004	1.8000e-004	0.0000	0.0000	1.9000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0365**	**0.0000**	**9.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.8000e-004**	**1.8000e-004**	**0.0000**	**0.0000**	**1.9000e-004**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	9/1/2025	9/26/2025	5	20	
2	Site Preparation	Site Preparation	9/27/2025	10/24/2025	5	20	
3	Grading	Grading	10/25/2025	1/16/2026	5	60	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4	Building Construction	Building Construction	1/17/2026	12/4/2026	5	230	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 20

Acres of Paving: 9.8

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	1	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Site Preparation	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	179.00	70.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0209	0.1920	0.1942	3.9000e-004		8.5300e-003	8.5300e-003		7.9200e-003	7.9200e-003	0.0000	33.9977	33.9977	9.4900e-003	0.0000	34.2350
Total	**0.0209**	**0.1920**	**0.1942**	**3.9000e-004**		**8.5300e-003**	**8.5300e-003**		**7.9200e-003**	**7.9200e-003**	**0.0000**	**33.9977**	**33.9977**	**9.4900e-003**	**0.0000**	**34.2350**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.8000e-004	4.0000e-004	4.9400e-003	1.0000e-005	1.8600e-003	1.0000e-005	1.8700e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.3635	1.3635	3.0000e-005	4.0000e-005	1.3751
Total	**5.8000e-004**	**4.0000e-004**	**4.9400e-003**	**1.0000e-005**	**1.8600e-003**	**1.0000e-005**	**1.8700e-003**	**4.9000e-004**	**1.0000e-005**	**5.0000e-004**	**0.0000**	**1.3635**	**1.3635**	**3.0000e-005**	**4.0000e-005**	**1.3751**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0209	0.1920	0.1942	3.9000e-004		8.5300e-003	8.5300e-003		7.9200e-003	7.9200e-003	0.0000	33.9976	33.9976	9.4900e-003	0.0000	34.2349
Total	**0.0209**	**0.1920**	**0.1942**	**3.9000e-004**		**8.5300e-003**	**8.5300e-003**		**7.9200e-003**	**7.9200e-003**	**0.0000**	**33.9976**	**33.9976**	**9.4900e-003**	**0.0000**	**34.2349**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.8000e-004	4.0000e-004	4.9400e-003	1.0000e-005	1.8600e-003	1.0000e-005	1.8700e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.3635	1.3635	3.0000e-005	4.0000e-005	1.3751
Total	**5.8000e-004**	**4.0000e-004**	**4.9400e-003**	**1.0000e-005**	**1.8600e-003**	**1.0000e-005**	**1.8700e-003**	**4.9000e-004**	**1.0000e-005**	**5.0000e-004**	**0.0000**	**1.3635**	**1.3635**	**3.0000e-005**	**4.0000e-005**	**1.3751**

3.3 Site Preparation - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1886	0.0000	0.1886	0.1002	0.0000	0.1002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0247	0.2523	0.1791	3.8000e-004		0.0109	0.0109		0.0100	0.0100	0.0000	33.4670	33.4670	0.0108	0.0000	33.7376
Total	**0.0247**	**0.2523**	**0.1791**	**3.8000e-004**	**0.1886**	**0.0109**	**0.1995**	**0.1002**	**0.0100**	**0.1102**	**0.0000**	**33.4670**	**33.4670**	**0.0108**	**0.0000**	**33.7376**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Site Preparation - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-004	4.9000e-004	5.9300e-003	2.0000e-005	2.2300e-003	1.0000e-005	2.2400e-003	5.9000e-004	1.0000e-005	6.0000e-004	0.0000	1.6362	1.6362	4.0000e-005	4.0000e-005	1.6501
Total	**7.0000e-004**	**4.9000e-004**	**5.9300e-003**	**2.0000e-005**	**2.2300e-003**	**1.0000e-005**	**2.2400e-003**	**5.9000e-004**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**1.6362**	**1.6362**	**4.0000e-005**	**4.0000e-005**	**1.6501**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0736	0.0000	0.0736	0.0391	0.0000	0.0391	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0247	0.2523	0.1791	3.8000e-004		0.0109	0.0109		0.0100	0.0100	0.0000	33.4670	33.4670	0.0108	0.0000	33.7375
Total	**0.0247**	**0.2523**	**0.1791**	**3.8000e-004**	**0.0736**	**0.0109**	**0.0844**	**0.0391**	**0.0100**	**0.0491**	**0.0000**	**33.4670**	**33.4670**	**0.0108**	**0.0000**	**33.7375**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Site Preparation - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-004	4.9000e-004	5.9300e-003	2.0000e-005	2.2300e-003	1.0000e-005	2.2400e-003	5.9000e-004	1.0000e-005	6.0000e-004	0.0000	1.6362	1.6362	4.0000e-005	4.0000e-005	1.6501
Total	**7.0000e-004**	**4.9000e-004**	**5.9300e-003**	**2.0000e-005**	**2.2300e-003**	**1.0000e-005**	**2.2400e-003**	**5.9000e-004**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**1.6362**	**1.6362**	**4.0000e-005**	**4.0000e-005**	**1.6501**

3.4 Grading - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1551	0.0000	0.1551	0.0806	0.0000	0.0806	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0365	0.3676	0.3490	7.1000e-004		0.0150	0.0150		0.0138	0.0138	0.0000	62.5676	62.5676	0.0202	0.0000	63.0735
Total	**0.0365**	**0.3676**	**0.3490**	**7.1000e-004**	**0.1551**	**0.0150**	**0.1701**	**0.0806**	**0.0138**	**0.0944**	**0.0000**	**62.5676**	**62.5676**	**0.0202**	**0.0000**	**63.0735**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Grading - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3900e-003	9.7000e-004	0.0119	4.0000e-005	4.4600e-003	2.0000e-005	4.4800e-003	1.1900e-003	2.0000e-005	1.2000e-003	0.0000	3.2724	3.2724	8.0000e-005	9.0000e-005	3.3001
Total	**1.3900e-003**	**9.7000e-004**	**0.0119**	**4.0000e-005**	**4.4600e-003**	**2.0000e-005**	**4.4800e-003**	**1.1900e-003**	**2.0000e-005**	**1.2000e-003**	**0.0000**	**3.2724**	**3.2724**	**8.0000e-005**	**9.0000e-005**	**3.3001**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0605	0.0000	0.0605	0.0314	0.0000	0.0314	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0365	0.3676	0.3490	7.1000e-004		0.0150	0.0150		0.0138	0.0138	0.0000	62.5675	62.5675	0.0202	0.0000	63.0734
Total	**0.0365**	**0.3676**	**0.3490**	**7.1000e-004**	**0.0605**	**0.0150**	**0.0755**	**0.0314**	**0.0138**	**0.0452**	**0.0000**	**62.5675**	**62.5675**	**0.0202**	**0.0000**	**63.0734**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Grading - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3900e-003	9.7000e-004	0.0119	4.0000e-005	4.4600e-003	2.0000e-005	4.4800e-003	1.1900e-003	2.0000e-005	1.2000e-003	0.0000	3.2724	3.2724	8.0000e-005	9.0000e-005	3.3001
Total	**1.3900e-003**	**9.7000e-004**	**0.0119**	**4.0000e-005**	**4.4600e-003**	**2.0000e-005**	**4.4800e-003**	**1.1900e-003**	**2.0000e-005**	**1.2000e-003**	**0.0000**	**3.2724**	**3.2724**	**8.0000e-005**	**9.0000e-005**	**3.3001**

3.4 Grading - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0467	0.0000	0.0467	0.0210	0.0000	0.0210	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.1400e-003	0.0919	0.0872	1.8000e-004		3.7400e-003	3.7400e-003		3.4400e-003	3.4400e-003	0.0000	15.6419	15.6419	5.0600e-003	0.0000	15.7684
Total	**9.1400e-003**	**0.0919**	**0.0872**	**1.8000e-004**	**0.0467**	**3.7400e-003**	**0.0505**	**0.0210**	**3.4400e-003**	**0.0245**	**0.0000**	**15.6419**	**15.6419**	**5.0600e-003**	**0.0000**	**15.7684**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Grading - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-004	2.2000e-004	2.7600e-003	1.0000e-005	1.1100e-003	0.0000	1.1200e-003	3.0000e-004	0.0000	3.0000e-004	0.0000	0.7908	0.7908	2.0000e-005	2.0000e-005	0.7973
Total	**3.2000e-004**	**2.2000e-004**	**2.7600e-003**	**1.0000e-005**	**1.1100e-003**	**0.0000**	**1.1200e-003**	**3.0000e-004**	**0.0000**	**3.0000e-004**	**0.0000**	**0.7908**	**0.7908**	**2.0000e-005**	**2.0000e-005**	**0.7973**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0182	0.0000	0.0182	8.1900e-003	0.0000	8.1900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.1400e-003	0.0919	0.0872	1.8000e-004		3.7400e-003	3.7400e-003		3.4400e-003	3.4400e-003	0.0000	15.6419	15.6419	5.0600e-003	0.0000	15.7683
Total	**9.1400e-003**	**0.0919**	**0.0872**	**1.8000e-004**	**0.0182**	**3.7400e-003**	**0.0220**	**8.1900e-003**	**3.4400e-003**	**0.0116**	**0.0000**	**15.6419**	**15.6419**	**5.0600e-003**	**0.0000**	**15.7683**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Grading - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-004	2.2000e-004	2.7600e-003	1.0000e-005	1.1100e-003	0.0000	1.1200e-003	3.0000e-004	0.0000	3.0000e-004	0.0000	0.7908	0.7908	2.0000e-005	2.0000e-005	0.7973
Total	**3.2000e-004**	**2.2000e-004**	**2.7600e-003**	**1.0000e-005**	**1.1100e-003**	**0.0000**	**1.1200e-003**	**3.0000e-004**	**0.0000**	**3.0000e-004**	**0.0000**	**0.7908**	**0.7908**	**2.0000e-005**	**2.0000e-005**	**0.7973**

3.5 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1573	1.4340	1.8497	3.1000e-003		0.0607	0.0607		0.0571	0.0571	0.0000	266.7074	266.7074	0.0627	0.0000	268.2747
Total	**0.1573**	**1.4340**	**1.8497**	**3.1000e-003**		**0.0607**	**0.0607**		**0.0571**	**0.0571**	**0.0000**	**266.7074**	**266.7074**	**0.0627**	**0.0000**	**268.2747**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.1100e-003	0.3337	0.1006	1.4100e-003	0.0481	2.1000e-003	0.0502	0.0139	2.0100e-003	0.0159	0.0000	135.4544	135.4544	6.2000e-004	0.0203	141.5186
Worker	0.0739	0.0492	0.6306	1.9700e-003	0.2550	1.0600e-003	0.2560	0.0678	9.8000e-004	0.0687	0.0000	180.8798	180.8798	3.8900e-003	4.6000e-003	182.3482
Total	**0.0820**	**0.3829**	**0.7311**	**3.3800e-003**	**0.3031**	**3.1600e-003**	**0.3063**	**0.0817**	**2.9900e-003**	**0.0847**	**0.0000**	**316.3341**	**316.3341**	**4.5100e-003**	**0.0249**	**323.8668**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1573	1.4340	1.8497	3.1000e-003		0.0607	0.0607		0.0571	0.0571	0.0000	266.7071	266.7071	0.0627	0.0000	268.2744
Total	**0.1573**	**1.4340**	**1.8497**	**3.1000e-003**		**0.0607**	**0.0607**		**0.0571**	**0.0571**	**0.0000**	**266.7071**	**266.7071**	**0.0627**	**0.0000**	**268.2744**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.1100e-003	0.3337	0.1006	1.4100e-003	0.0481	2.1000e-003	0.0502	0.0139	2.0100e-003	0.0159	0.0000	135.4544	135.4544	6.2000e-004	0.0203	141.5186
Worker	0.0739	0.0492	0.6306	1.9700e-003	0.2550	1.0600e-003	0.2560	0.0678	9.8000e-004	0.0687	0.0000	180.8798	180.8798	3.8900e-003	4.6000e-003	182.3482
Total	**0.0820**	**0.3829**	**0.7311**	**3.3800e-003**	**0.3031**	**3.1600e-003**	**0.3063**	**0.0817**	**2.9900e-003**	**0.0847**	**0.0000**	**316.3341**	**316.3341**	**4.5100e-003**	**0.0249**	**323.8668**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.525357	0.051382	0.167800	0.162287	0.028850	0.007480	0.012195	0.015949	0.000630	0.000469	0.022910	0.001396	0.003296

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0365	0.0000	9.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8000e-004	1.8000e-004	0.0000	0.0000	1.9000e-004
Unmitigated	0.0365	0.0000	9.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8000e-004	1.8000e-004	0.0000	0.0000	1.9000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	8.9000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0276					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	9.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8000e-004	1.8000e-004	0.0000	0.0000	1.9000e-004
Total	**0.0365**	**0.0000**	**9.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.8000e-004**	**1.8000e-004**	**0.0000**	**0.0000**	**1.9000e-004**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	8.9000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0276					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	9.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8000e-004	1.8000e-004	0.0000	0.0000	1.9000e-004
Total	**0.0365**	**0.0000**	**9.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.8000e-004**	**1.8000e-004**	**0.0000**	**0.0000**	**1.9000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Richgrove WWTP - Tulare County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Richgrove WWTP

Tulare County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	9.80	Acre	9.80	426,888.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	51
Climate Zone	7			**Operational Year**	2026
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Construction Schedule

Grading - Acres Graded

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	60.00
tblConstructionPhase	NumDays	10.00	20.00
tblConstructionPhase	PhaseEndDate	9/25/2026	12/4/2026
tblConstructionPhase	PhaseEndDate	11/7/2025	1/16/2026
tblConstructionPhase	PhaseEndDate	10/10/2025	10/24/2025

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstructionPhase	PhaseStartDate	11/8/2025	1/17/2026
tblConstructionPhase	PhaseStartDate	10/11/2025	10/25/2025
tblGrading	AcresOfGrading	60.00	20.00
tblGrading	AcresOfGrading	30.00	15.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

2.0 Emissions Summary

Richgrove WWTP - Tulare County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2025	2.5512	25.2792	20.0049	0.0405	19.0915	1.0878	20.1793	10.0775	1.0008	11.0783	0.0000	3,911.2154	3,911.2154	1.1973	4.5700e-003	3,938.5989
2026	2.1631	15.6439	23.4447	0.0579	6.5672	0.6243	7.1915	3.3992	0.5744	3.9736	0.0000	5,740.7315	5,740.7315	0.9325	0.2365	5,827.3130
Maximum	**2.5512**	**25.2792**	**23.4447**	**0.0579**	**19.0915**	**1.0878**	**20.1793**	**10.0775**	**1.0008**	**11.0783**	**0.0000**	**5,740.7315**	**5,740.7315**	**1.1973**	**0.2365**	**5,827.3130**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2025	2.5512	25.2792	20.0049	0.0405	7.5860	1.0878	8.6737	3.9674	1.0008	4.9682	0.0000	3,911.2154	3,911.2154	1.1973	4.5700e-003	3,938.5989
2026	2.1631	15.6439	23.4447	0.0579	2.7157	0.6243	3.3024	1.3567	0.5744	1.9311	0.0000	5,740.7315	5,740.7315	0.9325	0.2365	5,827.3130
Maximum	**2.5512**	**25.2792**	**23.4447**	**0.0579**	**7.5860**	**1.0878**	**8.6737**	**3.9674**	**1.0008**	**4.9682**	**0.0000**	**5,740.7315**	**5,740.7315**	**1.1973**	**0.2365**	**5,827.3130**

Richgrove WWTP - Tulare County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	59.85	0.00	56.24	60.49	0.00	54.16	0.00	0.00	0.00	0.00	0.00	0.00

Richgrove WWTP - Tulare County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2001	1.0000e-005	1.0000e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1400e-003	2.1400e-003	1.0000e-005		2.2800e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2001**	**1.0000e-005**	**1.0000e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.1400e-003**	**2.1400e-003**	**1.0000e-005**	**0.0000**	**2.2800e-003**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2001	1.0000e-005	1.0000e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1400e-003	2.1400e-003	1.0000e-005		2.2800e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2001**	**1.0000e-005**	**1.0000e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.1400e-003**	**2.1400e-003**	**1.0000e-005**	**0.0000**	**2.2800e-003**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	9/1/2025	9/26/2025	5	20	
2	Site Preparation	Site Preparation	9/27/2025	10/24/2025	5	20	
3	Grading	Grading	10/25/2025	1/16/2026	5	60	
4	Building Construction	Building Construction	1/17/2026	12/4/2026	5	230	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 20

Acres of Paving: 9.8

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	1	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	179.00	70.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0926	19.1966	19.4184	0.0388		0.8528	0.8528		0.7920	0.7920		3,747.5996	3,747.5996	1.0464		3,773.7606
Total	**2.0926**	**19.1966**	**19.4184**	**0.0388**		**0.8528**	**0.8528**		**0.7920**	**0.7920**		**3,747.5996**	**3,747.5996**	**1.0464**		**3,773.7606**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0654	0.0378	0.5865	1.6200e-003	0.1916	8.2000e-004	0.1924	0.0508	7.6000e-004	0.0516		163.6158	163.6158	3.4700e-003	3.8100e-003	164.8383
Total	**0.0654**	**0.0378**	**0.5865**	**1.6200e-003**	**0.1916**	**8.2000e-004**	**0.1924**	**0.0508**	**7.6000e-004**	**0.0516**		**163.6158**	**163.6158**	**3.4700e-003**	**3.8100e-003**	**164.8383**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0926	19.1966	19.4184	0.0388		0.8528	0.8528		0.7920	0.7920	0.0000	3,747.5996	3,747.5996	1.0464		3,773.7606
Total	**2.0926**	**19.1966**	**19.4184**	**0.0388**		**0.8528**	**0.8528**		**0.7920**	**0.7920**	**0.0000**	**3,747.5996**	**3,747.5996**	**1.0464**		**3,773.7606**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0654	0.0378	0.5865	1.6200e-003	0.1916	8.2000e-004	0.1924	0.0508	7.6000e-004	0.0516		163.6158	163.6158	3.4700e-003	3.8100e-003	164.8383
Total	**0.0654**	**0.0378**	**0.5865**	**1.6200e-003**	**0.1916**	**8.2000e-004**	**0.1924**	**0.0508**	**7.6000e-004**	**0.0516**		**163.6158**	**163.6158**	**3.4700e-003**	**3.8100e-003**	**164.8383**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Site Preparation - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.8616	0.0000	18.8616	10.0166	0.0000	10.0166			0.0000			0.0000
Off-Road	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999		3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**18.8616**	**1.0868**	**19.9484**	**10.0166**	**0.9999**	**11.0164**		**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0785	0.0453	0.7038	1.9400e-003	0.2299	9.9000e-004	0.2309	0.0610	9.1000e-004	0.0619		196.3390	196.3390	4.1600e-003	4.5700e-003	197.8060
Total	**0.0785**	**0.0453**	**0.7038**	**1.9400e-003**	**0.2299**	**9.9000e-004**	**0.2309**	**0.0610**	**9.1000e-004**	**0.0619**		**196.3390**	**196.3390**	**4.1600e-003**	**4.5700e-003**	**197.8060**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Site Preparation - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.3560	0.0000	7.3560	3.9065	0.0000	3.9065			0.0000			0.0000
Off-Road	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999	0.0000	3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**7.3560**	**1.0868**	**8.4428**	**3.9065**	**0.9999**	**4.9063**	**0.0000**	**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0785	0.0453	0.7038	1.9400e-003	0.2299	9.9000e-004	0.2309	0.0610	9.1000e-004	0.0619		196.3390	196.3390	4.1600e-003	4.5700e-003	197.8060
Total	**0.0785**	**0.0453**	**0.7038**	**1.9400e-003**	**0.2299**	**9.9000e-004**	**0.2309**	**0.0610**	**9.1000e-004**	**0.0619**		**196.3390**	**196.3390**	**4.1600e-003**	**4.5700e-003**	**197.8060**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Grading - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.3756	0.0000	6.3756	3.3484	0.0000	3.3484			0.0000			0.0000
Off-Road	1.5227	15.3148	14.5402	0.0297		0.6236	0.6236		0.5737	0.5737		2,873.7052	2,873.7052	0.9294		2,896.9405
Total	**1.5227**	**15.3148**	**14.5402**	**0.0297**	**6.3756**	**0.6236**	**6.9992**	**3.3484**	**0.5737**	**3.9221**		**2,873.7052**	**2,873.7052**	**0.9294**		**2,896.9405**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0654	0.0378	0.5865	1.6200e-003	0.1916	8.2000e-004	0.1924	0.0508	7.6000e-004	0.0516		163.6158	163.6158	3.4700e-003	3.8100e-003	164.8383
Total	**0.0654**	**0.0378**	**0.5865**	**1.6200e-003**	**0.1916**	**8.2000e-004**	**0.1924**	**0.0508**	**7.6000e-004**	**0.0516**		**163.6158**	**163.6158**	**3.4700e-003**	**3.8100e-003**	**164.8383**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Grading - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.4865	0.0000	2.4865	1.3059	0.0000	1.3059			0.0000			0.0000
Off-Road	1.5227	15.3148	14.5402	0.0297		0.6236	0.6236		0.5737	0.5737	0.0000	2,873.7052	2,873.7052	0.9294		2,896.9405
Total	**1.5227**	**15.3148**	**14.5402**	**0.0297**	**2.4865**	**0.6236**	**3.1101**	**1.3059**	**0.5737**	**1.8796**	**0.0000**	**2,873.7052**	**2,873.7052**	**0.9294**		**2,896.9405**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0654	0.0378	0.5865	1.6200e-003	0.1916	8.2000e-004	0.1924	0.0508	7.6000e-004	0.0516		163.6158	163.6158	3.4700e-003	3.8100e-003	164.8383
Total	**0.0654**	**0.0378**	**0.5865**	**1.6200e-003**	**0.1916**	**8.2000e-004**	**0.1924**	**0.0508**	**7.6000e-004**	**0.0516**		**163.6158**	**163.6158**	**3.4700e-003**	**3.8100e-003**	**164.8383**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Grading - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.3756	0.0000	6.3756	3.3484	0.0000	3.3484			0.0000			0.0000
Off-Road	1.5227	15.3148	14.5402	0.0297		0.6236	0.6236		0.5737	0.5737		2,873.7052	2,873.7052	0.9294		2,896.9405
Total	**1.5227**	**15.3148**	**14.5402**	**0.0297**	**6.3756**	**0.6236**	**6.9992**	**3.3484**	**0.5737**	**3.9221**		**2,873.7052**	**2,873.7052**	**0.9294**		**2,896.9405**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0606	0.0335	0.5446	1.5600e-003	0.1916	7.7000e-004	0.1924	0.0508	7.1000e-004	0.0515		158.1318	158.1318	3.1000e-003	3.5400e-003	159.2635
Total	**0.0606**	**0.0335**	**0.5446**	**1.5600e-003**	**0.1916**	**7.7000e-004**	**0.1924**	**0.0508**	**7.1000e-004**	**0.0515**		**158.1318**	**158.1318**	**3.1000e-003**	**3.5400e-003**	**159.2635**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Grading - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.4865	0.0000	2.4865	1.3059	0.0000	1.3059			0.0000			0.0000
Off-Road	1.5227	15.3148	14.5402	0.0297		0.6236	0.6236		0.5737	0.5737	0.0000	2,873.7052	2,873.7052	0.9294		2,896.9405
Total	**1.5227**	**15.3148**	**14.5402**	**0.0297**	**2.4865**	**0.6236**	**3.1101**	**1.3059**	**0.5737**	**1.8796**	**0.0000**	**2,873.7052**	**2,873.7052**	**0.9294**		**2,896.9405**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0606	0.0335	0.5446	1.5600e-003	0.1916	7.7000e-004	0.1924	0.0508	7.1000e-004	0.0515		158.1318	158.1318	3.1000e-003	3.5400e-003	159.2635
Total	**0.0606**	**0.0335**	**0.5446**	**1.5600e-003**	**0.1916**	**7.7000e-004**	**0.1924**	**0.0508**	**7.1000e-004**	**0.0515**		**158.1318**	**158.1318**	**3.1000e-003**	**3.5400e-003**	**159.2635**

