TURNIPSEED BASIN PHASE VI EXPANSION PROJECT

DRAFT INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

JUNE 2023

SCH NO.

PREPARED FOR:

Delano-Earlimart Irrigation District
14181 Avenue 24
Delano, CA 93215

PREPARED BY:

Provost & Pritchard Consulting Group

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ACRONYMS AND ABBREVIATIONS

AB ..... Assembly Bill
AF ..... acre-feet
APCD ..... Air Pollution Control District
APE ..... Area of Potential Effect
AQ ..... Air Quality
AQMD ..... Air Quality Management District
AQP ..... Air Quality Plan
BAAQMD ..... Bay Area Air Quality Management District
BPS ..... Best Performance Standards
CAAQS ..... California Ambient Air Quality Standards
CAFE ..... Corporate Average Fuel Economy
CalEEMod ..... California Emissions Estimator Model
CalGreen Code ..... California Green Building Standards Code
CARB ..... California Air Resources Board
CCA ..... Clean Air Act
CCAA ..... California Clean Air Act
CCR ..... California Code of Regulations
CDFW ..... California Fish and Wildlife
CEC ..... California Energy Commission
CEQA ..... California Environmental Quality Act
cfs ..... cubic feet per second
CH_4 ..... Methane
CHRIS ..... California Historical Resources Information System
CNDDB ..... California Natural Diversity Database
CNPS ..... California Native Plant Society
CO ..... Carbon monoxide
CO_2 ..... Carbon dioxide
CO_2e ..... Carbon Dioxide-Equivalent
County ..... Tulare
CVP ..... Central Valley Project
dBA ..... A-weighted decibels

DCP ..... Dust Control Plan
DEID ..... Delano-Earlimart Irrigation District
District ..... Delano-Earlimart Irrigation District
DOC ..... Department of Conservation
DPM ..... Diesel particulate matter
DTSC ..... Department of Toxic Substances Control
ECOS ..... (USFWS) Environmental Conservation Online System
EIR ..... Environmental Impact Report
EMFAC ..... ARB Emission Factor
EO ..... Executive Order
EPA ..... Environmental Protection Agency
FEMA ..... Federal Emergency Management Agency
FKC ..... Friant-Kern Canal
FMMP ..... Farmland Mapping and Monitoring Program
GAMAQI ..... Guidelines for Assessing and Mitigating Air Quality Impacts
GHG ..... Greenhouse Gas
GIS ..... Geographic Information System
GSP ..... Groundwater Sustainability Plan
GWP ..... Global Warming Potential
IPaC ..... U.S. Fish and Wildlife Service's Information for Planning and Consultation system
IPCC ..... United Nations Intergovernmental Panel on Climate Change
IS ..... Initial Study
IS/MND ..... Initial Study/Mitigated Negative Declaration
km ..... kilometers
Lead Agency ..... City of Hanford
MMRP ..... Mitigation Monitoring and Reporting Program
MND ..... Mitigated Negative Declaration
MT/yr ..... metric tons per year
MTCO2e ..... Metric Tons Carbon Dioxide Equivalent
NAAQS ..... National Ambient Air Quality Standards
NAHC ..... Native American Heritage Commission
ND ..... Negative Declaration
NEPA ..... National Environmental Policy Act
NHTSA ..... National Highway Traffic Safety Administration

NO_2 ..... Nitrogen Dioxide
NO_x ..... Nitrogen Oxides
NRCS ..... Natural Resources Conservation Service
O_3 ..... Ozone
Pb ..... Lead
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 ..... Turnipseed Basin Phase VI Expansion Project
Reclamation ..... United States Bureau of Reclamation
ROG ..... Reactive Organic Gases
SB ..... Senate Bill
SCAQMD ..... South Coast Air Quality Management District
SCS ..... Sustainable Communities Strategy
SIP ..... State Implementation Plan
SJVAB ..... San Joaquin Valley Air Basin
SJVAPCD ..... San Joaquin Valley Air Pollution Control District
SLCP ..... Short-Lived Climate Pollutant
SO_2 ..... Sulfur Dioxide
SR ..... State Route
SSJVIC ..... Southern San Joaquin Valley Information Center
SWPPP ..... Storm Water Pollution Prevention Plan
SWRCB ..... State Water Resources Control Board
TAC ..... Toxic Air Contaminant
TPY ..... tons per year
USFWS ..... United States Fish and Wildlife Service
VOC ..... Volatile Organic Compounds
ZEV ..... Zero Emission Vehicles
$\mu g/m_3$ ..... micrograms per cubic meter

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CHAPTER 1 INTRODUCTION

Provost & Pritchard Consulting Group (Provost & Pritchard) has prepared this Initial Study/Mitigated Negative Declaration (IS/MND) on behalf of Delano-Earlimart Irrigation District (District) to address the potential environmental effects of the Turnipseed Basin Phase VI Expansion Project (Project). This document has been prepared in accordance with the California Environmental Quality Act (CEQA), Public Resources Code Section 21000 et seq. The District 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 Air Quality and Greenhouse Gas Emissions Model, Biological Resources Information, and Cultural Resources Information, are provided as technical **Appendix A: CalEEMod Output Files**, **Appendix B: Biological Evaluation**, and **Appendix C: Class III Inventory/ Phase I Survey** respectively, at the end of this document.

CHAPTER 2 PROJECT DESCRIPTION

2.1 PROJECT BACKGROUND

2.1.1 Project Title

Delano-Earlimart Irrigation District – Turnipseed Basin Phase VI Expansion Project

2.1.2 Lead Agency Name and Address

Delano-Earlimart Irrigation District
14181 Avenue 24
Delano, CA 93215

2.1.3 Contact Person and Phone Number

Lead Agency Contact

Eric R. Quinley
General Manager
(661) 725-2526

CEQA Consultant

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

2.1.4 Project Location

The Project is located in Tulare County, California, approximately 210 miles southeast of the city of Sacramento and 30 miles northwest of the city of Bakersfield (see **Figure 2-1** and **Figure 2-2**). The Project site is located on Assessor's Parcel Numbers 338-120-010 and 338-120-011 at the intersection of Avenue 40 and Road 168, southwest Tulare County, northeast of the City of Delano. The centroid of the Project site is 35° 51' 34.41" N, 119° 12' 06.29" W. The Area of Potential Effect (APE) is approximately 170 acres.

2.1.5 General Plan Designation and Zoning

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

2.1.6 Description of Project

Project Background and Purpose

Delano-Earlimart Irrigation District

Irrigation in the Delano and Earlimart regions began in the late 1800s with artesian wells, but by the 1930s diminished groundwater supplies threatened the area's continued economic viability. By 1947 the mean depth to groundwater was dangerously low. The Delano-Earlimart Irrigation District (DEID or District) was formed in 1938 and signed its original water service contract for water delivery from the Friant Unit of the Central Valley Project with the United States Bureau of Reclamation (Reclamation) in 1951, after the average depth of groundwater had fallen every year since 1905.

The District is a Friant Division Central Valley Project (CVP) contractor with Reclamation and receives water diverted from the Friant-Kern Canal (FKC). The District's annual entitlement from its CVP contract is for 108,800 acre-feet (AF) Class 1 and 74,500 AF Class 2 supplies. When 215 Water (surplus CVP water) is available, the District can receive deliveries through annual contracts with Reclamation. The District delivers surface water to approximately 400 landowners on roughly 56,500 acres of land through an entirely underground system consisting of approximately 172 miles of pipeline, 527 irrigation turnouts, and 79 smaller metered deliveries to municipal and industrial water users. Currently, the District provides more than 99% of its water supply for irrigation purposes and less than one percent (300 AF annually) for municipal and industrial uses. Farmers within the District pump groundwater from privately-owned wells when surface water supplies are insufficient to meet their irrigation needs.

Virtually all of the acreage in the District is being utilized for agricultural production. More than 90% of the District is planted in permanent crops, the most common crop being grapes. Other permanent crops include pistachios, almonds, and various tree fruits. Overall, more than twenty different types of crops are grown within the District.[1]

In 1993, the District purchased and developed an 80-acre parcel specifically for use as a groundwater recharge basin, known as the Turnipseed Recharge Basin, which could receive water from either the District's distribution system or from direct diversions from the White River. In 2008, the Turnipseed Recharge Basin was converted into a banking facility. In 2011 the District increased its capacity to bank and regulate surface water by developing an additional 80-acre parcel to the south of the existing Turnipseed Recharge Basin into recharge cells, referred to as the Turnipseed Southern Expansion Project. This groundwater banking facility consists of wells and associated pipelines. The basin fills seasonally; however, there are some years when it is dry while in other years it operates continuously. The District owns and maintains approximately 0.5 miles of the White River that bisects the existing 160-acre Turnipseed Recharge Basin Project site, south of the Project. In 2019 the District began construction on Turnipseed Basin Phase III on approximately 320 acres which was completed in 2021. In 2021 the District began construction on Turnipseed Basin Phase IV on approximately 160 acres, which was completed in 2022. The District began construction on Turnipseed Basin Phase V in 2022 and anticipates completion in late 2023.

Project Description

The District acquired a 150-acre parcel and is in the process of acquiring a 20-acre parcel that would be used for the construction of a recharge basin with multiple cells to provide for sustainable management of surface and groundwater. The current project is identified as Turnipseed Basin Phase VI Expansion.

Project components could include ponds/cells within the basin separated by levees, performance testing, and demobilization. The District will excavate approximately 200,000 cubic yards of material from the site to form the overall basin. The basin will be further divided into approximately eight (8) cells to accommodate the varying topography and to minimize erosion by wave action. New levee construction would not exceed six feet, measured from the exterior toe to the top of new levee. The Project design will balance the earthwork, and no export of soil is anticipated. The Project will include a settling channel on the east side and an overflow basin along its western edge.

The Project may also include construction of a network of monitoring wells if needed to supplement existing monitoring wells associated with the existing banking operations that currently exist in proximity to the Project. Construction of those Project components would likely occur after construction of the basins are complete. The only pipelines contemplated in the Project would serve to introduce water for recharge/banking via construction of a tee in the existing Ave 40 Lateral. The District envisions that the basin will receive water from Lateral 113.7W which originates at a 97 cfs, 66-inch turnout on the Friant-Kern Canal, then extends west along Avenue 40 and beyond the Project site. At the Project location, the lateral is 48-inch diameter reinforced concrete pipe and has an approximate capacity of 75 cfs.

If recovery wells are constructed, they would tie into District laterals through newly constructed intertie facilities. Any banking return via District recovery wells on the 170-acre site would flow back to the Ave 40 mainline or other laterals. None of the recovered water would be returned to the Friant-Kern Canal.

Construction Schedule

The Project includes several phases of construction, including equipment mobilization, existing pipeline tie-in, earthwork for excavation of recharge/regulation basins and construction of basin perimeter levees not exceeding six feet in external height, and inter-basin control structures. The project will be constructed within a nine-month period.

Operation and Maintenance

Operation of the facility would be consistent with that of the District's other similar facilities in that groundwater conditions will be monitored to minimize negative impacts on the surrounding areas (such as nearby wells, crops, and septic systems). Water delivered to the Project Site would be expressly intended by the District to be available for recovery only by District landowners within the original DEID services area, that area under jurisdiction of the District prior to the annexation of lands that occurred in 2016. The accounting of water delivered to the Project site, and the intended recovery by landowners will occur through the water balance or other similar mechanisms under the Groundwater Sustainability Plan developed by the Delano-Earlimart Irrigation District Groundwater Sustainability Agency.

2.1.7 Site and Surrounding Land Uses and Setting

Table 2-1: Existing Uses, General Plan Designation, & Zone Districts of Surrounding Properties

Direction from Project Site	Existing Use	General Plan Designation	Zone District
NORTH	Agricultural	Valley Agriculture	AE-20 (Exclusive Agricultural)
EAST	Agricultural	Valley Agriculture	AE-20 (Exclusive Agricultural)
SOUTH	Agricultural	Valley Agriculture	AE-20 (Exclusive Agricultural)
WEST	Agricultural	Valley Agriculture	AE-20 (Exclusive Agricultural)

[1] Delano-Earlimart Irrigation District Website. http://www.deid.org/. Accessed September 2021.

2.1.8 Other Public Agencies Whose Approval May Be Required

Approvals and permits that could be required:

- State Water Resources Control Board – National Pollutant Discharge Elimination System Construction General Permit
- San Joaquin Valley Air Pollution Control District – Rules and Regulations (Regulation VIII, Rule 9510, Rule 4641)

2.1.9 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.

The Delano-Earlimart Irrigation District has received written correspondence from the Santa Rosa Rancheria Tachi Yokut Tribe pursuant to Public Resources Code Section 21080.3.1 requesting notification of proposed project. On October 7, 2021, a representative of the Santa Rosa Rancheria Tachi Yokut Tribe contacted P&P via email stating concerns. The Tribe sent a follow up letter to the District requesting consultation on November 12, 2021; however the letter was dated April 9, 2021. The Tribe then sent a new consultation request letter with the correct date of November 12, 2021. On December 10, 2021, the District sent a response letter to the tribe regarding consultation. Presently, the District has not received any additional correspondence from the Tribe continuing AB 52 consultation.