Richgrove WWTP - Tulare County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0731	2.7747	0.8608	0.0123	0.4293	0.0183	0.4475	0.1236	0.0175	0.1411		1,297.2174	1,297.2174	5.9900e-003	0.1943	1,355.2703
Worker	0.7226	0.3996	6.4993	0.0187	2.2864	9.2200e-003	2.2956	0.6063	8.4900e-003	0.6148		1,887.0397	1,887.0397	0.0370	0.0422	1,900.5446
Total	**0.7957**	**3.1743**	**7.3601**	**0.0309**	**2.7157**	**0.0275**	**2.7431**	**0.7300**	**0.0260**	**0.7559**		**3,184.2571**	**3,184.2571**	**0.0430**	**0.2365**	**3,255.8149**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0731	2.7747	0.8608	0.0123	0.4293	0.0183	0.4475	0.1236	0.0175	0.1411		1,297.2174	1,297.2174	5.9900e-003	0.1943	1,355.2703
Worker	0.7226	0.3996	6.4993	0.0187	2.2864	9.2200e-003	2.2956	0.6063	8.4900e-003	0.6148		1,887.0397	1,887.0397	0.0370	0.0422	1,900.5446
Total	**0.7957**	**3.1743**	**7.3601**	**0.0309**	**2.7157**	**0.0275**	**2.7431**	**0.7300**	**0.0260**	**0.7559**		**3,184.2571**	**3,184.2571**	**0.0430**	**0.2365**	**3,255.8149**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.525357	0.051382	0.167800	0.162287	0.028850	0.007480	0.012195	0.015949	0.000630	0.000469	0.022910	0.001396	0.003296

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.2001	1.0000e-005	1.0000e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1400e-003	2.1400e-003	1.0000e-005		2.2800e-003
Unmitigated	0.2001	1.0000e-005	1.0000e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1400e-003	2.1400e-003	1.0000e-005		2.2800e-003

Richgrove WWTP - Tulare County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0488					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1512					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.0000e-005	1.0000e-005	1.0000e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1400e-003	2.1400e-003	1.0000e-005		2.2800e-003
Total	**0.2001**	**1.0000e-005**	**1.0000e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.1400e-003**	**2.1400e-003**	**1.0000e-005**		**2.2800e-003**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0488					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1512					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.0000e-005	1.0000e-005	1.0000e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1400e-003	2.1400e-003	1.0000e-005		2.2800e-003
Total	**0.2001**	**1.0000e-005**	**1.0000e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.1400e-003**	**2.1400e-003**	**1.0000e-005**		**2.2800e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Richgrove WWTP - Tulare County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Richgrove WWTP

Tulare County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	9.80	Acre	9.80	426,888.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	51
Climate Zone	7			**Operational Year**	2026
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Construction Schedule

Grading - Acres Graded

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	60.00
tblConstructionPhase	NumDays	10.00	20.00
tblConstructionPhase	PhaseEndDate	9/25/2026	12/4/2026
tblConstructionPhase	PhaseEndDate	11/7/2025	1/16/2026
tblConstructionPhase	PhaseEndDate	10/10/2025	10/24/2025

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstructionPhase	PhaseStartDate	11/8/2025	1/17/2026
tblConstructionPhase	PhaseStartDate	10/11/2025	10/25/2025
tblGrading	AcresOfGrading	60.00	20.00
tblGrading	AcresOfGrading	30.00	15.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

2.0 Emissions Summary

Richgrove WWTP - Tulare County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2025	2.5460	25.2869	19.8940	0.0403	19.0915	1.0878	20.1793	10.0775	1.0008	11.0783	0.0000	3,892.4909	3,892.4909	1.1975	5.0700e-003	3,920.0030
2026	2.1129	15.9114	22.2551	0.0558	6.5672	0.6243	7.1915	3.3992	0.5744	3.9736	0.0000	5,527.9724	5,527.9724	0.9327	0.2417	5,616.1349
Maximum	**2.5460**	**25.2869**	**22.2551**	**0.0558**	**19.0915**	**1.0878**	**20.1793**	**10.0775**	**1.0008**	**11.0783**	**0.0000**	**5,527.9724**	**5,527.9724**	**1.1975**	**0.2417**	**5,616.1349**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2025	2.5460	25.2869	19.8940	0.0403	7.5860	1.0878	8.6737	3.9674	1.0008	4.9682	0.0000	3,892.4909	3,892.4909	1.1975	5.0700e-003	3,920.0030
2026	2.1129	15.9114	22.2551	0.0558	2.7157	0.6243	3.3024	1.3567	0.5744	1.9311	0.0000	5,527.9724	5,527.9724	0.9327	0.2417	5,616.1349
Maximum	**2.5460**	**25.2869**	**22.2551**	**0.0558**	**7.5860**	**1.0878**	**8.6737**	**3.9674**	**1.0008**	**4.9682**	**0.0000**	**5,527.9724**	**5,527.9724**	**1.1975**	**0.2417**	**5,616.1349**

Richgrove WWTP - Tulare County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	59.85	0.00	56.24	60.49	0.00	54.16	0.00	0.00	0.00	0.00	0.00	0.00

Richgrove WWTP - Tulare County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2001	1.0000e-005	1.0000e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1400e-003	2.1400e-003	1.0000e-005		2.2800e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2001**	**1.0000e-005**	**1.0000e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.1400e-003**	**2.1400e-003**	**1.0000e-005**	**0.0000**	**2.2800e-003**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2001	1.0000e-005	1.0000e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1400e-003	2.1400e-003	1.0000e-005		2.2800e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2001**	**1.0000e-005**	**1.0000e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.1400e-003**	**2.1400e-003**	**1.0000e-005**	**0.0000**	**2.2800e-003**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	9/1/2025	9/26/2025	5	20	
2	Site Preparation	Site Preparation	9/27/2025	10/24/2025	5	20	
3	Grading	Grading	10/25/2025	1/16/2026	5	60	
4	Building Construction	Building Construction	1/17/2026	12/4/2026	5	230	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 20

Acres of Paving: 9.8

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	1	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	179.00	70.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0926	19.1966	19.4184	0.0388		0.8528	0.8528		0.7920	0.7920		3,747.5996	3,747.5996	1.0464		3,773.7606
Total	**2.0926**	**19.1966**	**19.4184**	**0.0388**		**0.8528**	**0.8528**		**0.7920**	**0.7920**		**3,747.5996**	**3,747.5996**	**1.0464**		**3,773.7606**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0610	0.0442	0.4756	1.4300e-003	0.1916	8.2000e-004	0.1924	0.0508	7.6000e-004	0.0516		144.8914	144.8914	3.6500e-003	4.2300e-003	146.2424
Total	**0.0610**	**0.0442**	**0.4756**	**1.4300e-003**	**0.1916**	**8.2000e-004**	**0.1924**	**0.0508**	**7.6000e-004**	**0.0516**		**144.8914**	**144.8914**	**3.6500e-003**	**4.2300e-003**	**146.2424**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0926	19.1966	19.4184	0.0388		0.8528	0.8528		0.7920	0.7920	0.0000	3,747.5996	3,747.5996	1.0464		3,773.7606
Total	**2.0926**	**19.1966**	**19.4184**	**0.0388**		**0.8528**	**0.8528**		**0.7920**	**0.7920**	**0.0000**	**3,747.5996**	**3,747.5996**	**1.0464**		**3,773.7606**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0610	0.0442	0.4756	1.4300e-003	0.1916	8.2000e-004	0.1924	0.0508	7.6000e-004	0.0516		144.8914	144.8914	3.6500e-003	4.2300e-003	146.2424
Total	**0.0610**	**0.0442**	**0.4756**	**1.4300e-003**	**0.1916**	**8.2000e-004**	**0.1924**	**0.0508**	**7.6000e-004**	**0.0516**		**144.8914**	**144.8914**	**3.6500e-003**	**4.2300e-003**	**146.2424**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Site Preparation - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.8616	0.0000	18.8616	10.0166	0.0000	10.0166			0.0000			0.0000
Off-Road	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999		3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**18.8616**	**1.0868**	**19.9484**	**10.0166**	**0.9999**	**11.0164**		**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0733	0.0530	0.5707	1.7200e-003	0.2299	9.9000e-004	0.2309	0.0610	9.1000e-004	0.0619		173.8696	173.8696	4.3800e-003	5.0700e-003	175.4909
Total	**0.0733**	**0.0530**	**0.5707**	**1.7200e-003**	**0.2299**	**9.9000e-004**	**0.2309**	**0.0610**	**9.1000e-004**	**0.0619**		**173.8696**	**173.8696**	**4.3800e-003**	**5.0700e-003**	**175.4909**

Richgrove WWTP - Tulare County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Site Preparation - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.3560	0.0000	7.3560	3.9065	0.0000	3.9065			0.0000			0.0000
Off-Road	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999	0.0000	3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**7.3560**	**1.0868**	**8.4428**	**3.9065**	**0.9999**	**4.9063**	**0.0000**	**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0733	0.0530	0.5707	1.7200e-003	0.2299	9.9000e-004	0.2309	0.0610	9.1000e-004	0.0619		173.8696	173.8696	4.3800e-003	5.0700e-003	175.4909
Total	**0.0733**	**0.0530**	**0.5707**	**1.7200e-003**	**0.2299**	**9.9000e-004**	**0.2309**	**0.0610**	**9.1000e-004**	**0.0619**		**173.8696**	**173.8696**	**4.3800e-003**	**5.0700e-003**	**175.4909**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Grading - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.3756	0.0000	6.3756	3.3484	0.0000	3.3484			0.0000			0.0000
Off-Road	1.5227	15.3148	14.5402	0.0297		0.6236	0.6236		0.5737	0.5737		2,873.7052	2,873.7052	0.9294		2,896.9405
Total	**1.5227**	**15.3148**	**14.5402**	**0.0297**	**6.3756**	**0.6236**	**6.9992**	**3.3484**	**0.5737**	**3.9221**		**2,873.7052**	**2,873.7052**	**0.9294**		**2,896.9405**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0610	0.0442	0.4756	1.4300e-003	0.1916	8.2000e-004	0.1924	0.0508	7.6000e-004	0.0516		144.8914	144.8914	3.6500e-003	4.2300e-003	146.2424
Total	**0.0610**	**0.0442**	**0.4756**	**1.4300e-003**	**0.1916**	**8.2000e-004**	**0.1924**	**0.0508**	**7.6000e-004**	**0.0516**		**144.8914**	**144.8914**	**3.6500e-003**	**4.2300e-003**	**146.2424**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Grading - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.4865	0.0000	2.4865	1.3059	0.0000	1.3059			0.0000			0.0000
Off-Road	1.5227	15.3148	14.5402	0.0297		0.6236	0.6236		0.5737	0.5737	0.0000	2,873.7052	2,873.7052	0.9294		2,896.9405
Total	**1.5227**	**15.3148**	**14.5402**	**0.0297**	**2.4865**	**0.6236**	**3.1101**	**1.3059**	**0.5737**	**1.8796**	**0.0000**	**2,873.7052**	**2,873.7052**	**0.9294**		**2,896.9405**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0610	0.0442	0.4756	1.4300e-003	0.1916	8.2000e-004	0.1924	0.0508	7.6000e-004	0.0516		144.8914	144.8914	3.6500e-003	4.2300e-003	146.2424
Total	**0.0610**	**0.0442**	**0.4756**	**1.4300e-003**	**0.1916**	**8.2000e-004**	**0.1924**	**0.0508**	**7.6000e-004**	**0.0516**		**144.8914**	**144.8914**	**3.6500e-003**	**4.2300e-003**	**146.2424**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Grading - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.3756	0.0000	6.3756	3.3484	0.0000	3.3484			0.0000			0.0000
Off-Road	1.5227	15.3148	14.5402	0.0297		0.6236	0.6236		0.5737	0.5737		2,873.7052	2,873.7052	0.9294		2,896.9405
Total	**1.5227**	**15.3148**	**14.5402**	**0.0297**	**6.3756**	**0.6236**	**6.9992**	**3.3484**	**0.5737**	**3.9221**		**2,873.7052**	**2,873.7052**	**0.9294**		**2,896.9405**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0567	0.0392	0.4423	1.3900e-003	0.1916	7.7000e-004	0.1924	0.0508	7.1000e-004	0.0515		140.0718	140.0718	3.2800e-003	3.9200e-003	141.3223
Total	**0.0567**	**0.0392**	**0.4423**	**1.3900e-003**	**0.1916**	**7.7000e-004**	**0.1924**	**0.0508**	**7.1000e-004**	**0.0515**		**140.0718**	**140.0718**	**3.2800e-003**	**3.9200e-003**	**141.3223**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Grading - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.4865	0.0000	2.4865	1.3059	0.0000	1.3059			0.0000			0.0000
Off-Road	1.5227	15.3148	14.5402	0.0297		0.6236	0.6236		0.5737	0.5737	0.0000	2,873.7052	2,873.7052	0.9294		2,896.9405
Total	**1.5227**	**15.3148**	**14.5402**	**0.0297**	**2.4865**	**0.6236**	**3.1101**	**1.3059**	**0.5737**	**1.8796**	**0.0000**	**2,873.7052**	**2,873.7052**	**0.9294**		**2,896.9405**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0567	0.0392	0.4423	1.3900e-003	0.1916	7.7000e-004	0.1924	0.0508	7.1000e-004	0.0515		140.0718	140.0718	3.2800e-003	3.9200e-003	141.3223
Total	**0.0567**	**0.0392**	**0.4423**	**1.3900e-003**	**0.1916**	**7.7000e-004**	**0.1924**	**0.0508**	**7.1000e-004**	**0.0515**		**140.0718**	**140.0718**	**3.2800e-003**	**3.9200e-003**	**141.3223**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0683	2.9743	0.8924	0.0123	0.4293	0.0183	0.4476	0.1236	0.0175	0.1412		1,299.9745	1,299.9745	5.7800e-003	0.1949	1,358.1905
Worker	0.6772	0.4675	5.2781	0.0165	2.2864	9.2200e-003	2.2956	0.6063	8.4900e-003	0.6148		1,671.5236	1,671.5236	0.0391	0.0468	1,686.4463
Total	**0.7455**	**3.4417**	**6.1705**	**0.0288**	**2.7157**	**0.0275**	**2.7432**	**0.7300**	**0.0260**	**0.7560**		**2,971.4981**	**2,971.4981**	**0.0449**	**0.2417**	**3,044.6368**

Richgrove WWTP - Tulare County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0683	2.9743	0.8924	0.0123	0.4293	0.0183	0.4476	0.1236	0.0175	0.1412		1,299.9745	1,299.9745	5.7800e-003	0.1949	1,358.1905
Worker	0.6772	0.4675	5.2781	0.0165	2.2864	9.2200e-003	2.2956	0.6063	8.4900e-003	0.6148		1,671.5236	1,671.5236	0.0391	0.0468	1,686.4463
Total	**0.7455**	**3.4417**	**6.1705**	**0.0288**	**2.7157**	**0.0275**	**2.7432**	**0.7300**	**0.0260**	**0.7560**		**2,971.4981**	**2,971.4981**	**0.0449**	**0.2417**	**3,044.6368**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.525357	0.051382	0.167800	0.162287	0.028850	0.007480	0.012195	0.015949	0.000630	0.000469	0.022910	0.001396	0.003296

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.2001	1.0000e-005	1.0000e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1400e-003	2.1400e-003	1.0000e-005		2.2800e-003
Unmitigated	0.2001	1.0000e-005	1.0000e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1400e-003	2.1400e-003	1.0000e-005		2.2800e-003

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0488					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1512					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.0000e-005	1.0000e-005	1.0000e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1400e-003	2.1400e-003	1.0000e-005		2.2800e-003
Total	**0.2001**	**1.0000e-005**	**1.0000e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.1400e-003**	**2.1400e-003**	**1.0000e-005**		**2.2800e-003**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0488					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1512					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.0000e-005	1.0000e-005	1.0000e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1400e-003	2.1400e-003	1.0000e-005		2.2800e-003
Total	**0.2001**	**1.0000e-005**	**1.0000e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.1400e-003**	**2.1400e-003**	**1.0000e-005**		**2.2800e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix B: Biological Evaluation

RICHGROVE COMMUNITY SERVICES DISTRICT
WASTEWATER TREATMENT PLANT IMPROVEMENT PROJECT
BIOLOGICAL EVALUATION

RICHGROVE, CALIFORNIA
JANUARY 2024

PREPARED FOR:
Richgrove Community Services District
20986 Grove Drive, Richgrove, California 93261

PREPARED BY:
Provost & Pritchard Consulting Group
455 W. Fir Avenue, Clovis, California 93611

Report Prepared for:
Richgrove Community Services District
20986 Grove Drive Richgrove, California 93261
(661) 725-5632

Contact:
Diego Paniagua, General Manager

Report Prepared by:
Provost & Pritchard Consulting Group
Preparer: Jairo Perez, Biologist
Project Manager: Briza Sholars, Senior Planner
QA/QC: Geoff Cline, Principal Biologist
Other personnel involved in report preparation: Ben Toews, GIS Specialist; Jackie Lancaster, Senior Project Administrator

Contact:
Briza Sholars
(559) 455-2700

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

ACRONYMS AND ABBREVIATIONS

BMP ..... Best Management Practices
BUOW ..... Burrowing Owl
CDFW..... California Fish and Wildlife
CEQA ..... California Environmental Quality Act
CNDDB..... California Natural Diversity Database
CNPS..... California Native Plant Society
County..... Tulare
District ..... Richgrove Community Services District
ECOS..... (USFWS) Environmental Conservation Online System
EPA ..... Environmental Protection Agency
HUC ..... Hydrologic Unit Code
IPaC ..... U.S. Fish and Wildlife Service's Information for Planning and Consultation system
MBTA..... Migratory Bird Act
MGD ..... Million Gallons per Day
MSL ..... Mean Sea Level
NEPA..... National Environmental Policy Act
NRCS..... Natural Resources Conservation Service
Project ..... Wastewater Treatment Plant Improvement Project
Provost & Pritchard..... Provost & Pritchard Consulting Group
RWQCB..... Regional Water Quality Control Board
RCSD..... Richgrove Community Services District
SWPPP ..... Storm Water Pollution Prevention Plan
SWRCB..... State Water Resources Control Board
SJKF ..... San Joaquin Kit Fox
USACE..... United States Army Corps of Engineers
USC ..... United States Code
USDA ..... United States Department of Agriculture
USFWS..... United States Fish and Wildlife Service
USGS..... United States Geological Survey
WWTP ..... Waste Water Treatment Plant

1 INTRODUCTION

This Biological Evaluation Report, prepared by Provost & Pritchard Consulting Group (Provost & Pritchard) in compliance with the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA), includes a description of the biological resources present or with the potential to occur within the Richgrove Community Services District's (RCSD) proposed Wastewater Treatment Plant (WWTP) Improvement Project (or "project") and evaluates potential project-related impacts to those resources.

1.1 PROJECT DESCRIPTION

The approximately 92-acre project site is located northeast of the community of Richgrove, approximately seven miles east of the City of Delano, and along the eastern side of the San Joaquin Valley in Tulare County, California (see Figure 1, Figure 2, and Figure 3). It includes the existing Richgrove Wastewater Treatment Plant and associated facilities (transmission mains, two aerating ponds, an effluent storage pond, and an alfalfa field). The purpose of the project is to improve the existing wastewater treatment and disposal system to accommodate population growth in the area and provide the necessary capacity expansion and treatment process upgrades for more reliable treatment. The project would construct a standard aeration pond system, an influent lift station and headworks structure, new electrical and control facilities, and minor improvements to the existing effluent disposal site at the WWTP. At the effluent disposal site a small berm will be constructed along the eastern edge of the field, which may involve relocating some of the piping in this area. The project does not intend to draw-down any aquatic features located within the effluent disposal site.

1.2 REPORT OBJECTIVES

Construction activities such as those proposed by the project could potentially modify biological resources or habitats that are crucial for sensitive plant and wildlife species. In cases such as these, development may be regulated by state or federal agencies, and/or addressed by local regulatory agencies. This report addresses issues related to the following:

- The presence of sensitive biological resources on the project site, or with the potential to occur on the project site.
- The federal, state, and local regulations regarding these resources.
- The mitigation measures that may be required to reduce the magnitude of anticipated impacts and/or comply with permit requirements of state and federal resource agencies.

Therefore, the objectives of this report are to:

- Summarize all project-specific information related to existing biological resources;
- Make reasonable inferences about the biological resources that could occur on the project site based on habitat suitability and the proximity of the project site to a species' known range;
- Summarize all state and federal natural resource protection laws that may be relevant to implementation of the project;
- Identify and discuss project impacts and effects to biological resources likely to occur onsite within the context of CEQA, NEPA, and/or state or federal laws; and
- Identify and prescribe a set of avoidance and mitigation measures that would reduce impacts to a less-than-significant level (as identified by CEQA) or avoid and minimize effects (as identified by NEPA) and are generally consistent with recommendations of the resource agencies for affected biological resources.