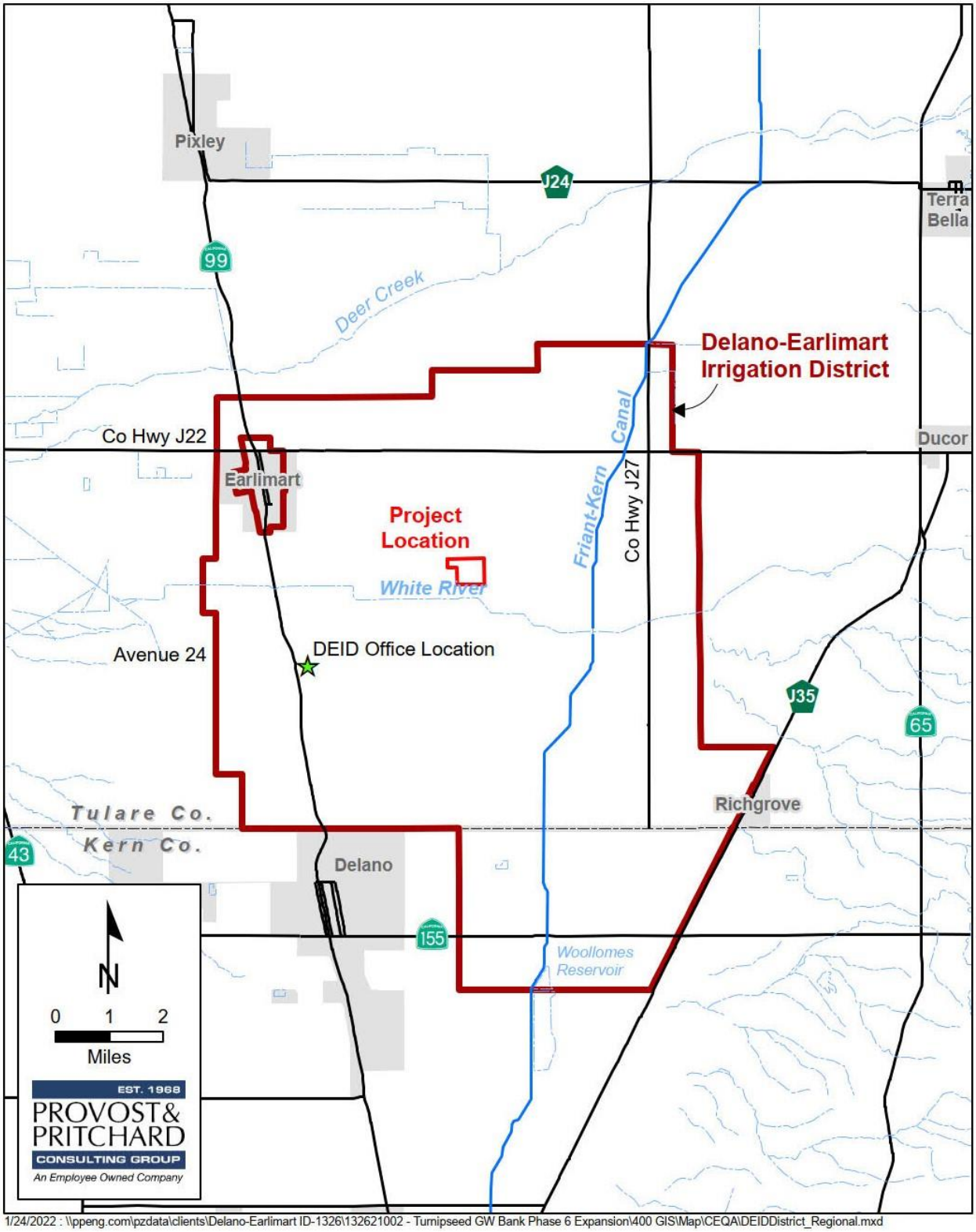

Figure 2-1: Regional Location Map within DEID Boundary

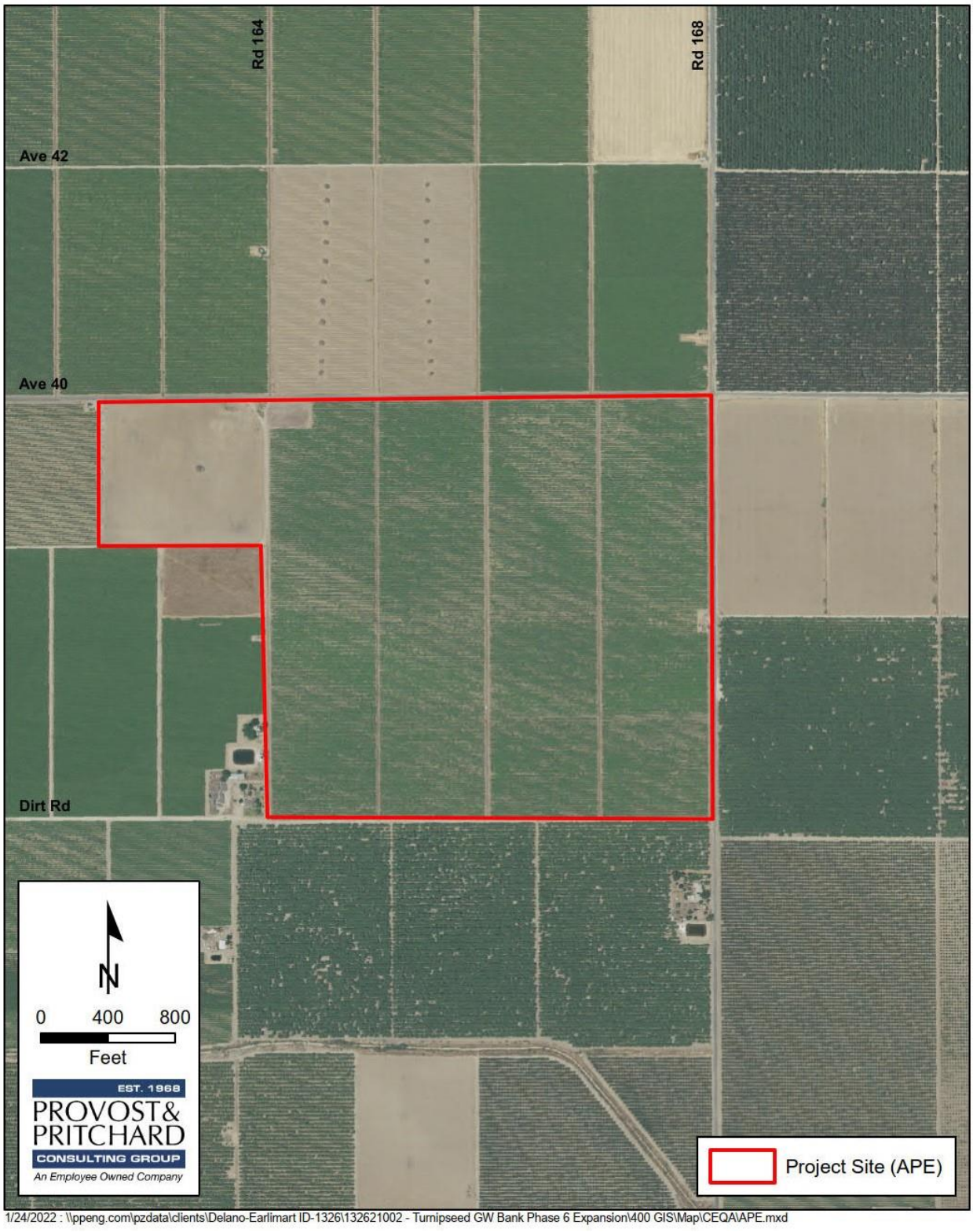

Figure 2-2: Project Site/ Area of Potential Effect Map

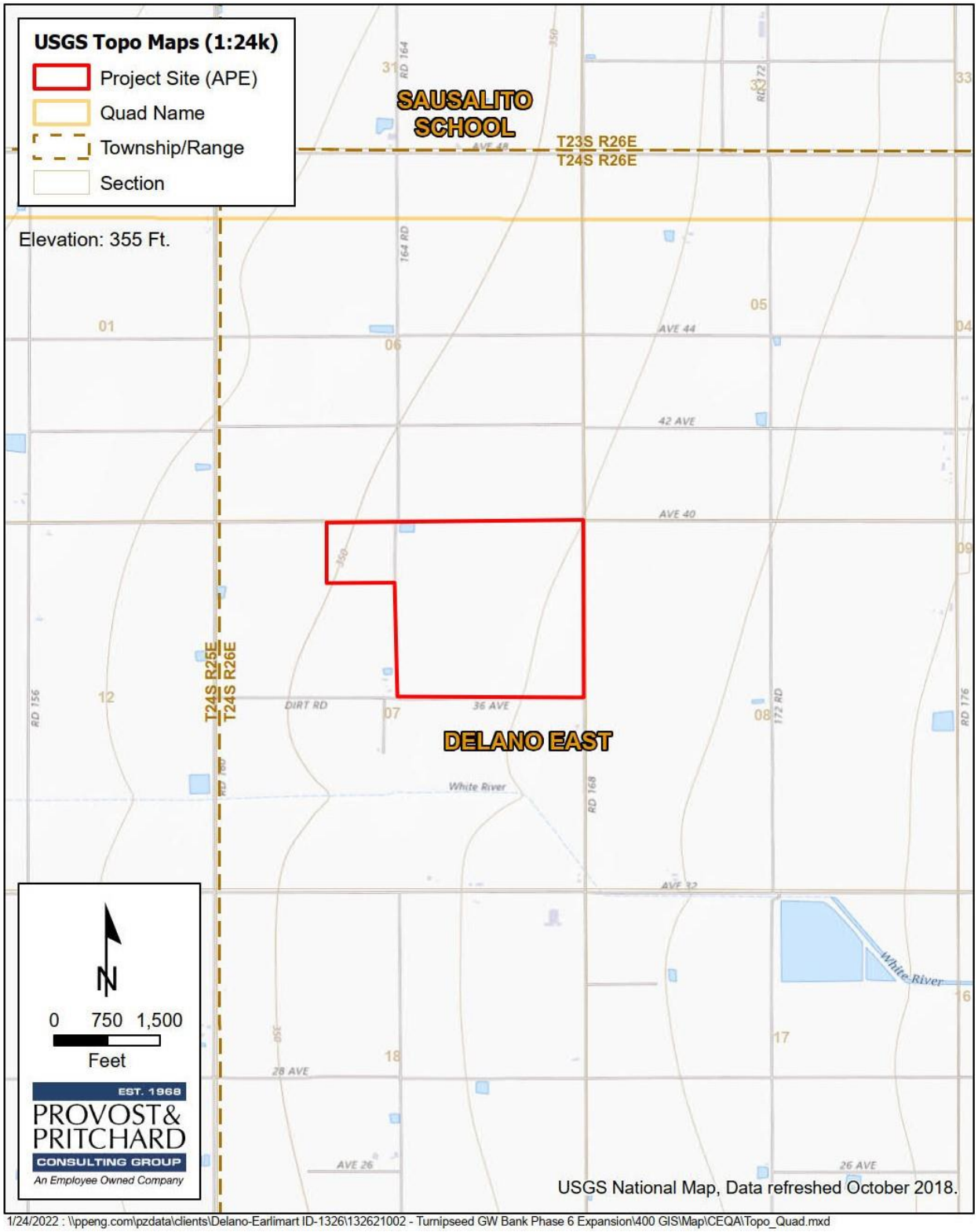

Figure 2-3: Topoquadrangle Map

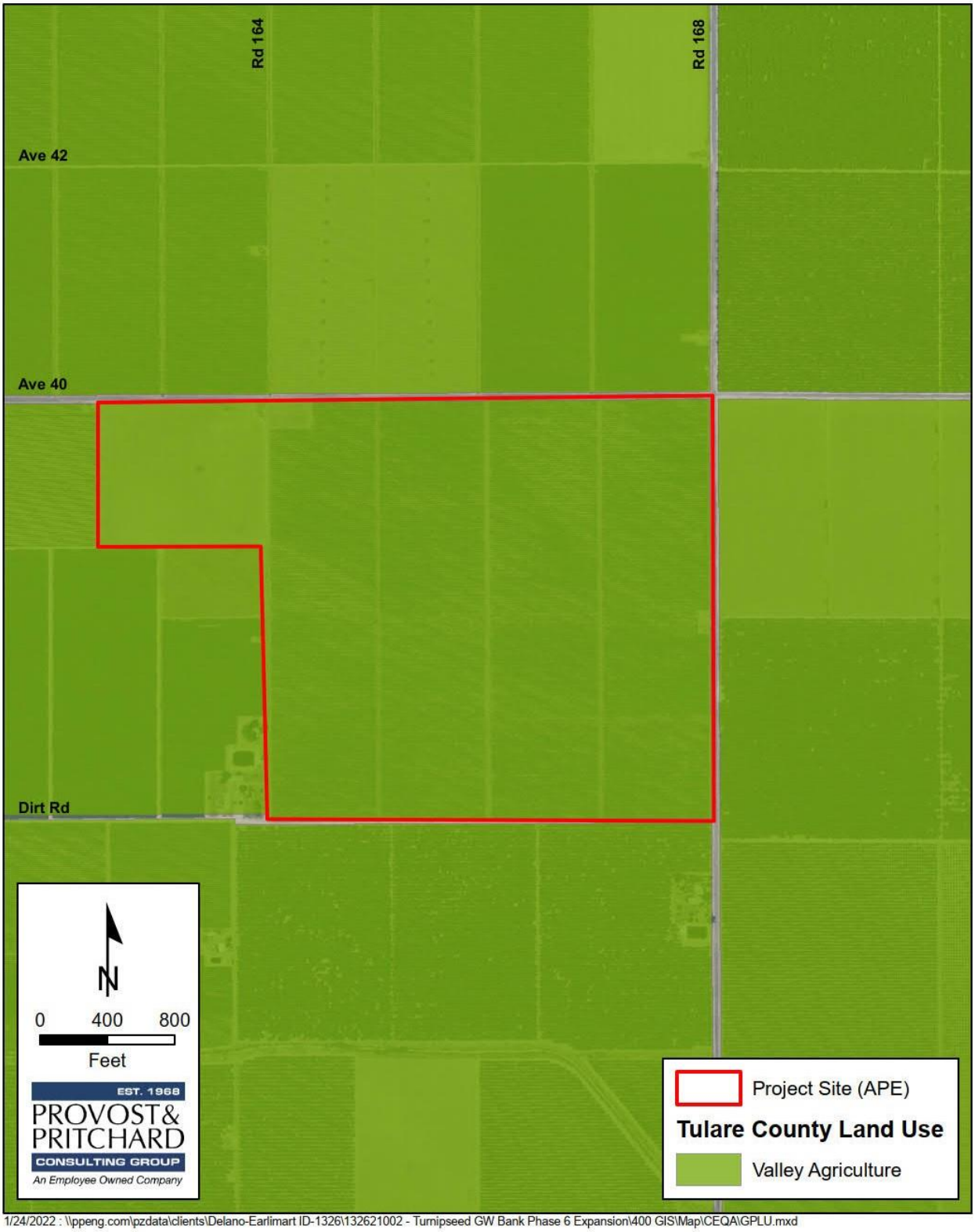

Figure 2-4: General Plan Land Use Designation Map

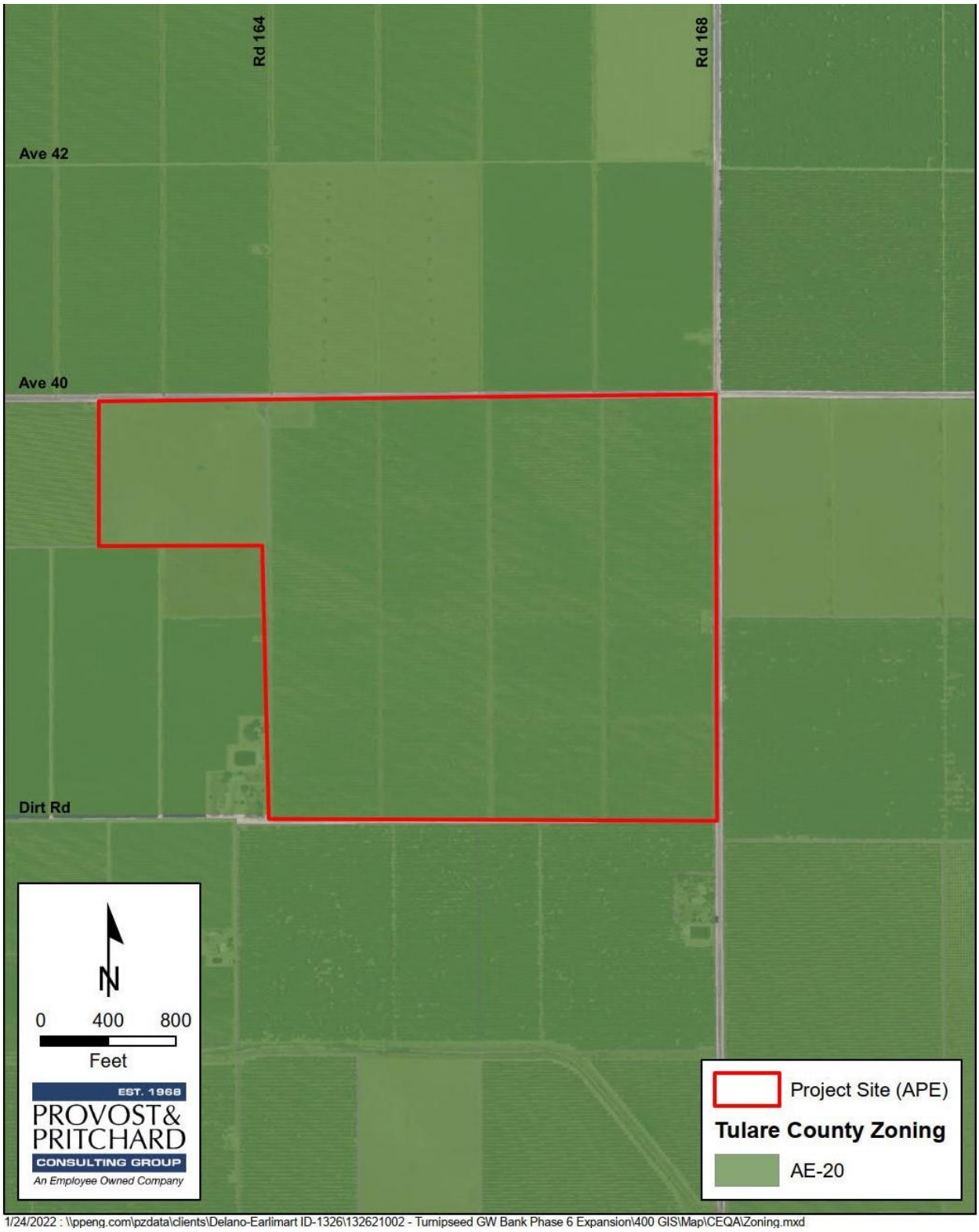

Figure 2-5: Zone District Map

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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 _____ Date 06/20/23

ERIC R. QUINLEY, 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 southwestern part of Tulare County in the Central San Joaquin Valley. Land in the vicinity consists of relatively flat irrigated farmland and retired farmland. Agricultural practices in the vicinity consist of row crops, field crops, and orchard cultivation in the form of vineyards and almonds. Crossing Tulare County, State Route (SR) 190 has not been an official "designated State Scenic Highway;" however, it is eligible to be. Its beginning point is approximately 16 miles northeast of the site. See **Figure 4-1: Scenic** Highways below. Rural roadways, the Friant-Kern Canal, local water distribution canals, water retention basins, and other infrastructure typical of rural agricultural areas in the San Joaquin Valley are also in the regional vicinity.

4.1.2 Impact Analysis

a) Have substantial adverse effect on a scenic vista?

Less than Significant Impact. The existing area contains scenic features such as the Friant Kern Canal and the vast expanse of agricultural uses such as row crops like grapes and almonds. The Project site is not located within the viewshed of these features and the site does not obtrude its surroundings in a

significant manner. The Project is consistent with the aesthetics of the area. Impacts are less than significant.

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

Less than Significant Impact. SR 190 traverses through the southern portion of Tulare County, and is an Officially Designated State Scenic Highway, as depicted in **Figure 4-1**. Project activities would occur approximately 16 miles southwest and do not have the potential to affect the highway. There are no scenic resources located on or in the vicinity of the Project site. Impacts would be less than significant.

Figure 4-1: Scenic Highways Map

State Route 190 is an Officially Designated 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?

Less than Significant Impact. The Project site is currently vacant agricultural land with remnants of previously farmed crops. The Project site is zoned and located amid lands designated for agriculture by Tulare County. The new basin facility will blend in with existing uses and the Project will not substantially degrade the visual character of the area. The impact will 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?

No Impact. The area surrounding the Project site is primarily agriculture and associated agricultural uses. No artificial lighting is proposed to be on-site. Vehicular traffic to the site after the facility is constructed will be limited to as needed daytime maintenance trips. Therefore, the Project will 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. There would be no impact.

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

Tulare County is located in California's agricultural heartland. The county's total gross production value for 2018 was $7.2 billion. Milk is the county's number one commodity at nearly $1.7 billion. A wide range of commodities are cultivated in the county, including grapes, citrus and stone fruits, nuts, corn, and cattle. Rich soil, irrigation water, Mediterranean climate, and steady access to local, national, and global markets make this possible.

The District is composed of approximately 56,500 acres, more than 90% of which are irrigated permanent crops. The major crops grown in the district include grapes, pistachios, almonds, and other fruit and nut trees, with a total of more than two dozen different crops grown. Irrigation methods include drip, micro, gravity, and sprinkler. The Project area is currently vacant agricultural land with previously farmed crop remnants. Most of the land adjacent to the Project site is zoned for agricultural use, with the majority designated as prime agricultural land.

Farmland Mapping and Monitoring Program (FMMP): The FMMP produces maps and statistical data used for analyzing impacts to California's agricultural resources. 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 (DOC) 2012 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 4-2**, the FMMP for Tulare County designates the Project site as Prime Farmland and Farmland of Statewide Importance, and Native Vegetation.[2]

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?

Less than Significant Impact. The majority of the Project site is designated as Prime Farmland and is currently vacant agricultural land with remnants of previously farmed crops. See ***Figure 4-2***. The Project would allow the construction of a recharge basin to replenish groundwater from surface water sources

[2] California Important Farmland Finder (FMMP). https://maps.conservation.ca.gov/DLRP/CIFF/. Accessed September 2021.

when available, thereby contributing to recharge the area's aquifer so agricultural operations may continue. Therefore, the impact would be less than significant.

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

Less than Significant Impact. Chapter 3, Section 9.5 of the Tulare County Zoning Ordinance addresses the AE zone districts. Section 9.5 does not list basins as permitted use. However, pursuant to Government Code Section 53091(e), location, or construction of facilities for the production, generation, storage, treatment, or transmission of water by a special district are not subject to the zoning ordinance of the county in which the project would be located. Although the Project is not required to comply with the Tulare County Zoning Ordinance, it is the Project's intent to enhance groundwater levels, thereby sustaining agriculture. The basin will facilitate greater security of groundwater storage for District growers, inherently promoting the agricultural zoning and Williamson Act intentions. One of the project site parcels, Assessor's Parcel Number 338-120-011, is currently under Williamson Act contract number 08041. The principal objectives of the Williamson Act program include protection of agricultural resources, preservation of open space land, and promotion of efficient urban growth patterns. The implementation of a recharge/regulation basin would promote groundwater security inherently protecting agricultural resources. Therefore, impacts will be less than significant.

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. There are no lands zoned for forest or timberland use in the region. Therefore, the Project would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production. There would be no impact.

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

No Impact. There are no forests or timberland in the region, therefore the Project would not result in the loss of forest land or conversion of forest land to non-forest use. Land or timberland. 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?

Less than Significant Impact. The Project would not convert the land from its existing agricultural use to any other land use pursuant to the FMMP. The intent of the Project is to support ongoing agricultural endeavors by enhancing groundwater availability. As a result, the Project will result in continued farming on surrounding agricultural lands that might potentially be fallowed due to lack of water. Impacts would be less than significant.

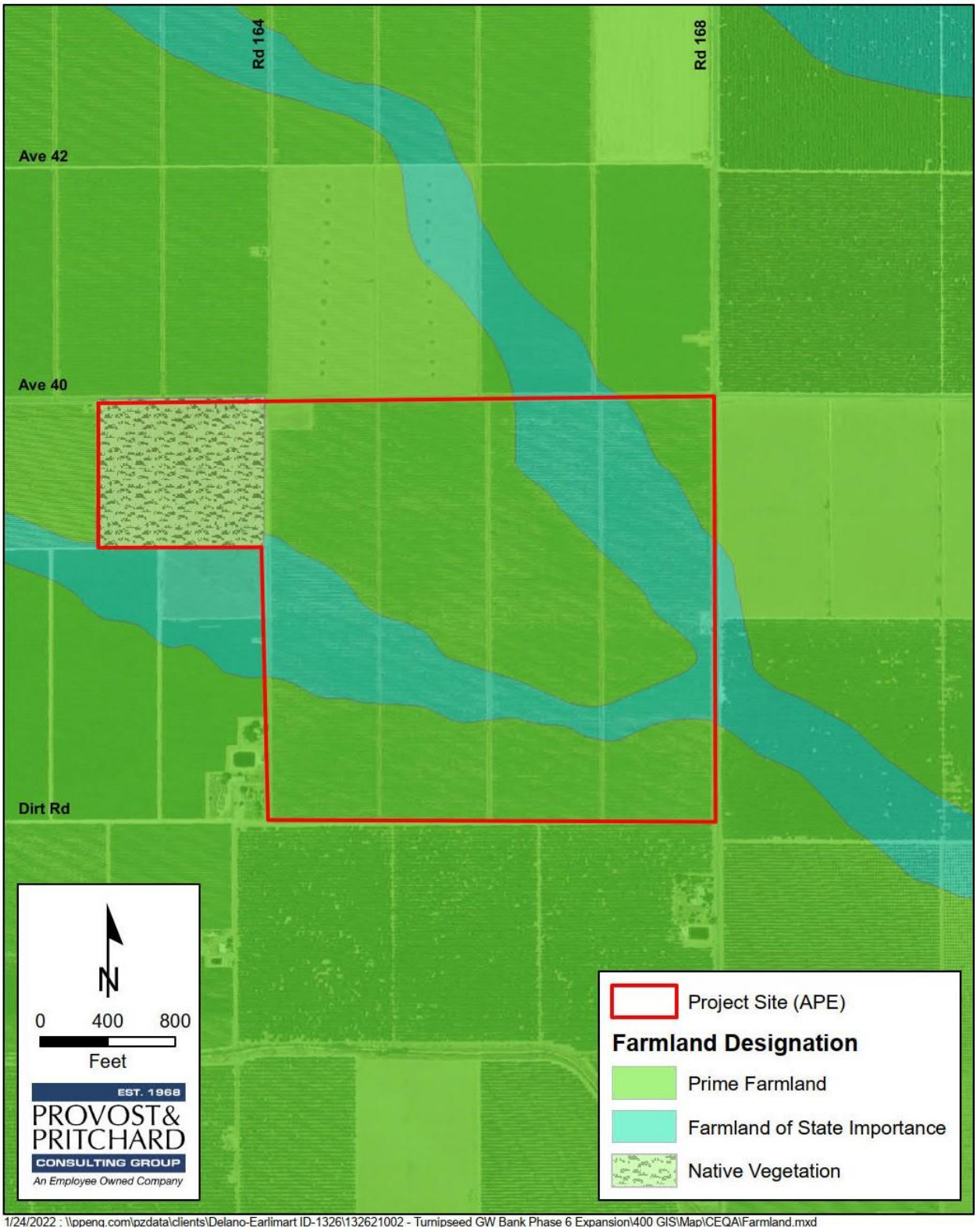

Figure 4-2: Farmland Designation Map

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 an agricultural site dominated by agricultural land uses.

4.3.2 Applicable Regulations

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 (EPA) designates areas for ozone (O_3), carbon monoxide (CO), and nitrogen dioxide (NO_2) as "does not meet the primary standards," "cannot be classified," or "better than national standards." For sulfur dioxide (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 EPA uses the same sub-categories for nonattainment status: serious, severe, and extreme. In 1991, the EPA assigned new nonattainment designations to areas that had previously been classified as Group I, II, or III for particulate matter less than 10 microns in diameter (PM_{10}) based on the likelihood that they would violate national PM_{10} standards. All other areas are designated "unclassified."

The State and national attainment status designations pertaining to the San Joaquin Valley Air Basin (SJVAB) are summarized in Table 1. The SJVAB is currently designated as a nonattainment area with respect to the

State PM_{10} standard, ozone, and fine particulate matter 2.5 microns in size ($PM_{2.5}$) standards. The SJVAB is designated nonattainment for the National Ambient Air Quality Standards (NAAQS) 8-hour ozone and $PM_{2.5}$ standards. On September 25, 2008, the EPA re-designated the San Joaquin Valley to attainment status for the PM_{10} NAAQS and approved the PM_{10} Maintenance Plan.

4.3.3 Thresholds

To assist local jurisdictions in the evaluation of air quality impacts, the San Joaquin Valley Air Pollution Control District (SJVAPCD) has published the Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI). This guidance document includes recommended thresholds of significance to be used for the evaluation of short-term construction, long-term operational, odor, toxic air contaminant, and cumulative air quality impacts. Accordingly, the SJVAPCD-recommended thresholds of significance are used to determine whether implementation of the proposed Project would result in a significant air quality impact. Projects that exceed these recommended thresholds would be considered to have a potentially significant impact to human health and welfare. The thresholds of significance are summarized, as follows:

Particulate Matter (PM_{10}): Construction impacts associated with the proposed Project would be considered significant if the feasible control measures for construction in compliance with Regulation VIII as listed in the SJVAPCD guidelines are not incorporated or implemented, or if project-generated emissions would exceed 15 tons per year (TPY). Operational impacts associated with the proposed Project would be considered significant if the project generates emissions of PM_{10} that exceed 15 TPY.