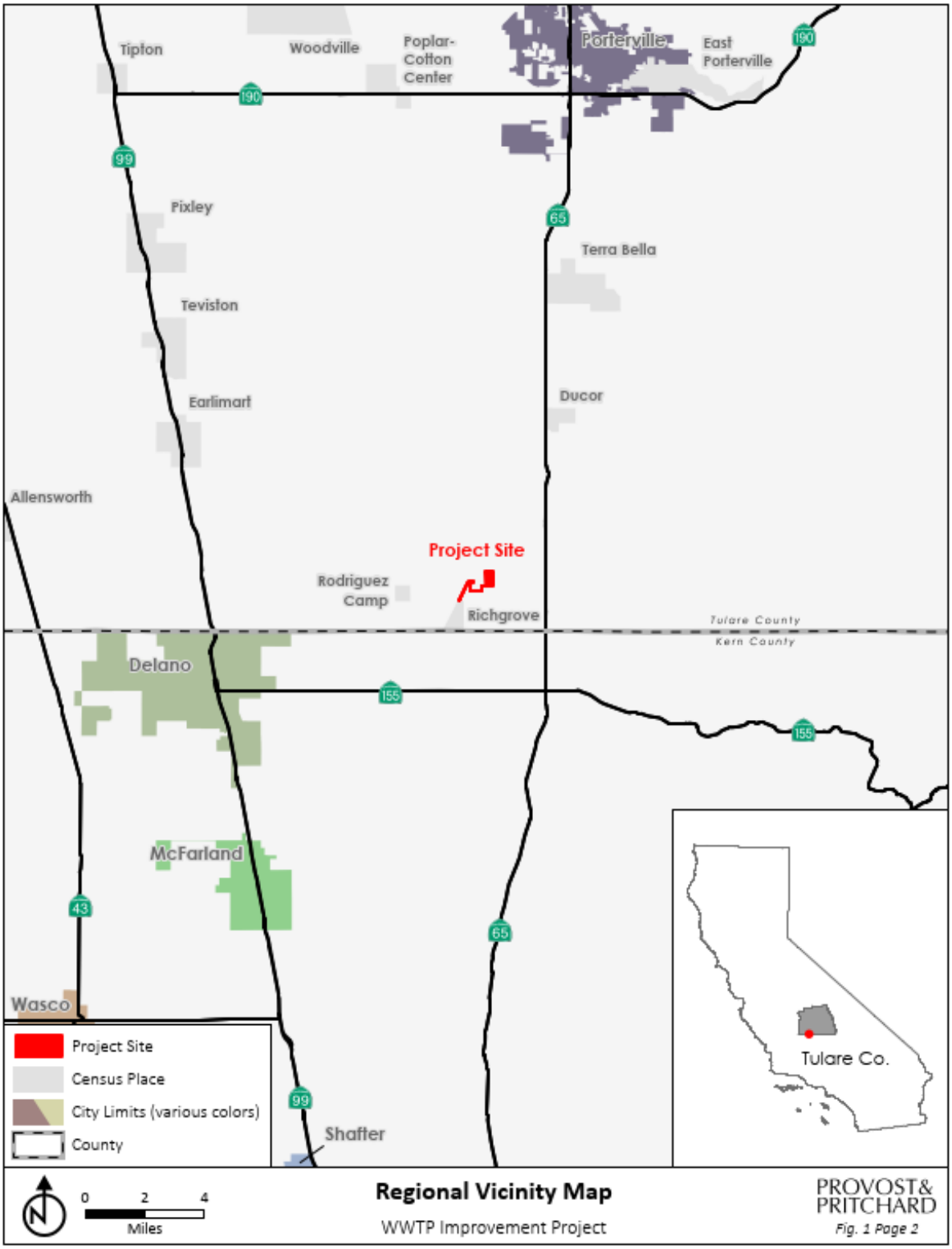


Figure 1: Regional Location Map

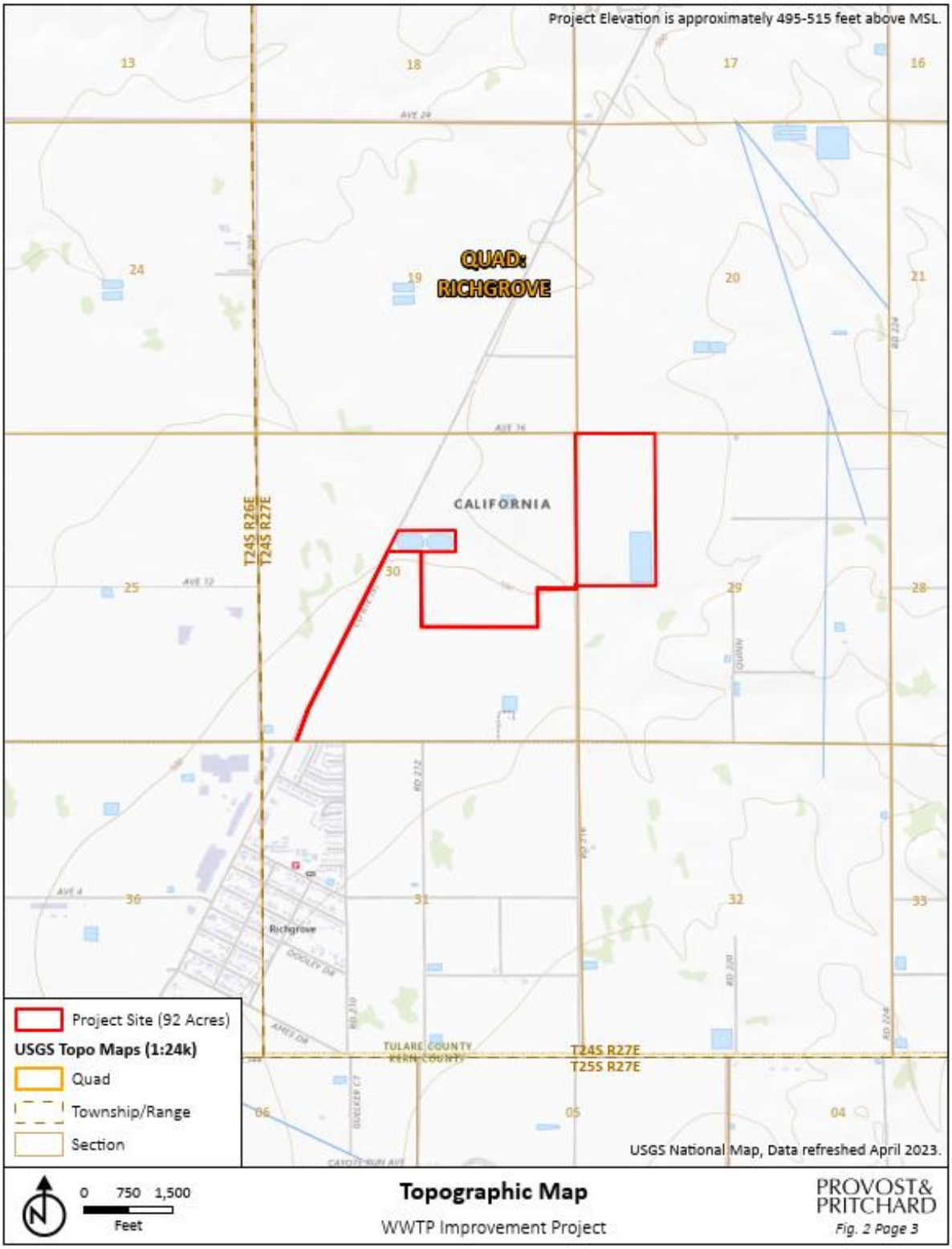


Figure 2: Topographic Quadrangle Map

Figure 3: Project Site Map

1.3 STUDY METHODOLOGY

A reconnaissance-level field survey of the project site was conducted on November 8, 2023, by Provost & Pritchard biologist, Jairo Perez. The survey consisted of walking and driving throughout accessible areas of the project site while identifying and noting land uses, biological habitats and communities, and plant and animal species encountered. Habitats were also assessed for potential suitability for various rare or protected plant and animal species. Representative photographs of the site were taken and are presented in Appendix A.

Mr. Perez then utilized the results of the field survey to conduct an analysis of potential project-related impacts to biological resources based on the resources known to occur or with the potential to occur within the project site. Sources of information used in preparation of this analysis included: the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB; see Appendix B for the species list) and California Wildlife Habitat Relationships (CWHR) database, California Native Plant Society's (CNPS) Online Inventory of Rare and Endangered Vascular Plants of California, CalFlora's online database of California native plants, Jepson Herbarium's online database (i.e., Jepson eFlora), United States Fish and Wildlife Service's (USFWS), Environmental Conservation Online System (ECOS), Information for Planning and Consultation (IPaC; see Appendix C for the species list) system, and National Wetlands Inventory (NWI), iNaturalist; NatureServe Explorer's online database, United States Department of Agriculture (USDA) Natural Resources Conservation Service's (NRCS) Web Soil Survey (see Appendix D for the Web Soil Survey Report), California Herps website, and various manuals, reports, and references related to plants and animals of the San Joaquin Valley region.

The field survey did not include focused surveys for special status species. The field survey conducted included the appropriate level of detail to assess the significance of potential impacts to sensitive biological resources resulting from implementing the project. Furthermore, the field survey was sufficient to generally describe those features of the project that could be subject to the jurisdiction of federal and/or state agencies, such as the United States Army Corps of Engineers (USACE), CDFW, Regional Water Quality Control Board (RWQCB) and the State Water Resources Control Board (SWRCB).

2 EXISTING CONDITIONS

2.1 REGIONAL SETTINGS

TOPOGRAPHY

The topography of the project site is relatively flat with elevations ranging from approximately 482 to 492 feet above mean sea level (MSL).

CLIMATE

Like most of California, the project site experiences a Mediterranean climate. Warm, dry summers are followed by cool, moist winters. In the summer, average high temperatures range between 90- and 100-degrees Fahrenheit (°F), but often exceed 100°F, and the humidity is generally low. Winter temperatures are often below 60°F during the day and rarely exceed 70°F. On average, Richgrove receives approximately nine inches of precipitation in the form of rain yearly, most of which occurs between October and March (Bestplaces, 2023). The project site would be expected to receive similar amounts of precipitation.

SOILS

Three soils were identified within the project site and are listed in Table 1 (see Appendix D for the Web Soil Survey Report). The soils are displayed with their core properties in the table below, according to the Major Land Resource Area of California. The soil types are generally used for irrigated cropland, dairy cattle production, building site development, and grazing.

Table 1: List of Soils Located on the Project Site and Their Basic Properties.

Soil	Soil Map Unit	Percent of Project Site	Hydric Soil Category	Drainage	Permeability	Runoff
Centerville clay	Clay, 2 to 5 percent slopes	53.1%	Predominantly hydric	Well drained	Very slow	Medium
Colpien loam	Loam, 0 to 2 percent slopes	43.7%	Non-hydric	Moderately well drained	Slow	Low
Exeter loam, 0 to 2 percent slopes	Loam, 0 to 2 percent slopes	3.2%	Predominantly Non-hydric	Moderately well drained	Moderately slow	Medium

Hydric soils are defined as soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions such that under sufficiently wet conditions, hydrophytic vegetation can be supported. Centerville clay is identified as predominantly hydric soil, meaning that at least one major component listed for a given map unit is rated as hydric, and at least one contrasting minor component is not rated hydric. Colpien loam is identified as non-hydric soil, meaning no major or minor components for the map unit are rated hydric. Exeter loam is predominantly a non-hydric soil.

2.2 BIOTIC HABITATS

The project contained several habitats, including agricultural, agriculture pond, ruderal, artificial treatment pond, and lagoon (see Figure 4). These habitats and their constituent plant and animal species are described in more detail in the following sections.

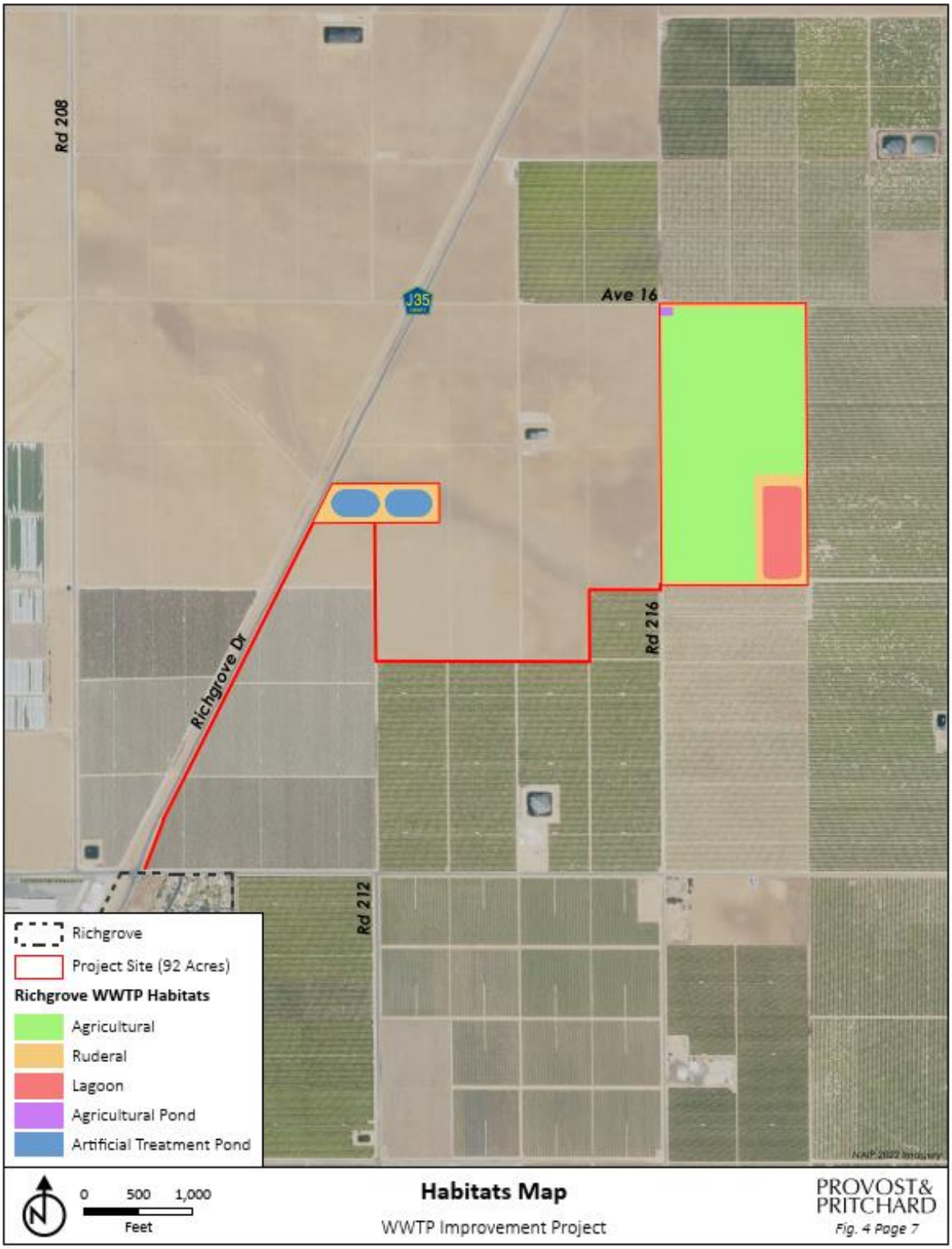


Figure 4: Habitats Map

AGRICULTURAL

The agricultural habitat within the project site consisted of recently fallowed field that was previously an alfalfa field that had been regularly irrigated by effluent water from the adjacent agricultural lagoon. This habitat contained vegetation including remnants of scattered alfalfa (*Medicago sativa*), Bermuda grass (*Cynodon dactylon*), black mustard (*Brassica nigra*), cheeseweed mallow (*Malva parviflora*), wheat (*Triticum sp.*), dove weed (*Croton setiger*), field bindweed (*Convolvulus arvensis*), hairy fleabane (*Erigeron bonariensis*), Johnson grass (*Sorghum halepense*), barnyard grass (*Echinochloa colona*), white stemmed filaree (*Erodium moschatum*), oats (*Avena* sp.), Russian thistle (*Kali tragus*), and silverleaf nightshade (*solanum elaeagnifolium*).

Agricultural habitat provides foraging habitat for a variety of avian species. Common avian species observed foraging within the agricultural habitat included mourning dove (*Zenaida macroura*), northern mockingbird (*Mimus polyglottos*), house finch (*Haemorhous mexicanus*), American crow (*Corvus brachyrhynchos*), and common raven (*Corvus corax*).

Small mammals that can forage within the agricultural habitat include deer mice (*Peromyscus maniculatus*), Botta's pocket gopher (*Thomomys bottae*), and California ground squirrel (*Otospermophilus beecheyi*). Mammalian predators potentially occurring within agricultural habitat would most likely be racoon (*Procyon lotor*), coyote (*Canis latrans*), and striped skunk (*Mephitis mephitis*).

RUDERAL

The ruderal habitat within the site included dirt access roads, the shoulder of California State Route 65, and the outside banks of the wastewater treatment pond, and effluent lagoon habitats. Vegetation observed within this habitat included scattered weedy vegetation including cheeseweed mallow, foxtail brome (*Bromus madritensis*), Russian thistle, wild radish (*Raphanus raphanistrum*), crabgrass (*Digitaria ischaemum*), dove weed, false daisy (*Eclipta prostrata*), hairy fleabane, Canada horseweed (*Erigeron canadensis*), white stemmed filaree, puncture vine (*Tribulus terrestrius*), Russian thistle, spotted spurge (*Euphorbia maculata*), silverleaf nightshade, Mexican fan palm (*Washingtonia robusta*), and coyote melon (*Cucurbita palmata*), common cocklebur (*Xanthium orientale*), curly dock (*Rumex crispus*), sunflower (*Helianthus sp.*), prickly lettuce (*Lactuca serriola*), and puncture vine (*Tribulus terrestris*).

The ruderal field survey within the project site resulted in the identification of numerus bird, small mammal, and reptile species such as American pipit (*Anthus rubescens*), black phoebe (*Sayornis nigricans*), common raven (*Corvus corax*), house finch, hooded merganser (*Lophodytes cucullatus)*, killdeer (*Charadrius vociferus*), red-tailed hawk, deer mice, Botta's pocket gopher, California ground squirrel, common side-blotched lizard (*Uta stansburiana*) and western fence lizard (*Sceloporus occidentalis*). Other bird species that can be expected to roam and forage within this habitat include northern mockingbirds *(Mimus polyglottos)*, and mourning doves *(Zenaida macroura).* The presence of rodents, reptiles and small birds can likely attract foraging raptors (i.e., red-tailed hawk (*Buteo jamaicensis*)) into the ruderal habitat. Coyotes (*Canis latrans*), and other nocturnal animals (i.e., opossums (*Didelphis virginianus*)) could occasionally pass through the ruderal habitat on their way to more suitable habitats elsewhere.

ARTIFICIAL TREATMENT POND

An artificial treatment pond habitat was present within the existing wastewater treatment ponds, which was contaminated with sewage, water chemicals, plastics, and waste material. Vegetation within this habitat was sparse, but included cheeseweed mallow, puncture vine, barnyard grass, and whitestem filaree (*Erodium moschatum*). Both of these treatment ponds also contained common duckweed (*Lemna minor*) floating on the water's surface. No amphibians or fish were observed within the ponds.

Bird species observed within this habitat during the field survey included American pipit and killdeer.

LAGOON

Lagoon habitat was present within the existing wastewater treatment plant lagoon and banks, located along the eastern side of the project site. Moderate amounts of vegetation were found within the lagoon habitat and included curly dock, willow, and other species. This habitat was visually scanned for aquatic species (fish and amphibians) during the survey, however none were observed. Based on a conversation with RCSD personnel there is a possibility for mosquito fish (*Gambusia affinis*) to be present in the lagoon habitat.

Observations within the agricultural lagoon resulted in the identification of numerous birds including American pipit, hooded merganser, and killdeer. The lagoon habitat can also provide a habitat for aquatic migrating birds (i.e., ducks and mallards) en route to a more suitable habitat elsewhere. Ground nesting birds, such as killdeer, could nest within this habitat. Songbird species such as house finches could nest in the willows.

AGRICULTURAL POND

Adjacent to the northwest corner of the agricultural habitat was an agricultural pond habitat, which contained minimal stagnant water with algae. The lower banks of the pond contained ground cover vegetation such as Canadian horseweed, curly dock, cheeseweed mallow, foxtail brome, barnyard grass, and Johnson grass.

During the field survey the agricultural pond habitat was visually scanned for aquatic species, and none were observed. However, this habitat could potentially provide value to wildlife. Some native amphibian species that have the potential to occur within this habitat include western toads (*Anaxyrus boreas*). These species can breed and forage in this habitat.

2.3 NATURAL COMMUNITIES OF SPECIAL CONCERN AND RIPARIAN HABITAT

Natural communities of special concern are those that are of limited distribution, distinguished by significant biological diversity, or home to special status species. CDFW has classified and mapped all-natural communities in California. Just as the special status plant and animal species, these natural communities of special concern can be found within the CNDDB. There is no recorded observation of a natural community of special concern within the project site. Additionally, no natural communities of special concern were observed during the biological survey.

Riparian habitat is composed of plant communities that occur along the banks, and sometimes over the banks, of most waterways and is an important habitat for numerous wildlife species. CDFW has jurisdiction over most riparian habitats in California. No natural waterways were observed within or adjacent to the project site.

2.4 DESIGNATED CRITICAL HABITAT

The USFWS often designates areas of “critical habitat” when it lists species as threatened or endangered. Critical habitat is a specific geographic area that contains features essential for the conservation of a threatened or endangered species, which may require special management and protection. According to the IPaC, designated critical habitat is absent from the project site and vicinity.

2.5 WILDLIFE MOVEMENT CORRIDORS AND NATIVE WILDLIFE NURSERY SITES

Wildlife movement corridors are routes that animals regularly and predictably follow during seasonal migration, dispersal from native ranges, daily travel within home ranges, and inter-population movements. Movement corridors in California are typically associated with valleys, ridgelines, and rivers and creeks

supporting riparian vegetation. The habitats of the project site are common to the area and it is unlikely that the project site is utilized as a wildlife movement corridor.

Native wildlife nursery sites are areas where a species or group of similar species raise their young in a concentrated place, such as maternity bat roosts. No native wildlife nursery sites were found within the project site.

2.6 SPECIAL STATUS PLANTS AND ANIMALS

California contains several rare plant and animal species. In this context, "rare" is defined as a species known to have low populations or limited distributions. This results in rare and sensitive species becoming increasingly more vulnerable to extirpation. State and federal regulations have provided the CDFW and USFWS with a mechanism for conserving and protecting the diversity of plant and animal species native to California. Numerous native plants and animals have been formally designated as "threatened" or "endangered" under state and federal endangered species legislation. Other formal designations include "candidate" for listing or "species of special concern" by CDFW. The CNPS has its list of native plants considered rare, threatened, or endangered. Collectively these animals and plants are referred to as "special status species."

A query of the CNDDB for occurrences of special status plant and animal species was conducted for the *Richgrove* 7.5-minute U.S. Geological Survey (USGS) quadrangle that contains the project site, and for the 8 surrounding USGS quadrangles: *Sausalito school, Ducor, Fountain Springs, Delano East, Quincy school, McFarland, Deepwell Ranch,* and *Sand Canyon*. A query of the IPaC was also completed for the project site. These species, and their potential to occur within the project site, are listed in

Table 2 and Table 3 on the following pages. Other special status species that did not show up in the CNDDB query, but have the potential to occur in the vicinity, are also included in Table 3. Species lists obtained from CNDDB and IPaC are available in Appendix B and Appendix C, respectively. All relevant sources of information, as discussed in the Study Methodology section of this report, as well as field observations, were used to determine if any special status species have the potential to occur within the project site.

Table 2: List of Special Status Plants with Potential to Occur on the project site and/or in the Vicinity.

Species	Status*	Habitat	Occurrence within the Site
Alkali-sink goldfields (*Lasthenia chrysantha*)	CNPS 1B	Found in vernal pool and wet saline flat habitats in the San Joaquin Valley region at elevations below 700 feet. Blooms February – April.	**Absent.** Habitats required by this species are absent from the project site.
Brittlescale (*Atriplex depressa*)	CNPS 1B	Found in Chenopod scrub, meadows and seeps, playas, valley and foothill grassland, vernal pools in alkaline, clay soils. Found at elevations between 3 and 1,050 feet. Blooms May to October.	**Absent.** Suitable habitats for this species are absent from the project site and surrounding areas.
Calico monkeyflower (*Diplacus pictus*)	CNPS 1B	Found in the Sierra Nevada foothills and the Tehachapi mountains in bare, sunny, shrubby areas, around granite outcrops within foothill woodland communities. Found	**Absent.** Suitable habitats for this species were absent from the project site and surrounding areas.

Species	Status*	Habitat	Occurrence within the Site
		at elevations between 450 and 4,100 feet. Blooms March – May.	
California jewelflower (*Caulanthus californicus*)	FE, CE, CNPS 1B	Found in the San Joaquin Valley and western Transverse Ranges in sandy soils. Occurs on flats and slopes, generally in non-alkaline grassland at elevations between 200 and 6,100 feet. Blooms February – April.	**Absent.** Suitable habitat is absent from the project site and surrounding areas. The project site appears to be regularly maintained for agricultural use.
Earlimart orache (*Atriplex cordulata* var. *erecticaulis*)	CNPS 1B	Found in the San Joaquin Valley in saline and alkaline soils, typically within valley grasslands at elevations below 400 feet. Blooms August – September.	**Absent.** Suitable habitat and outside known elevational range required by this species were absent within the project site and surrounding areas.
Lost Hills crownscale (*Atriplex cordulata var. erecticaulis*)	CNPS 1B	Found in the San Joaquin Valley in dried ponds and vernal pools with alkaline soils in alkali scrub, and valley and foothill grasslands at elevations below 2,900 feet. Blooms April – September.	**Absent.** Suitable habitat required by this species were absent within the project site and surrounding areas.
Recurved larkspur (*Delphinium recurvatum*)	CNPS 1B	Occurs in chenopod scrub, cismontane woodland, and grassland habitats on poorly drained, fine, alkaline soils; often in valley saltbush or valley chenopod scrub communities at elevations between 100 and 2,600 feet. Blooms March – June.	**Absent.** Suitable habitats required by this species were absent within the project site and surrounding areas.
San Joaquin adobe sunburst (*Pseudobahia peirsonii*)	FT, CE, CNPS 1B	Found in the San Joaquin Valley and the Sierra Nevada foothills in bare, dark clay soils in valley and foothill grassland and cismontane woodland communities at elevations between 300 and 3,000 feet. Blooms March – May.	**Absent.** Suitable habitats and soils required by this species were absent within the project site and surrounding areas.
San Joaquin woollythreads (*Monolopia congdonii*)	FE, CNPS 1B	Occurs in the San Joaquin Valley in sandy soils on alkaline or loamy plains in valley and foothill grassland and alkali scrub communities at elevations between 150 and 2,800 feet. Blooms February – May.	**Absent.** The habitats required by this species were absent within the project site and surrounding areas.
Spiny-sepaled button-celery (*Eryngium spinosepalum*)	CNPS 1B	Found in the Sierra Nevada foothills and the San Joaquin Valley. Occurs in vernal pools, swales, and roadside ditches. Often associated with clay soils in vernal pools within grassland communities. Occurs at elevations between 50 and 4,200 feet. Blooms April – July.	**Absent.** Suitable habitats required by this species were absent within the project site and surrounding areas.

Species	Status*	Habitat	Occurrence within the Site
Subtle orache (*Atriplex subtilis*)	CNPS 1B	Found in the San Joaquin Valley in saline depressions in alkaline soils within valley and foothill grassland communities at elevations below 300 feet. Blooms June – October.	**Absent.** Suitable habitat and outside known elevational range required by this species were absent within the project site and surrounding areas.
Vernal pool smallscale (*Atriplex persistens*)	CNPS 1B	Occurs in the Central Valley in alkaline vernal pools at elevations below 400 feet. Blooms June – September.	**Absent.** Suitable habitat and outside known elevational range required by this species were absent within the project site and surrounding areas.

Table 3: List of Special Status Animals with Potential to Occur on the Project Site and/or in the Vicinity.

Species	Status*	Habitat	Occurrence within the Site
American badger (*Taxidea taxus*)	CSSC	Occurs most abundantly in drier open stages of shrub, forest, and herbaceous habitats with friable soils to burrow, but can be found within numerous habitats throughout California, including the margins of agricultural lands. Needs a sufficient prey base of burrowing rodents.	**Unlikely.** The project site and surrounding areas are frequently cultivated agricultural lands that are unsuitable for this species. An American Badger could potentially pass through the project site, but it is unlikely they would forage or live within the project site. The nearest recorded observation of this species within the vicinity was found deceased along Highway 65 in section 9, approximately 8.8 miles southeast of the project site in 1989.
Blunt-nosed leopard lizard (*Gambelia sila*)	FE, CE, CFP	Occurs in the San Joaquin Valley region in expansive, arid areas with scattered vegetation. Today they inhabit non-native grassland and alkali sink scrub communities of the Valley floor marked by poorly drained, alkaline, and saline soils. In the foothills of the southern San Joaquin Valley and Carrizo Plain, they occur in the chenopod community, which is associated with non-alkaline, sandy soils. They can be found at elevations ranging from 98 to 2,600 feet above sea level. They are absent from areas of steep slopes and dense vegetation, and areas subject to seasonal flooding. Known to bask on kangaroo rat mounds and often seeks shelter at the base of shrubs, in small mammal burrows, or in rock piles. Adults may excavate shallow burrows but rely on	**Unlikely.** The sites and surrounding areas are regularly disturbed and maintained. The habitat of the project site is unsuitable for this species. The nearest recorded observation of this species within the vicinity was approximately 10 miles southwest of the project site in 1959.

Species	Status*	Habitat	Occurrence within the Site
		deeper pre-existing rodent burrows for hibernation and reproduction.	
Burrowing owl (*Athene cunicularia*)	CSSC	Resides in open, dry grasslands, deserts, scrublands, and other areas with low growing vegetation. Nests and roosts underground in existing burrows created by mammals, most often ground squirrels, and human-made structures.	**Possible**. The soil embankments of the agricultural lagoon contain small mammal burrows that this species can occupy. Evidence of feathers left behind near the entrance of the burrow. The nearest recorded observation of this species within the vicinity was approximately 6.3 miles northeast of the project site in 2007.
California condor (*Gymnogyps californianus*)	FE, CE, CFP	Typically nests in cavities in canyon or cliff faces but has also been recorded nesting in giant sequoias in Tulare County. Requires vast expanse of open savannah, grassland, and/or foothill chaparral in mountain ranges of moderate altitude. Forages for carrion up to 100 miles from their roost/nest sites.	**Absent**. Suitable habitats required by this species were absent within the project site and surrounding areas.
Crotch bumble bee (*Bombus crotchii*)	CCE	Occurs throughout coastal California, as well as east to the Sierra Nevada-Cascade crest, and south into Mexico. Food plant genera include *Antirrhinum*, *Phacelia*, *Clarkia*, *Dendromecon*, *Eschscholzia*, and *Eriogonum*.	**Unlikely**. Suitable habitats required for this species are absent from the project site. Unlikely because suitable forage plant species are absent from the project site. The project site is surrounded by agricultural orchards. The nearest recorded observation of this species within the vicinity was approximately 10 miles southeast of the project site in the Deepwell Ranch topographic quadrangle in 1965.
Kern brook lamprey (*Lampera hubbsi*)	CSSC	Inhabits silty backwaters of large rivers in the foothills region. Requires slight flow and shallow pools with sand, gravel, rubble, and mud substrate in areas where summer temperatures rarely exceed 77°F.	**Absent**. The habitats required by this species are absent from the site.
San Joaquin kit fox (*Vulpes macrotis mutica*)	FE, CT	Opportunistically forages in a variety of habitats. Dens in burrows within alkali sink, valley grassland, and woodland habitats in valleys and adjacent foothills and in human-made structures in cities, rangeland, and agricultural areas.	**Possible.** The site and surrounding areas are regularly maintained for agricultural purposes and are unsuitable for this species. This species not expected to occur except, perhaps, as a transient. However, several potential dens were observed along the embankments of the agricultural lagoon. The dens meet the required size dimensions that a SJKF could

Species	Status*	Habitat	Occurrence within the Site
			use. The nearest recorded observation of this species occurred approximately 0.5 miles northwest of the project site in 1975.
Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*)	FE, CE	Inhabits saltbush scrub and sink scrub communities in the Tulare Lake Basin of the southern San Joaquin Valley. This species needs soft friable soils to burrow. Current distribution is not completely known, occurrences of the Tipton kangaroo rats are limited to scattered, isolated clusters west of Tipton, Pixley, and Earlimart and in areas in southern Kern County.	**Unlikely**. The project site and surrounding areas are regularly maintained for agricultural purposes and are unsuitable for this species. The nearest recorded observation of this species occurred approximately 13.4 miles southeast of the project site in 1993.
Tricolored blackbird (*Agelaius tricolor*)	CT, CSSC	Nests colonially near fresh water in dense cattails or tules, or in thickets of riparian shrubs. Forages in grassland and cropland. Large colonies are often found foraging in dairy farm feed fields.	**Unlikely**. The project site and surrounding areas lack suitable habitat for this species. The nearest recorded observation of this species occurred approximately 11 miles northwest of the project site in 1935.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	Occupies vernal and seasonal pools, with clear to tea-colored water, in grass or mud-bottomed swales, and basalt depression pools.	**Unlikely.** The project site and surrounding areas are regularly maintained for agricultural purposes and are unsuitable for this species. The nearest recorded observation of this species occurred approximately 5.3 miles northeast of the project site in 2002.
Western spadefoot (*Spea hammondii*)	CSSC	The majority of the time this species is terrestrial and occurs in small mammal burrows and soil cracks, sometimes in the bottom of dried pools. Prefers open areas with sandy or gravelly soils, in a variety of habitats including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Vernal or seasonal pools, that hold water for a minimum of three weeks, are necessary for breeding.	**Unlikely.** The project site and surrounding areas are regularly maintained for agricultural purposes and are unsuitable for this species. The nearest recorded observation of this species within the vicinity was approximately 4.1 miles northwest of the project site in 2005.

***EXPLANATION OF OCCURRENCE DESIGNATIONS AND STATUS CODES**

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

STATUS CODES

FE	Federally Endangered	CE	California Endangered
FT	Federally Threatened	CCE	California Endangered (Candidate)
FC	Federal Candidate	CT	California Threatened
		CFP	California Fully Protected
		CSSC	California Species of Special Concern

CNPS LISTING

1B	Plants rare, threatened, or endangered in California and elsewhere.

3 IMPACTS AND MITIGATION

3.1 SIGNIFICANCE CRITERIA

CEQA

General plans, area plans, and specific projects are subject to the provisions of CEQA. The purpose of CEQA is to assess the impacts of proposed projects on the environment prior to project implementation. Impacts to biological resources are just one type of environmental impact assessed under CEQA and vary from project to project in terms of scope and magnitude. Projects requiring removal of vegetation may result in the mortality or displacement of animals associated with this vegetation. Animals adapted to humans, roads, buildings, and pets may replace those species formerly occurring on a site. Plants and animals that are rare may be destroyed or displaced. Sensitive habitats such as wetlands and riparian woodlands may be altered or destroyed. Such impacts may be considered either "significant" or "less than significant" under CEQA. According to *CEQA Statute and Guidelines* (AEP 2023), "significant effect on the environment" means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic interest. Specific project impacts to biological resources may be considered "significant" if they would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (CWA) (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional, or state HCP.

Furthermore, CEQA Guidelines Section 15065(a) states that a project may trigger the requirement to make a "mandatory finding of significance" if the project has the potential to:

> "Substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare or threatened species, or eliminate important examples of the major periods of California history or prehistory."

NEPA

Federal projects are subject to the provisions of NEPA. The purpose of NEPA is to assess the effects of a proposed action on the human environment, assess the significance of those effects, and recommend measures that if implemented would mitigate those effects. As used in NEPA, a determination that certain effects on the human environment are "significant" requires considerations of both context and intensity (40 Code of Federal Regulations (CFR) 1508.27).

For the purposes of assessing effects of an action on biological resources, the relevant context is often local. The analysis may, however, require a comparison of the action area's biological resources with the biological resources of an entire region. Project activities must have a federal nexus and discuss federally listed species, and/or designated critical habitat that may be affected in the action area.

Federal agencies are required to determine whether their actions may affect listed or proposed species and designated critical habitat. The primary role of this document is to provide agencies conclusion and the rationale to support those conclusions regarding the effects of any proposed actions of the project on protected resources. Document content and recommended elements are identified in 50 CFR 402.12(f).

Under section 7 of the Endangered Species Act, federal agencies must consult with NOAA Fisheries or the USFWS, depending on the species, through an informal or formal consultation when any action the agency carries out, funds, or authorizes may affect either a species listed as threatened or endangered under the Act, or any critical habitat designated for it.

Once resources are assessed an Endangered Species Act Section 7 finding needs to be made regarding proposed or listed species and/or designated critical habitat that may be present in the project area. This report will provide the necessary information for the lead federal agency to make a determination on affects. This finding may result in one of the following determinations:

- *"*No effect*"* - means there will be no impacts, positive or negative, to listed or proposed resources. Generally, this means no listed resources will be exposed to action and its environmental consequences. Concurrence from the Service is not required.
- *"*May affect, but not likely to adversely affect" means that all effects are beneficial, insignificant, or discountable. Beneficial effects have contemporaneous positive effects without any adverse effects to the species or habitat. Insignificant effects relate to the size of the impact and include those effects that are undetectable, not measurable, or cannot be evaluated. Discountable effects are those extremely unlikely to occur. These determinations require written concurrence from the Service.
- *"*May affect, likely to adversely affect" means that listed resources are likely to be exposed to the action or its environmental consequences and will respond in a negative manner to the exposure.

3.2 RELEVANT GOALS, POLICIES, AND LAWS

TULARE COUNTY GENERAL PLAN

The Tulare County General Plan Policy Document contains the following goals and policies related to Environmental Resource Management (ERM) and Biological Resources (section 8.1) related to the project's project site:

3.2.1.1.1 THREATENED AND ENDANGERED SPECIES

ERM-1.1: *Protection of Rare and Endangered Species*. The County shall ensure the protection of environmentally sensitive wildlife and plant life, including those species designated as rare, threatened, and/or endangered by State and/or Federal government, through compatible land use development.

ERM-1.2: *Development in Environmentally Sensitive Areas*. The County shall limit or modify proposed development within areas that contain sensitive habitat for special status species and direct development into less significant habitat areas. Development in natural habitats shall be controlled so as to minimize erosion and maximize beneficial vegetative growth.

THREATENED AND ENDANGERED SPECIES

Permits may be required from CDFW and/or USFWS if activities associated with a project have the potential to result in the "take" of a species listed as threatened or endangered under the California Endangered Species Act (CESA) and/or Endangered Species Act (ESA), respectively. Take is defined by CESA as, "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill" (California Fish and Game Code, Section 86). Take is more broadly defined by the ESA to include "harm" (16 USC, Section 1532(19), 50 CFR, Section 17.3). CDFW and USFWS are responsible agencies under CEQA and NEPA. Both agencies review CEQA and NEPA documents in order to determine the adequacy of the treatment of endangered species issues and to make project-specific recommendations for their conservation.

DESIGNATED CRITICAL HABITAT

When species are listed as threatened or endangered, the USFWS often designates areas of "critical habitat" as defined by section 3(5)(A) of the ESA. Critical habitat is a term defined in the ESA as a specific geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. Critical habitat is a tool that supports the continued conservation of imperiled species by guiding cooperation with the federal government. Designations only affect federal agency actions or federally funded or permitted activities. Critical habitat does not prevent activities that occur within the designated area. Only activities that involve a federal permit, license, or funding and are likely to destroy or adversely modify critical habitat will be affected.

MIGRATORY BIRDS

The Migratory Bird Treaty Act (MBTA: 16 USC 703-712) prohibits killing, possessing, or trading in any bird species covered in one of four international conventions to which the United States is a party, except in accordance with regulations prescribed by the Secretary of the Interior. The name of the act is misleading, as it covers almost all bird's native to the United States, even those that are non-migratory. The MBTA encompasses whole birds, parts of birds, and bird nests and eggs. Additionally, California Fish and Game Code makes it unlawful to take or possess any non-game birds covered by the MBTA (Section 3513), as well as any other native non-game birds (Section 3800).

BIRDS OF PREY

Birds of prey are protected in California under provisions of California Fish and Game Code (Section 3503.5), which states that it is unlawful to take, possess, or destroy any birds in the order Falconiformes (hawks and eagles) or Strigiformes (owls), as well as their nests and eggs. The bald eagle and golden eagle are afforded additional protection under the Bald and Golden Eagle Protection Act (16 USC 668), which makes it unlawful to kill birds or their eggs, or take feathers or nests, without a permit issued by the U.S. Secretary of the Interior.

NESTING BIRDS

In California, protection is afforded to the nests and eggs of all birds. California Fish and Game Code (Section 3503) states that it is "unlawful to take, possess, or needlessly destroy the nest or eggs of any bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Breeding-season disturbance that causes nest abandonment and/or loss of reproductive effort is considered a form of "take" by the CDFW.

WETLANDS AND OTHER "JURISDICTIONAL WATERS"

The definition of "waters of the United States" (WOTUS) often changes from one presidential administration to the next. The current definition, established under the Biden Administration that became effective on March 20, 2023 (i.e., "new rule"), has adopted much of the same WOTUS designations as the pre-2015 rules, but has incorporated the most recent science and court case rulings. Traditional navigable waters, territorial seas, and interstate waters remain covered under the new rule. Natural drainage channels and adjacent wetlands may be considered "waters of the United States" or "jurisdictional waters" subject to the jurisdiction of the USACE if there is a "relatively permanent" surface water connection, or

"significant nexus" to WOTUS. The extent of jurisdiction has been defined in the Code of Federal Regulations but is also subject to interpretation by the federal courts. Jurisdictional waters generally include the following categories:

1) *Waters which are:*
    a. *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;*
    b. *The territorial seas; or*
    c. *Interstate waters, including interstate wetlands;*
2) *Impoundments of waters otherwise defined as WOTUS under this definition, other than impoundments of waters identified under item (5) of this section;*
3) *Tributaries of waters identified in items (1) or (2) of this section:*
    a. *That are relatively permanent, standing or continuously flowing bodies of water; or*
    b. *That either alone or in combination with similarly situated waters in the region, significantly affect the chemical, physical, or biological integrity of waters identified in item (1) of this section;*
4) *Wetlands adjacent to the following waters:*
    a. *Waters identified in item (1) of this section; or*
    b. *Relatively permanent, standing or continuously flowing bodies of water identified in items (2) or (3)(i) of this section and with a continuous surface connection to those waters; or*
    c. *Waters identified in items (2) or (3) of this section when the wetlands either alone or in combination with similarly situated waters in the region, significantly affect the chemical, physical, or biological integrity of waters identified in item (1) of this section;*
5) *Intrastate lakes and ponds, streams, or wetlands not identified in items (1) through (4) of this section:*
    a. *That are relatively permanent, standing or continuously flowing bodies of water with a continuous surface connection to the waters identified in items (1) or (3)(i) of this section; or*
    b. *That either alone or in combination with similarly situated waters in the region, significantly affect the chemical, physical, or biological integrity of waters identified in item (1) of this section.*

Prior exclusions have been consolidated under the new rule, which excludes from jurisdiction any feature that satisfies the following terms:

- *Waste treatment systems, including treatment ponds or lagoons;*
- *Prior converted cropland;*
- *Ditches excavated wholly in and draining only dry land and do not carry a relatively permanent flow of water;*
- *Artificially irrigated areas that would revert to dry land if irrigation ceased;*
- *Artificial lakes or ponds created by excavating or diking dry land for the use of stock watering, irrigation, settling basins or rice growing;*
- *Artificial reflecting or swimming pools;*
- *Waterfilled depressions created in dry land; and*
- *Swales and erosional features (ex. gullies and small washes) characterized by low volume, infrequent, or short duration flow.*

The new rule has incorporated the best available science, relevant supreme court cases, public comment, technical expertise, and experience gained from more than 45 years of implementing the pre-2015 "waters of the United States" framework to inform jurisdictional limits. One significant court case involves the U.S. Supreme Court in its *2001 Solid Waste Agency of Northern Cook County v. United States Army Corps of*

Engineers (SWANCC) decision. It was determined that 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 United States Supreme Court ruled that a significant nexus between a wetland and other navigable waters must exist for the wetland itself to be considered jurisdictional waters. The Supreme Court heard *Sackett v. United States Environmental Protection Agency (EPA)* in May 2023, to determine governing standards of a significant nexus between waters of the United States and adjacent wetlands. The court decided that adjacent wetlands would be protected under the CWA only if it maintained a continuous surface water connection with a federal water body. This decision has limited protection for networks of wetlands connected to navigable waters through subsurface flow. The final decision is anticipated to be published in October 2023.
The USACE regulates the filling or grading of waters of the United States. under the authority of Section 404 of the CWA. 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 United States 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 results in no net loss of wetland functions or values. No permit can be issued until the RWQCB issues a Section 401 Water Quality Certification (or waiver of such certification) verifying that the proposed activity will meet state water quality standards.

Under the Porter-Cologne Water Quality Control Act of 1969, the SWRCB has regulatory authority to protect the water quality of all surface water and groundwater in the State of California ("Waters of the State"). Nine RWQCBs oversee water quality at the local and regional level. The RWQCB for a given region regulates discharges of fill or pollutants into Waters of the State through the issuance of various permits and orders. Discharges into Waters of the State that are also Waters of the United States require a Section 401 Water Quality Certification from the RWQCB as a prerequisite to obtaining certain federal permits, such as a Section 404 Clean Water Act permit. Discharges into all Waters of the State, even those that are not also Waters of the United States, require Waste Discharge Requirements (WDRs), or waivers of WDRs, from the RWQCB. The RWQCB also administers the Construction Storm Water Program and the federal National Pollution Discharge Elimination System (NPDES) program. Projects that disturb one acre or more of soil must obtain a Construction General Permit under the Construction Storm Water Program. A prerequisite for this permit is the development of a Storm Water Pollution Prevention Plan (SWPPP) by a certified Qualified SWPPP Developer. Projects that discharge wastewater, storm water, or other pollutants into a Water of the United States may require a NPDES permit.

CDFW has jurisdiction over the bed and bank of natural drainages and lakes according to provisions of Section 1601 and 1602 of the California Fish and Game Code. Activities that may substantially modify such waters through the diversion or obstruction of their natural flow, change or use of any material from their bed or bank, or the deposition of debris require a notification of a Lake or Streambed Alteration. If CDFW determines that the activity may adversely affect fish and wildlife resources, a Lake or Streambed Alteration Agreement will be prepared. Such an agreement typically stipulates that certain measures will be implemented to protect the habitat values of the lake or drainage in question.

3.3 POTENTIALLY SIGNIFICANT PROJECT-RELATED IMPACTS AND MITIGATION

Species protected by California Fish and Game Code, CDFW, USFWS, CEQA or NEPA that have the potential to be impacted by project activities include: burrowing owl, other nesting migratory birds and raptors, and San Joaquin kit fox. Corresponding mitigation measures can be found below.

GENERAL PROJECT-RELATED IMPACTS

The project has the potential to impact a number of sensitive resources, as described in more detail in the following sections. Impacts to these resources could be a violation of state and federal laws or considered a potentially significant impact under CEQA and NEPA. Implementation of the following measures will help reduce potential impacts to these resources to a less than significant level under CEQA and NEPA and will help with complying with state and federal laws protecting these resources:

> Mitigation Measure BIO-1a (*WEAP Training*): Prior to initiating construction activities (including staging and mobilization), all personnel associated with project construction will attend a mandatory Worker Environmental Awareness Program (WEAP) training, conducted by a qualified biologist, to aid workers in identifying special status resources that may occur in the project site. The specifics of this program will include identification of the sensitive species and suitable habitats, a description of the regulatory status and general ecological characteristics of sensitive resources, and review of the limits of construction and mitigation measures required to reduce impacts to biological resources within the work area. This training will discuss special status species, describe the laws and regulations in place to provide protection of these species, identify the penalties for violation of applicable environmental laws and regulations, and include a list of required protective measures to avoid "take." A fact sheet summarizing this information, along with photographs or illustrations of sensitive species with potential to occur on the project site, will also be prepared for distribution to all contractors, their employees, and all other personnel involved with construction of the project. All trainees will sign a form documenting that they have attended WEAP training and understand the information presented to them.
>
> Mitigation Measure BIO-1b (*BMPs*): The project proponent will require that all workers employ the following best management practices (BMPs) in order to avoid and minimize potential impacts to special status species:
>
> - *Vehicles will observe a 15-mph speed limit while on unpaved access routes.*
> - *Workers will inspect areas beneath parked vehicles, equipment, and materials prior to mobilization. If special status species are detected, the individual will either be allowed to leave of its own volition or will be captured by the qualified biologist (must possess appropriate collecting/handling permits) and relocated out of harm's way to the nearest suitable habitat beyond the influence of the project work area. "Take" of a state or federal special status (rare, California Species of Special Concern, threatened, or endangered) species is prohibited.*

The presence of any special status species will be reported to the project's qualified biologist who will submit the occurrence to the CNDDB. If necessary, the biologist will report the occurrence to CDFW and/or USFWS.