Emissions of Ozone Precursors (ROG and NO_X): Construction impacts associated with the proposed Project would be considered significant if the project generates emissions of Reactive Organic Gases (ROG) or nitrogen oxides (NO_X) that exceeds 10 TPY. Operational impacts associated with the proposed Project would be considered significant if the project generates emissions of ROG or NO_X that exceeds 10 TPY.

Conflict with or Obstruct Implementation of Applicable Air Quality Plan: Due to the region's nonattainment status for O_3, $PM_{2.5}$, and PM_{10}, if the project-generated emissions of either of the ozone precursor pollutants (i.e., ROG and NO_X) or PM_{10} would exceed the SJVAPCD's significance thresholds, then the project would be considered to conflict with the attainment plans. In addition, if the project would result in a change in land use and corresponding increases in vehicle miles traveled, the project may result in an increase in vehicle miles traveled that is unaccounted for in regional emissions inventories contained in regional air quality control plans.

Local Mobile-Source CO Concentrations: Local mobile source impacts associated with the proposed Project would be considered significant if the project contributes to CO concentrations at receptor locations in excess of the California Ambient Air Quality Standards (i.e., 9.0 ppm for 8 hours or 20 ppm for 1 hour).

Toxic Air Contaminants (TACs): Exposure to toxic air contaminants would be considered significant if the probability of contracting cancer for the Maximally Exposed Individual (i.e., maximum individual risk) would exceed 20 in 1 million or would result in a Hazard Index greater than 1.

Odors: Odor impacts associated with the proposed Project would be considered significant if the project has the potential to frequently expose members of the public to objectionable odors.

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		
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.*
****Secondary Standard*
Source: http://www.valleyair.org/aqinfo/attainment.htm.

4.3.4 Impact Analysis

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

Less than Significant Impact. CEQA requires that certain projects be analyzed for consistency with the applicable air quality plan. For a project to be consistent with SJVAPCD air quality plans, the pollutants emitted from a project should not exceed the SJVAPCD emission thresholds or cause a significant impact on air quality. In addition, emission reductions achieved through implementation of offset requirements are a major component of the SJVAPCD air quality plans. As discussed below, construction of the Project would not result in the generation of criteria air pollutants that would exceed SJVAPCD thresholds of significance. Implementation of SJVAPCD Regulation VIII would further reduce construction dust impacts. Operational emissions associated with the project would not exceed SJVAPCD established significance thresholds for ROG, NO_X, CO, SO_X, PM_{10}, or $PM_{2.5}$ emissions. Therefore, the Project would not conflict with or obstruct implementation of SJVAPCD air quality plans. The impact would be less than significant.

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 results of the modeling are presented in **Table 4-5**. The emissions that would occur during construction activities were compared with the significance threshold for each pollutant. For assumptions in estimating the emissions, please refer to **Appendix A**. As shown in **Table 4-5**, the emissions are below the significance thresholds. Therefore, the emissions would be less than significant on a Project basis.

Table 4-5: Construction Emission Summary, Criteria Air Pollutants

	Emissions (in tons per year)					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Construction Emissions	0.184	1.559	1.256	0.004	0.102	0.062
Significance Threshold	10	10	100	27	15	15
Significant Impact?	No	No	No	No	No	No
Source: ***Appendix A***						

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

Less than Significant Impact. The Project would require the use of diesel-powered off-road construction equipment and emergency generator. However, due to the short duration of construction and emergency operations, exposure to diesel particulate matter would be temporary and limited. Therefore, the impact would be less than significant.

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

Less than Significant Impact. Heavy-duty equipment in the project area during construction could emit odors, primarily from the equipment exhaust. However, the construction activity would cease when construction is completed. The SJVAPCD addresses odor criteria within the GAMAQI. The District has not established a rule or standard regarding odor emissions, rather, the District has a nuisance rule, which states, “Any project with the potential to frequently expose members of the public to object able odors to be deemed to have a significant impact.” The proposed uses are not anticipated to emit any long term objectionable odors. Therefore, objectionable odors affecting a substantial number of people would not occur as a result of the project. There would be a less than significant impact.

4.4 BIOLOGICAL RESOURCES

Table 4-6: 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

The Project is located southwest Tulare County, California, northeast of Delano and southwest of Earlimart at the intersection of Avenue 40 and Road 168. The Project lies within the Lower San Joaquin Valley, part of the Central Valley of California (See **Figure 2-1**). The Central Valley is bordered by the Sierra Nevada Mountain Ranges to the east, the Coast Ranges to the west, the Klamath Mountains and Cascade Range to the north, and the Transverse Ranges and Mojave Desert to the south.

A reconnaissance-level field survey of the Project area with a 50-foot additional survey area which makes up the APE was conducted on September 7, 2021. The survey consisted of walking and driving the APE while identifying and noting plant and animal species encountered, biological habitats and communities,

and land uses. Further, the APE and surrounding areas were assessed for suitable habitats of various wildlife species.

The biologist conducted an analysis of potential Project-related impacts to biological resources based on the resources known to exist or with potential to exist within the APE. Sources of information used in preparation of this analysis included: the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB); the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Vascular Plants of California; CalFlora's online database of California native plants; the Jepson Herbarium online database (Jepson eFlora); United States Fish and Wildlife Service (USFWS) Environmental Conservation Online System (ECOS) and Information for Planning and Consultation (IpaC) system; the NatureServe Explorer online database; the United States Department of Agriculture Natural Resources Conservation Service (NRCS) Plants Database; CDFW California Wildlife Habitat Relationships (CWHR) database; the California Herps online database; and various manuals, reports, and references related to plants and animals of the San Joaquin Valley region.

A thorough search of CNDDB for published accounts of special status plant and animal species was conducted for the *Delano East* 7.5-minute quadrangle, which contains the entire APE, and the eight surrounding quadrangles: *Delano West*, *Pond*, *McFarland*, *Deepwell Ranch*, *Richgrove*, *Pixley*, *Ducor*, and *Sausalito -School*. These species, and their potential to occur within the APE are listed in **Table 4-7** and **Table 4-8** below.

Table 4-7: List of Special Status Animals with Potential to Occur Onsite and/or in the Vicinity.

Species	*Status*	*Habitat*	*Occurrence on APE*
American badger (*Taxidea taxus*)	CSC	Grasslands, savannas, and mountain meadows near timberline are preferred. Most abundant in drier open spaces of shrub and grassland. Burrows in soil.	**Unlikely.** American badger individuals, signs, or suitable burrows were not observed during the field survey. The nearest recorded observation of this species corresponds to an undated historic collection at an unknown location near Earlimart, which is approximately 5 miles northwest of the APE.
Bakersfield legless lizard (*Anniella grinnelli*)	CSC	General habitat is sandy with herbaceous cover and scattered shrubs in grassland, sand/dune, or chaparral. Burrows in soil. Fallen logs, woody debris, and leaf litter under trees and bushes in sunny areas often indicate suitable habitat.	**Unlikely.** Bakersfield legless lizard individuals were not observed during the biological survey. The disturbed habitats of the APE are generally unsuitable for this species. The nearest recorded observation of this species was reported in 2017 along Deer Creek, approximately 9.5 miles northwest of the APE.
Blunt-nosed leopard lizard (*Gambelia sila*)	FE, CE, CFP	Inhabits semi-arid grasslands, alkali flats, low foothills, canyon floors, large washes, and arroyos, usually on sandy, gravelly, or loamy substrate, sometimes on hardpan. Often found where there are abundant rodent burrows in dense vegetation or tall grass. Cannot survive on lands under cultivation. Known to bask on kangaroo rat mounds and often seeks shelter at the base of shrubs, in small mammal	**Absent.** Blunt-nosed leopard lizard individuals or suitable habitat were not observed during the biological survey. The APE and surrounding areas are frequently cultivated agricultural lands and are unsuitable for this species.

Species	*Status*	*Habitat*	*Occurrence on APE*
		burrows, or in rock piles. Adults may excavate shallow burrows but rely on deeper pre-existing rodent burrows for hibernation and reproduction.	
Burrowing Owl (*Athene cunicularia*)	CSC	Resides in open, dry annual or perennial grasslands, deserts, and scrublands with low growing vegetation. Nests underground in existing burrows created by mammals, most often ground squirrels.	**Unlikely.** The disturbed habitats of the APE are unsuitable for this species. Nesting and foraging habitat is absent due to incompatible topography and/or vegetative cover. At most, a burrowing owl individual could potentially pass over or through the APE but would not be expected to nest or forage within or adjacent to proposed impact areas. The presence of raptors in the vicinity makes this site generally unsuitable for burrowing owl.
California red-legged frog *(Rana draytonii)*	FT, CSC	Inhabits perennial rivers, creeks, and stock ponds with vegetative cover within the Coast Range and northern Sierra foothills.	**Absent**. The Project area does not provide suitable habitat for this species and is outside of its current known range. There have been no recorded observations of this species in the vicinity of the Project.
Coast horned lizard (*Phrynosoma blainvillii*)	CSC	Found in grasslands, coniferous forests, woodlands, and chaparral, primarily in open areas with patches of loose, sandy soil and low-lying vegetation in valleys, foothills, and semi-arid mountains. Frequently found near ant hills and along dirt roads in lowlands along sandy washes with scattered shrubs.	**Unlikely.** The disturbed habitats of the APE are generally unsuitable for this species, as there is little vegetation within the APE. Ant hills were not observed within the APE, indicating a lack of resources. This species was last observed in 2016, 9 miles west of the APE.
Delta smelt *(Hypomesus transpacificus)*	FT, CE	This pelagic and euryhaline species is Endemic to the Sacramento-San Joaquin River Delta, upstream through Contra Costa, Sacramento, San Joaquin, and Solano Counties.	**Absent**. Suitable perennial aquatic habitat for this species is absent from the Project area.
giant gartersnake *(Thamnophis gigas)*	FT, CT	Occurs in marshes, sloughs, drainage canals, irrigation ditches, rice fields, and adjacent uplands. Prefers locations with emergent vegetation for cover and open areas for basking. This species uses small mammal burrows adjacent to aquatic habitats for hibernation in the winter and to escape from excessive heat in the summer.	**Absent**. The Project is more than 50 miles south of the current known range of this species.

Species	*Status*	*Habitat*	*Occurrence on APE*
Kern Brook lamprey (*Entosphenus hubbsi*)	CSC	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 degrees Fahrenheit.	**Absent.** Suitable habitat for this species is absent from the APE. There are no water sources within the APE.
San Joaquin coachwhip (*Masticophis flagellum ruddocki*)	CSC	Found in open dry habitats with little or no tree cover in valley grassland and saltbush scrub communities in the San Joaquin Valley. Relies on mammal burrows for refuge and oviposition sites.	**Absent.** Habitats of the APE are generally unsuitable for this species. The nearest recorded observation was reported in 1992 in undisturbed grassland habitat approximately 8 miles west-northwest of the APE.
San Joaquin kit fox (*Vulpes macrotis mutica*)	FE, CT	Underground dens with multiple entrances in alkali sink, valley grassland, and woodland in valleys and adjacent foothills.	**Unlikely.** There are 67 recorded observations of this species in the vicinity of the Project; however, only 7 of these observations occurred within the past 25 years. The APE is located approximately 38 miles north-northeast of the nearest core population (Western Kern County). Although the APE is not within a core recovery area, satellite recovery area, or a linkage recovery area, a kit fox could potentially pass through the APE.
Swainson's Hawk (*Buteo swainsoni*)	CT	Nests in large trees in open areas adjacent to grasslands, grain or alfalfa fields, or livestock pastures suitable for supporting rodent populations.	**Unlikely.** Swainson's Hawks are generally uncommon in southeast Tulare County. Suitable nest trees are absent from the APE, although suitable foraging habitat is present. The nearest recorded observation of this species was reported approximately 12 miles northwest of the APE.
Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*)	FE, CE	Burrows in soil. Often found in grassland and shrubland.	**Unlikely.** Kangaroo rat individuals or signs were not observed during the field survey. The disturbed habitats of the APE are generally unsuitable for this species. The nearest recorded observation of this species in the vicinity was reported in undisturbed grassland habitats of Allensworth Ecological Reserve, approximately 8 miles west of the APE.
Tricolored Blackbird (*Agelaius tricolor*)	CT, CSC	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 on dairy farm forage fields.	**Unlikely.** Suitable nesting habitat is absent and foraging habitat is marginal, at best. There are no sources of freshwater within the APE. This species was last observed in the region in 1935, that population is categorized as "possibly extirpated."
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	Occupies vernal pools, clear to tea-colored water, in grass or mud-bottomed swales, and basalt depression pools.	**Absent.** Suitable soils and vernal pool habitat are absent from the APE.

Species	*Status*	*Habitat*	*Occurrence on APE*
Western spadefoot (*Spea hammondii*)	CSC	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 pools or temporary wetlands, lasting a minimum of three weeks, which do not contain bullfrogs, fish, or crayfish are necessary for breeding.	**Unlikely.** Habitat suitable for this species is absent from the APE. High levels of disturbance related to agricultural production also makes the habitats in the APE less than marginal for this species.

Table 4-8: List of Special Status Plants with Potential to Occur Onsite and/or in the Vicinity.

Species	*Status*	*Habitat*	*Occurrence on APE*
Alkali mariposa-lily (*Calochortus striatus*)	CNPS 1B	Found in the Sierra Nevada Foothills, the Desert Mountains, and the Mojave Desert in alkaline meadows, ephemeral washes, and creosote-bush scrub in chaparral, alkali scrub communities, meadows, and seeps at elevations between 230 feet and 5300 feet. Sometimes associated with vernal pools. Blooms April–June.	**Absent.** Habitat required by this species is absent from the APE, which is a ruderal lot.
Alkali-sink goldfields (*Lasthenia chrysantha*)	CNPS 1B	Found in vernal pool and wet saline flat habitats. Occurrences documented in the San Joaquin and Sacramento Valleys at elevations below 656 feet. Blooms February – April.	**Absent.** Vernal pool soils and habitat are absent from APE and are unsuitable for this species.
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 230 feet and 6100 feet. Blooms February–April.	**Absent.** The disturbed habitats of the APE are unsuitable for this species. Grassland habitats are not present within the APE.
Coulter's goldfields (*Lasthenia glabrata* ssp. *Coulteri*)	CNPS 1B	Found on alkaline or saline soils in vernal pools and playas in grassland at elevations below 4500 feet. Blooms April–May.	**Absent**. Habitat required by this species is absent from the APE. Vernal pools and grasslands do not exist within the APE.
Earlimart orache (*Atriplex cordulata* var. *erecticaulis*)	CNPS 1B	Found in the San Joaquin Valley in saline or alkaline soils, typically within valley and foothill grassland at elevations below 375 feet. Blooms August–September.	**Absent.** The disturbed habitats of the APE are unsuitable for this species. Grassland habitats are not present within the APE.

Species	*Status*	*Habitat*	*Occurrence on APE*
Kern mallow (*Eremalche parryi* ssp. *Kernensis*)	CNPS 1B, FE	Occurs in the San Joaquin Valley and the Inner South Coast Ranges in eroded hillsides and alkali flats; often on dry, open, sandy to clay soils and within alkali scrub communities. Occurs at elevations between 200 feet and 4250 feet. Blooms March–May.	**Absent**. The disturbed habitats of the APE are unsuitable for this species. Eroded hillsides or alkali flats are not present within the APE.
Lesser saltscale (*Atriplex minuscula*)	CNPS 1B	Found in the San Joaquin Valley in sandy, alkaline soils in alkali scrub, valley and foothill grassland, and alkali sink communities at elevations below 750 feet. Blooms April–October.	**Absent**. Habitats required by this species are absent from the APE. Alkali scrub, sink, and grassland habitats are not within the APE.
Lost Hills crownscale (*Atriplex 4-19egligib* var. *vallicola*)	CNPS 1B	Found in the San Joaquin Valley in dried ponds and alkaline soils in alkali scrub, valley and foothill grassland, and vernal pools at elevations below 2900 feet. Blooms April–September.	**Absent**. Habitats required by this species are absent from the APE. There have been no recorded observations of this species in the vicinity in over 30 years.
Munz's tidy-tips (*Layia munzii*)	CNPS 1B	Found in the San Joaquin Valley in alkaline clay soils; often along hillsides in alkali scrub and sometimes valley and foothill grassland. Occurs at elevations between 145 feet and 2625 feet Blooms March–April.	**Absent**. Habitats required by this species are absent from the APE. There have been no recorded observations of this species in the vicinity in over 25 years.
Recurved larkspur (*Delphinium recurvatum*)	CNPS 1B	Occurs in poorly drained, fine, alkaline soils in grassland and alkali scrub communities at elevations between 100 feet and 2600 feet. Blooms March–June.	**Absent**. Habitat required by this species is absent from the APE. There are no alkali scrub or grassland communities within the APE.
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 325 feet and 2950 feet. Blooms March–May.	**Absent**. Habitat required by this species is absent from the APE. Ongoing disturbance from agriculture would deter this species from occurring.
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 180 feet and 2750 feet. Blooms February–May.	**Absent**. The disturbed habitats of the APE are generally unsuitable for this species. There have been no recorded observations of this species in the vicinity in over 100 years.
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 feet and 4160 feet. Blooms April–July.	**Absent**. Vernal pools are absent, and the disturbed habitats of the APE are generally unsuitable for this species. There have been no recorded observations of this species in the vicinity in over 50 years.

Species	*Status*	*Habitat*	*Occurrence on APE*
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 330 feet. Blooms June–October.	**Absent**. Habitat required by this species is absent from the APE. Grassland communities are not present within the APE.

EXPLANATION OF OCCURRENCE DESIGNATIONS AND STATUS CODES

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

STATUS CODES

FE Federally Endangered
FT Federally Threatened
FPE Federally Endangered (Proposed)
FPT Federally Threatened (Proposed)
FC Federal Candidate
CWL California Watch List

CE California Endangered
CT California Threatened
CCT California Threatened (Candidate)
CFP California Fully Protected
CSC California Species of Special Concern
CCE California Endangered (Candidate)
CR California Rare

CNPS LISTING

1A Plants Presumed Extinct in California.
1B Plants Rare, Threatened, or Endangered in California and elsewhere.
2 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.

Species identified as candidate, sensitive, or special status species in local or regional plans policies or regulations by CDFW or the USFWS that have the potential to be impacted by the Project are identified below with corresponding mitigation measures.

4.16.2.2 Project-Related Impacts to Special Status Animal Species.

All 16 of the regionally occurring special status species are considered absent from or unlikely to occur within the Project area due to past or ongoing disturbance and/or the absence of suitable habitat. As explained in **Table 4-7**, the following species were deemed absent from the APE: blunt-nosed leopard lizard, California red-legged frog, coast horned lizard, Delta smelt, giant garter snake, Kern Brook lamprey, San Joaquin coachwhip, and vernal pool fairy shrimp; and the following 8 species were deemed unlikely to occur within the Project area: American badger, Bakersfield legless lizard, Burrowing Owl, San Joaquin kit fox, Swainson's Hawk, Tipton kangaroo rat, Tricolored Blackbird, and western spadefoot. Since it is unlikely that these species would occur onsite, implementation of the Project should have no impact on these 13 special status species through construction mortality, disturbance, or loss of habitat due to historic and ongoing disturbance and/or the absence of suitable habitat. Additionally, none of these species were observed during the biological survey. Therefore, the implementation of the Project would have no effect on individual animals or regional populations of these special status animal species.

There are no trees within the APE; however, there is potential foraging habitat available within the APE that would be utilized by bird species. Additionally, smaller avian species could nest within the surrounding agricultural fields and ground nesting birds, particularly those tolerant of disturbance, such as Killdeer (*Charadrius vociferous*), could nest onsite. Killdeer were observed during the survey.

Birds foraging within the APE during construction activities would be expected to fly away from disturbance, subsequently eliminating the risk of injury or mortality while foraging. However, birds nesting on the ground within the APE could be injured or killed by Project activities. Further, construction activities could disturb birds nesting within or adjacent to work areas, resulting in nest abandonment. Project construction activities that adversely affect the nesting success of raptors and migratory birds or result in the mortality of individual birds constitute a violation of State and federal laws and are considered a significant impact under CEQA. Implementation of the following measures would reduce potential impacts to raptors, migratory birds, and special status birds to a less than significant level under CEQA and would ensure compliance with State and federal laws protecting these avian species.

4.4.2.2 Project-Related Impacts to Special Status Plant Species.

As explained in **Table 4-8**, all 14 of the special status plant species which have been documented in the Project vicinity are considered absent from or unlikely to occur within the APE due to past or ongoing disturbance and/or the absence of suitable habitat. The following species were deemed absent from the APE: alkali Mariposa-lily, California jewelflower, Coulter's goldfields, Earlimart orache, Kern mallow, lesser saltscale, Lost Hill's crownscale, Munz's tidy-tips, recurved larkspur, San Joaquin adobe sunburst, San Joaquin woollythreads, spiny-sepaled button-celery, and subtle orache. Therefore, the implementation of the Project would have no effect on individual plants or regional populations of these special status plant species. Mitigation measures are not warranted.

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. According to CNDDB, there are no natural communities of special concern with potential to occur within the APE or vicinity. Additionally, no natural communities of special concern were observed during the biological survey. Therefore, implementation of the Project would have no impact on riparian habitat, or any other sensitive natural communities and mitigation measures are 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?

No Impact. The National Wetland Inventory (NWI) identifies a portion of the APE as a potential freshwater pond. Examination of this area during a field survey revealed that there are no wetlands currently present. The area defined on the NWI did exhibit indicators of hydrology, including surface soil cracks, but wetland soils were not present and plant species in the area were either facultative-upland species or non-indicator (Capsella bursa-pastoris, Hordeum murinum, and Malva parviflora). Therefore, the project will not result in impacts to wetlands and mitigation is not warranted.

d) Would the project 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 area does not contain features likely to function as wildlife movement corridors. Furthermore, the Project is located in a region often disturbed by human activities related to adjacent industrial uses which would discourage dispersal and migration. Therefore, implementation of the Project would have no impact on wildlife movement corridors. Mitigation measures are not warranted.

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

No Impact.

Project design appears to be consistent with the goals and policies of the Tulare County 2030 General Plan. As such, there would be no impact to local policies or ordinances and mitigation measures are not warranted.

f) Would the project 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. There are no known Habitat Conservation Plans within the Project vicinity. As such, there would be no impacts or conflicts with an adopted Habitat Conservation Plan or Natural Community Conservation Plan. Mitigation measures are not warranted.

4.4.3 Mitigation

BIO-1 (*Avoidance*) The Project's construction activities shall occur, if feasible, between September 16 and January 31 (outside of nesting bird season) in an effort to avoid impacts to nesting birds.

BIO-2 (*Pre-construction Surveys*) If activities must occur within nesting bird season (February 1 to September 15), a qualified biologist shall conduct pre-construction for nesting bird survey (including ground nesting species) within 10 days prior to the start of construction. The survey shall include the proposed work area and surrounding lands within 50 feet. All raptor nests will be considered "active" upon the nest-building stage.

BIO-3 (*Establish* Buffers) On discovery of any active nests near work areas, the biologist shall determine appropriate construction setback distances based on applicable CDFW and/or USFWS guidelines and/or the biology of the species in question. Construction buffers shall be identified with flagging, fencing, or other easily visible means, and shall be maintained until the biologist has determined that the nestlings have fledged and are no longer dependent on the nest.

4.5 CULTURAL RESOURCES

Table 4-9: 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

A Class III/Phase I Survey for the Project was prepared for the Project in July 2022 (see **Appendix C**). At the time of the Class III Inventory/ Phase I survey, the study area consisted of fallow agricultural land adjacent to active farm fields. Although this location currently may be characterized as a dry open valley bottom, historically it may have included swampy lands, lying roughly 16-miles east of the historical Tule Lake shoreline and about 100 feet north of White River, or dry valley grassland with possible oak groves. Prior to changes resulting from the agricultural development of the area, Deer Creek, located north of the APE, was an effective divide between mesic environments to the north and more xeric environments to the south. Lying to the south of Deer Creek, the Project APE would have been on the drier side of the Deer Creek alluvial fan. Deer Creek and White River, which is approximately two miles south, may have been occasionally inundated by floodwaters during heavy spring snowmelt, but in most years these drainages would have been perennial only in their upper reaches in the foothills, and intermittent lower on their courses, nearer the APE.

Historical and recent land-use has thus changed the vegetation that was once present within and near the Project APE. Prior to development, oak groves and valley grasslands would have dominated. However, it is likely that Riparian Woodlands were once found along local drainages, including along Deer Creek and White River.

Records Search

An archival records search was conducted at the California State University, Bakersfield, Southern San Joaquin Valley Information Center (SSJVIC), by SSJVIC staff members on September 9, 2021 and May 10, 2022 to determine: (1) if prehistoric or historical cultural resources had previously been recorded within the APE; (2) if the APE had been systematically surveyed by archaeologists prior to the initiation of this field study; and/or (3) whether the region of the Project was known to contain archaeological sites and to thereby be archaeologically sensitive. Additionally, a search of the Native American Heritage Commission (NAHC) Sacred Lands File was conducted in order to ascertain whether traditional cultural places or cultural landscapes had been identified within the APE.

According to the records search results, no previous archaeological surveys had been completed within the APE, and no cultural resources were known within the APE or within a 0.5-mi radius of it. Only one previous

archaeological survey had been completed within 0.5-mi of the APE: Report TU-1407, "Cultural Resources Assessment for the DEID Turnipseed Groundwater Banking Project," RSO Consulting, 2009.

Native American Outreach

A search of the Native American Heritage Commission (NAHC) Sacred Lands File was completed on October 6, 2021. Based on the NAHC records, no sacred sites or traditional cultural places had been identified within or adjacent to the APE (see Appendix A of **Appendix C**). Outreach letters and follow-up emails were sent to tribal organizations on the NAHC contact list. Emails and letters from the Santa Rosa Rancheria – Tachi Yokut Tribe have been received requested general tribal consultation, monitoring for the Project, and a conference call to discuss the Project. Arrangements for this call are currently being made. TCR-1 for a cultural sensitivity awareness training as been incorporated into the Project in **Section 4.18**.

Historical United States Geological Survey topographical quadrangles and aerial photographs were also examined to determine whether there was evidence of historical development within the APE. Based on these sources, the only development of the APE occurred circa 1956 when a series of farm outbuildings and a farm basin appeared in the northwest portion of the APE. The nature of the buildings is unknown although the main structure looks to have been a barn or packing shed. They are no longer standing but, based on geometry/dimensions and positioning, they clearly were not residences or a residential compound.

Based on the records search and other sources, the APE appeared to have low cultural resources sensitivity. Additionally, the intensive Class III inventory/Phase I survey demonstrated that no Native American sacred sites or cultural landscapes had been identified within or immediately adjacent to the study APE, and no archaeological sites had been recorded within the APE. Additionally, it was determined that the APE lacks significant historical resources or historic properties. The proposed Project therefore does not have the potential to result in adverse impacts or effects to significant historical resources or historic properties. A finding of No Significant Impacts/No Historic Properties Affected is recommended for the Project.

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?

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

a-c) Less than Significant Impacts with Mitigation Incorporated. A records search request to the California Historical Resources Information System (CHRIS) by Provost & Pritchard staff in August 2021, indicated that there are no previous cultural resources studies within the project area. A portion of one cultural resource study was conducted within the one-half mile radius, TU01407. Additionally, there are no recorded resources within the Project area or one-half mile radius, and it is not known if any exist there. There are no recorded cultural resources within the Project area or radius that are listed in the National Register of Historic Places, the California Register of Historical Resources, the California Points of Historical Interest, California Inventory of Historic Resources, or the California State Historic Landmarks. (See **Appendix C**)

In addition to the CHRIS records search request, Provost & Pritchard contacted the Native American Heritage Commission (NAHC) for a Sacred Lands File & Native American Contacts List, which was received October 6, 2021. Following receipt of the contact list, Provost & Pritchard sent letters to the following five Tribes on September 27, 2021, via certified mail, requesting consultation:

1. Big Sandy Rancheria of Mono Indians, Elizabeth Kipp, Chairperson
2. Santa Rosa Rancheria Tachi Yokut Tribe, Leo Sisco, Chairperson
3. Tule River Indian Tribe, Neil Peyron, Chairperson
4. Tule River Indian Tribe, Kerri Vera, Environmental Department
5. Tule River Indian Tribe, Joey Garfield, Tribal Archaeologist

A written response was received from the Santa Rosa Rancheria Tahi Yokut Tribe. Tribal correspondence is included within **Appendix C** to this Initial Study.

No formal cemeteries or other places of human internment are known to exist on the Project site; however, in accordance with Health and Safety Code Section 7050.5 and Public Resource Code Section 5097.98, if human remains are uncovered, Mitigation Measure CUL-2 as outlined below, would be implemented to reduce impacts to less than significant to human remains should they be discovered during construction.

4.5.3 Mitigation

CUL-1 In the event that archaeological remains are encountered at any time during development or ground-moving activities within the entire project area, all work in the vicinity of the find shall halt until a qualified archaeologist can assess the discovery. The District shall implement all recommendations of the archaeologist necessary to avoid or reduce to a less than significant level potential impacts to cultural resource. Appropriate actions could include a Data Recovery Plan or preservation in place.

CUL-2 If human remains are uncovered, or in any other case when human remains are discovered during construction, the Tulare County Coroner will be notified to arrange proper treatment and disposition. If the remains are identified—on the basis of archaeological context, age, cultural associations, or biological traits—as those of a Native American, California Health and Safety Code 7050.5 and Public Resource Code 5097.98 require that the coroner notify the NAHC within 24 hours of discovery. The NAHC will then identify the Most Likely Descendent who will determine the manner in which the remains are treated.

4.6 ENERGY

Table 4-10: 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

Southern California Edison (SCE) supplies electricity to the project area. SCE obtains its power through hydroelectric, natural gas, and eligible renewable sources. SCE continually produces new electric generation and natural gas sources and implements continuous improvements to gas lines throughout its service areas to ensure the provision of services to residents. New construction would be subject to Titles 20 and 24 of the California Code of Regulations (CCR) which each serve to reduce demand for electrical energy by implementing energy-efficient standards for residential, as well as non-residential buildings. As the recharge basin Project does not involve buildings of any kind, these regulations are not applicable.

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?

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

Less than Significant Impact. Construction is anticipated to consume gasoline for worker trips and diesel from on-site construction equipment. California Code of Regulations Title 13, Motor Vehicles, Section 2449(d)(2) 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 construction of the project. Therefore, construction energy impacts would be less than significant.

4.7 GEOLOGY AND SOILS

Table 4-11: 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. 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 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 soils and their core properties are displayed **Table 4-12** below. All three soils are primarily used for agriculture in the form of irrigated cropland and annual pasture. Vegetation in uncultivated areas is mainly annual grasses and herbaceous plants.

Table 4-12: Soils of the Project Site

Soil	Soil Map Unit	Percent of APE	Hydric Unit	Hydric Minor Units	Drainage	Permeability	Runoff
Nord	Fine sandy loam, 0 to 2 percent slopes	72.1%	No	Yes	Well drained	Moderate permeability	Negligible runoff
Tujunga	Loamy sand, 0 to 2 percent slopes	27.8%	No	Yes	Somewhat excessively drained	Moderate permeability	Negligible runoff
Yettem	Sandy loam, 0 to 2 percent slopes	0.1%	No	Yes	Well drained	Moderately rapid permeability	Very low

None of the major soil mapping units were identified as hydric, but all of the units have minor soil mapping units which makes up 3.6% of the Project site that are considered hydric. 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.

The complete NRCS Web Soil Survey report is available in Appendix D of **Appendix B**.

Faults and Seismicity

The Project site is not located within an 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 over 60 miles southwest of the Project site. 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 Poso Fault, is approximately 10 miles southwest of the site and an unnamed fault located near Rag Gulch is approximately seven miles southeast.

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 conditions are key factors in selecting locations for direct groundwater recharge projects.

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.

Dam and Levee Failure

There is no inundation zone within 10 miles of the Project site.

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?

a-i and a-ii) Less than Significant Impact. The nearest major fault to the Project site is the San Andreas Fault, located approximately 46 miles southwest. A smaller fault zone, the Poso Fault, is approximately seven miles southwest of the site, and an unnamed fault located near Rag Gulch is approximately seven miles southeast. The Project does not include habitable residential, agricultural, commercial, or industrial structures. Operation of the Project would require infrequent, routine maintenance by DEID employees. Any impact would be less than significant.

The Project site and its vicinity are 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 (Section 2622 of Chapter 7.5, Division 2 of the California Public Resources Code.

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. The impact 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 and level. There will 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 basin 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 Storm Water Pollution Prevention Plan (SWPPP) by a certified Qualified SWPPP Developer (QSD). 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. Most of the Project site and the surrounding area do not have any substantial grade changes to the point where the proposed basin would expose people or structures to potential substantial adverse effects on- or offsite such as landslides, lateral spreading, subsidence, liquefaction, or collapse. Subsidence and liquefaction risk are low to moderate at the site. 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 soil at the Project site is sandy loam, particularly Hanford soil, Nord soil, and Yettem soil. Permeability is moderate or moderately rapid. The Project will 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. The Project will be consistent with the California Building Standards Code; 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 Project site is located in an area with a significant depth to saturation, consistent with the south side of Tulare County. Septic installation or alternative wastewater disposal systems are not necessary for the project. There will be no impact.

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

Less than Significant Impact. Unique paleontological resources or sites or unique geological features have not been identified in the Project area. There will be no impact.

4.8 GREENHOUSE GAS EMISSIONS

Table 4-13: 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

The Earth's climate has been warming for the past century. Experts believe this warming trend is related to the release of certain gases into the atmosphere. Greenhouse gases (GHG) absorb infrared energy that would otherwise escape from the Earth. As the infrared energy is absorbed, the air surrounding the Earth is heated. An overall warming trend has been recorded since the late 19th century, with the most rapid warming occurring over the past 35 years, with 16 of the 17 warmest years on record occurring since 2001. Not only was 2016 the warmest year on record, but eight of the 12 months that make up the year—from January through September, with the exception of June—were the warmest on record for those respective months. October, November, and December of 2016 were the second warmest of those months on record—in all three cases, behind records set in 2015.[3] Human activities have been attributed to an increase in the atmospheric abundance of greenhouse gases. The following is a brief description of the most commonly recognized GHGs.

Greenhouse Gases

Carbon dioxide (CO2) is an odorless, colorless natural greenhouse gas. CO2 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 (CH4) 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 (N2O), 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.

[3] (National Aeronautics and Space Administration Warmest Year on Record 2017). Accessed September 2021.

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. Ozone 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. 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 (SF6) is an inorganic, odorless, colorless, nontoxic, nonflammable gas. It has the highest global warming potential 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.

Effects of Climate Change

The impacts of climate change have yet to fully manifest. A hotter planet is causing the sea level to rise, disease to spread to non-endemic areas, as well as more frequent and severe storms, heat events, and air pollution episodes. Also affected are agricultural production, the water supply, the sustainability of ecosystems, and therefore the economy. The magnitude of these impacts is unknown.

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. GHG emissions are typically expressed in carbon dioxide-equivalents (CO2e), based on the GHG's Global Warming Potential (GWP). The GWP is dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. For example, one ton of CH4 has the same contribution to the greenhouse effect as approximately 21 tons of CO2. Therefore, CH4 is a much more potent GHG than CO2.

4.8.2 Methodology

The CalEEMod Emissions Model (**Appendix A**) was prepared in June 2023. The sections below detail the methodology of the report and its conclusions.

Short-Term Construction-Generated Emissions

Short-term construction emissions associated with the Project were calculated using the CalEEMod Emissions Model, Version 2022.1. Emission modeling were estimated based on the construction records of

the Turnipseed Phase IV project, which is of comparable size. Modeling assumptions and output files are included in **Appendix A**.

Long-Term Operational Emissions

The Project does not include any additional traffic lanes. It is not anticipated that there would be additional long-term operational emissions associated with the Project.

Thresholds of Significance

DEID has not adopted its own GHG thresholds or prepared a Climate Action Plan that can be used as a basis for determining project significance. In accordance with SJVAPCD's *CEQA Greenhouse Gas Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects,*[4] projects complying with Best Performance Standards (BPS) would be determined to have a less-than-significant impact. The SJVAPCD does not have an adopted threshold for GHGs; however, the South Coast Air Quality Management District (SCAQMD) has set a threshold of 10,000 $MTCO_2e$.[5] This threshold has been applied to this Project. Compliance with BPS and projects generating less than 10,000 $MTCO_2e$ per year would result in less than significant impacts. In addition, project-generated emissions complying with an approved plan or mitigation program would also be determined to have a less-than-significant impact.

4.8.3 Impact Analysis

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

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

Less than Significant Impact. Total GHG emissions generated during all phases of construction were combined and are presented in **Table 4-14**. The SJVAPCD does not recommend assessing the significance of construction-related emissions. However, other jurisdictions, such as the SCAQMD, have concluded that construction emissions should be included since they may remain in the atmosphere for years after construction is complete. In order to account for the construction emissions, amortization of the total emissions generated during construction were based on the life of the development (nonresidential—30 years). As the emissions do not exceed this threshold, impacts are less than significant.

Table 4-14 Construction Emissions, Greenhouse Gases

	$MTCO_2e$
Total Construction Emissions	377.5
Amortized over 30 years	12.58

Notes:
Calculation totals use unrounded numbers from CalEEMod output.
Source: Appendix A

4.9 HAZARDS AND HAZARDOUS MATERIALS

[4] (San Joaquin Valley Air Pollution Control District 2009)
[5] Invalid source specified.

Table 4-15: 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 (GC) Section 65962.5 requires the California Environmental Protection Agency (CalEPA) 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 (DTSC, 2010). In addition to the EnviroStor database, the State Water Resources Control Board (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 (SLIC) sites, Department of Defense (DOD)sites, and Land Disposal program. A search of the DTSC EnviroStor database and the SWRCB Geotracker performed on September 3, 2021, determined that there are no known active hazardous waste generators or hazardous material spill sites within the Project site.

Airports

The Delano Municipal Airport is located approximately 7.5 miles southwest of the project. The Fresno Yosemite International Airport is located approximately 70 miles northwest 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.

Sensitive Receptors

Columbine Elementary School, the closest school to the Project site, is located approximately 1.75-miles southwest of the Project site.

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. There would be no transport, use, or disposal of hazardous materials associated with Project construction, with the exception of diesel fuel for construction equipment. Any potential accidental hazardous materials spills during Project construction are the responsibility of the contractor to remediate in accordance with industry best management practices and State and county regulations. Any impact would therefore 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?

Less than Significant Impact. Columbine Elementary School is located approximately 1.75 miles southwest of the Project site. The Project will not emit hazardous emissions or involve the transport or handling of any hazardous materials. Impacts would be less than significant.

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?

Less than Significant Impact. The Project does not involve land that is listed as an active hazardous materials site pursuant to Government Code Section 65962.5 and is not included on a list compiled by DTSC. Both the SWQCB's GeoTracker and DTSC's EnviroStor websites were queried on September 3, 2021, for contaminated groundwater or sites in the area with negative findings. Operation of the recharge facility would not involve the transport, use, or disposal of hazardous materials and the parcels

proposed for the basin have not been identified as active hazardous waste generators or hazardous material spill sites. Facility operation would be consistent with that of the District's other similar basins in that groundwater conditions will be monitored to minimize negative impacts on the surrounding areas (such as nearby wells, crops, and septic systems). The impacts would be less than significant.

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 Delano Municipal Airport is located approximately 7.5 miles southwest of the project. Fresno Yosemite International Airport is located approximately 70 miles northwest of the project. The Project site is not located within an airport land use plan or within two miles of an airport. 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 does not involve any physical barriers or interfere with any roadways in such a way that would impede emergency or hazards response; therefore, the Project would not interfere with implementation of an emergency response plan or evacuation plan. 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. Activities taking place at the Project site and the surrounding lands consist of operations related to agriculture uses. The Project does not include any residential components, nor would it require any employees to be stationed permanently at the site on a daily basis. Any impact would be less than significant.

4.10 HYDROLOGY AND WATER QUALITY

Table 4-16: 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 site is an approximately 170-acre lot that is currently vacant agricultural land with remnants of previously farmed crops. Growing crops utilizes water, and many crops tend to be water-intensive. In order to maintain high yields, these crops require the consumption of a significant amount of water.

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. SWRCB requires that a SWPPP be prepared for projects that disturb one (1) or more acres of soil. A SWPPP involves site planning and scheduling, limiting disturbed soil areas, and determining best management practices to minimize the risk of pollution and sediments being discharged from construction sites. Implementation of the SWPPP will minimize the potential for the Project to substantially alter the existing drainage pattern in a manner that will result in substantial erosion or siltation onsite or offsite. Additionally, there will be no discharge to any surface source. However, by design, there will be percolation discharge to groundwater via the proposed recharge/regulation basins. Use of chemicals or surfactants will not be generated through the maintenance or operation of the Project and as such, there will be no discharge directly associated with Project implementation that could impact water quality standards. The Project will not violate any water quality standards and will not impact waste discharge requirements, and the pipeline construction will not entail disturbance of one or more acres of soil. The impact would be less than significant.

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?

Less than Significant Impact. The Primary Phase of the Proposed Project consists of constructing a recharge basin to improve groundwater supplies, followed by extraction of those supplies by District landowners. Groundwater recoveries would not exceed the total water recharged, so as to not deplete any groundwater supplies. The DEID Groundwater Sustainability Agency holds jurisdiction over the Project area and is responsible for developing a Groundwater Sustainability Plan (GSP), and any water brought to the Project site under Primary Phase operations would be accounted for under the GSP. Subsequently, any recovery of recharged water by District landowners in the original DEID service area would also be accounted for in the GSP, with such accounting assuming that no more than 90 percent of the recharged water is available to be recovered by District landowners. The 10 percent leave behind effectively provides a net benefit to the aquifer. No additional groundwater will be required compared to baseline conditions; therefore, the impacts will be less than significant. Existing or proposed monitoring wells operated as part of the project would be available to confirm no negative effect of operations. Impacts would be less than significant.

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?