PROJECT-RELATED MORTALITY AND/OR DISTURBANCE TO BURROWING OWL

The project site contained suitable burrowing owl (BUOW) nesting and roosting features, in the form of small mammal burrows, within the soft soils of the outside embankments of the agricultural lagoon habitat. Some of the burrows had twists and turns with an opening of at least four to six inches wide. During the field survey feathers were observed within the opening of a burrow which may have been from a burrowing owl. Construction activities that adversely affect the nesting success of burrowing owl or result in the mortality of individuals constitute a violation of state and federal laws and would be considered a significant impact under CEQA and NEPA.

Suitable foraging habitat for BUOW was also present within the agricultural field habitat. While this habitat is suitable, implementation of the project would not significantly reduce foraging habitat for this species. Therefore, mitigation measures are not warranted for loss of BUOW foraging habitat.

Implementation of the following measures would reduce potential impacts to nesting or roosting BUOW to a less than significant level under CEQA and NEPA and help comply with state and federal laws protecting this avian species.

> Mitigation Measure BIO-2a (Pre-construction Take Avoidance Survey): A qualified biologist will conduct a single pre-construction take avoidance survey for BUOW and suitable burrows, in accordance with CDFW's *Staff Report on Burrowing Owl Mitigation* (2012), within seven days prior to the start of construction activities. The survey shall include the proposed work area and surrounding lands up to 500 feet. If no BUOW individuals or active burrows are observed, no further mitigation is required.
>
> Mitigation Measure BIO-2b (Avoidance): If an active BUOW burrow is detected, the occurrence will be reported to the CNDDB, and avoidance buffers shall be implemented. A qualified biologist will determine appropriate avoidance buffer distances based on applicable CDFW guidelines, the biology of the species, conditions of the burrow(s), and the level of project disturbance. If necessary, avoidance buffers will be identified with flagging, fencing, or other easily visible means, and will be maintained until the biologist has determined that the nestlings have fledged and all BUOW have left the project site.
>
> Mitigation Measure BIO-2c (Passive Relocation): If avoidance of an active BUOW burrow is not feasible, passive relocation during the non-breeding season (September 1 through January 31) could be utilized or during the breeding season (February 1 through August 31) if a qualified biologist determines that there are no young in the burrow. Prior to completion a qualified biologist will prepare a passive relocation plan that will detail the methods to be used. It will include the tools to exclude the BUOW from its burrow (i.e., one-way doors or other devices) and excavate the burrow (hand tools and machinery, if needed). Following completion of passive relocation, a report will be prepared that will document the methods and results of these efforts.

PROJECT-RELATED MORTALITY AND/OR DISTURBANCE OF NESTING MIGRATORY RAPTORS AND BIRDS

The project site contains suitable nesting and foraging habitat for a variety of migratory bird species, including raptors. It is anticipated that during the nesting bird season, birds could nest on the ground or in shrubs, trees, or structures within the project site and forage within the project site. Migratory birds nesting within the project site during construction have the potential to be injured or killed by project-related activities. In addition to the direct "take" of migratory nesting birds, nesting birds within the project site or adjacent areas could be disturbed by project-related activities resulting in nest abandonment. Projects that adversely affect the nesting success of raptors and migratory birds or result in the mortality of individual birds are considered a violation of state and federal laws and are considered a potentially significant impact under CEQA and NEPA.

While foraging habitat for migratory birds and raptors is present on the site, suitable foraging habitat is located adjacent to the project site and within the vicinity of the project site and there will be no loss of foraging habitat from implementation of the project. Loss of foraging habitat for migratory birds and raptors is not considered a significant impact.

Implementation of the following measures will reduce potential impacts to nesting raptors, migratory birds, and special status birds to a less than significant level under CEQA and NEPA and will help the project comply with state and federal laws protecting these avian species.

> Mitigation Measure BIO-3a (Avoidance): The project's construction activities will occur, if feasible, between August 31 and January 31 (outside of the nesting bird season) to avoid impacts to nesting birds.
>
> Mitigation Measure BIO-3b (Pre-construction Surveys): If activities must occur within the nesting bird season (February 1 to August 31), a qualified biologist will conduct a pre-construction survey for active migratory bird nests no more than seven days prior to the start of the construction within the project sites and surrounding lands up to 100 feet from the project sites and for active raptor nests within the project sites and all accessible lands up to 500-feet from the project sites. All raptor nests would be considered "active" upon the nest-building stage.
>
> Mitigation Measure BIO-3c (Avoidance Buffers): On discovery of any active nests near work areas, the biologist will determine appropriate construction setback distances (avoidance buffers) based on applicable CDFW and/or USFWS guidelines, the biology of the species, and work and site conditions. If necessary, avoidance buffers will be identified with flagging, fencing, or other easily visible means, and will be maintained until the biologist has determined that the nestlings have fledged.

PROJECT-RELATED MORTALITY AND/OR DISTURBANCE TO SAN JOAQUIN KIT FOX

The project site contains suitable denning habitat for San Joaquin kit fox (SJKF). Several potential dens were observed along the embankments of the agricultural lagoon. The dens met the required size dimensions (greater than four inches wide) that a SJKF could use. San Joaquin kit fox denning within the project site during construction have the potential to be injured or killed by project-related activities. Projects that result in the mortality of individuals would be considered a violation of state and federal laws and considered a potentially significant impact under CEQA. Implementation of the following measures will reduce potential impacts to SJKF to a less than significant level under CEQA and NEPA and will comply with state and federal laws protecting this species.

> Mitigation Measure BIO-4a (Pre-Construction Survey): Within seven days prior to the start of construction a pre-construction survey for San Joaquin kit fox will be conducted on and within 200 feet of proposed work areas.
>
> Mitigation Measure BIO-4b (Establish Buffers): On discovery of any SJKF dens near the project area a qualified biologist will determine appropriate construction setback distances (buffer zones) based on applicable CDFW and/or USFWS guidelines (see below). If needed, construction buffers will be identified with flagging, fencing, or other easily visible means. They will be maintained until the biologist has determined that the den will no longer be impacted by construction. The buffer zones shall be at least 100 feet around den(s), at least 200 feet around natal dens (which SJKF young are reared), and at least 500 feet around any natal dens with pups (except for any portions of the buffer zone that is already fully developed).
>
> Mitigation Measure BIO-4c (Avoidance and Minimization): The project will observe all avoidance and minimization measures in the USFWS's *Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance* (2011), including, but not limited to: maintaining buffer zones, construction speed limits, covering of pipes, installation of escape

structures, restriction of herbicide and rodenticide use, proper disposal of food items and trash, prohibition of pets and firearms, and completion of an employee education program (see BIO-1a).

3.4 SECTION 7 DETERMINATIONS

In addition to the effects analysis performed in

Table 2 and Table 3 of this document, Table 4 summarizes project effect determinations for federally-listed species found on the CNDDB list generated on November 02, 2023, and the USFWS IPaC list generated on November 01, 2023 (see Appendix B and Appendix C, respectively), in accordance with Section 7 of the Endangered Species Act.

Table 4: Section 7 Determinations

Species	Determination	Rationale for Determination
Buena Vista Lake Ornate Shrew (*Sorex ornatus relictus*)	No effect	**Habitat absent.** Habitats required by this species were absent from the project site.
Blunt-nosed leopard lizard (*Gambelia sila*)	No effect	**Habitat absent.** Habitats required by this species were absent from the project site.
California Condor *(Gymnogyps californianus)*	No effect	**Habitat absent.** Habitats required by this species for nesting and foraging were absent from the project site.
California jewelflower (*Caulanthus californicus*)	No effect	**Habitat absent.** Habitats required by this species were absent from the project site.
Monarch butterfly (*Danaus plexippus*)	No effect	**Habitat absent**. Foraging and roosting habitat was absent within the project site.
San Joaquin adobe sunburst *(Pseudobahia peirsonii)*	No effect	**Habitat absent.** Habitats required by this species were absent from the project site.
San Joaquin kit fox (*Vulpes macrotis mutica*)	May effect, not likely to adversely effect	**Habitat present.** This species is not expected to occur except, perhaps, as a transient. However, several potential burrows that could be used as dens were observed along the embankments of the agricultural lagoon. The burrows meet the required size dimensions (greater than four inches wide) that a SJKF could use.
Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*)	No effect	**Habitat absent**. Habitats required by this species were absent from the project site.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	No effect	**Habitat absent**. Vernal pool habitat was absent within the project site and surrounding areas.

3.5 LESS THAN SIGNIFICANT PROJECT-RELATED IMPACTS

PROJECT-RELATED IMPACTS TO SPECIAL STATUS PLANT SPECIES ABSENT FROM, OR UNLIKELY TO OCCUR ON, THE PROJECT SITE

Of the 12 regionally occurring special status plant species, all are considered absent from or unlikely to occur within the project site due to past or ongoing disturbance and/or the absence of suitable habitat.

Since it is unlikely that these species would occur onsite, implementation of the project should have no impact on these 12 special status plant species through construction mortality, disturbance, or loss of habitat. Mitigation measures are not warranted.

PROJECT-RELATED IMPACTS TO SPECIAL STATUS ANIMAL SPECIES ABSENT FROM, OR UNLIKELY TO OCCUR ON, THE PROJECT SITE

Of the 11 regionally occurring special status animal species, nine are considered absent from or unlikely to occur within the project site due to past or ongoing disturbance and/or the absence of suitable habitat. These species include: American badger, blunt-nosed leopard lizard, California condor, crotch bumble bee, Kern brook lamprey, Tipton kangaroo rat, tricolored blackbird, vernal pool fairy shrimp and western spadefoot.

Since it is unlikely that these species would occur onsite, implementation of the project should have no impact on these eight special status species through construction mortality, disturbance, or loss of habitat. Mitigation measures are not warranted.

PROJECT-RELATED IMPACTS TO RIPARIAN HABITAT AND NATURAL COMMUNITIES OF SPECIAL CONCERN

There was no riparian habitat or natural communities of special concern within the project site. There are no CNDDB-designated "natural communities of special concern" recorded within the project site or surrounding lands. Mitigation is not warranted.

PROJECT-RELATED IMPACTS TO REGULATED WATERS, WETLANDS, AND WATER QUALITY

Four aquatic features were observed onsite during the field survey and included two aerating ponds, an effluent storage pond, and an agricultural pond. All aquatic features on site are artificial, do not have a connection to a navigable water or a natural drainage channel with a bed or bank, and would not fall under the jurisdiction of state or federal agencies. Also, there are no designated wild and scenic rivers within the project site. Therefore, project activities would not result in direct impacts to regulated waters, wetlands, and water quality. Mitigation measures are not warranted.

Since construction would involve ground disturbance over an area greater than one acre, the project would be required to obtain a Construction Stormwater General Permit under the Storm Water Program administered by the RWQCB. A prerequisite for this permit is the development of a Storm Water Pollution Prevention Plan (SWPPP) so construction activities do not adversely affect water quality.

PROJECT-RELATED IMPACTS TO WILDLIFE MOVEMENT CORRIDORS AND NATIVE WILDLIFE NURSERY SITES

The project site does not have any features that would be used as wildlife movement corridors.

While the project does have suitable features (agricultural pond and lagoon) that may be used as native wildlife nursery sites, the project will not impact these features and these features will continue to function during and after project implementation.

No mitigation is warranted.

PROJECT-RELATED IMPACTS TO CRITICAL HABITAT

Designated critical habitat is absent from the project site and surrounding lands. Therefore, there would be no impact to critical habitat, and mitigation measures are not warranted.

LOCAL POLICIES OR HABITAT CONSERVATION PLANS

The project appears to be consistent with the goals and policies of the Tulare County General Plan. There are no known HCPs or NCCPs in the project vicinity. Mitigation measures are not warranted.

PROJECT-RELATED IMPACT TO ESSENTIAL FISH HABITAT

Essential Fish Habitat (EFH) and Habitat Areas of Particular Concern (HAPC) are absent from the project site and surrounding lands, and consultation with the National Marine Fisheries (NMFS) Service would not be required. Query results of the NMFS EHF Mapper can be found in Appendix E at the end of this document. Mitigation measures are not warranted.

4 REFERENCES

Baldwin, B., Goldman, D. H., Keil, D., Patterson, R., Rosatti, T., & Wilken, D. 2012. *The Jepson Manual; Vascular Plants of California, second edition.* Berkeley: University of California Press. Retrieved November 2023

Calflora. (2023). Retrieved from Calflora: Information on California Plants for Education, Research and Conservation: http://www.calflora.org/

California Department of Conservation Fish and Wildlife. (2022). *California Department of Conservation Fish and Wildlife*. Retrieved November 2023, from California Department of Conservation Fish and Wildlife: https://wildlife.ca.gov/Data/CNDDB

California Department of Fish and Wildlife (CDFW). (2018, March). *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensative Natural Communities.* Retrieved November 2023, from https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959&inline

California Department of Fish and Wildlife. (2012). *Staff Report on Burrowing Owl Mitigation.* Retrieved November 2023

California Department of FIsh and Wildlife. (2023). *State and federally listed endangered, threatened, and rare plants of California*. Retrieved November 2023, from https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109390&inline

California Natural Diversity Database (CNDDB). (2023). *California Department of Fish and Wildlife. California Natural Diversity Database (CNDDB)*. Retrieved November 2023

Climate in Richgrove, CA. (2023). Retrieved December 2023, from Best Places: https://www.bestplaces.net/climate/city/ca/richgrove

Department of Water Resources. (n.d.). Retrieved November 2023, from Groundwater Basin Boundary Assessment Tool (BBAT): http://gis.water.ca.gov/app/bbat/

eBird, Cornell Lab of Ornithology. (2023). Retrieved November 2023, from eBird: An online database of bird distribution and abundance: https://ebird.org/

iNaturalist. (2023). *Observations of Special Status Species*. Retrieved November 2023, from iNaturalist: https://www.inaturalist.org/

Jepson Flora Project (eds.). (2023). Retrieved November 2023, from Jepson eFlora: http://ucjeps.berkeley.edu/eflora/

Natural Resource Conservation Service. (2023). *NRCS Hydric Soils List*. Retrieved November 2023, from https://www.nrcs.usda.gov/publications/Lists%20of%20Hydric%20Soils%20-%20Query%20by%20Soil%20Survey%20Area%20Map%20Unit%20Rating.html

Sibley, D. A. (n.d.). *The Sibley Guide to Birds* (Second ed.). Knopf. Retrieved November 2023

State Water Resources Control Board. (2021, April 6). State Wetland Definition and Procedures for Discharge of Dredged or Fill Material to Waters of the State. Retrieved November 2023

Swainson's Hawk Technical Advisory Committee. (2000, May). Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley. CA: CDFW. Retrieved November 2023

The California Burrowing Owl Consortium. (1993). *Burrowing Owl Survey Protocol and Mitigation Guidelines*. Retrieved November 2023

The National Oceanic and Atmospheric Administration Habitat Conservation. (2023). Essential Fish Habitat Mapper. Retrieved November 2023, from https://www.habitat.noaa.gov/apps/efhmapper/?page=page_5

Tulare County General Plan. (2012, August). Retrieved November 2023 , from http://generalplan.co.tulare.ca.us/documents/GP/001Adopted%20Tulare%20County%20General%20Plan%20Materials/200Mitigating,%20Monitoring%20and%20Reporting%20Program/MITIGATING,%20MONITORING%20AND%20REPORTING%20PROGRAM.pdf

United States Army Corps of Engineers. (1987). *Corps of Engineers Wetlands Delineation Manual.* Department of the Army. Retrieved November 2023

United States Environmental Protection Agency (USEPA). (2022). *Waters GeoViewer*. Retrieved November 2023, from https://www.epa.gov/waterdata/waters-geoviewer

United States Fish and Wildlife Service. (1998). *Recovery Plan for Upland Species of the San Joaquin Valley, California*. Retrieved November 2023

United States Fish and Wildlife Service. (2011). *Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance.* Retrieved November 2023

United States Fish and Wildlife Service. (2023). *Environmental Conservation Online System (ECOS)*. Retrieved November 2023, from https://ecos.fws.gov/ecp/

United States Fish and Wildlife Service. National Wetlands Inventory. (2023). *National Wetlands Inventory.* Retrieved November 2023, from National Wetlands Inventory: https://www.fws.gov/wetlands/data/mapper.html

United States Fish and Wildlife Service.. (2023). *Information on Planning and Consultation (IPaC)*. Retrieved November 2023, from https://ecos.fws.gov/ipac/

APPENDIX A: REPRESENTATIVE PHOTOS OF THE PROJECT SITE

Photograph 1

Overview of the ruderal habitat adjacent to the artificial treatment ponds.

Photograph 2

Overview of the artificial treatment pond with floating common duckweed.

Photograph 3

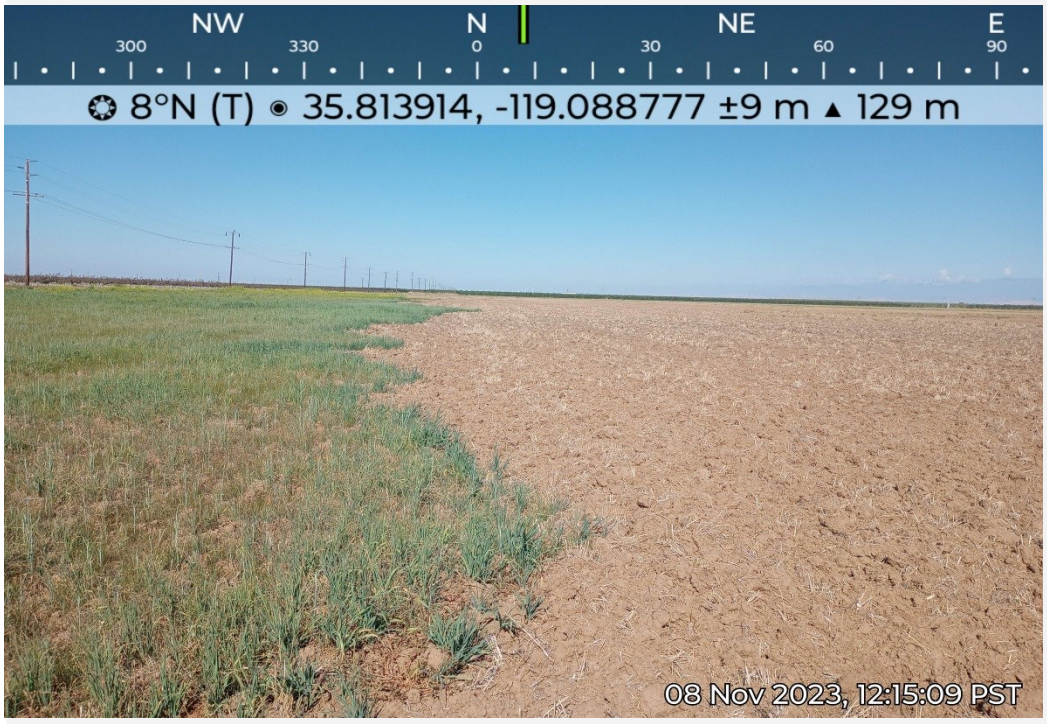
Overview of the ruderal habitat adjacent to Richgrove Dr.

Photograph 4

The agricultural pond habitat located in the northwest corner of the agricultural habitat of the project site.

Photograph 5

Overview of a den/burrow along the embankments of the agricultural lagoon. This burrow is of suitable size to be used by burrowing owl or San Joaquin kit fox.



Photograph 6

Overview of the agricultural habitat containing wheat and recent cultivated disked soils.

Photograph 7

Overview of the lagoon habitat northeast of the project site.

Photograph 8

Another overview of the ruderal habitat with moderate amounts of vegetation surrounding the edges of the agricultural lagoon.

APPENDIX B: CNDDB 9-QUAD SPECIES LIST

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Ducor (3511981) OR Richgrove (3511971) OR McFarland (3511962) OR Delano East (3511972) OR Sausalito School (3511982) OR Fountain Springs (3511888) OR Quincy School (3511878) OR Deepwell Ranch (3511961) OR Sand Canyon (3511868))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
alkali-sink goldfields *Lasthenia chrysantha*	PDAST5L030	None	None	G2	S2	1B.1
American badger *Taxidea taxus*	AMAJF04010	None	None	G5	S3	SSC
blunt-nosed leopard lizard *Gambelia sila*	ARACF07010	Endangered	Endangered	G1	S2	FP
brittlescale *Atriplex depressa*	PDCHE042L0	None	None	G2	S2	1B.2
burrowing owl *Athene cunicularia*	ABNSB10010	None	None	G4	S2	SSC
calico monkeyflower *Diplacus pictus*	PDSCR1B240	None	None	G2	S2	1B.2
California jewelflower *Caulanthus californicus*	PDBRA31010	Endangered	Endangered	G1	S1	1B.1
Crotch bumble bee *Bombus crotchii*	IIHYM24480	None	Candidate Endangered	G2	S2	
Earlimart orache *Atriplex cordulata var. erecticaulis*	PDCHE042V0	None	None	G3T1	S1	1B.2
hoary bat *Lasiurus cinereus*	AMACC05032	None	None	G3G4	S4	
Hopping's blister beetle *Lytta hoppingi*	IICOL4C010	None	None	G1G2	S2	
Kern brook lamprey *Lampetra hubbsi*	AFBAA02040	None	None	G1G2	S1S2	SSC
Lost Hills crownscale *Atriplex coronata var. vallicola*	PDCHE04371	None	None	G4T3	S3	1B.2
Northern Claypan Vernal Pool *Northern Claypan Vernal Pool*	CTT44120CA	None	None	G1	S1.1	
recurved larkspur *Delphinium recurvatum*	PDRAN0B1J0	None	None	G2?	S2?	1B.2
San Joaquin adobe sunburst *Pseudobahia peirsonii*	PDAST7P030	Threatened	Endangered	G1	S1	1B.1
San Joaquin kit fox *Vulpes macrotis mutica*	AMAJA03041	Endangered	Threatened	G4T2	S3	
San Joaquin pocket mouse *Perognathus inornatus*	AMAFD01060	None	None	G2G3	S2S3	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
San Joaquin woollythreads *Monolopia congdonii*	PDASTA8010	Endangered	None	G2	S2	1B.2
spiny-sepaled button-celery *Eryngium spinosepalum*	PDAPI0Z0Y0	None	None	G2	S2	1B.2
striped adobe-lily *Fritillaria striata*	PMLIL0V0K0	None	Threatened	G1	S1	1B.1
subtle orache *Atriplex subtilis*	PDCHE042T0	None	None	G1	S1	1B.2
Sycamore Alluvial Woodland *Sycamore Alluvial Woodland*	CTT62100CA	None	None	G1	S1.1	
Tipton kangaroo rat *Dipodomys nitratoides nitratoides*	AMAFD03152	Endangered	Endangered	G3T1T2	S2	
tricolored blackbird *Agelaius tricolor*	ABPBXB0020	None	Threatened	G1G2	S2	SSC
vernal pool fairy shrimp *Branchinecta lynchi*	ICBRA03030	Threatened	None	G3	S3	
vernal pool smallscale *Atriplex persistens*	PDCHE042P0	None	None	G2	S2	1B.2
western spadefoot *Spea hammondii*	AAABF02020	None	None	G2G3	S3S4	SSC

Record Count: 28

APPENDIX C: IPAC SPECIES LIST

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: November 01, 2023
Project Code: 2024-0011807
Project Name: Wastewater Treatment Plant Improvement Project

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

PROJECT SUMMARY

Project Code: 2024-0011807
Project Name: Wastewater Treatment Plant Improvement Project
Project Type: Drainage Project
Project Description: Located in Richgrove, CA in Tulare County 12 weeks
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@35.8125125,-119.10105941159433,14z

Counties: Tulare County, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 9 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. 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.

MAMMALS

NAME	STATUS
Buena Vista Lake Ornate Shrew *Sorex ornatus relictus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1610	Endangered
San Joaquin Kit Fox *Vulpes macrotis mutica* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2873	Endangered
Tipton Kangaroo Rat *Dipodomys nitratoides nitratoides* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7247	Endangered

BIRDS

NAME	STATUS
California Condor *Gymnogyps californianus* Population: U.S.A. only, except where listed as an experimental population There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8193	Endangered

REPTILES

NAME	STATUS
Blunt-nosed Leopard Lizard *Gambelia silus*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/625

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

CRUSTACEANS

NAME	STATUS
Vernal Pool Fairy Shrimp *Branchinecta lynchi*	Threatened

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/498

FLOWERING PLANTS

NAME	STATUS
California Jewelflower *Caulanthus californicus*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/4599

San Joaquin Adobe Sunburst *Pseudobahia peirsonii*	Threatened

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/2931

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Jairo Perez
Address: 1800 30th St #280
City: Bakersfield
State: CA
Zip: 93301
Email jperez@ppeng.com
Phone: 6616165900

APPENDIX D: NRCS WEB SOIL SURVEY REPORT

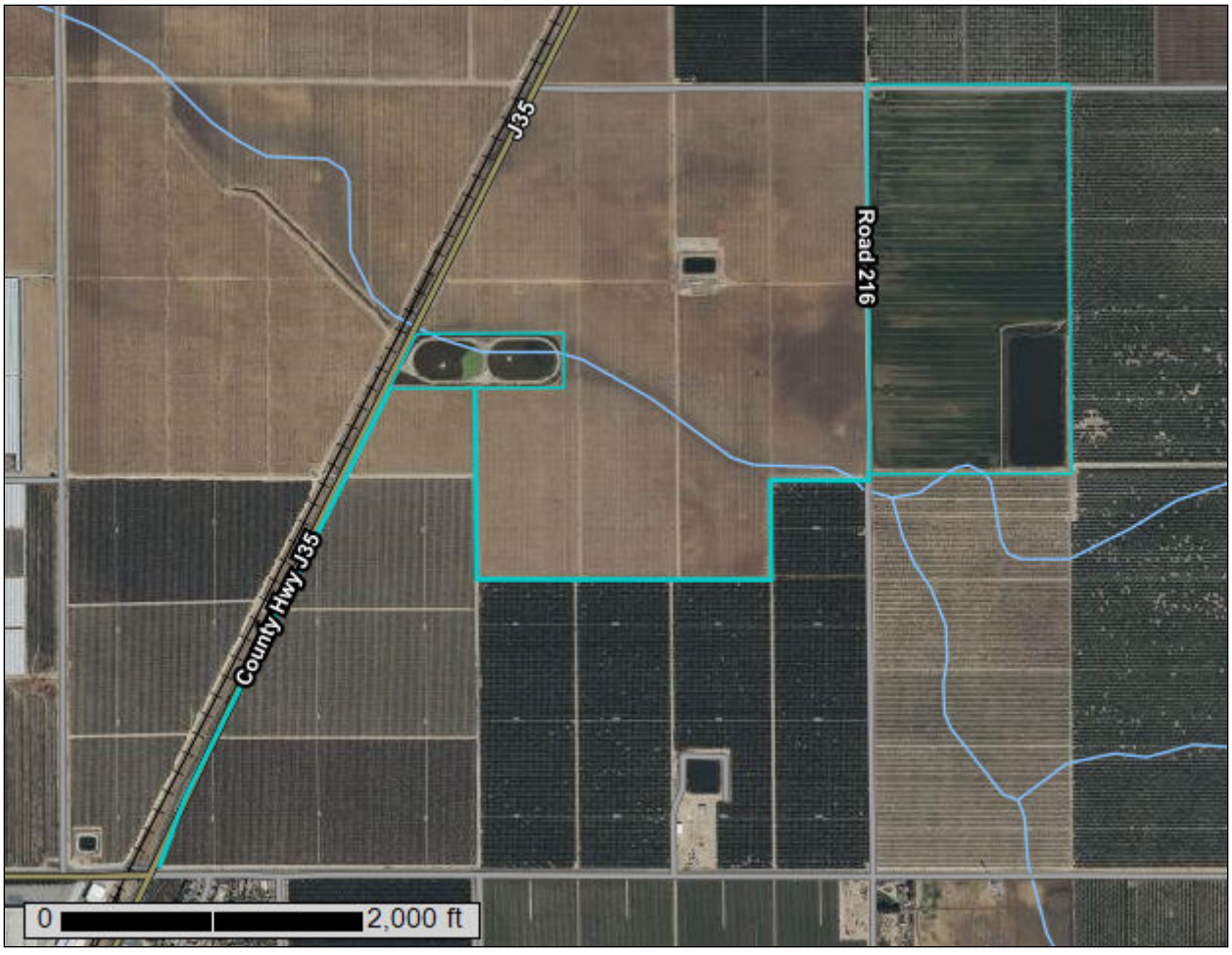
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Tulare County, Western Part, California



October 31, 2023

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

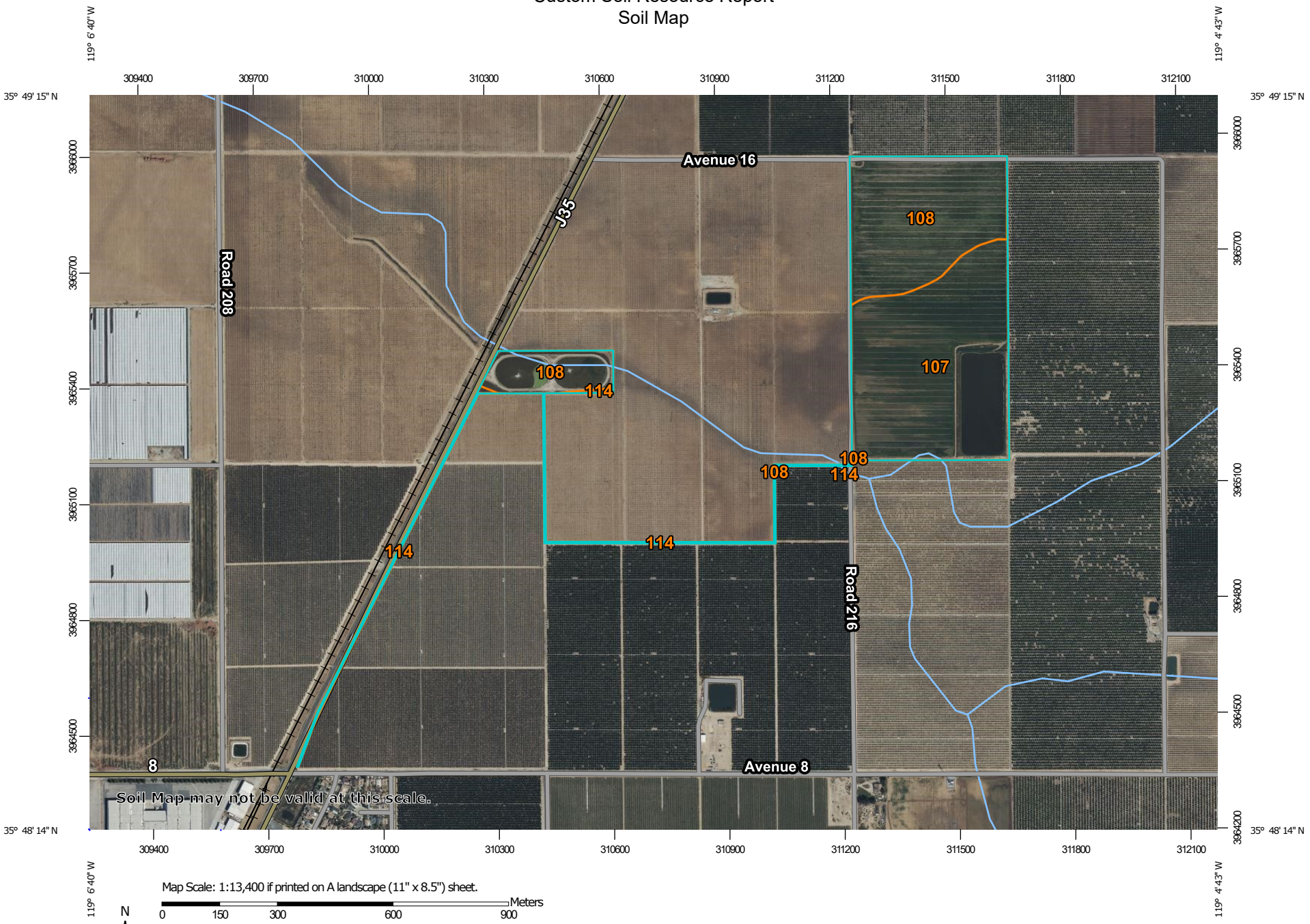
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



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, Western Part, California
Survey Area Data: Version 17, Aug 31, 2023

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

Date(s) aerial images were photographed: Mar 12, 2022—Mar 22, 2022

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
107	Centerville clay, 2 to 5 percent slopes	48.7	53.1%
108	Colpien loam, 0 to 2 percent slopes	40.1	43.7%
114	Exeter loam, 0 to 2 percent slopes	3.0	3.2%
Totals for Area of Interest		**91.7**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or

landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Tulare County, Western Part, California

107—Centerville clay, 2 to 5 percent slopes

Map Unit Setting

National map unit symbol: hp49
Elevation: 300 to 600 feet
Mean annual precipitation: 9 to 12 inches
Mean annual air temperature: 59 to 64 degrees F
Frost-free period: 250 to 300 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Centerville and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Centerville

Setting

Landform: Fan remnants
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granitoid

Typical profile

A - 0 to 7 inches: clay
Bss - 7 to 48 inches: sandy clay
Btdkss - 48 to 60 inches: gravelly sandy clay loam

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: 48 to 60 inches to densic material
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Very rare
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to moderately saline (0.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 40.0
Available water supply, 0 to 60 inches: Moderate (about 6.7 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: R017XY905CA - Dry Alluvial Fans and Terraces
Hydric soil rating: No

Minor Components

Exeter
Percent of map unit: 7 percent
Landform: Fan remnants
Hydric soil rating: No

San joaquin
Percent of map unit: 2 percent
Landform: Fan remnants
Hydric soil rating: No

Unnamed, ponded
Percent of map unit: 1 percent
Landform: Depressions
Hydric soil rating: Yes

108—Colpien loam, 0 to 2 percent slopes

Map Unit Setting
National map unit symbol: hp4b
Elevation: 220 to 550 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 63 to 64 degrees F
Frost-free period: 250 to 300 days
Farmland classification: Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition
Colpien and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Colpien

Setting
Landform: Fan remnants
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granitic rock sources

Typical profile
Ap - 0 to 6 inches: loam
Bt - 6 to 24 inches: loam
Btk - 24 to 60 inches: loam
C - 60 to 65 inches: sandy loam

Properties and qualities
Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to slightly saline (0.5 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 12.0
Available water supply, 0 to 60 inches: High (about 10.7 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 4c
Hydrologic Soil Group: C
Ecological site: R017XY906CA - Non-Alkali San Joaquin Valley Desert
Hydric soil rating: No

Minor Components

Biggriz

Percent of map unit: 3 percent
Landform: Fan remnants
Hydric soil rating: No

Gambogy

Percent of map unit: 3 percent
Landform: Alluvial fans, flood plains
Hydric soil rating: No

Hanford

Percent of map unit: 3 percent
Landform: Alluvial fans, flood plains
Hydric soil rating: No

Nord

Percent of map unit: 2 percent
Landform: Alluvial fans, flood plains
Hydric soil rating: No

Akers, saline-sodic

Percent of map unit: 2 percent
Landform: Fan remnants
Hydric soil rating: No

Tujunga

Percent of map unit: 2 percent
Landform: Flood plains
Hydric soil rating: No

114—Exeter loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hp4j
Elevation: 250 to 570 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 63 to 64 degrees F
Frost-free period: 250 to 300 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Exeter, 0-2% slopes, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Exeter, 0-2% Slopes

Setting

Landform: Fan remnants
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granitic rock sources

Typical profile

Ap - 0 to 9 inches: loam
Bt1 - 9 to 26 inches: sandy clay loam
Bt2 - 26 to 28 inches: clay loam
Btqm - 28 to 46 inches: indurated
2Bt - 46 to 72 inches: stratified very gravelly loamy coarse sand to gravelly loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 20 to 40 inches to duripan
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low (0.01 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Very rare
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: C

Ecological site: R017XY902CA - Duripan Vernal Pools
Hydric soil rating: No

Minor Components

Hanford
Percent of map unit: 4 percent
Landform: Alluvial fans, flood plains
Hydric soil rating: No

Colpien
Percent of map unit: 3 percent
Landform: Fan remnants
Hydric soil rating: No

San joaquin
Percent of map unit: 3 percent
Landform: Fan remnants
Hydric soil rating: No

Calgro
Percent of map unit: 2 percent
Landform: Fan remnants
Hydric soil rating: No

Quonal
Percent of map unit: 2 percent
Landform: Fan remnants
Hydric soil rating: No

Unnamed, ponded
Percent of map unit: 1 percent
Landform: Depressions
Hydric soil rating: Yes

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

APPENDIX E: NMFS EFH MAPPER

EFH Mapper Report

EFH Data Notice

Essential Fish Habitat (EFH) is defined by textual descriptions contained in the fishery management plans developed by the regional fishery management councils. In most cases mapping data can not fully represent the complexity of the habitats that make up EFH. This report should be used for general interest queries only and should not be interpreted as a definitive evaluation of EFH at this location. A location-specific evaluation of EFH for any official purposes must be performed by a regional expert. Please refer to the following links for the appropriate regional resources.

West Coast Regional Office

EFH

No additional Essential Fish Habitats (EFH) were identified at the report location.

Pacific Salmon EFH

No Pacific Salmon Essential Fish Habitat (EFH) were identified at the report location.

Atlantic Salmon

No Atlantic Salmon were identified at the report location.

HAPCs

No Habitat Areas of Particular Concern (HAPC) were identified at the report location.

EFH Areas Protected from Fishing

No EFH Areas Protected from Fishing (EFHA) were identified at the report location.

Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data. ****For links to all EFH text descriptions see the complete data inventory: open data inventory -->**
Pacific Coastal Pelagic Species, Jack Mackerel, Pacific (Chub) Mackerel, Pacific Sardine, Northern Anchovy - Central Subpopulation, Northern Anchovy - Northern Subpopulation, **Pacific Highly Migratory Species**, Bigeye Thresher Shark - North Pacific, Bluefin Tuna - Pacific, Dolphinfish (Dorado or Mahimahi) - Pacific, Pelagic Thresher Shark - North Pacific, Swordfish - North Pacific

Appendix C: Class III Inventory/Phase I Survey

Draft

CLASS III INVENTORY/PHASE I SURVEY, RICHGROVE COMMUNITY SERVICES DISTRICT WASTEWATER TREATMENT PLANT IMPROVEMENT PROJECT TULARE COUNTY, CALIFORNIA

Prepared for:

Briza Sholars
Provost & Pritchard Consulting Group
455 West Fir Avenue
Clovis, CA 93611-0242

Prepared by:

Peter A. Carey, M.A., RPA,

and

Dustin Merrick, M.A., RPA,

ASM Affiliates
4800 Stockdale Hwy, Ste 405
Bakersfield, CA 93309

April 2024
PN 36510.53

TABLE OF CONTENTS

Chapter **Page**

LIST OF FIGURES

Page

LIST OF TABLES

Page

MANAGEMENT SUMMARY

This report documents the results of an intensive Class III inventory/Phase I survey for the Richgrove Community Services District (RCSD or District) Wastewater Treatment Plant (WWTP) Improvement Project (Project) Tulare County, California.

The Project is within Tulare County, approximately 9.5 miles (mi.) northeast of the city of Delano. This places the Project on the open flats of the San Joaquin Valley. Specifically, the Project is within Sections 29 and 30, Township 24 South, Range 27 East (T24S/R27E), Mount Diablo Base and Meridian (MDBM), as illustrated on the Richgrove USGS 7.5-minute topographic quadrangle. The proposed Project site consists of agricultural fields, a modern water treatment plant, a modern water storage feature, and unpaved and paved roads. Elevations within the Project area, which is mostly flat, range from 485 feet (ft.) above mean sea level (amsl) to 505 ft. amsl. The horizontal Area of Potential Effect (APE) for the Project totals approximately 92.2 acres (ac.) and contains all construction areas, staging and laydown areas, and access roads. The vertical APE, defined as the maximum depth of excavation for the Project, is not expected to exceed 10 ft. below ground surface.

ASM Affiliates (ASM) conducted this study, with Director Peter A. Carey, M.A., RPA, serving as Principal Investigator. Senior Archaeologist Dustin Merrick, M.A., RPA, was a contributing author of this report. Associate Archaeologist Robert Azpitarte, B.A., and Assistant Archaeologist Margarita Medina Lemus, B.A., conducted the fieldwork. The study was undertaken to assist with compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and the California Environmental Quality Act (CEQA).

To determine whether the Project APE had been previously surveyed for cultural resources, and/or whether any such resources were known to exist within or near to it, an archival records search was conducted by the staff of the Southern San Joaquin Valley Information Center (SSJVIC) on January 29, 2024. According to the SSJVIC, one previous study (TU-00046) has been conducted within the Project APE, and five previous studies (TU-01228, TU-01279, TU-01764, TU-01771, and TU-01831) were identified within the 0.5 mi. buffer. The SSJVIC results identified no previously recorded cultural resources within the APE. Three historic-era built environment resources (P-54-004626, P-54-004832, and P-54-004833) were identified within the 0.5 mi. buffer, with the nearest resource located less than 0.1 mi. from the Project APE.

Geoarchaeological review of the project APE indicates that the APE is unlikely to contain buried deposits. Historic aerial and topographic map review shows the project APE has been heavily disturbed by agricultural activities as far back as 1954.

A search of the Native American Heritage Commission (NAHC) Sacred Lands File was completed on January 26, 2024. Based on the NAHC records, the APE is negative for sacred sites or traditional cultural places (Confidential Appendix B). Outreach letters were sent on February 6, 2024, to tribal organizations on the NAHC contact list. Follow-up emails were sent on March 20, 2024. No responses were received as a result of this outreach.

The Class III inventory/Phase I survey of the Project APE was conducted on March 21, 2024. Parallel survey transects spaced at maximum intervals of 15 meters (m.) apart were employed for pedestrian survey of the 92.2 ac. Project APE. The Project APE consists of fallow agricultural land, a modern water treatment plant, a modern water storage feature, and unpaved and paved roads. Modern refuse in the form of plastics and clothing was noted within the APE. In addition, the Project APE east of Road 216 was heavily disturbed to create access roads. Visibility for the Project APE east of Road 216 ranged from fair (approximately 30 percent) to poor (approximately 15 percent) with the exception of the retention basin which was filled with water at the time of survey. Visibility was obscured by non-native vegetation and puddles of water east of Road 216. Visibility west of Road 216 was excellent (greater than 95 percent) due to previous disturbance with the exception of the water treatment infrastructure which was hardscaped over. No cultural resources were observed within the Project APE.

Based on the above analyses and findings, the proposed Richgrove Community Services District Wastewater Treatment Plant Improvement Project will not result in adverse impacts or effects to historic properties or historical resources, and a determination of ***no adverse effect*** under Section 106 and ***no significant impact*** under CEQA is recommended. It is further recommended that, in the unlikely event that previously unrecorded cultural resources are identified during Project construction, work be halted within a 100 ft. radius of the find and a qualified archaeologist be contacted to evaluate the newly discovered resource.

1. INTRODUCTION AND REGULATORY CONTEXT

ASM Affiliates (ASM) was retained by the Provost & Pritchard Consulting Group to conduct an intensive Class III inventory/Phase I survey for the Richgrove Community Services District (RCSD or District) Wastewater Treatment Plant (WWTP) Improvement Project (Project) Tulare County, California (Figure 1). The study was undertaken to assist with compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and the California Environmental Quality Act (CEQA). The investigation was conducted, specifically, to ensure that significant impacts or adverse effects to historic properties or historical resources do not occur as a result of Project construction.

This current study included:

- A background records search and literature review to determine if any known cultural resources were present in the project zone and/or whether the area had been previously and systematically studied by archaeologists;
- An on-foot, intensive inventory of the Project site to identify and record previously undiscovered cultural resources and to examine known sites; and
- A preliminary assessment of any such resources found within the subject property.

Director Peter A. Carey, M.A., RPA, served as Principal Investigator. Senior Archaeologist Dustin Merrick, M.A., RPA, was a contributing author of this report. Associate Archaeologist Robert Azpitarte, B.A., and Assistant Archaeologist Margarita Medina Lemus, B.A., conducted the fieldwork.

This document constitutes a report on the Class III inventory/Phase I survey. Subsequent chapters provide background to the investigation, including historic context studies; the findings of the archival records search; a summary of the field surveying techniques employed; and the results of the fieldwork. We conclude with management recommendations for the Project.

1.1 PROJECT LOCATION

The Project is within Tulare County, approximately 9.5 miles (mi.) northeast of the city of Delano. This places the Project on the open flats of the San Joaquin Valley. Specifically, the Project is within Sections 29 and 30, Township 24 South, Range 27 East (T24S/R27E), Mount Diablo Base and Meridian (MDBM), as illustrated on the Richgrove USGS 7.5-minute topographic quadrangle. The proposed Project site consists of agricultural fields, a modern water treatment plant, a modern water storage feature, and unpaved and paved roads. Elevations within the Project area, which is mostly flat, range from 485 feet (ft.) above mean sea level (amsl) to 505 ft. amsl.

1.2 PROJECT DESCRIPTION AND AREA OF POTENTIAL EFFECTS

1.2.1 Project Background and Purpose

The RCSD received a Clean Water State Revolving Fund planning grant from the State Water Resources Control Board (SWRCB) to study and plan improvements for the existing wastewater collection and treatment system in Richgrove.

RCSD currently owns and operates a WWTP located northeast of the community of Richgrove. The WWTP, which serves the community, currently operates under a permit issued by the Central Valley Regional Water Quality Control Board (RWQCB), Waste Discharge Requirements (WDR) Order No. 83-088. The permitted capacity of the existing pond-based WWTP is 0.22 million gallons per day (MGD). The WWTP is an aerated pond system that was constructed in the 1980s. WWTP flows have been reported near the design capacity, and the treatment system is aging.

The objectives of the Project are to provide the necessary capacity expansion and treatment process upgrades to provide more reliable biological treatment and to accommodate projected growth and development.

1.2.2 Project Description

The Project proposes to make necessary improvements to the existing WWTP in order to effectively serve its existing and planned population. The proposed Project would construct a standard aeration pond system, an influent lift station and headworks structure, new electrical and control facilities, and minor improvements to the existing effluent disposal site. These Project components are described in more detail below.

Aeration Ponds

The proposed aeration ponds consist of three lined ponds within the footprint of the two existing treatment ponds. The ponds would be equipped with surface aerators designed to provide aeration and mixing. The ponds would include one complete mix pond, followed by a partial mix pond, and an oxidation pond in series. The complete mix pond would be designed to be intensely aerated and mixed, which would eliminate the risk of temperature overturn or algae growth.

Each existing treatment pond is approximately 4.85 million gallons (MG). The complete mix pond footprint would be reduced to approximately 0.9 MG and would be equipped with four to five 10 horsepower (HP) aerators. The remaining area of the existing Pond 1 would be converted to a partial mixed pond equipped with four 10 HP aerators. The second existing pond would be kept as an oxidation pond with an option of two 5 HP aerators. The complete mix pond would be concrete lined, such that it could potentially be used for a Biolac system in the future. The partial mix pond and oxidation pond would have a polyethylene liner.

The new treatment facilities would be constructed by temporarily isolating one of the treatment ponds at a time to complete the work while still allowing the existing facilities to process and treat wastewater.

Lift Station and Headworks

A new lift station would be installed at the southwest corner of the existing WWTP site. The new lift station would be designed with three lift pumps rated to provide the peak hour flow of 730 gallons per minute (gpm), and capable of providing the maximum daily flow with one pump out of service. Each lift pump is anticipated to have a design capacity of approximately 350 gpm. Typically, only one pump would operate at any given time, with a second pump to meet peak flows. The third pump would provide redundancy and firm capacity during peak flow events.