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

c-d) Less than Significant Impact. There are no streams or rivers onsite or in the immediate vicinity of the Project. The Project does not involve the construction of impervious surfaces so impacts to the existing

drainage pattern of the area would be less than significant. The Project would consist of excavating to a uniform depth for the purpose of groundwater recharge. In order to minimize erosion and run-off during construction activities, a SWPPP may be implemented, and the contractor would comply with all Cal/OSHA 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 onsite. Additionally, the Project area is not at risk of tsunami or within a seiche zone. As demonstrated in **Figure 4-3**, the Project site is not located within the 100-year flood zone. 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 will improve groundwater storage and prevent exceedances of storm water drainage systems or additional polluted runoff by providing a depressional space for surface water. The project will not substantially alter the course of the flow of a stream or river in which substantial erosion or siltation could occur. The Project does not require impermeable areas that could potentially alter draining patterns. Therefore, impacts will be less than significant.

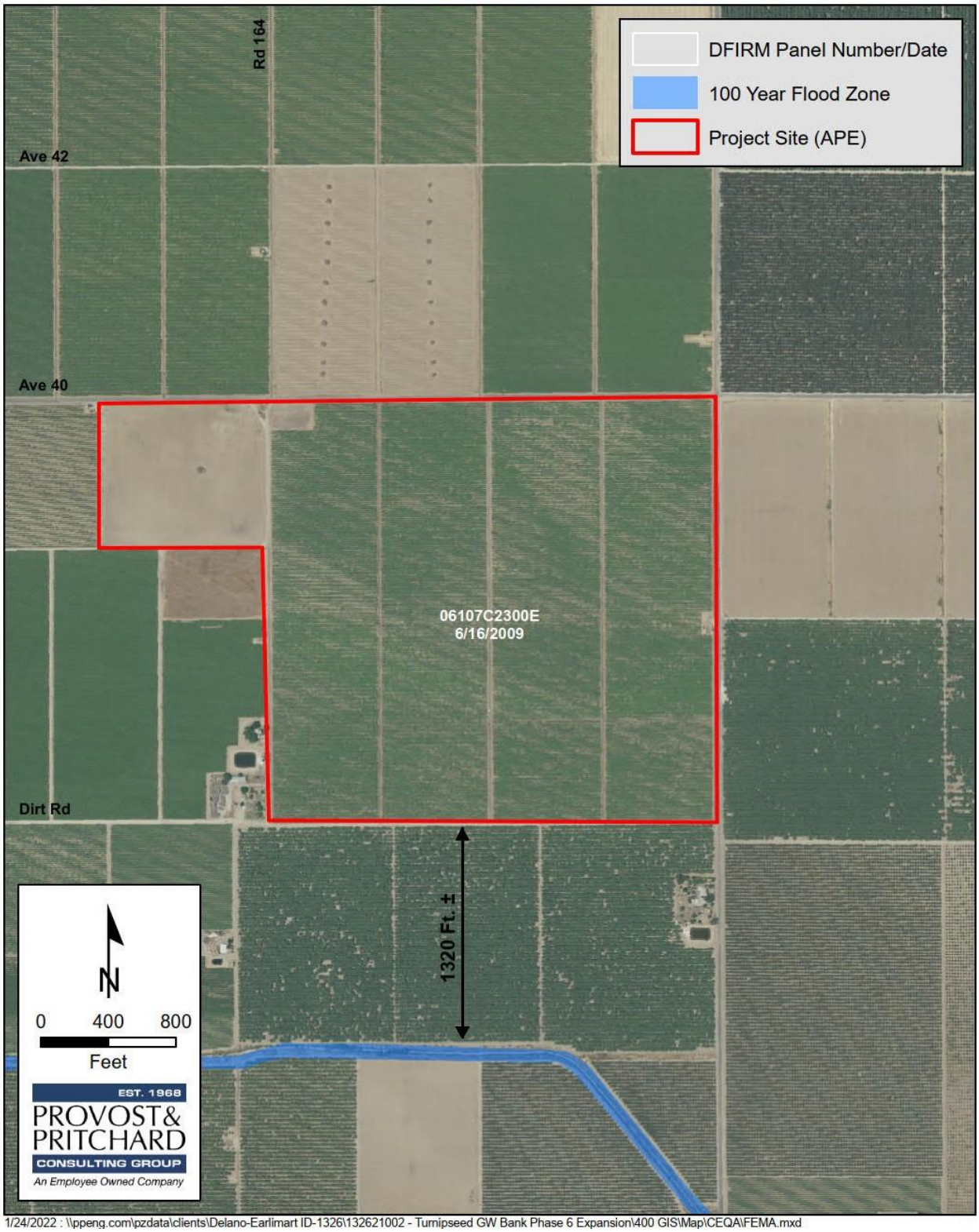

Figure 4-3: FEMA Flood Map

4.11 LAND USE AND PLANNING

Table 4-17: Land Use and Planning Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
f) Physically divide an established community?	☐	☐	☐	☒
g) 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 Project area is classified by DOC's FMMP as Prime Farmland and Farmland of Statewide Importance. The Project site is designated as Valley Agriculture by the Tulare County General Plan and is within the AE-20 (Exclusive Agriculture) zone district. Properties directly surrounding the Project site are currently in use for agriculture and are also designated Valley Agriculture and zoned AE-20. The District is located on the Valley floor east of the Coast Ranges and west of the Sierra Nevada Mountain Range. The proposed recharge basin is located approximately 3.5 miles east of SR 99. Topographically, the Project area is at an elevation of 360 feet above mean sea level. No forest or timber land is present at the Project site or in the Project vicinity.

4.11.2 Impact Analysis

a) Would the project physically divide an established community?

No Impact. The Project is located in an agricultural area approximately four miles southeast of Earlimart and five miles northeast of Delano. This project is approximately two miles west of the Friant-Kern Canal. Surrounding uses are primarily agricultural uses. The Project would not physically divide any established community. 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 Exclusive Agricultural. The Project would not involve the development of new agriculture lands since the District is almost fully developed to agriculture. Construction of the Project would not develop new sources of water that would support any new housing or new permanent population growth that would exceed official regional or local population projections in the District service area. The main purpose of the Project is to improve the District's groundwater supply reliability in order to meet irrigation demands during dry hydrological years; therefore, no impacts to land use are anticipated. Additionally, the Project involves the construction and operation of a recharge basin which is consistent with the land use within the vicinity. Therefore, the Project would not conflict with any applicable plans, policies, or regulations. There would be no impact.

4.12 MINERAL RESOURCES

Table 4-18: 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.

The Project site is not delineated on a local land use plan as a locally important mineral resource recovery site.

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. The California Geological Survey Division of Mines and Geology has not classified the Project site as a Mineral Resource Zone under the Surface Mining and Reclamation Act (SMARA). California's Division of Oil, Gas and Geothermal Resources has no records of active oil or gas wells on the Project site. No known mineral resources are within the Project area. Therefore, construction of the Project would not result in the loss of availability of a known mineral resource since no known mineral resources have been identified in this area. There would be no impact.

4.13 NOISE

Table 4-19: 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 site and most of the surrounding area is designated as Valley Agriculture by the Tulare County General Plan. There are two existing residences within 500 feet of the Project. Columbine Elementary School, the closest school to the Project site, is located approximately 1.75-miles southwest. The Project is located approximately four miles southeast of Earlimart and five miles northeast of Delano.

The Project site is situated within a region dominated by agricultural uses, 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. While much of unincorporated Tulare County is composed of discrete small communities and remote rural residences, major noise generators include SR 99 and other 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 at 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. Project operation would not generate significant noise; however, Project construction will generate temporary noise, mostly from trucks. Other construction equipment could include scrapers, backhoes, and drilling rigs. Noise from construction activities would not exceed Tulare County Noise Element standards of 60 dBA. The Project is located within agricultural lands, accustomed to noise generated by farm equipment and industrial machinery. As construction noise would be temporary, and maintenance would take place as needed, impacts due to noise would be less than significant.

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

Less than Significant Impact. The Project would not generate ground borne vibration or noise greater than existing conditions as it takes place in an area of agricultural operations. Construction would require temporary excavation and grading and Project operations would not involve ground borne vibration or noise. Impacts will 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 Delano Municipal Airport is located approximately 7.5 miles southwest of the project and the Fresno Yosemite International Airport is located approximately 70 miles northwest of the project. As the project is not located within an airport land use plan or two miles from an airport, there would be no impact.

4.14 POPULATION AND HOUSING

Table 4-20: 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 Sample, 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

The immediate area surrounding the Project is used for agricultural operations. A variety of water-related facilities and structures are located within the Project vicinity including drainage ditches, irrigation basins, wells, pipelines, and associated appurtenances. Properties within the immediate vicinity of the Project site and located within Tulare County boundaries are designated and zoned for agricultural uses.

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)?

No Impact. The Project involves the construction of a recharge basin to increase water resources in the region. The Project would not induce substantial unplanned population growth in an area directly or indirectly. There would be no impact.

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

No Impact. The Project involves the construction of a recharge basin to increase water resources in the region. The Project would not displace existing people or housing, therefore there would be no impact.

4.15 PUBLIC SERVICES

Table 4-21: 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:	☐	☐	☐	☒
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
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 in Earlimart approximately four miles northwest of the Project.

Police Protection: Police protection is provided by the Tulare County Sheriff. The closest station is located in Pixley approximately nine miles southwest of the Project.

Schools: Columbine Elementary School, the closest school to the Project site, is located approximately 1.75-miles southwest of the Project site.

Parks: The Tulare County park closest to the Project site is Pixley National Wildlife Refuge, approximately 5.8 miles to the northwest.

Landfills: The nearest landfill to the Project site is the Mid Valley Disposal, located approximately 12 miles to the 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-v) No Impact. The Project will 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 and operation of a recharge basin and will have no impact on public services.

4.16 RECREATION

Table 4-22: 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

Tulare County has several regional parks, as well as State and national parks, national forest, wilderness areas, and ecological reserves. There are 13 parks and recreation facilities that are owned and operated by Tulare County. The Tulare County Resource Management Agency, Parks and Recreation Branch maintains and develops regional parks and landscaped areas. Colonel Allensworth State Historic Park is the only State Park in Tulare County. Mountain Home State Forest, a State Forest managed by the California Department of Forestry and Fire Protection, is situated just east of Porterville, and contains numerous Giant Sequoias. Lake Kaweah and Lake Success are federal recreation areas within Tulare County, operated by the U.S. Army Corps of Engineers. The majority of the recreational opportunities within Tulare County are found within Sequoia National Forest, Giant Sequoia National Monument, and in Sequoia and Kings Canyon National Parks.

Federal lands, such as wilderness, national forests, monuments, and parks occupy 52.2 percent of land area within Tulare County. Agricultural uses encompass 43 percent of the County's land. The remainder comprises miscellaneous uses, such as County parks, urban uses in cities, unincorporated communities, and hamlets, and infrastructure rights-of-way. The Tulare County General Plan sets forth guidelines in order to maintain an overall standard of five or more acres of public County parkland per 1,000 population in unincorporated areas, regional parks at one-acre per 1,000 population, neighborhood parks at three to six acres per 1,000 population, and community parks at one to two acres per 1,000 population.[6]

As noted in ***Section 4.15.1***, the Tulare County park closest to the Project site is Pixley National Wildlife Refuge, approximately 5.8 miles northwest.

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?

[6] Tulare County General Plan. http://generalplan.co.tulare.ca.us/ Accessed 7 September 2021.

No Impact. The Project would construct a recharge basin facility on two parcels, comprised of 170 acres, that have been historically utilized for agricultural purposes. The Project would not increase the use of existing neighborhood and regional parks or other recreational facilities. 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?

No Impact. The Project would not include recreational facilities or require the construction or expansion of recreational facilities. The Project would construct a recharge basin to provide sustainable management of surface and groundwater. There would be no impact.

4.17 TRANSPORTATION

Table 4-23: 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 site is surrounded by agricultural operations with very little development. No State or interstate highways are in the immediate vicinity and the Project will not increase the number of staff in the District. The Delano Municipal Airport is located approximately 7.5 miles southwest of the Project and the Fresno Yosemite International Airport is located approximately 70 miles northwest of the Project. The project will utilize existing roadways in the area.

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?

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

a and b) Less than Significant Impact. The Project consists of the construction and operation of a recharge basin. Construction traffic associated with the Project would be temporary for excavation of soil, grading, site preparation, and construction of the basin. Operational traffic will consist of as-needed maintenance trips. There would not be a permanent adverse effect to existing roadways in the area. There are no transit, pedestrian, or bicycle facilities in the vicinity of the site. The Project would not conflict with any plan, ordinance, or policy regarding circulation. Impacts would be less than significant.

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. The Project does not involve geometric roadway features or propose incompatible uses. There would be no impact.

d) Would the project result in inadequate emergency access?

No Impact. The Project will have no lasting impact on existing roads or emergency access routes as it involves the conversion of farmland to a recharge basin and the project will not create additional permanent traffic. There would be no impact.

4.18 TRIBAL CULTURAL RESOURCES

Table 4-24: 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

The Project lies within the homeland of the Southern Valley Yokuts. At the time of first contact with the Spanish missionaries, the Yokut people, which also includes Northern Valley and Foothill groups, collectively inhabited the San Joaquin Valley as well as the eastern foothills of the Sierra Nevada from the Fresno River southward to the Kern River.

The serial incursion of Spanish, Mexican, and finally northern European settlers irrevocably changed the lifeways of the Yokuts and ultimately led to the complete displacement of native peoples from the valley. With the founding of Mission San Juan Bautista in 1797, Indians inhabiting the western portion of the San Joaquin Valley were forcibly recruited to serve at the mission. It appears that natives were replaced by Spanish settlers.

The Project area has been intensively farmed for over a century and little (if any) natural vegetation remains. The site is currently vacant and recently cleared of agriculture and has been disced annually.

Native American Outreach

In September 2021, Provost & Pritchard contacted the Native American Heritage Commission (NAHC) in Sacramento. Provost & Pritchard provided NAHC a brief description of the Project and a map showing its location and requested that the NAHC perform a search of the Sacred Lands File to determine if any Native American resources have been recorded in the immediate study area. Provost & Pritchard also requested NAHC provide a current list of local Native American contacts for the Project APE. The eight tribes identified by NAHC were contacted in writing via US mail with a letter dated September 30, 2021, informing them about the Project. On October 7, 2021, a representative of the Santa Rosa Rancheria Tachi Yokut Tribe contacted P&P via email requesting monitoring, curation agreement, and burial treatment plan. The Tribe sent a follow up letter to the District requesting consultation on November 12, 2021, but the letter was dated April 9, 2021. The Tribe then sent a new consultation request letter with the correct date of November 12, 2021. On December 10, 2021, the District sent a letter to the tribe initiating consultation. On June 24, 2022, the Tribe sent an email to ASM who prepared the Class III Inventory/ Phase I survey on behalf of the District requesting a meeting to discuss Project status.

Mitigation Measure TCR-1 for a cultural sensitivity awareness training conducted by the tribe has been incorporated into the Project.

All Tribal correspondence is included within **Appendix C** to this initial study.

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.

Less than Significant Impact with Mitigation Incorporated. A search of the Native American Heritage Commission (NAHC) Sacred Lands File was completed for the Project APE. No tribal cultural resources were identified. Additionally, a records search was conducted at the Southern San Joaquin Valley Archaeological Information Center, California State University, Bakersfield. This search determined that the Project site had not been previously surveyed and that no historic, archaeological sites, sacred sites, or traditional cultural places/landscapes had been identified within or adjacent to the Project area.

The District has received request for consultation from the Santa Rosa Rancheria Tachi Yokut Tribe pursuant to AB 52 in a letter addressed to the Delano-Earlimart Irrigation District received November 12, 2021 (dated April 9, 2021.) A consultation letter was sent to the tribe December 10, 2021. Tribal consultation with Santa Rosa Rancheria Yokut Tribe was held July 5, 2022, and the Tribe requested that a cultural sensitivity training occur before excavation. Mitigation Measure TCR-1 as described below is recommended prior to any ground disturbance.

There is little or no chance the Project would cause a substantial adverse change to the significance of a tribal cultural resource as defined. To ensure additional protection to Tribal Cultural Resources, Mitigation Measure CUL-1 and CUL-2, described above in **Section 4.5,** are recommended in the event cultural materials or human remains are unearthed during excavation or construction.

4.18.3 Mitigation

TCR-1 It is recommended that the Santa Rosa Rancheria – Tachi Yokut Tribe conduct a cultural sensitivity awareness training to grading and construction staff prior to ground surface disturbance for the Project. It is further recommended that they be contacted if any archaeological discoveries are made during Project construction and implementation.

4.19 UTILITIES AND SERVICE SYSTEMS

Table 4-25: 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 within the Tule Subbasin of the San Joaquin Valley Groundwater Basin, as defined by the California Department of Water Resources Groundwater Bulletin 118. Groundwater overdraft and declines in groundwater basin storage are recurring problems in Tulare County. Measures for ensuring the continued availability of groundwater have been identified and planned in several areas of the county. The measures include groundwater conservation and recharge and supplementing or replacing groundwater sources for irrigation with surface water.

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?

No Impact. The Project would not require relocation or expansion of existing facilities for wastewater treatment, storm water drainage, electric power, natural gas, or telecommunications. The Project does include the construction of a new recharge basin but would not cause significant environmental effects

since the Project would follow all required standards and policies. Additionally, the Project construction would increase water supply, improve groundwater conditions, reduce costs to produce groundwater, increase diversification and availability of water supplies, and facilitate compliance with the Sustainable Groundwater Management Act.

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?

No Impact. The Project consists of the construction and operation of a recharge basin for groundwater. Project operation is passive and would not reduce the area's available water supply under any scenario. There would be no impact.

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 does not require wastewater treatment, so analysis of capacity is unwarranted. 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?

No Impact. The Project would not generate any solid waste, therefore there would be no impact.

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 comply with all federal, State, and local standards, policies, and goals. There would be no impact.

4.20 WILDFIRE

Table 4-26: 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 site is served by the Tulare County Fire Department for its fire protection needs. The site is not located in a very high fire hazard severity zone nor is the site located in a State Responsibility Area. The nearest very high fire hazard severity zone is located approximately 30 miles east of the site.[7] The nearest State Responsibility Area is approximately eight miles east of the site.[8] The Project will not result in population growth, and it does not involve the construction of structures, habitable or otherwise.

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?

[7] ArcGIS. Is Your Home in a Fire Hazard Severity Zone? Website: https://www.arcgis.com/apps/Styler/index.html?appid=5e96315793d445419b6c96f89ce5d153. Accessed 9/8/21
[8] ArcGIS. State Responsibility Zones. Website: https://www.arcgis.com/apps/mapviewer/index.html?layers=5ac1dae3cb2544629a845d9a19e83991. Accessed 9/8/21

No Impact. The Project is not located in or near a State Responsibility Area or lands classified as very high fire hazard severity zones. There would be no impact.

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

No Impact. The Project is not located in or near a State Responsibility Area or lands classified as very high fire hazard severity zones, therefore there would be no impact.

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?

No Impact. The Project is not located in or near a State Responsibility Area or lands classified as very high fire hazard severity zones, therefore further analysis is not warranted. There would be no impact.

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?

No Impact. The Project is not located in or near State Responsibility Area or lands classified as very high fire hazard severity zones. There would be no impact.

4.21 CEQA MANDATORY FINDINGS OF SIGNIFICANCE

Table 4-27: 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, will have a less than significant effect on the environment. The potential for impacts to biological resources, cultural resources, and tribal cultural resources from the construction and operation of the Project will be less than significant with the incorporation of the mitigation measures discussed in **Chapter 6 Mitigation, Monitoring, and Reporting Program**. Accordingly, the Project will 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 with Mitigation Incorporated. 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 would include the construction of a 170-acre recharge basin. No additional roads would be constructed as a result of the Project, nor would any additional public services be required. The Project is not expected to 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 include the construction of water recharge basins. The Project in and of itself would not create a significant hazard to the public or the environment. Construction-related air quality/dust exposure impacts could occur temporarily as a result of project 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 Delano-Earlimart Irrigation District – Turnipseed Basin Phase VI Expansion Project (Proposed Project) in Tulare County (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

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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						
BIO-1	(Avoidance) The Project's construction activities shall occur, if feasible, between September 16 and January 31 (outside of nesting bird season) in an effort to avoid impacts to nesting birds.	Prior to initiating construction activities	Prior to initiating construction activities	DEID		
BIO-2	(Pre-construction Surveys) If activities must occur within nesting bird season (February 1 to September 15), a qualified biologist shall conduct pre-construction for nesting bird survey (including ground nesting species) within 10 days prior to the start of construction. The survey shall include the proposed work area and surrounding lands within 50 feet. All raptor nests will be considered "active" upon the nest-building stage.	If activities must occur within nesting bird season (February 1 to September 15), prior to the start of ground disturbing and construction activities	Prior to initiating construction activities	DEID		
BIO-3	(Establish Buffers) On discovery of any active nests near work areas, the biologist shall determine appropriate construction setback distances based on applicable CDFW and/or USFWS guidelines and/or the biology of the species in question. Construction buffers shall be identified with flagging, fencing, or other easily visible means, and shall be maintained until the biologist has determined that the nestlings have fledged and are no longer dependent on the nest.	Prior to initiating construction activities	Prior to initiating construction activities	DEID		
Cultural Resources						
CUL-1	In the event that archaeological remains are encountered at any time during development or ground-moving activities within the entire project area, all work in the vicinity of the find shall halt until a qualified archaeologist can assess the discovery. The District shall implement all recommendations of the archaeologist necessary to avoid or reduce to a less than significant level potential impacts to cultural resource. Appropriate actions could include a Data Recovery Plan or preservation in place.	During construction	Daily during construction activities	DEID		

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
CUL-2	If human remains are uncovered, or in any other case when human remains are discovered during construction, the Tulare County Coroner is to be notified to arrange their proper treatment and disposition. If the remains are identified—on the basis of archaeological context, age, cultural associations, or biological traits—as those of a Native American, California Health and Safety Code 7050.5 and Public Resource Code 5097.98 require that the coroner notify the NAHC within 24 hours of discovery. The NAHC will then identify the Most Likely Descendent who will determine the manner in which the remains are treated.	During construction	Daily during construction activities	DEID		
Tribal Cultural Resources						
TCR-1	It is recommended that the Santa Rosa Rancheria – Tachi Yokut Tribe conduct a cultural sensitivity awareness training to grading and construction staff prior to ground surface disturbance for the Project. It is further recommended that they be contacted if any archaeological discoveries are made during Project construction and implementation.	Once, prior to any construction activities	Once, prior to any construction activities	DEID		

CHAPTER 6 REFERENCES

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San Joaquin Valley Air Pollution Control District. 2009. *Guidance for Valley Land-use Agencies.* December 17. http://www.valleyair.org/Programs/CCAP/12-17-09/3%20CCAP%20-%20FINAL%20LU%20Guidance%20-%20Dec%2017%202009.pdf.