The associated sewer force main would have a minimum velocity of approximately 2.0 feet per second (FPS) to keep solids suspended so as not to accumulate at the bottom of the pipe. A peak flow velocity of at least 3.5 FPS is desirable to re-suspend solids that have settled within the pipe. The force main sizing would be re-evaluated once actual pump performance is known. The new sewer force main from the lift station to the treatment system would be 8-inch (in.) diameter constructed of C900 polyvinyl chloride (PVC) pipe.

The proposed headworks structure would be constructed to accommodate the hydraulic requirements of the other Project features. A new automatically cleaned screen and a bypass channel with a manual bar screen would be installed. A new flow meter would be installed on the influent pipeline, after the influent lift station to measure influent flows to the WWTP.

Electrical and Controls

New electrical service would be required and coordinated with Southern California Edison. A new motor control center and standby generator would be included. In addition, the Project would include a radio or cellular based monitoring and control system to provide remote monitoring and alarm capabilities, as well as providing automatic reporting of critical information.

Storage and Disposal Facilities

Continued storage and use of effluent for alfalfa irrigation is planned, with some improvements to the existing disposal site.

1.2.3 Area of Potential Effect

The Area of Potential Effect (APE) for the Project was defined as the area of potential ground surface disturbance. The majority of ground disturbance will be at the existing WWTP site, which is approximately 9.2 acres (ac.). This would involve earthwork to modify and construct new treatment ponds, construction of new lift station and headworks, and onsite piping. Work on the 80 ac. disposal site is limited to constructing a small berm along the eastern side of the property, and the potential addition of a second effluent storage pond. The area of ground disturbance for the berm would be approximately 25,000 square feet.

The horizontal APE for the Project totals approximately 92.2 ac. and contains all construction areas, staging and laydown areas, and access roads. The vertical APE, defined as the maximum depth of excavation of the Project, is not expected to exceed 10 ft. below ground surface.

1.3 REGULATORY CONTEXT

1.3.1 National Historic Preservation Act Section 106

NHPA Section 106 is applicable to federal undertakings, including projects financed or permitted by federal agencies regardless of whether the activities occur on federally managed or privately owned land. Its purpose is to determine whether adverse effects will occur to significant cultural resources, defined as "historical properties" that are listed in or determined eligible for listing in the National Register of Historic Places (NRHP). The criteria for NRHP eligibility are defined at 36 CFR § 60.4 as follows:

> The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and that:
>
> (A) are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> (B) are associated with the lives of persons significant in our past; or
>
> (C) embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> (D) have yielded or may be likely to yield, information important in prehistory or history.

There are, however, restrictions on the kinds of historical properties that can be NRHP listed. These have been identified by the Advisory Council on Historic Preservation (ACHP), as follows:

> Ordinarily cemeteries, birthplaces, or graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, properties primarily commemorative in nature, and properties that have achieved significance within the past 50 years shall not be considered eligible for the National Register. However, such properties will qualify if they are integral parts of districts that do meet the criteria or if they fall within the following categories:
>
> (a) A religious property deriving primary significance from architectural or artistic distinction or historical importance; or
>
> (b) A building or structure removed from its original location, but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event; or
>
> (c) A birthplace or grave of a historical figure of outstanding importance if there is no appropriate site or building directly associated with his productive life.

(d) A cemetery which derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events; or

(e) A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived; or

(f) A property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or

(g) A property achieving significance within the past 50 years if it is of exceptional importance. (ACHP n.d.)

1.3.2 National Register Criteria for Evaluation

The criteria for evaluation of NRHP eligibility are outlined at 36 CFR Part 60.4. A district, site, building, structure, or object must generally be at least 50 years old to be eligible for consideration as a historic property. That district, site, building, structure, or object must retain integrity of location, design, setting, materials, workmanship, feelings, and association as well as meet one of the following criteria to demonstrate its significance in American history, architecture, archeology, engineering, and culture. A district, site, building, structure, or object must:

> (A) be associated with events that have made a significant contribution to the broad patterns of history; or,
>
> (B) be associated with the lives of people significant in our past; or,
>
> (C) embody the distinct characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction; or,
>
> (D) have yielded, or may be likely to yield, information important in prehistory or history.

A site must have integrity and meet one of the four criteria of eligibility to demonstrate its historic associations in order to convey its significance. A property must be associated with one or more events important in the history or prehistory in order to be considered for listing under Criterion A. Additionally, the specific association of the property itself, must also be considered significant. Criterion B applies to properties associated with individuals whose specific contributions to the history can be identified and documented. Properties significant for their physical design or construction under Criterion C must have features with characteristics that exemplify such elements as architecture, landscape architecture, engineering, and artwork. Criterion D most commonly applies to properties that have the potential to answer, in whole or in part, important research questions about human history that can only be answered by the actual physical materials of cultural resources. A property eligible under Criterion D must demonstrate the potential to contain information relevant to the prehistory and history (*National Register Bulletin* 15).

A district, site, building, structure, or object may also be eligible for consideration as a historic property if that property meets the criteria considerations for properties generally less than 50 years old, in addition to possessing integrity and meeting the criteria for evaluation.

1.3.3 California Environmental Quality Act

CEQA is applicable to discretionary actions by state or local lead agencies. Under CEQA, lead agencies must analyze impacts to cultural resources. Significant impacts under CEQA occur when "historically significant" or "unique" cultural resources are adversely affected, which occurs when such resources could be altered or destroyed through project implementation. Historically significant cultural resources are defined by eligibility for or by listing in the California Register of Historical Resources (CRHR). In practice, the federal NRHP criteria (below) for significance applied under Section 106 are generally (although not entirely) consistent with CRHR criteria (see PRC § 5024.1, Title 14 CCR, Section 4852 and § 15064.5(a)(3)).

Significant cultural resources are those archaeological resources and historical properties that:

(A) Are associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

(B) Are associated with the lives of persons important in our past;

(C) Embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of an important creative individual, or possess high artistic values; or

(D) Have yielded, or may be likely to yield, information important in prehistory or history.

Unique resources under CEQA, in slight contrast, are those that represent:

An archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

(1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

(2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.

(3) Is directly associated with a scientifically recognized important prehistoric or historic event or person (PRC § 21083.2(g)).

Preservation in place is the preferred approach under CEQA to mitigating adverse impacts to significant or unique cultural resources.

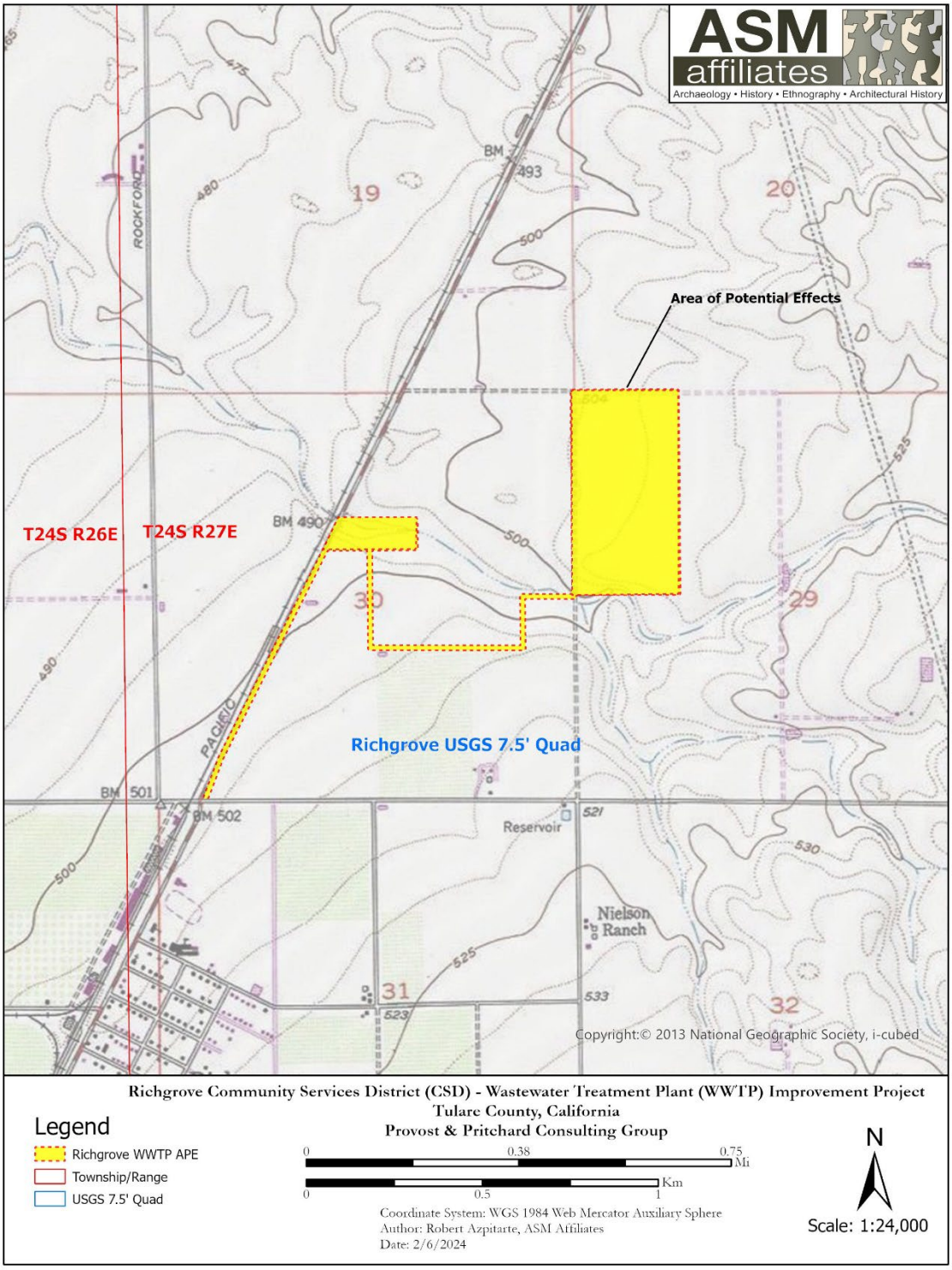


Figure 1. Richgrove CSD WWTP Improvement Project, Tulare County, California.

2. ENVIRONMENTAL AND CULTURAL BACKGROUND

2.1 ENVIRONMENTAL BACKGROUND AND GEOARCHAEOLOGICAL SENSITIVITY

As noted above, the Project is at an average elevation of approximately 500 ft. amsl, 9.5 mi. northeast of the city of Delano on the open flats of the San Joaquin Valley. Before the appearance of agriculture, this location would have been prairie grasslands, grading into tree savannas in the foothills to the east (Preston 1981). The APE and immediate surroundings have been farmed and grazed for many years and no native vegetation is present, with the APE now consisting largely of undeveloped land, a water treatment plant, a reservoir, and access roads. Perennial bunchgrasses such as purple needlegrass and nodding needlegrass most likely would have been the dominant plant cover in the region prior to cultivation.

The Project APE is within the southern extent of the San Joaquin Valley. A Caltrans geoarchaeological study (Meyer et al. 2010) that included the APE was consulted in order to identify the potential for buried archaeological sites in the vicinity of the Project area. This study involved first determining the location and ages of late Pleistocene (>25,000 years old) landforms in the southern San Joaquin Valley. These were identified by combining a synthesis of 2,400 published paleontological, soils and archaeological chronometric dates with geoarchaeological field testing. The ages of surface landforms were then mapped to provide an assessment for the potential for buried archaeological deposits. These ages were derived primarily from the Soil Survey Geographic Database (SSURGO) and the State Soils Geographic (STATSGO) database. A series of maps were created from this information that ranked locations in seven ordinal classes for sensitivity for buried soils, from Very Low to Very High.

According to the geoarchaeological model developed by Meyer et al. (2010), the general vicinity of the Project APE has a Low to Very Low potential for buried archaeological deposits. Based on the observable data, buried sites and cultural resources are considered unlikely within the Project APE.

2.2 ETHNOGRAPHIC BACKGROUND

Penutian-speaking Yokuts tribal groups occupied the southern San Joaquin Valley region and much of the nearby Sierra Nevada. Ethnographic information about the Yokuts was collected primarily by Powers (1971, 1976 [originally 1877]), Kroeber (1925), Gayton (1930, 1948), Driver (1937), and Harrington (n.d.). For a variety of historical reasons, existing research information emphasizes the central Yokuts tribes which occupied both the valley and particularly the foothills of the Sierra Nevada. The northernmost tribes suffered from the influx of Euro Americans during the Gold Rush and their populations were in substantial decline by the time ethnographic studies began in the early twentieth century. In contrast, the southernmost tribes were partially removed by the Spanish to missions and eventually absorbed into multi-tribal communities on the Sebastian Indian Reservation (on Tejon Ranch), and later the Tule River Reservation and Santa Rosa

Rancheria to the north. The result is a scarcity of ethnographic detail on southern Valley tribes, especially in relation to the rich information collected from the central foothills tribes where native speakers of the Yokuts dialects are still found. Regardless, the general details of indigenous lifeways were similar across the broad expanse of Yokuts territory, particularly in terms of environmentally influenced subsistence and adaptation and with regard to religion and belief, which were similar everywhere.

Following Kroeber (1925: Plate 47), the Tulare region lies in a contact zone between a series of Yokuts tribal groups. Kroeber places the Wowol to the west of the Project APE, the Tuhohi to the south, Koyeti to the north along Tule River, and the Paleuyami to the southeast. No historic villages are recorded in the immediate Project area by Kroeber (1925).

The Yokuts settlement pattern was largely consistent, regardless of the specific tribe involved. Winter villages were typically located along lakeshores and major stream courses (as these existed circa 150 YBP), with dispersal phase family camps at elevated spots on the valley floor and near gathering areas in the foothills.

Most Yokuts groups, again regardless of specific tribal affiliation, were organized as a recognized and distinct tribelet; a circumstance that almost certainly pertained to the tribal groups noted above. Tribelets were land-owning groups organized around a central village and linked by shared territory and descent from a common ancestor. The population of most tribelets ranged from about 150 to 500 people (Kroeber 1925).

Each tribelet was headed by a chief who was aided by a variety of assistants, the most important of whom was the *winatum*, a herald or messenger and assistant chief. A shaman also served as a religious officer. While shamans did not have any direct political authority, as Gayton (1930) has illustrated, they maintained substantial influence within their tribelet.

Shamanism is a religious system common to many Native American tribes. It involves a direct and personal relationship between the individual and the supernatural world enacted by entering a trance or hallucinatory state (usually through the ingestion of psychotropic plants, such as jimsonweed or more typically native tobacco). Shamans were considered individuals with an unusual degree of supernatural power, serving as healers or curers, diviners, and controllers of natural phenomena (such as rain or thunder). Shamans also produced the rock art of this region, depicting the visions they experienced in vision quests believed to represent their spirit helpers and events in the supernatural realm (Whitley 1992, 2000).

The centrality of shamanism to the religious and spiritual life of the Yokuts was demonstrated by the role of shamans in the yearly ceremonial round. The ritual round, performed the same way each year, started in the spring with the jimsonweed ceremony, followed by rattlesnake dance and (where appropriate) first salmon ceremony. After returning from seed camps, fall rituals began in the late summer with the mourning ceremony, followed by first seed and acorn rites, and then bear dance (Gayton 1930:379). In each case, shamans served as ceremonial officials responsible for specific dances involving a display of their supernatural powers (Kroeber 1925).

Subsistence practices varied from tribelet to tribelet based on the environment of residence. Throughout Native California, and Yokuts territory in general, the acorn was a primary dietary component, along with a variety of gathered seeds. Valley tribes augmented this resource with lacustrine and riverine foods, especially fish and wildfowl. As with many Native California tribes, the settlement and subsistence rounds included the winter aggregation into a few large villages, where stored resources (like acorns) served as staples, followed by dispersal into smaller camps, often occupied by extended families, where seasonally available resources would be gathered and consumed.

Although population estimates vary and population size was greatly affected by the introduction of European American diseases and social disruption, the Yokuts were one of the largest, most successful groups in Native California. Cook (1978) estimates that the Yokuts region contained 27 percent of the aboriginal population in the state at the time of contact; other estimates are even higher. Many Yokuts people continue to reside in the southern San Joaquin Valley today.

2.3 PRE-CONTACT ARCHAEOLOGICAL BACKGROUND

The southern San Joaquin Valley region has received minimal archaeological attention compared to other areas of the state. In part, this is because the majority of California archaeological work has been concentrated in the Sacramento Delta, Santa Barbara Channel, and central Mojave Desert areas (see Moratto 1984). Although knowledge of the region's prehistory is limited, enough is known to determine that the archaeological record is broadly similar to south-central California as a whole (see Gifford and Schenck 1926; Hewes 1941; Wedel 1941; Fenenga 1952; Elsasser 1962; Fredrickson and Grossman 1977; Schiffman and Garfinkel 1981). Based on these sources, the general prehistory of the region can be outlined as follows.

Initial occupation of the region occurred at least as early as the *Paleoindian Period*, or prior to about 10,000 years before present (YBP). Evidence of early use of the region is indicated by characteristic fluted and stemmed points found around the margin of Tulare Lake, in the foothills of the Sierra, and in the Mojave Desert proper.

Both fluted and stemmed points are particularly common around lake margins, suggesting a terminal Pleistocene/early Holocene lakeshore adaptation similar to that found throughout the far west at the same time; little else is known about these earliest peoples. More than 250 fluted points have been recovered from the Witt Site (CA-KIN-32), located along the western shoreline of ancient Tulare Lake, west of the Project APE, demonstrating the importance of this early occupation in the San Joaquin Valley (see Fenenga 1993). Additional finds consist of a Clovis-like projectile point discovered in a flashflood cut-bank near White Oak Lodge in 1953 on Tejon Ranch (Glennan 1987a, 1987b). More recently, a similar fluted point was found near Bakersfield (Zimmerman et al. 1989), and a number are known from the Edwards Air Force Base and Boron area of the western Mojave Desert. Although human occupation of the state was well-established during the Late Pleistocene, relatively little can be inferred about the nature and distribution of this occupation with a few exceptions. First, little evidence exists to support the idea that people at that time were big-game hunters, similar to those found on the Great Plains. Second, the western Mojave Desert evidence suggests small, very mobile populations that left a minimal archaeological signature. The evidence from the ancient Tulare Lake shore, in contrast, suggests much more

substantial population and settlements which, instead of relying on big game hunting, were tied to the lacustrine lake edge. Variability in subsistence and settlement patterns is thus apparent in California, in contrast to the Great Plains.

Substantial evidence for human occupation across California, however, first occurs during the middle Holocene, roughly 7500 to 4000 YBP. This period is known as the *Early Horizon*, or alternatively as the Early Millingstone, along the Santa Barbara Channel. In the south, populations were concentrated along the coast with minimal visible use of inland areas. Adaptation emphasized hard seeds and nuts with toolkits dominated by mullers and grindstones (manos and metates). Additionally, little evidence for Early Horizon occupation exists in most inland portions of the state, partly due to a severe cold and dry paleoclimatic period occurring at this time, although a site deposit dating to this age has been identified along the ancient Buena Vista shoreline in Kern County to the south (Rosenthal et al. 2007). Regardless of specifics, Early Horizon population density was low with a subsistence adaptation more likely tied to plant food gathering than hunting.

Environmental conditions improved dramatically after about 4000 YBP during the *Middle Horizon* (or Intermediate Period). This period is known climatically as the Holocene Maximum (circa 3800 YBP) and was characterized by significantly warmer and wetter conditions than previously experienced. It was marked archaeologically by large population increase and radiation into new environments along coastal and interior south-central California and the Mojave Desert (Whitley 2000). In the Delta region to the north, this same period of favorable environmental conditions was characterized by the appearance of the Windmiller culture which exhibited a high degree of ritual elaboration (especially in burial practices) and perhaps even a rudimentary mound-building tradition (Meighan, personal communication, 1985). Along with ritual elaboration, Middle Horizon times experienced increasing subsistence specialization, perhaps correlating with the appearance of acorn processing technology. Penutian speaking peoples (including the Yokuts) are also posited to have entered the state roughly at the beginning of this period and, perhaps to have brought this technology with them (cf. Moratto 1984). Likewise, it appears the so-called "Shoshonean Wedge" in southern California, the Takic speaking groups that include the Gabrielino/Fernandeño, Tataviam, and Kitanemuk, may have moved into the region at that time (Sutton 2009), rather than at about 1500 YBP as first suggested by Kroeber (1925).

Evidence for Middle Horizon occupation of interior south-central California is substantial. For example, in northern Los Angeles County along the upper Santa Clara River, to the south of the San Joaquin Valley, the Agua Dulce village complex indicates occupation extending back to the Intermediate Period, when the population of the village may have been 50 or more people (King et al. n.d.). Similarly, inhabitation of the Hathaway Ranch region near Lake Piru, and the Newhall Ranch near Valencia, appears to date to the Intermediate Period (W&S Consultants 1994). To the west, little or no evidence exists for pre-Middle Horizon occupation in the upper Sisquoc and Cuyama River drainages; populations first appear there at roughly 3500 YBP (Horne 1981). The Carrizo Plain, the valley immediately west of the San Joaquin, experienced a major population expansion during the Middle Horizon (W&S Consultants 2004; Whitley et al. 2007), and recently collected data indicates the Tehachapi Mountains region was first significantly occupied during the Middle Horizon (W&S Consultants 2006). A parallel can be drawn to the inland Ventura County region where a similar pattern has been identified (Whitley and Beaudry 1991), as well as the western Mojave Desert (Sutton 1988a, 1988b), the southern Sierra Nevada (W&S Consultants

1999), and the Coso Range region (Whitley et al. 1988). In all of these areas a major expansion in settlement, the establishment of large site complexes, and an increase in the range of environments exploited appear to have occurred sometime roughly around 4000 YBP. Although most efforts to explain this expansion have focused on local circumstances and events, it is increasingly apparent this was a major southern California-wide occurrence, and any explanation must be sought at a larger level of analysis (Whitley 2000). Additionally, evidence from the Carrizo Plain suggests the origins of the tribelet level of political organization developed during this period (W&S Consultants 2004; Whitley et al. 2007). Whether this same demographic process holds for the southern San Joaquin Valley, including the current Project APE, is yet to be determined.

The beginning of the *Late Horizon* is set variously at 1500 and 800 YBP, with a growing archaeological consensus for the shorter chronology. Increasing evidence suggests the importance of the Middle-Late Horizons transition (1150 to 500 YBP) in the understanding of south-central California prehistory. This corresponds to the so-called Medieval Climatic Anomaly, followed by the Little Ice Age, and this general period of climatic instability extended to about 90 YBP. It included major droughts matched by intermittent "mega-floods," and resulted in demographic disturbances across much of the west (Jones et al. 1999). It is believed to have resulted in major population decline and abandonments across south-central California, involving as much as 90 percent of the interior populations in some regions, including the Carrizo Plain (Whitley et al. 2007). It is not clear whether site abandonment was accompanied by a true reduction in population or an agglomeration of the same numbers of peoples into fewer but larger villages in more favorable locations. Population along the Santa Barbara coast appears to have spiked at about the same time that it collapsed on the Carrizo Plain (Whitley et al. 2007). Along Buena Vista Lake, in Kern County, population appears to have been increasingly concentrated toward the later end of the Medieval Climatic Anomaly (Culleton 2006), and population intensification also appears to have occurred in the well-watered Tehachapi Mountains during this same period (W&S Consultants 2006).

What is clear is that Middle Period villages and settlements were widely dispersed across the south-central California landscape, including in the Sierra Nevada and the Mojave Desert. Many of these sites are found at locations that lack existing or historically known freshwater sources. Late Horizon sites, in contrast, are typically concentrated in areas where fresh water was available during the historical period, if not currently.

One extensively studied site that shows evidence of intensive occupation during the Middle-Late Horizons transition (~1500-500 YBP) is the Redtfeldt Mound (CA-KIN-66/H), located west of the current Project APE, near the north shore of ancient Tulare Lake. There, Siefkin (1999) reported on human burials and a host of artifacts and ecofacts excavated from a modest-sized mound. He found that both Middle Horizon and Middle-Late Horizons transition occupations were more intensive than Late Horizon occupations, which were sporadic and less intensive (Siefkin 1999:110-111).

The Late Horizon can then be understood as a period of recovery from a major demographic collapse. One result is the development of regional archaeological cultures as the precursors to ethnographic Native California; suggesting that ethnographic lifeways recorded by anthropologists extend roughly 800 years into the past.

The position of southern San Joaquin Valley prehistory relative to patterns seen in surrounding areas is still somewhat unknown. The presence of large lake systems in the valley bottoms appears to have mediated some of the desiccation seen elsewhere. But, as the reconstruction of Soda Lake in the nearby Carrizo Plain demonstrates (see Whitley et al. 2007) environmental perturbations had serious impacts on lake systems too. Identifying certain of the prehistoric demographic trends for the southern San Joaquin Valley and determining how these trends (if present) correlate with those seen elsewhere, is a current important research objective.

2.4 HISTORICAL BACKGROUND

Spanish explorers first visited the San Joaquin Valley in 1772, but its lengthy distance from the missions and presidios along the Pacific Coast delayed permanent settlement for many years, including during the Mexican period of control over the Californian region. In the 1840s, Mexican rancho owners along the Pacific Coast allowed their cattle to wander and graze in the San Joaquin Valley (JRP Historical Consulting 2009). The Mexican government granted the first ranchos in the southern part of the San Joaquin Valley in the early 1840s, but these did not result in permanent settlement. It was not until the annexation of California in 1848 that the exploitation of the southern San Joaquin Valley began (Pacific Legacy 2006).

The discovery of gold in northern California in 1848 resulted in a dramatic increase of population, consisting in good part of fortune seekers and gold miners, who began to scour other parts of the state. After 1851, when gold was discovered in the Sierra Nevada Mountains in eastern Kern County, the population of the area grew rapidly. Some new immigrants began ranching in the San Joaquin Valley to supply the miners and mining towns. Ranchers grazed cattle and sheep, and farmers dry-farmed or used limited irrigation to grow grain crops, leading to the creation of small agricultural communities throughout the valley (JRP Historical Consulting 2009).

After the American annexation of California, the southern San Joaquin Valley became significant as a center of food production for this new influx of people in California. The expansive unfenced and principally public foothill spaces were well suited for grazing both sheep and cattle (Boyd 1997). As the Sierra Nevada gold rush presented extensive financial opportunities, ranchers introduced new breeds of livestock, consisting of cattle, sheep and pig (Boyd 1997).

With the increase of ranching in the southern San Joaquin Valley came the dramatic change in the landscape, as non-native grasses more beneficial for grazing and pasture replaced native flora (Preston 1981). After the passing of the Arkansas Act in 1850, efforts were made to reclaim small tracts of land in order to create more usable spaces for ranching. Eventually, as farming supplanted ranching as a more profitable enterprise, large tracts of land began to be reclaimed for agricultural use, aided in part by the extension of the railroad in the 1870s (Pacific Legacy 2006).

The Santa Fe and Southern Pacific Railroads extended into Tulare County in the 1870s. Deliberations among the major owners of the rail companies resulted in a decision that one large town would be developed in the approximate middle of each San Joaquin Valley County, to serve as county seat and railroad hub. The location of the City of Tulare was one such selected spot, located at the intersection of the Santa Fe and Southern Pacific railroads (Preston 1991). Prior to

that time, this area had relatively few settlers due to the lack of surface water, with most Euro Americans settling either farther north and east, closer to the main branches of the Kaweah and Kings Rivers, or to the south and east, along the Tule River (Menafee and Dodge 1913).

The City of Tulare was then established by the Southern Pacific Railroad in 1872, with plats aligned parallel to the tracks. As a rail diversion point, a series of rail company workshops, including a roundhouse, were constructed. The work force for these facilities attracted additional development and settlement. In addition to the rail yards, by 1876 the town had a general store, drugstore, hardware shop, two blacksmiths, two carpentry shops, a wheelwright, lumberyard, and a flour mill (Preston 1991).

Following the passage of statewide "No-Fence" laws in 1874, ranching practices began to decline, while farming expanded in the San Joaquin Valley in both large land holdings and smaller, subdivided properties. As the farming population grew, so did the demand for irrigation. During the period of reclaiming unproductive land in the southern San Joaquin Valley, grants were given to individuals who had both the resources and the finances to undertake the operation alone.

Three competing partnerships developed during this period which had a great impact on control of water, land reclamation and ultimately agricultural development in the San Joaquin Valley: Livermore and Chester, Haggin and Carr, and Miller and Lux, perhaps the most famous of the enterprises. Livermore and Chester were responsible, among other things, for developing the large Hollister plow (3 ft. wide by 2 ft. deep), pulled by a 40-mule team, which was used for ditch digging. Haggin and Carr were largely responsible for reclaiming the beds of the Buena Vista and Kern lakes, and for creating the Calloway Canal, which drained through the Rosedale area in Bakersfield to Goose Lake (Morgan 1914). Miller and Lux ultimately became one of the biggest private property holders in the country, controlling the rights to over 22,000 square mi. Miller and Lux's impact extended far beyond Kern County, however. They recognized early on that control of water would have important economic implications, and they played a major role in the water development of the state. They controlled, for example, over 100 mi. of the San Joaquin River with the San Joaquin and Kings River Canal and Irrigation System. They were also embroiled for many years in litigation against Haggin and Carr over control of the water rights to the Kern River. Descendants of Henry Miller continue to play a major role in California water rights, with his great grandson, George Nickel, Jr., the first to develop the concept of water banking, thus creating a system to buy and sell water (Levine 2011).

The controversies associated with these endeavors culminated in the Wright Irrigation Act of 1887, which provided for the ownership of land and water as a unit rather than as separate rights. It further allowed the creation of irrigation districts comprised of local landowners.

Richgrove is currently a small unincorporated residential community with approximately 3200 inhabitants. The Richgrove area developed due to the expansion of citrus orchards in the 1890s (Menefee and Dodge 1913). The 1892 Thomas H. Thompson Tulare County map shows that the T24S/R27E had a school, referred to as the Thermal Schoolhouse, and the Stockton Tulare Railroad traversed through the T24S/R27E. The development of the community occurred after circa 1899, when the Visalia Water Company started providing electrical power to the region (ibid). According to historical USGS topographical quadrangles, the subdivision of the community

did not occur until sometime after 1929.

3. RECORDS AND SACRED LANDS FILE SEARCHES

3.1 RECORDS SEARCH

In order to determine whether the Project APE had been previously surveyed for cultural resources, and/or whether any such resources were known to exist within or near to it, an archival records search was conducted by the staff of the Southern San Joaquin Valley Information Center (SSJVIC) on January 29, 2024. The records search was completed to determine: (i) if pre-contact or historic-era cultural resources had previously been recorded within the Project APE; (ii) if the Project APE had been systematically surveyed by archaeologists prior to the initiation of this fieldwork; and/or (iii) whether the area surrounding the proposed Project was known to contain archaeological sites or built environment resources and to thereby be culturally sensitive. Records examined included archaeological site files and maps, the NRHP, Historic Property Data File, California Inventory of Historic Resources, and the California Points of Historic Interest. The records search included the Project APE and a 0.5 mi. buffer.

According to the SSJVIC, one previous study (TU-00046) has been conducted within the Project APE, and five previous studies (TU-01228, TU-01279, TU-01764, TU-01771, and TU-01831) were identified within the 0.5 mi. buffer (Table 1). Based on SSJVIC data, approximately 30 percent of the Project APE has been previously surveyed; however, the only study within the APE is over 40 years old.

The SSJVIC results identified no previously recorded cultural resources within the APE. Three historic-era built environment resources (P-54-004626, P-54-004832, and P-54-004833) were identified within the 0.5 mi. buffer, with the nearest located less than 0.1 mi. from the Project APE (Table 2). The results of the SSJVIC records search are available in Confidential Appendix A.

Table 1. Previous Reports with 0.5 mi. of the APE

Report #	Year	Author/Affiliation	Title	APE Relationship
TU-00046	1980	Beck, Allen	Archaeological Field Reconnaissance Report Summary for the Richgrove Community Service District Wastewater Project	Within
TU-01228	2004	Pruett, Catherine	Cultural Resources Assessment for a Storm Water Basin Located North of Richgrove, Tulare County, California	Outside
TU-01279	2006	Jones, Kari	Archaeological Survey of East Richgrove Cell Site, Tulare County. (Clayton Project No. 70-05912.01; PL. No. 922-85)	Outside
TU-01764	2017	Foglia, Shannon E, Cooley, Theodore, and Miller, Chandra	Cultural Resources Survey Report for the Proposed Southern California Edison North of Magunden Transmission Line Rating Remediation Project, Kern and Tulare Counties, California	Outside
TU-01771	2017	Pearson, Jeffrey	Cultural Resources Records Search and Site Visit for T-Mobile West, LLC Candidate	Outside

Report #	Year	Author/Affiliation	Title	APE Relationship
			SC50694A (Richgrove), 20812 Grove Drive, Richgrove, Tulare County, California	
TU-01831	2018	Whitley, David and Carey, Peter	Class III Inventory/Phase I Survey, Richgrove CSD Well and Pipeline Project, Tulare County, California	Outside

Table 2. Previously Recorded Resources

Primary #	Type	Description	Eligibility Status	APE Relationship
P-15-004626	Historic-era structure	Segment of the Southern Pacific Railroad.	Determined not eligible	Outside
P-15-004832	Historic-era structure	The SCE Big Creek Hydroelectric System East & West Transmission.	Determined eligible	Outside
P-15-004833	Historic-era structure	Segment of a telegraph/telephone line.	Recommended not eligible	Outside

3.2 TRIBAL OUTREACH

A search of the Native American Heritage Commission (NAHC) Sacred Lands File was completed on January 26, 2024. Based on the NAHC records, the APE is negative for sacred sites or traditional cultural places. Outreach letters were sent on February 6, 2024, to tribal organizations on the NAHC contact list. Follow-up emails were sent on March 20, 2024. No responses were received as a result of this outreach. NAHC request, NAHC results, Tribal outreach letters, and Tribal responses can be found in Confidential Appendix B.

3.3 HISTORIC AERIAL AND TOPOGRAPHIC MAPS

Historical topographical maps and aerial imagery that included the Project APE were consulted to identify potential historic-era structures or resources. According to USGS topographic quadrangles, historical aerials, Google Earth imagery, and Nationwide Environmental Title Research, the area has undergone minimal development since at least the mid-twentieth century. The 1929 USGS Richgrove 1:31,680 quadrangle depicts the APE as undeveloped with the Southern Pacific Railroad and Richgrove Drive running northeast-southwest to the east and north of the APE, an Edison transmission line running southeast-northwest east and north of the Project APE, and Avenue 8 south of the APE. An unnamed road runs through the eastern portion of the APE along the same alignment as what is now Road 216, and a stream is depicted running east-west through the southern portion of the APE. The 1952 USGS Richgrove 1:24,000 quadrangle depicts the APE as being in the same condition as the 1929 topographic map with the exception of the southern portion of the center of the APE which is depicted as agricultural lands.

Aerial imagery depicts the majority of the APE as agricultural lands as far back as 1956. Between 1958 to 1969, the APE changes very little with the only observable change being the southwestern portion of the APE being left fallow. By 1984, the entirety of the APE is either agricultural land

or access roads associated with agricultural activities. Between 1984 and 1994, the water retention basin in the eastern portion of the Project APE and the water treatment facility in the western portion of the APE were constructed. From 1994 to 2020, the APE appears in its current form, according to aerial imagery.

4. METHODS AND RESULTS

4.1 FIELD METHODS

An intensive Class III inventory/Phase I survey of the Project APE was conducted by ASM Associate Archaeologist Robert Azpitarte, B.A., with assistance from Assistant Archaeologist Margarita Medina Lemus, B.A., on March 21, 2024. The Class III inventory/Phase I survey included a review of the Project APE for the presence of built environment features. The field methods employed also included intensive pedestrian examination of the ground surface for evidence of archaeological sites in the form of artifacts, surface features (such as bedrock mortars or historical mining equipment), and archaeological indicators (e.g., organically enriched midden soil or burnt animal bone); the identification and location of any discovered sites, should they be present; tabulation and recording of surface diagnostic artifacts; site sketch mapping; preliminary evaluation of site integrity; and site recording, following the California Office of Historic Preservation (OHP) Instructions for Recording Historic Resources using California Department of Parks and Recreation (DPR) 523 forms. Parallel survey transects spaced at maximum intervals of 15 m. apart were employed for pedestrian survey of the 92.2 ac. Project APE.

4.2 SURVEY RESULTS

4.2.1 Archaeological Results

The proposed Project APE consists of improvements to a water treatment facility constructed in the 1980s. The Project APE consists of fallow agricultural land, a modern water treatment plant, modern water storage feature, and unpaved and paved roads. Modern refuse in the form of plastics and clothing was observed within the APE. In addition, the Project APE east of Road 216 was heavily disturbed to create access roads (Figure 2). Visibility for the Project APE east of Road 216 ranged from fair (approximately 30 percent) to poor (approximately 15 percent) with the exception of the retention basin which was filled with water at the time of survey (Figure 2 and Figure 3). Visibility was obscured by non-native vegetation and puddles of water east of Road 216. Visibility west of Road 216 was excellent (greater than 95 percent) due to previous disturbance (Figure 4) with the exception of the water treatment infrastructure which was hardscaped over (Figure 5). No cultural resources were observed within the Project APE.

Figure 2. Project APE overview, facing south.

Figure 3. Water retention basin, facing south southeast.

Figure 4. Project APE Overview, facing east.

Figure 5. Water Treatment Basin, facing west southwest.

5. SUMMARY AND RECOMMENDATIONS

5.1 SUMMARY

A Class III inventory/Phase I survey was conducted for the Richgrove CSD WWTP Improvement Project, Tulare County, California. A records search was conducted at the SSJVIC. This search indicated that the portions of the Project APE had been previously surveyed, and that no previously recorded cultural resources were within the Project APE. An NAHC SLF search was conducted for the Project APE and the NAHC responded with negative SLF results. Geoarchaeological review of the project APE indicates that the APE is unlikely to contain buried deposits. Historic aerial and topographic map review indicates the project APE has been heavily disturbed by agricultural activities as far back as 1954.

A Class III inventory/Phase I survey fieldwork of the Project APE was conducted on March 21, 2024, with parallel transects spaced at 15 m. intervals. No cultural resources of any kind were identified within the Project APE.

5.2 RECOMMENDATIONS

Based on the above analyses and findings, the proposed Richgrove CSD WWTP Improvement Project will not result in adverse impacts or effects to historic properties or historical resources, and a determination of ***no adverse effect*** under Section 106 and ***no significant impact*** under CEQA is recommended. It is further recommended that, in the unlikely event that previously unrecorded cultural resources are identified during Project construction, work be halted within a 100 ft. radius of the find and a qualified archaeologist be contacted to evaluate the newly discovered resource.

REFERENCES

Advisory Council on Historic Preservation
n.d. National Register Evaluation Criteria. Electronic document, http://www.achp.gov/nrcriteria.html. Accessed June 18, 2018.

Boyd, W.H.
1997 *Lower Kern River Country 1850-1950: Wilderness to Empire*. Kings River Press, Lemoore.

Cook, S. F.
1978 Historical Demography. In *Handbook of North American Indians, Volume 8, California*, R. F. Heizer, editor, pp. 91-98. Washington, D.C., Smithsonian Institute.

Culleton, Brendan J.
2006 Implications of a Freshwater Radiocarbon Reservoir Correction for the Timing of the Late Holocene Settlement of the Elk Hills, Kern County, California. *Journal of Science* 33:1331-1339.

Driver, H.E.
1937 Cultural Element Distributions: VI, Southern Sierra Nevada. *University of California Anthropological Records* 1(2):53-154. Berkeley

Elsasser, A.
1962 *Indians of Sequoia and Kings Canyon National Parks*. Three Rivers: Sequoia Natural History Association.

Fenenga, F.
1952 The Archaeology of the Slick Rock Village, Tulare County, California. *American Antiquity* 17:339-347.

Fenenga, G.
1993 Test Excavations at the Witt Site (CA-KIN-32). In W.J. Wallace and F.A. Riddell, editors, pp. 25-38, *Finding the Evidence: The Quest for Tulare Lake's Archaeological Past*. Contributions to Tulare Lake Archaeology II. Redondo Beach, Tulare Lake Archaeological Research Group.

Fredrickson, D.A., and J. Grossman
1977 A San Dieguito component at Buena Vista Lake, California. *Journal of California and Great Basin Anthropology* 4:173-190.

Gayton, A.H.
1930 Yokuts-Mono Chiefs and Shamans. *University of California Publications in American Archaeology and Ethnology* 24. Berkeley, 361-420.

1948 Yokuts and Western Mono Ethnography. *University of California Anthropological Records* 10:1–290. Berkeley.

Gifford, E.W., and W.E. Schenck
1926 Archaeology of the Southern San Joaquin Valley. *University of California Publications in American Archaeology and Ethnology* 23(1):1-122.

Glennan, W.S.
1987a Concave-Based Lanceolate Fluted Projectile Points from California. *Prehistory of the Antelope Valley, California: An Overview*, R.W. Robinson, ed., Antelope Valley Archaeological Society, Occasional Papers No.1: 21-24.
1987b Evidence for Paleoeastern Culture Type in the Southwestern Great Basin. *Prehistory of the Antelope Valley, California: An Overview*, R.W. Robinson, ed., Antelope Valley Archaeological Society, Occasional Papers No.1:11-20.

Harrington, John Peabody
n.d. Yokuts ethnographic notes. National Anthropological Archives.

Hewes, G.
1941 Archaeological reconnaissance of the central San Joaquin Valley. *American Antiquity* 7:123-133.

Horne, S.P.
1981 *The Inland Chumash: Ethnography, Ethnohistory and Archaeology*. Ph.D. dissertation, UCSB. University Microfilms, Ann Arbor.

Jones. T.L., G.M. Brown, L.M. Raab, J.L. McVickar, W.G. Spaulding. D.J. Kennett, A. York, and P.L. Walker
1999 Demographic Crisis in Western North America during the Medieval Climatic Anomaly. *Current Anthropology* 40:137-170.

JRP Historical Consulting Services
2009 North Kern Water Storage District, Lateral Canal 8-1: Inventory and Evaluations, Kern County, California. Prepared for North Kern Water Storage District.
2019 *Historic Property Survey Report: Friant Kern Canal*.

King, C., C. Smith, and T. King
n.d. *Archaeological Report Related to the Interpretation of Archaeological Resources Present at the Vasquez Rocks County Park*. Report on file, SCCIC.

Kroeber, A.L.
1925 Handbook of the Indians of California. *Bureau of American Ethnology, Bulletin 78*. Washington, D.C.

Levine, Yasha

2011 California Class War History: Meet the Oligarch Family That's Been Scamming Taxpayers for 150 Years, and Counting! Available online at http://exiledonline.com/california-class-war-history-meet-the-oligarch-family-thats-been-scamming-taxpayers-for-150-years-and-counting/; accessed November 8, 2023.

Menafee, Eugene L. and Fred A. Dodge
1913 *History of Tulare and Kings Counties, California*. Historic Record Company, Los Angeles.

Meyer, J., D. Craig Young, and Jeffrey S. Rosenthal
2010 *Volume I: A Geoarchaeological Overview and Assessment of Caltrans Districts 6 and 9.* Submitted to California Department of Transportation.

Moratto, M.
1984 *California Archaeology*. New York: Academic Press.

Morgan, W.A.
1914 *History of Kern County, California with Biographical Sketches*. Los Angeles: Historic Record Company.

Pacific Legacy, Inc.
2006 *Southern San Joaquin Valley Oil Fields Comprehensive Study*. Manuscript on file, BLM Bakersfield office.

Powers, Stephen
1971 The Yokuts Dance for the Dead. In *The California Indians: A Source Book* (second edition), edited by R.F. Heizer and M.A. Whipple, pp. 513-519. Berkeley, University of California Press (original 1877).
1976 *Tribes of California*. Berkeley, University of California Press (original 1877).

Preston, William L.
1981 *Vanishing Landscapes: Land and Life in the Tulare Lake Basin*. Berkeley, University of California Press.

Rosenthal, J. S., White, G. G., & Sutton, M. Q.
2007 The Central Valley: A View from the Catbird's Seat. *California Prehistory: Colonization, Culture, and Complexity*(50):147-164.

Schiffman, R.A., and A.P. Garfinkel
1981 Prehistory of Kern County: An Overview. *Bakersfield College Publications in Archaeology, Number 1*.

Siefkin, Nelson
1999 Archaeology of the Redfeldt Mound (CA-KIN-66), Tulare Basin, California. M.A. Thesis, Department of Sociology and Anthropology, California State University, Bakersfield.

Sutton, M.Q.
1988a An Introduction to the Archaeology of the Western Mojave Desert, California. *Archives of California Prehistory, No. 14*. Salinas: Coyote Press.
1988b On the Late Prehistory of the Western Mojave Desert. *Pacific Coast Archaeological Society Quarterly* 24(1):22-29.
2009 People and Language: Defining the Takic Expansion into the Southern California. *Pacific Coast Archaeological Society Quarterly* 40(2, 3): 31-73.

W&S Consultants
1994 Phase II Test Excavations and Determinations of Significance at CA-LAN-2133, -2233, -2234, -2235, -2236, -2240, -2241 and -2242, Los Angeles County, California. Manuscript on file, CSUF AIC.
1999 Class III Inventory/Limited Archaeological Testing Program for the Manuscript on file, CSUB AIC.
2004 Class II Inventory of the Carrizo Plain National Monument, San Luis Obispo County, California. Report on file, BLM Bakersfield office.
2006 *Phase II Test Excavations and Determinations of Significance for the Tejon Mountain Village Project, Kern County, California*. Report on file, Tejon Ranch Company.

Wedel, W.
1941 Archaeological Investigations at Buena Vista Lake, Kern County, California. *Bureau of American Ethnology Bulletin* 130.

Whitley, D.S.
1992 Shamanism and Rock Art in Far Western North America. *Cambridge Archaeological Journal* 2(1):89-113.
2000 *The Art of the Shaman: Rock Art of California*. Salt Lake City: University of Utah Press.

Whitley, D.S., and M.P. Beaudry
1991 Chiefs on the Coast: The Development of Complex Society in the Tiquisate Region in Ethnographic Perspective. In *The Development of Complex Civilizations in Southeastern Mesoamerica*, edited by W. Fowler, pp. 101-120. Orlando: CRC Press.

Whitley, D.S., G. Gumerman IV, J. Simon, and E. Rose
1988 The Late Prehistoric Period in the Coso Range and Environs. *Pacific Coast Archaeological Society Quarterly* 24(1):2-10.

Whitley, D.S., J. Simon, and J.H.N. Loubser
2007 The Carrizo Collapse: Art and Politics in the Past. In *A Festschrift Honoring the Contributions of California Archaeologist Jay von Werlhof*, edited by R.L. Kaldenberg, pp. 199-208. Ridgecrest: Maturango Museum Publication 20.

Zimmerman, K.L., C.L. Pruett, and M.Q. Sutton
1989 A Clovis-Like Projectile Point from the Southern Sierra Nevada. *Journal of California and Great Basin Anthropology* 11:89-91.

CONFIDENTIAL APPENDICES