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Appendix A: CalEEMod Output Files

Turnipseed Phase VI Custom Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Turnipseed Phase VI
Construction Start Date	1/1/2024
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.10
Precipitation (days)	23.0
Location	35.859558, -119.201747
County	Tulare
City	Unincorporated
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2741
EDFZ	9
Electric Utility	Eastside Power Authority
Gas Utility	Southern California Gas
App Version	2022.1.1.13

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Other Non-Asphalt Surfaces	170	Acre	170	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.55	3.01	25.2	20.7	0.06	0.98	0.65	1.63	0.90	0.10	1.00	—	6,739	6,739	0.28	0.06	1.20	6,766
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.52	2.97	25.2	20.2	0.06	0.98	0.82	1.63	0.90	0.10	1.00	—	6,705	6,705	0.28	0.06	0.03	6,731
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.19	1.01	8.54	6.88	0.02	0.33	0.22	0.56	0.31	0.04	0.34	—	2,271	2,271	0.10	0.02	0.17	2,280
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.22	0.18	1.56	1.26	< 0.005	0.06	0.04	0.10	0.06	0.01	0.06	—	376	376	0.02	< 0.005	0.03	378

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2024	3.55	3.01	25.2	20.7	0.06	0.98	0.65	1.63	0.90	0.10	1.00	—	6,739	6,739	0.28	0.06	1.20	6,766
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	3.52	2.97	25.2	20.2	0.06	0.98	0.82	1.63	0.90	0.10	1.00	—	6,705	6,705	0.28	0.06	0.03	6,731
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	1.19	1.01	8.54	6.88	0.02	0.33	0.22	0.56	0.31	0.04	0.34	—	2,271	2,271	0.10	0.02	0.17	2,280
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.22	0.18	1.56	1.26	< 0.005	0.06	0.04	0.10	0.06	0.01	0.06	—	376	376	0.02	< 0.005	0.03	378

3. Construction Emissions Details

3.1. Site Preparation (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.41	1.18	11.4	8.92	0.02	0.48	—	0.48	0.45	—	0.45	—	2,398	2,398	0.10	0.02	—	2,406
Dust From Material Movement	—	—	—	—	—	—	0.78	0.78	—	0.08	0.08	—	—	—	—	—	—	—
Onsite truck	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	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.12	0.10	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	26.3	26.3	< 0.005	< 0.005	—	26.4
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.35	4.35	< 0.005	< 0.005	—	4.37
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.31	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	40.9	40.9	< 0.005	< 0.005	< 0.005	41.6
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.46	0.46	< 0.005	< 0.005	< 0.005	0.47
Vendor	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	0.00

Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.08	0.08	< 0.005	< 0.005	< 0.005	0.08
Vendor	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	0.00
Hauling	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	0.00

3.3. Grading (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.26	2.74	25.0	18.3	0.06	0.98	—	0.98	0.90	—	0.90	—	6,446	6,446	0.26	0.05	—	6,468
Dust From Material Movement	—	—	—	—	—	—	0.39	0.39	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.26	2.74	25.0	18.3	0.06	0.98	—	0.98	0.90	—	0.90	—	6,446	6,446	0.26	0.05	—	6,468
Dust From Material Movement	—	—	—	—	—	—	0.39	0.39	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	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	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.09	0.92	8.36	6.11	0.02	0.33	—	0.33	0.30	—	0.30	—	2,155	2,155	0.09	0.02	—	2,162
Dust From Material Movement	—	—	—	—	—	—	0.13	0.13	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.17	1.53	1.12	< 0.005	0.06	—	0.06	0.05	—	0.05	—	357	357	0.01	< 0.005	—	358
Dust From Material Movement	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.29	0.27	0.16	2.47	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	293	293	0.02	0.01	1.20	298
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.26	0.23	0.20	1.93	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	259	259	0.02	0.01	0.03	263
Vendor	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	0.00
Hauling	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	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.06	0.67	0.00	0.00	0.09	0.09	0.00	0.02	0.02	—	89.8	89.8	0.01	< 0.005	0.17	91.4
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.01	0.12	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	14.9	14.9	< 0.005	< 0.005	0.03	15.1
Vendor	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	0.00
Hauling	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	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	1/2/2024	1/5/2024	5.00	4.00	—
Grading	Grading	1/6/2024	6/25/2024	5.00	122	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Graders	Diesel	Average	1.00	6.00	250	0.40
Site Preparation	Scrapers	Diesel	Average	2.00	6.00	330	0.37
Grading	Excavators	Diesel	Average	1.00	0.66	140	0.38
Grading	Graders	Diesel	Average	2.00	4.79	250	0.41
Grading	Rubber Tired Loaders	Diesel	Average	1.00	1.44	176	0.40
Grading	Rollers	Diesel	Average	2.00	4.11	240	0.48
Grading	Crawler Tractors	Diesel	Average	4.00	1.39	165	0.37
Grading	Off-Highway Trucks	Diesel	Average	2.00	3.74	380	0.38
Grading	Other Material Handling Equipment	Diesel	Average	7.00	2.22	330	0.40

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	7.50	7.70	LDA,LDT1,LDT2
Site Preparation	Vendor	—	6.80	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	47.5	7.70	LDA,LDT1,LDT2
Grading	Vendor	—	6.80	HHDT,MHDT

Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	0.00	0.00	7.50	0.00	—
Grading	0.00	0.00	116	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Other Non-Asphalt Surfaces	170	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	453	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Construction timeline based on clean fleet information available from Turnipseed Phase IV project.
Construction: Off-Road Equipment	Construction equipment, horsepower, count, and hours modified to reflect Turnipseed Phase IV clean fleet information.

San Joaquin Valley Air Pollution Control District
Indirect Source Review (ISR)
Construction Clean Fleet Data Template

Note: All fields are required to be completed.	
Project Name: TURNIPSEED BASIN PH 4 EARTHWORK	**ISR Project Number:** C-20210011
Contact Name: ERIK QUINLEY	**Start date of Construction:** AUG. 30, 2021
Contact Phone Number: (661) 725-2526	**End date of Construction:** JAN 25, 2022

Please briefly describe the development project or project phase this data is being submitted for (e.g.: 30 single family units, or 35,000 square feet of commercial uses):

CONVERT BARE LAND INTO A SERIES OF RECHARGE BASINS

NOTE: When an ISR project involves the use of a Construction Clean Fleet as a required on-site emission reduction measure, construction records for the development project or project phase(s) is required to be submitted to the District **within 30 days of completing construction of the development project or project phase.**

A. Demolition/Grubbing/Land Clearing - *Duration of this phase:* _____ *days*

Start date: 8/24/21

☐ Check box if no Demolition/Grubbing/Land Clearing Construction occurred

End date: 8/30/21

Type of Equipment	Engine Model Year or Year Rebuilt	Equipment Horsepower	Total Hours of Operation	Alternative Fuel Type (If Available)	Control Device (If Available)	No. of this Equipment Type
Bore / Drill Rig						
Concrete / Industrial Saw						
Crane						
Crawler Tractor						
Crushing / Processing Equipment						
Excavator						
Grader	2020	250	24			1
Off Highway Tractor						
Off Highway Truck						
Paver						
Other Equipment						
Paving Equipment						
Rollers						
Rough Terrain Forklift						
Rubber Tired Dozer						
Rubber Tired Loader						
Scraper	2017	330	48			2
Signal Boards						
Skid Steer Loader						
Surfacing Equipment						
Tractor / Loader / Backhoe						
Trencher						

B. Grading/Excavation - *Duration of this phase: _____ days*

☐ Check box if no Building Construction occurred

Start of Construction : 8/21

End of Construction : 1/22

Type of Equipment	Engine Model Year or Year Rebuilt	Equipment Horsepower	Total Hours of Operation	Alternative Fuel Type (If Available)	Control Device (If Available)	No. of this Equipment Type
Bore / Drill Rig						
Concrete / Industrial Saw						
Crane						
Crawler Tractor	2015	165	680			≤ 4
Crushing / Processing Equipment						
Excavator	2017	140	80			1
Grader	2020	250	1168			≤ 2
Off Highway Tractor						
Off Highway Truck	2009	380	912			≤ 2
Paver						
Other Equipment	2017	330	1898			≤ 7
Paving Equipment						
Rollers	2006	240	1003			≤ 2
Rough Terrain Forklift						
Rubber Tired Dozer						
Rubber Tired Loader	2015	74	176			1

C. Services Installation - *Duration of this phase: _____ days*

☑ Check box if no Services Installation Construction occurred

Start of Construction: _____

End of Construction: _____

Type of Equipment	Engine Model Year or Year Rebuilt	Equipment Horsepower	Total Hours of Operation	Alternative Fuel Type (If Available)	Control Device (If Available)	No. of this Equipment Type
Crawler Tractor						
Excavator						
Grader						
Off Highway Tractor						
Off Highway Truck						
Other Equipment						
Rough Terrain Forklift						
Rubber Tired Dozer						
Rubber Tired Loader						
Scraper						
Skid Steer Loader						
Tractor / Loader / Backhoe						
Trencher						

D. Building- *Duration of this phase: _____ days*

☑ Check box if no Building Construction occurred

Start of Construction : _____

End of Construction : _____

Type of Equipment	Engine Model Year or Year Rebuilt	Equipment Horsepower	Total Hours of Operation	Alternative Fuel Type (If Available)	Control Device (If Available)	No. of this Equipment Type
Bore / Drill Rig						
Concrete / Industrial Saw						
Crane						
Crawler Tractor						
Crushing / Processing Equipment						
Excavator						
Grader						
Off Highway Tractor						
Off Highway Truck						
Paver						
Other Equipment						
Paving Equipment						
Rollers						
Rough Terrain Forklift						
Rubber Tired Dozer						
Rubber Tired Loader						
Scraper						
Signal Boards						
Skid Steer Loader						
Surfacing Equipment						
Tractor / Loader / Backhoe						
Trencher						

E. Asphalt/Drainage/Utilities/Subgrade - *Duration of this phase: _____ days*	**Start of Construction: _____**
☑ Check box if no Asphalt/Drainage/Utilities/Subgrade Construction occurred	**End of Construction: _____**

Type of Equipment	Engine Model Year or Year Rebuilt	Equipment Horsepower	Total Hours of Operation	Alternative Fuel Type (If Available)	Control Device (If Available)	No. of this Equipment Type
Bore / Drill Rig						
Concrete / Industrial Saw						
Crane						
Crawler Tractor						
Crushing / Processing Equipment						
Excavator						
Grader						
Off Highway Tractor						
Off Highway Truck						
Paver						
Other Equipment						
Paving Equipment						
Rollers						
Rough Terrain Forklift						
Rubber Tired Dozer						
Scraper						
Signal Boards						
Skid Steer Loader						
Surfacing Equipment						
Tractor / Loader / Backhoe						
Trencher						

- I certify that I have authorization as the signing authority for the submittal of this Construction Clean Fleet Data Template, and that all information provided in this Template, including any additional attachments, is the following:
  - The construction data submitted is all the data covering the entire construction phase (e.g.: from ground construction related activities to vertical construction activities),
  - The construction data submitted is for the entire development project or project phase it is being submitted for as described on page 1 of the Template, and
  - The construction data is complete and correct to the best of my knowledge.
- I understand that the District is relying upon this information to verify compliance with the construction requirements of District Rule 9510 Indirect Source Review, and that if such requirements are not met, additional fees may be required by Rule 9510.

Signature:	Date:
Print Name:	Title:
Company Name:	

Appendix B: Biological Evaluation

Biological Evaluation

DELANO-EARLIMART IRRIGATION DISTRICT

TURNIPSEED BASIN PHASE VI EXPANSION PROJECT

JUNE 2023

Jacob A. Rogers, Biologist
Shaylea Stark, Biologist
PROVOST & PRITCHARD CONSULTING GROUP | 455 W. FIR AVE, CLOVIS CA 93611

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Appendix C: IPaC Species List
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I. Introduction

The following technical report, prepared by Provost & Pritchard Consulting Group, 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 potential to occur within the proposed Delano-Earlimart Irrigation District (DEID) Turnipseed Basin Phase VI Expansion Project (or "project") and surrounding areas, and evaluates potential project-related impacts to those resources.

Project Description

The project is located at the intersection of Avenue 40 and Road 168 in southwest Tulare County, California, northeast of Delano and southwest of Earlimart, in the southern San Joaquin Valley (see **Figure 1**). DEID proposes to construct an 8-cell water recharge basin within a 170-acre parcel of land. A portion of this parcel was once 150 acres of former agricultural land, which was left to fallow and has turned into ruderal land. The remaining 20-acres was once an old cotton gin, which was removed, and is currently a vacant field. The recharge basin would provide sustainable management for surface and groundwater. The project would include several phases of construction, including equipment mobilization, excavation, and construction of perimeter berms. The project's Area of Potential Effect (APE) includes 170-acre parcel of land plus a 50-foot buffer surrounding the APE (see **Figure 2** and **Figure 3**).

Report Objectives

Construction activities such as those proposed by the project could potentially damage biological resources or habitats that are crucial for sensitive plant and wildlife species. Development may be regulated by state or federal agencies, and/or addressed by local regulatory agencies.

This report addresses issues related to the following:

1. The presence of sensitive biological resources on the APE, or with the potential to occur on the APE.
2. The federal, state, and local regulations regarding these resources.
3. 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:

1. Summarize all APE-specific information related to existing biological resources.
2. Make reasonable inferences about the biological resources that could occur on the APE based on habitat suitability and the proximity of the APE to a species' known range.
3. Summarize all state and federal natural resource protection laws that may be relevant to the implementation of the project.
4. Identify and discuss project impacts to biological resources likely to occur on the APE within the context of CEQA, NEPA, and/or state or federal laws.
5. Identify and publish 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.

Study Methodology

Mr. Rogers and Ms. Stark conducted an analysis of potential project-related impacts to biological resources based on the resources known to exist or with potential to exist within the APE. 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.

A reconnaissance-level field survey of the APE and surrounding areas was conducted on September 7, 2021, by Provost & Pritchard biologist, Jacob Rogers. The survey consisted of walking and driving the APE while identifying and noting land uses, biological habitats and communities, and plant and animal species encountered, and assessing habitats that could be suitable for various rare or protected plant and animal species wildlife species. Representative photographs of the APE were taken and are presented in **Appendix A**.

The field investigation 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 State Water Resources Control Board (SWRCB).

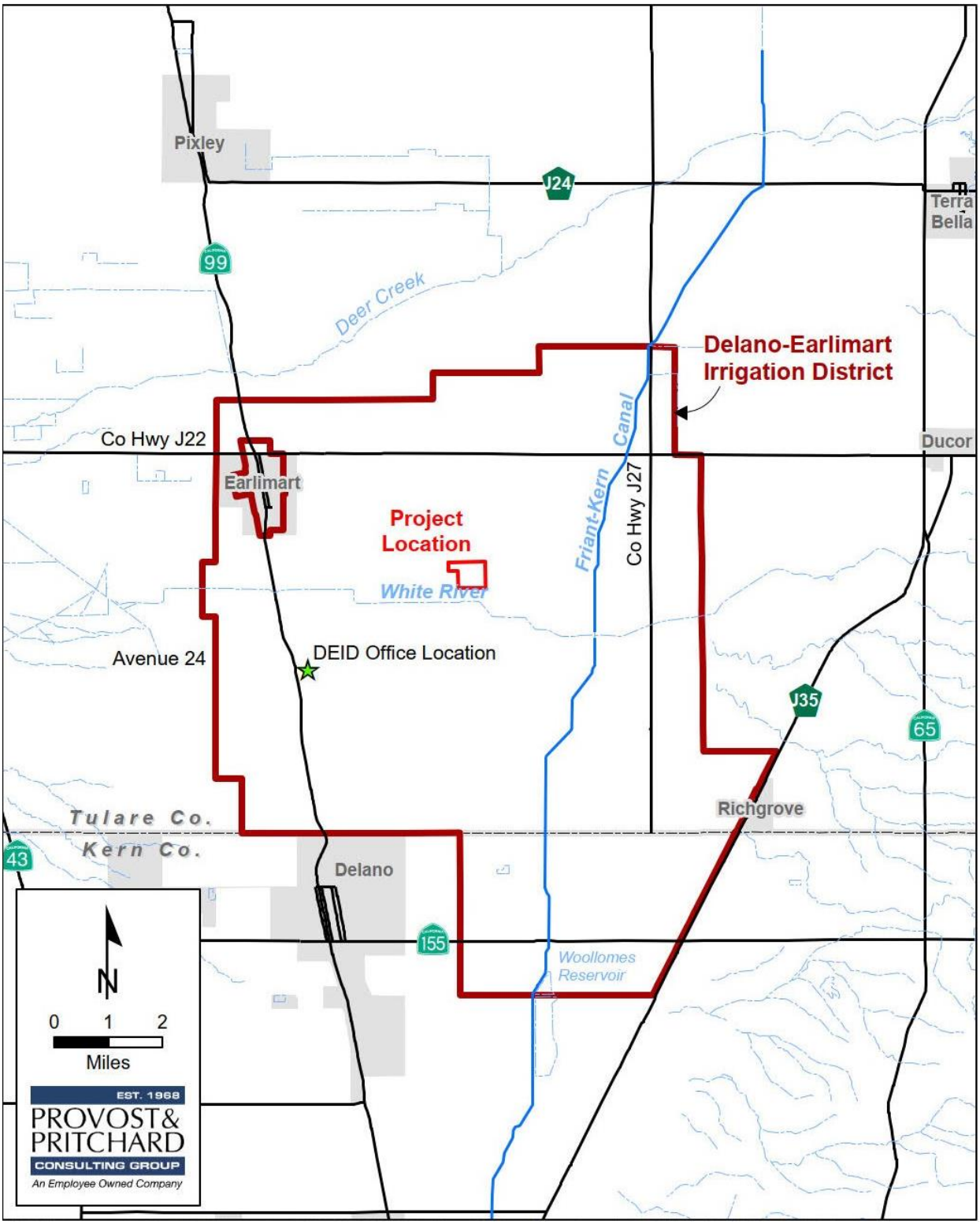

Figure 1. Regional Location with DEID District Boundary Map

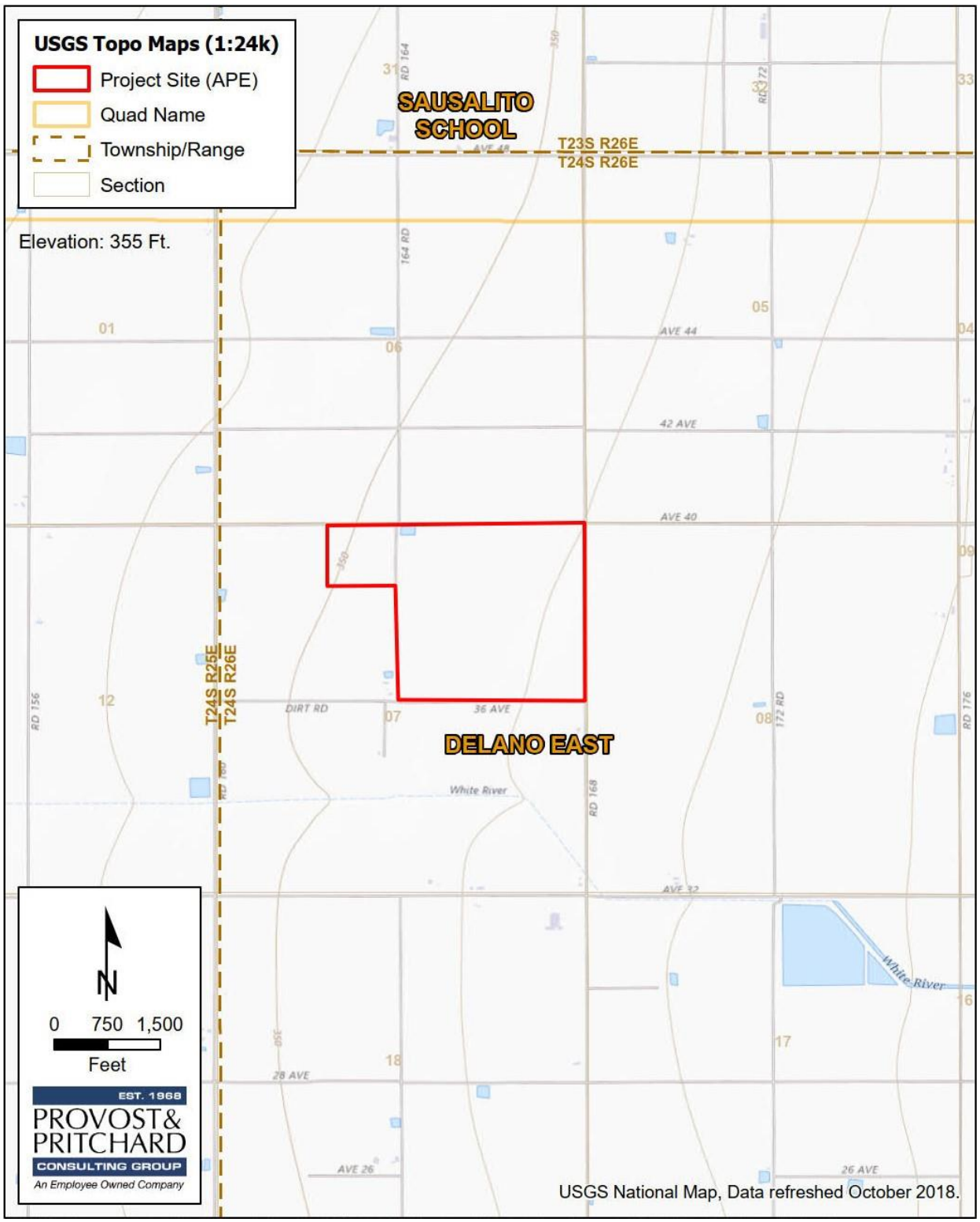

Figure 2. Topographic Quadrangle Map

Figure 3. Area of Potential Effect Map

II. Existing Conditions

Regional Setting

Topography

The topography of the APE is relatively flat and is at an elevation between 346 and 362 feet above mean sea level.

Climate

Most of the San Joaquin Valley experiences a Mediterranean climate. Warm, dry summers are followed by cool, moist winters. Summer temperatures range from 70 to 80 degrees Fahrenheit (°F), but often exceeds 90 °F. Winter minimum temperatures are near 40 °F. Near the project, the average annual precipitation is approximately 10 inches, falling mainly from October to April (Weatherspark, 2022).

Hydrology

A watershed is the topographic region that drains into a stream, river, or lake and can consist of many smaller subwatersheds. The nearest surface waters are White River which is 0.25 miles from the south portion of the APE. The Town of Richgrove-Town of Allensworth watershed is comprised of stormwater or snowmelt collected in upland areas which flows down into White River. This river has inputs from smaller streams as it flows down until it passes by the APE and connects with a few unnamed canals (USEPA, 2022). The APE lies within the Town of Richgrove-Town of Allensworth watershed; Hydrologic Unit Code (HUC): 1803000508 and a single subwatershed: Town of Earlimart subwatershed; HUC: 180300050803.

Soils

Three soil mapping units representing three soil types were identified within the APE and are listed in **Table 1** (see **Appendix D** for the Web Soil Survey Report). The soils and their core properties are displayed in the table below, according to the Major Land Resource Area of California. All three soils are primarily used for agriculture in the form of irrigated cropland and annual pasture.

Table 1. Soils of the Area of Potential Effect.

Soil	Soil Map Unit	Percent of APE	Major Component Hydric Soil	Minor Component Hydric Soil	Drainage	Permeability	Runoff
Nord	Fine sandy loam, 0 to 2 percent slopes	72.1%	No	Yes	Well drained	Moderate permeability	Negligible runoff
Tujunga	Loamy sand, 0 to 2 percent slopes	27.8%	No	Yes	Somewhat excessively drained	Moderate permeability	Negligible runoff
Yettem	Sandy loam, 0 to 2 percent slopes	0.1%	No	Yes	Well drained	Moderately rapid permeability	Very low

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. None of the major soil mapping units were identified as hydric, but some of the minor soil mapping units located on the APE were identified as hydric. Though some of the minor units were identified as hydric the soils within the APE are considered predominantly nonhydric.

Biotic Habitats

One biotic habitat, ruderal, was observed within the project site. This habitat and its constituent plant and animal species are described in more detail in the following section.

Ruderal

As illustrated in **Figure 3**, the APE includes 170 acres of ruderal land that is still regularly disced for vegetation removal. The APE was comprised of bare ground, sparse vegetation, and many large piles of chopped agriculture trees. Although limited, vegetation within the APE includes Bermuda grass (*Cynodon dactylon*), prickly lettuce (*Lactuca serriola*), sacred datura (*Datura wrightii*), and smooth brome (*Bromus inermis*).

The survey of the APE resulted in the identification of bird species including house finch (*Haemorhous mexicanus*), killdeer (*Charadrius vociferus*), red-tailed hawk (*Buteo jamaicensis*), and northern mockingbird (*Mimus polyglottos*).

A few fossorial mammal burrows were observed within the APE. Due to the shape and size of burrows, they were most likely created by California ground squirrel (*Otospermophilus beecheyi*) and Botta's pocket gopher (*Thomomys bottae*). A nest box was present on the southern boundary of the APE but was determined to be inactive at the time of the survey.

The APE is also surrounded by expansive tracts of diverse agriculture in every direction.

Natural Communities of Special Concern and Riparian Habitat

Natural communities of special concern are those of limited distribution, distinguished by significant biological diversity, or home to special status species. CDFW is responsible for the classification and mapping of 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. According to CNDDB, there are no recorded observations of natural communities of special concern with potential to occur within the APE or vicinity. 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 habitat in California. No waterways or riparian habitat were observed within or adjacent to the APE.

Designated Critical Habitat of the APE

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 CNDDB and IPaC, designated critical habitat is absent from the APE 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 APE does not contain features that would be likely to function as wildlife movement corridors. Further, the project is located in an area often disturbed by human activities, which would discourage dispersal and migration.

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 APE.

Special Status Plants and Animals

California contains several rare plant and animal species. In this context, "rare" is defined as species known to have low populations or limited distributions. As human population grows, urban expansion encroaches on the already-limited suitable habitat for rare species. This results in sensitive species becoming increasingly more vulnerable to extirpation. State and federal regulations have provided 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 a list of native plants considered rare, threatened, or endangered. Collectively these plants and animals are referred to as "special status species."

A query of the CNDDB for occurrences of special status animal and plant species was conducted for the *Delano East* 7.5-minute U.S. Geological Survey (USGS) quadrangle, which contains the APE, and for the eight surrounding quadrangles: *Delano West, Pond, McFarland, Deepwell Ranch, Richgrove, Pixley, Ducor*, and *Sausalito School*. These species, and their potential to occur within the APE, 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 2. 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 are known to be within the APE.

Table 2. List of Special Status Animals with Potential to Occur on the APE and/or in the Vicinity.

Species	*Status**	*Habitat*	*Occurrence within the APE*
American badger (*Taxidea taxus*)	CSSC	Grasslands, savannas, and mountain meadows near timberline are preferred. Most abundant in drier open spaces of shrub and grassland. Burrows in soil.	**Unlikely.** No American badger individuals, sign, or suitable burrows were observed during the field survey. The APE is still maintained making it unlikely this species would occur onsite. The nearest recorded observation of this species corresponds to an undated historic collection at an unknown location near Earlimart, which is approximately 5 miles northwest of the APE.
Bakersfield legless lizard *(Anniella grinnelli)*	CSSC	General habitat is sandy with herbaceous cover and scattered shrubs in grassland, sand/dune, or chaparral. Burrows in soil. Fallen logs, woody debris, and leaf litter under trees and bushes in sunny areas often indicate suitable habitat.	**Unlikely.** No Bakersfield legless lizard individuals were observed during the biological survey. The disturbed habitats of the APE are generally unsuitable for this species. The nearest recorded observation of this species was reported in 2017 along Deer Creek, approximately 9.5 miles northwest of the APE.

Species	*Status**	*Habitat*	*Occurrence within the APE*
Blunt-nosed leopard lizard ***(Gambelia sila)***	FE, CE, CFP	Inhabits semi-arid grasslands, alkali flats, low foothills, canyon floors, large washes, and arroyos, usually on sandy, gravelly, or loamy substrate, sometimes on hardpan. Often found where there are abundant rodent burrows in dense vegetation or tall grass. Cannot survive on lands under cultivation. 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 pre-existing rodent burrows for hibernation and reproduction.	**Absent.** No blunt-nosed leopard lizard individuals or suitable habitat were observed during the biological survey. The APE is regularly maintained, and surrounding areas are frequently cultivated agricultural lands that are unsuitable for this species.
Burrowing owl ***(Athene cunicularia)***	CSSC	Resides in open, dry annual or perennial grasslands, deserts, and scrublands with low growing vegetation. Nests underground in existing burrows created by mammals, most often ground squirrels.	**Unlikely.** The disturbed habitats of the APE are unsuitable for this species. Nesting and foraging habitat is absent due to incompatible topography and/or vegetative cover. The APE is still maintained making it unlikely this species would occur onsite. At most, a burrowing owl individual could potentially pass over or through the site but would not be expected to nest or forage within or adjacent to proposed impact areas. The presence of raptors in the vicinity makes this site generally unsuitable for burrowing owl.
Buena Vista Lake ornate shrew (*Sorex ornatus relictus*)	FE, CSSC	Prefers moist soils, inhabiting marshes, swamps, and riparian shrublands. Uses stumps, logs, and leaf litter for cover.	**Absent.** Suitable habitat for this species is absent from the APE.
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 up to 100 miles from roost/nest site for carrion.	**Unlikely.** Suitable nesting habitat for this species is absent from the APE. This species could fly over or potentially forage but would not be expected to be impacted by project activities.
Coast horned lizard ***(Phrynosoma blainvillii)***	CSSC	Found in grasslands, coniferous forests, woodlands, and chaparral, primarily in open areas with patches of loose, sandy soil and low-lying vegetation in valleys, foothills, and semi-arid mountains. Frequently found near ant hills and along dirt roads	**Absent.** Suitable habitat for this species is absent from the APE.

Species	*Status**	*Habitat*	*Occurrence within the APE*
		in lowlands along sandy washes with scattered shrubs.	
Crotch bumble bee (*Bombus crotchii*)	CCE	Occurs throughout coastal California, as well as east to the Sierra-Cascade crest, and south into Mexico. Food plant genera include *Antirrhinum*, *Phacelia*, *Clarkia*, *Dendromecon*, *Eschscholzia*, and *Eriogonum*.	**Unlikely.** The APE does not provide suitable foraging or overwintering habitat to support this species. This species could potentially fly over the site while travelling to more suitable habitat but would not be impacted by project activities.
Kern Brook lamprey *(Entosphenus hubbsi)*	CSSC	Silty backwaters of large rivers in the Sierra Nevada foothills region. Requires slight flow and shallow pools with sand, gravel, rubble, and mud substrate in areas where summer temperatures rarely exceed 77 degrees Fahrenheit.	**Absent.** Suitable habitat for this species is absent from the APE.
Monarch butterfly (*Danaus plexippus*)	FC	Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby. Larval host plants consist of milkweeds (*Asclepias* sp.). Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico.	**Unlikely.** The APE does not provide suitable habitat to support this species. This species could potentially fly over the site while travelling to more suitable habitat but would not be impacted by project activities.
San Joaquin coachwhip (*Masticophis flagellum ruddocki*)	CSSC	Found in open dry habitats with little or no tree cover in valley grassland and saltbush scrub communities in the San Joaquin Valley. Relies on mammal burrows for refuge and oviposition sites.	**Absent.** Habitats of the APE are unsuitable for this species. The nearest recorded observation was reported in 1992 in undisturbed grassland habitat approximately 8 miles west-northwest of the APE.
San Joaquin kit fox *(Vulpes macrotis mutica)*	FE, CT	Underground dens with multiple entrances in alkali sink, valley grassland, and woodland in valleys and adjacent foothills.	**Unlikely.** There are 67 recorded observations of this species in the vicinity of the project; however, only 7 of these observations occurred within the past 25 years. The APE is located approximately 38 miles north-northeast of the nearest core population (Western Kern County). Although the APE is not within a core recovery area, satellite recovery area, or a linkage recovery area, a kit fox could potentially pass through the APE.
Swainson's hawk *(Buteo swainsoni)*	CT	Nests in large trees in open areas adjacent to grasslands, grain or alfalfa fields, or livestock pastures suitable for supporting rodent populations.	**Unlikely.** Swainson's hawks are generally uncommon in southeast Tulare County. Suitable nest trees are absent from the APE, although suitable foraging habitat is present. The nearest recorded observation of this species was reported along Deer Creek, approximately 12 miles northwest of the APE.

Species	*Status**	*Habitat*	*Occurrence within the APE*
Tipton kangaroo rat *(Dipodomys nitratoides nitratoides)*	FE, CE	Often found in grassland and saltbush shrubland. This species needs soft friable soils to dig their burrows.	**Unlikely.** No Tipton kangaroo rat individuals or sign were observed during the field survey. The disturbed habitats of the APE are generally unsuitable for this species. The nearest recorded observation of this species in the vicinity was reported in undisturbed grassland habitats of Allensworth Ecological Reserve, approximately 8 miles west of the APE.
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 on dairy farm forage fields.	**Unlikely.** Suitable nesting habitat is absent and foraging habitat is marginal, at best.
Vernal pool fairy shrimp *(Branchinecta lynchi)*	FT	Occupies vernal pools, clear to tea-colored water, in grass or mud-bottomed swales, and basalt depression pools.	**Absent.** Suitable soils and vernal pool habitat are absent from the APE.
Western spadefoot *(Spea hammondii)*	CSSC	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 pools or temporary wetlands, lasting a minimum of three weeks, which do not contain bullfrogs, fish, or crayfish are necessary for breeding.	**Unlikely.** Habitat suitable for this species is absent from the APE.

Table 3. List of Special Status Plants with Potential to Occur on the APE and/or in the Vicinity.

Species	*Status**	*Habitat*	*Occurrence within the APE*
Alkali mariposa-lily (*Calochortus striatus*)	CNPS 1B	Found in the Sierra Nevada foothills, the Desert Mountains, and the Mojave Desert in alkaline meadows, ephemeral washes, and creosote-bush scrub in chaparral, alkali scrub communities, meadows, and seeps at elevations between 230 feet and 5,300 feet. Sometimes associated with vernal pools. Blooms April–June.	**Absent.** Habitat required by this species is absent from the APE.
Alkali-sink goldfields (*Lasthenia chrysantha*)	CNPS 1B	Found in vernal pool and wet saline flat habitats. Occurrences documented in the Central Valley at elevations below 656 feet. Blooms February – April.	**Absent.** Vernal pool soils and habitat are absent from APE.

Species	*Status**	*Habitat*	*Occurrence within the APE*
Brittlescale (*Atriplex depressa*)	CNPS 1B	Found in the Central Valley in alkaline or clay soils, typically in meadows or annual grassland at elevations below 1,050 feet. Sometimes associated with vernal pools. Blooms June–October.	**Absent.** The disturbed habitats of the APE are unsuitable for this species.
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 230 feet and 6,100 feet. Blooms February–April.	**Absent.** The disturbed habitats of the APE are unsuitable for this species.
Coulter's goldfields (*Lasthenia glabrata* ssp. *Coulteri*)	CNPS 1B	Found on alkaline or saline soils in vernal pools and playas in grassland at elevations below 4,500 feet. Blooms April–May.	**Absent**. Habitat required by this species is absent from the APE.
Earlimart orache (*Atriplex cordulata* var. *erecticaulis*)	CNPS 1B	Found in the San Joaquin Valley and adjacent foothills in saline or alkaline soils, at elevations below 375 feet. Blooms August–September.	**Absent.** The disturbed habitats of the APE are unsuitable for this species.
Kern mallow (*Eremalche parryi* ssp. *kernensis*)	CNPS 1B, FE	Occurs in the San Joaquin Valley and the Inner South Coast Ranges in eroded hillsides and alkali flats; often on dry, open, sandy to clay soils and within alkali scrub communities. Occurs at elevations between 200 feet and 4,250 feet. Blooms March–May.	**Absent**. The disturbed habitats of the APE are unsuitable for this species.
Lesser saltscale (*Atriplex minuscula*)	CNPS 1B	Found in the San Joaquin Valley and adjacent foothills in sandy, alkaline soils in alkali scrub communities at elevations below 750 feet. Blooms April–October.	**Absent**. Habitats required by this species are absent from the APE.
Lost Hills crownscale (*Atriplex coronata* var. *vallicola*)	CNPS 1B	Found in the San Joaquin Valley in dried ponds and alkaline soils in alkali scrub, valley and foothill grassland, and vernal pools at elevations below 2,900 feet. Blooms April–September.	**Absent**. Habitats required by this species are absent from the APE. There have been no recorded observations of this species in the vicinity in over 30 years.
Munz's tidy-tips (*Layia munzii*)	CNPS 1B	Found in the San Joaquin Valley in alkaline clay soils; often along hillsides in alkali scrub and sometimes valley and foothill grassland. Occurs at elevations between 145 feet and 2,625 feet Blooms March–April.	**Absent**. Habitats required by this species are absent from the APE. There have been no recorded observations of this species in the vicinity in over 25 years.

Species	*Status**	*Habitat*	*Occurrence within the APE*
Recurved larkspur (*Delphinium recurvatum*)	CNPS 1B	Occurs in poorly drained, fine, alkaline soils in grassland and alkali scrub communities at elevations between 100 feet and 2,600 feet. Blooms March–June.	**Absent**. Habitat required by this species are absent from the APE.
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 325 feet and 2,950 feet. Blooms March–May.	**Absent**. Habitat required by this species are absent from the APE.
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 180 feet and 2,750 feet. Blooms February–May.	**Absent**. The disturbed habitats of the APE are generally unsuitable for this species. There have been no recorded observations of this species in the vicinity in over 100 years.
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 feet and 4,160 feet. Blooms April–July.	**Absent**. Vernal pools are absent, and the disturbed habitats of the APE are generally unsuitable for this species. There have been no recorded observations of this species in the vicinity in over 50 years.
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 330 feet. Blooms June–October.	**Absent**. Habitat required by this species are absent from the APE.
Vernal pool smallscale (*Atriplex persistens*)	CNPS 1B	Occurs in the Central Valley in alkaline vernal pools at elevations below 375 feet. Blooms June–September.	**Absent**. Vernal pools are absent, and the disturbed habitats of the APE are generally unsuitable for this species.

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

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

STATUS CODES

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

CNPS LISTING

1B	Plants Rare, Threatened, or Endangered in California and elsewhere.

III. Impacts and Mitigation

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.

Relevant Goals, Policies, and Laws

Tulare County General Plan

The Tulare County General Plan 2030 Agriculture and Environmental Resources Management Elements contain the following goals and policies related to the project:

3. Agriculture

AG-1.7 **Preservation of Agricultural Lands**. The County shall promote the preservation of its agricultural economic base and open space resources through the implementation of resource management programs such as the Williamson Act, Rural Valley Lands Plan, Foothill Growth Management Plan or similar types of strategies and the identification of growth boundaries for all urban areas located in the County.

AG-1.17 **Agricultural Water Resources.** The County shall seek to protect and enhance surface water and groundwater resources critical to agriculture.

4. Land Use

C. Environment Component

Principle 1: Protection Protect the supply and quality of urban, agricultural, and environmental water serving the County.

Principle 3: Recharge Identify and encourage the development of locations where water recharge systems can be developed to replenish water supplies.

7. Scenic Landscapes

SL-1.3 **Watercourses.** The County shall protect visual access to, and the character of, Tulare County's scenic rivers, lakes, and irrigation canals by:

1. Locating and designing new development to minimize visual impacts and obstruction of views of scenic watercourses from public lands and rights-of-way, and

2. Maintaining the rural and natural character of landscape viewed from trails and watercourses used for public recreation.

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" often changes from one presidential administration to the next. The current definition, established under the new rule that became effective on March 20, 2023, has established measurable distances for qualifying jurisdictional waters that no administration has set before. 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. The extent of jurisdiction has been defined in the Code of Federal Regulations but has also been subject to interpretation by the federal courts. Jurisdictional waters generally include the following categories:

- Traditional Navigable Waters - all waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- Territorial Seas - waters that extend three miles out to sea from the coast;
- Interstate Waters - waters including lakes, streams, or wetlands that cross or form part of state boundaries;
- Impoundments - impounded waters created in or from "waters of the United States;"
- Tributaries - waters that ultimately flow into jurisdictional water bodies. Tributaries are jurisdictional if they meet either the relatively permanent standard or significant nexus standard;
- Adjacent Wetlands - wetlands next to, abutting, or near jurisdictional waters, and most often within a few hundred feet of jurisdictional waters. These wetlands are jurisdictional if they meet either the relatively permanent standard or the significant nexus standard;
- of waters identified in paragraphs (a)(1)-(4) (i.e., the bulleted items above).
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce;
- All impoundments of waters otherwise defined as waters of the United States under the definition;

Familiar and longstanding exclusions under the new definition include the following:

- Prior converted cropland;
- Waste treatment systems, including treatment ponds or lagoons;

- 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;
- Swales and erosional features (ex. gullies and small washes);

As determined by the United States Supreme Court in its 2001 Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers (SWANCC) decision, channels and wetlands isolated from other jurisdictional waters cannot be considered jurisdictional on the basis of their use, hypothetical or observed, by migratory birds. Similarly, in its 2006 consolidated Carabell/Rapanos decision, the Supreme Court ruled that a significant nexus between a wetland and other navigable waters must exist for the wetland itself to be considered a navigable and therefore jurisdictional water. Furthermore, the Supreme Court clarified that the United States Environmental Protection Agency (USEPA) and the USACE will not assert jurisdiction over ditches excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

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.

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 nesting migratory birds and raptors.

Project-Related Mortality and/or Nest Abandonment of Migratory Birds, Raptors, and Special Status Birds

The APE contains suitable nesting and/or foraging habitat for ground nesting avian species. Killdeer were observed during the survey; these birds are known to build nests on bare ground or compacted dirt roads. Although no nests were observed at the time of survey, trees near the APE and the nest box have the potential to host nesting birds. Raptors could potentially use the ruderal area for foraging.

If birds are nesting within the APE during construction, they have the potential to be injured or killed by project-related activities. In addition to the direct "take" of nesting birds, birds nesting in these areas could be disturbed by project-related activities resulting in nest abandonment. Projects that adversely affect the nesting success of protected birds or result in the mortality of these birds would be a violation of state and federal laws and considered a potentially significant impact under CEQA and NEPA.

While foraging habitat for migratory birds and raptors is present on the APE, suitable foraging habitat is located adjacent to the APE and within the vicinity of the APE and loss of the foraging habitat from implementation of the project is not considered a significant impact.

Implementation of the following measures will reduce potential impacts to protected nesting birds to a less than significant level under CEQA and NEPA and will ensure compliance with state and federal laws protecting these bird species.

> ***Mitigation Measure BIO-1 (Avoidance):*** The project's construction activities will occur, if feasible, between September 16 and January 31 (outside of nesting bird season) in an effort to avoid impacts to nesting birds.
>
> ***Mitigation Measure BIO-2 (Pre-construction Surveys):*** If activities must occur within the nesting bird season (February 1 to September 15), a qualified biologist will conduct a pre-construction for nesting bird survey within five (5) days prior to the start of construction. The survey shall include the APE and up to 50 feet outside of the APE for nesting migratory birds and up to 450 feet outside of the APE for nesting raptors. Raptor nests are considered "active" upon the nest-building stage. If no active nests are observed, no further mitigation is required.
>
> ***Mitigation Measure BIO-3 (Establish Buffers):*** On discovery of any active nests near work areas, the qualified biologist will determine appropriate avoidance buffer distances based on applicable CDFW and/or USFWS guidelines, the biology of the species, conditions of the nest(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.

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 USFWS IPaC list generated on June 5, 2023 (se**e Appendix C**), in accordance with Section 7 of the Endangered Species Act.

Table 4. Section 7 Determinations

Species	Determination	Rationale for Determination
Blunt-nosed leopard lizard (*Gambelia sila*)	**No effect**	**Habitat disturbed.** The APE and surrounding areas are regularly maintained making it unsuitable for this species.
Monarch butterfly (*Danaus plexippus*)	**No effect**	**Habitat absent.** The APE does not provide suitable habitat to support this species.
San Joaquin kit fox (*Vulpes macrotis mutica*)	**No effect**	**Habitat disturbed.** The APE is regularly maintained, and surrounding areas are frequently cultivated agricultural lands that are unsuitable for this species.
Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*)	**No effect**	**Habitat absent.** No Tipton kangaroo rat individuals or sign were observed during the field survey. The disturbed habitats of the APE are generally unsuitable for this species.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	**No effect**	**Habitat absent.** Suitable soils and vernal pool habitat are absent from the APE.

Less Than Significant Project-Related Impacts

Project-Related Impacts to Special Status Animal Species Absent From, or Unlikely to Occur on, the APE

Of the 17 regionally occurring special status animal species, all 17 are considered absent from or unlikely to occur within the APE due to past or ongoing disturbance and/or the absence of suitable habitat. These species include: American badger, Bakersfield legless lizard, blunt-nosed leopard lizard, burrowing owl, Buena Vista Lake ornate shrew, California condor, coast horned lizard, Crotch bumble bee, Kern Brook lamprey, monarch butterfly, San Joaquin coachwhip, San Joaquin kit fox, Swainson's hawk, Tipton kangaroo rat, tricolored blackbird, vernal pool fairy shrimp, and western spadefoot.

Since it is unlikely these species would occur within the APE, implementation of the project should have no impact on these 17 special status species through construction mortality, disturbance, or loss of habitat. Mitigation measures are not warranted.

At the time of the survey, special status fishes were not considered present or likely to occur within the APE. The APE lacks aquatic habitat and White River is outside of the APE and would not be impacted by project activities. Mitigation measures are not warranted.

Project-Related Impacts to Special Status Plant Species Absent From, or Unlikely to Occur on, the APE

Of the 16 regionally occurring special status plant species, all 16 are considered absent from or unlikely to occur within the APE due to past or ongoing disturbance and/or the absence of suitable habitat. These species include: alkali mariposa lily, alkali-sink goldfields, brittlescale, California jewelflower, Coulter's goldfields, Earlimart orache, Kern mallow, lesser saltscale, Lost Hills crownscale, Munz's tidy-tips, recurved larkspur, San Joaquin adobe sunburst, San Joaquin woollythreads, spiny-sepaled button-celery, subtle orache, and vernal pool smallscale.

Since it is unlikely these species would occur within the APE, implementation of the project should have no impact on these 16 special status plant 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

Riparian habitat is absent from the APE and adjacent lands. There are no CNDDB-designated "natural communities of special concern" recorded within the APE or surrounding lands. Mitigation is not warranted.

Project-Related Impacts to Regulated Waters, Wetlands, and Water Quality

Typical wetlands, vernal pools, and other waters were not observed within the APE at the time of the biological survey. No mitigation is warranted.

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

Project-Related Impacts to Wildlife Movement Corridors and Native Wildlife Nursery Sites.

The APE does not contain features that would be likely to function as wildlife movement corridors or native wildlife nursery sites. Furthermore, the project is located in an area regularly disturbed by humans which would discourage dispersal and migration. Therefore, the project would have no impact on wildlife movement corridors or native wildlife nursery sites, and no additional mitigation measures are necessary.

Project-Related Impacts to Critical Habitat.

Designated critical habitat is absent from the APE and surrounding lands. Therefore, there will be no impact to critical habitat, and mitigation is 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 habitat conservation plans (HCPs) or a Natural Community Conservation Plan (NCCP) in the project vicinity.

Coastal Zone and Coastal Barriers Resources Act

The project would not be located within the coastal zone. The project would not impact or be located within or near the Coastal Barrier Resources System or its adjacent wetlands, marshes, estuaries, inlets, and near-shore waters. Mitigation is not warranted.

Project-Related Impact to Essential Fish Habitat

Essential Fish Habitat (EFH) and Habitat Areas of Particular Concern (HAPC) are absent from the APE 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 is not warranted.

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Appendix A: Representative Photos of the Project Area

DELANO-EARLIMART IRRIGATION DISTRICT

TURNIPSEED BASIN PHASE VI EXPANSION PROJECT

Photograph 1

A general overview of the APE, facing south. Photograph was taken from the center of APE.

Photograph 2

A general overview of the APE, facing east. Photograph was taken from the center of APE.

Photograph 3

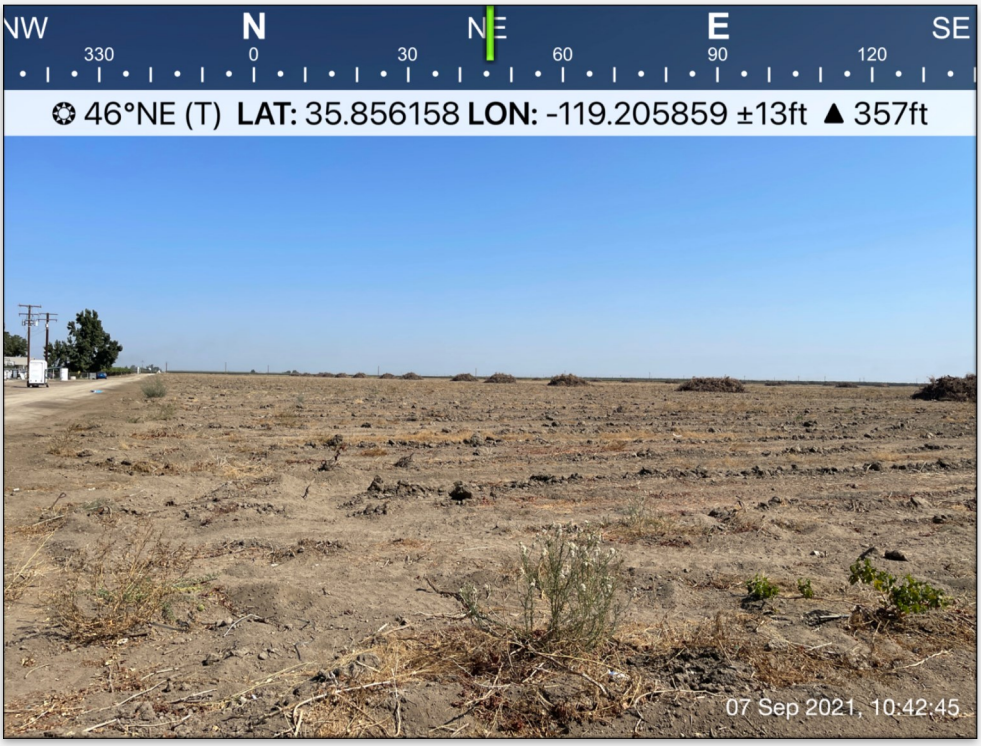
The eastern boundary of the APE, shown facing north. Photograph shows general overview of ruderal land and surrounding agriculture.

Photograph 4

The southern boundary of the APE, shown facing west. Photograph shows general overview of ruderal land and surrounding agriculture.

Photograph 5

An inactive owl box, with no signs of recent activity, located on the southern boundary of the APE.

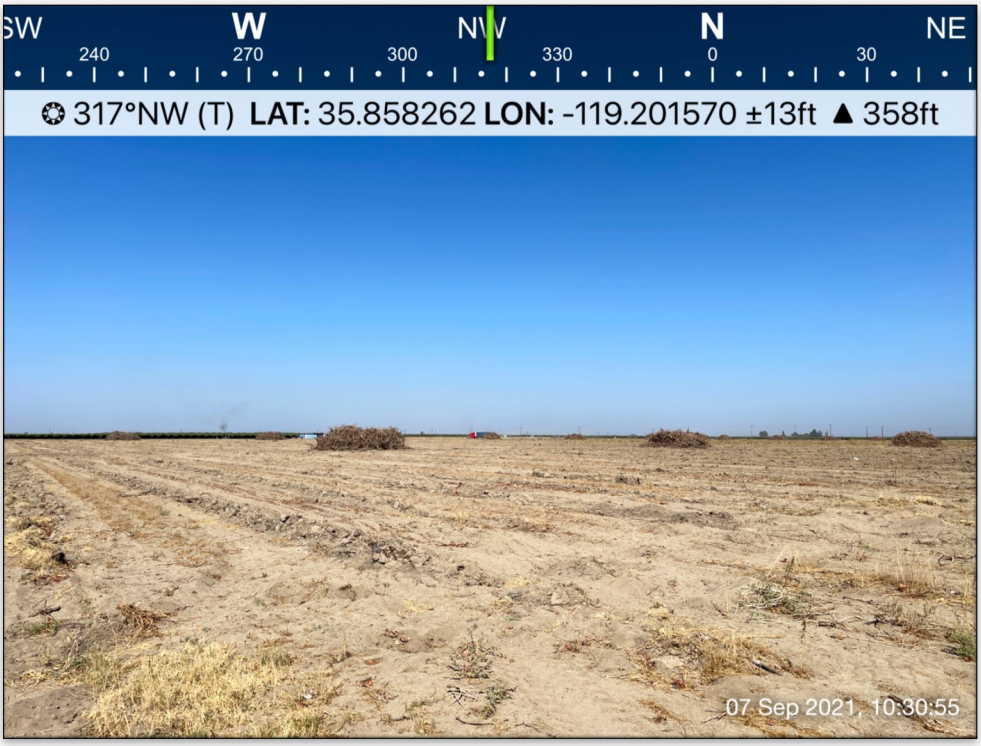


Photograph 6

A general overview of the APE, shown facing northeast. Photograph was taken from southwest corner of APE.

Photograph 7

Photograph was taken facing northeast. Photograph shows disturbance from west boundary of APE



Photograph 8

Photograph was taken facing southeast. Photograph shows large blue oak trees southeast of the APE boundary.

Appendix B: CNDDB 9-Quad Species List

DELANO-EARLIMART IRRIGATION DISTRICT

TURNIPSEED BASIN PHASE VI EXPANSION PROJECT

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Delano East (3511972) OR Delano West (3511973) OR Pond (3511963) OR McFarland (3511962) OR Deepwell Ranch (3511961) OR Richgrove (3511971) OR Pixley (3511983) OR Ducor (3511981) OR Sausalito School (3511982))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
alkali mariposa-lily *Calochortus striatus*	PMLIL0D190	None	None	G3	S2S3	1B.2
alkali-sink goldfields *Lasthenia chrysantha*	PDAST5L030	None	None	G2	S2	1B.1
American badger *Taxidea taxus*	AMAJF04010	None	None	G5	S3	SSC
Bakersfield legless lizard *Anniella grinnelli*	ARACC01050	None	None	G2G3	S2S3	SSC
blunt-nosed leopard lizard *Gambelia sila*	ARACF07010	Endangered	Endangered	G1	S1	FP
brittlescale *Atriplex depressa*	PDCHE042L0	None	None	G2	S2	1B.2
burrowing owl *Athene cunicularia*	ABNSB10010	None	None	G4	S3	SSC
California jewelflower *Caulanthus californicus*	PDBRA31010	Endangered	Endangered	G1	S1	1B.1
coast horned lizard *Phrynosoma blainvillii*	ARACF12100	None	None	G4	S4	SSC
Coulter's goldfields *Lasthenia glabrata ssp. coulteri*	PDAST5L0A1	None	None	G4T2	S2	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
Kern mallow *Eremalche parryi ssp. kernensis*	PDMAL0C031	Endangered	None	G3G4T3	S3	1B.2
lesser saltscale *Atriplex minuscula*	PDCHE042M0	None	None	G2	S2	1B.1
Lost Hills crownscale *Atriplex coronata var. vallicola*	PDCHE04371	None	None	G4T3	S3	1B.2
molestan blister beetle *Lytta molesta*	IICOL4C030	None	None	G2	S2	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Morrison's blister beetle *Lytta morrisoni*	IICOL4C040	None	None	G1G2	S2	
Munz's tidy-tips *Layia munzii*	PDAST5N0B0	None	None	G2	S2	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 coachwhip *Masticophis flagellum ruddocki*	ARADB21021	None	None	G5T2T3	S3	SSC
San Joaquin kit fox *Vulpes macrotis mutica*	AMAJA03041	Endangered	Threatened	G4T2	S2	
San Joaquin pocket mouse *Perognathus inornatus*	AMAFD01060	None	None	G2G3	S2S3	
San Joaquin tiger beetle *Cicindela tranquebarica joaquinensis*	IICOL0220E	None	None	G5T1	S1	
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
subtle orache *Atriplex subtilis*	PDCHE042T0	None	None	G1	S1	1B.2
Swainson's hawk *Buteo swainsoni*	ABNKC19070	None	Threatened	G5	S4	
Tipton kangaroo rat *Dipodomys nitratoides nitratoides*	AMAFD03152	Endangered	Endangered	G3T1T2	S1S2	
tricolored blackbird *Agelaius tricolor*	ABPBXB0020	None	Threatened	G1G2	S2	SSC
Valley Saltbush Scrub *Valley Saltbush Scrub*	CTT36220CA	None	None	G2	S2.1	
Valley Sink Scrub *Valley Sink Scrub*	CTT36210CA	None	None	G1	S1.1	
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: 39

Appendix C: IPaC Species List

DELANO-EARLIMART IRRIGATION DISTRICT

TURNIPSEED BASIN PHASE VI EXPANSION PROJECT

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: June 05, 2023
Project Code: 2023-0089619
Project Name: Delano-Earlimart Irrigation District Turnipseed Basin Phase VI Expansion 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 ECOS-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 ECOS-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:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.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/birds/policies-and-regulations.php.

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/birds/bird-enthusiasts/threats-to-birds.php.

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/birds/policies-and-regulations/executive-orders/e0-13186.php.

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: 2023-0089619

Project Name: Delano-Earlimart Irrigation District Turnipseed Basin Phase VI Expansion Project

Project Type: Water Supply Facility - New Constr

Project Description: DEID proposes to construct an 8-cell water recharge basin within a 170-acre parcel of land. The recharge basin would provide sustainable management for surface and groundwater. The Project would include several phases of construction, including equipment mobilization, excavation, and construction of perimeter berms.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@35.85840535,-119.20150304606275,14z

Counties: Tulare County, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 7 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.

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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

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: Provost & Pritchard Consulting
Name: Shaylea Stark
Address: 455 W Fir Ave
City: Clovis
State: CA
Zip: 93612
Email sstark@ppeng.com
Phone: 5594492700

Appendix D: NRCS Web Soil Survey Report

DELANO-EARLIMART IRRIGATION DISTRICT

TURNIPSEED BASIN PHASE VI EXPANSION PROJECT

United States Department of Agriculture

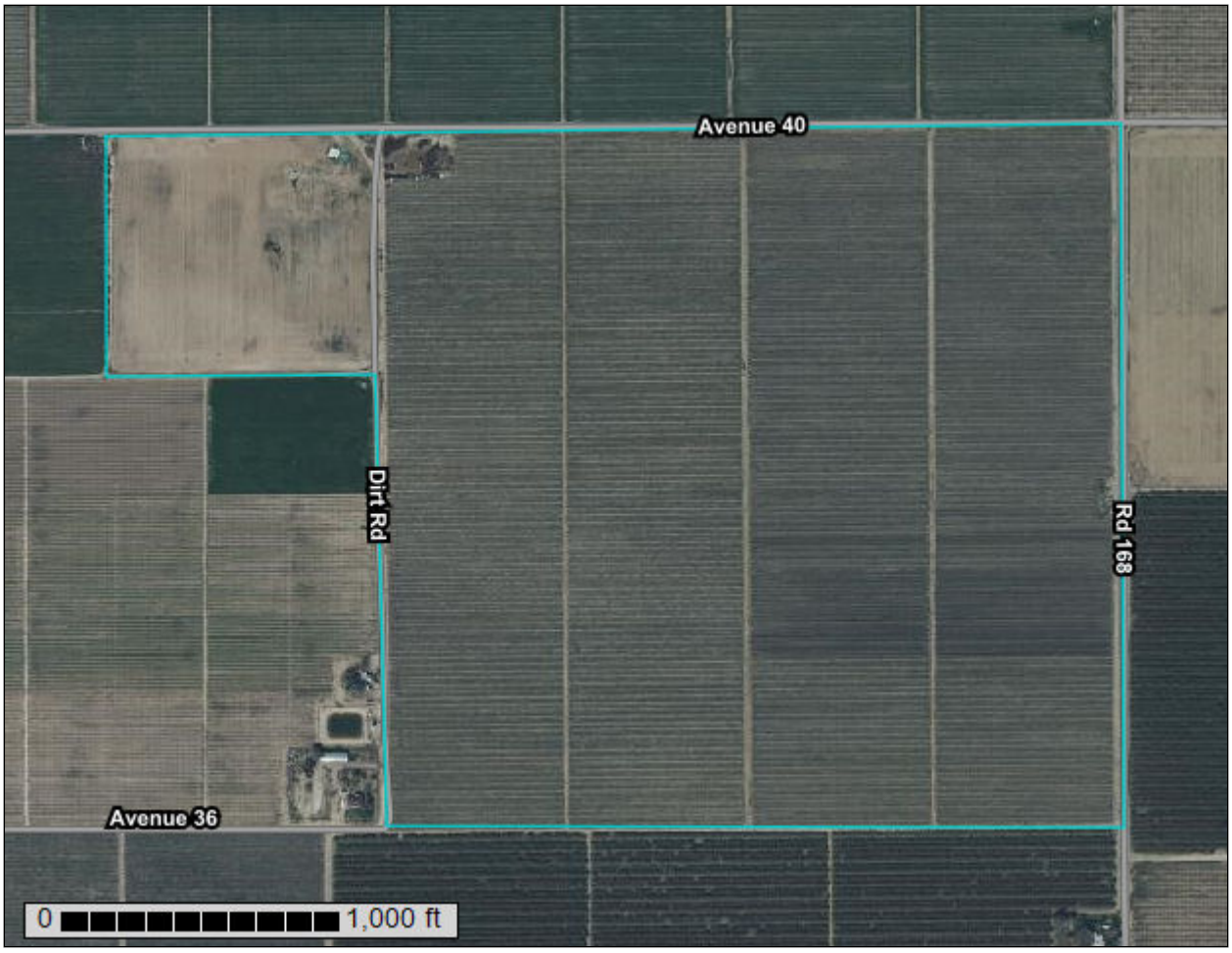
NRCS

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

Turnipseed Basin Phase VI Expansion Project



January 28, 2022

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.

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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 Scale: 1:6,510 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 50 100 200 300

Feet
0 300 600 1200 1800

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

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 15, Sep 3, 2021

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

Date(s) aerial images were photographed: Mar 12, 2019—Mar 14, 2019

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
130	Nord fine sandy loam, 0 to 2 percent slopes	124.7	72.1%
138	Tujunga loamy sand, 0 to 2 percent slopes	48.0	27.8%
143	Yettem sandy loam, 0 to 2 percent slopes	0.2	0.1%
Totals for Area of Interest		**172.9**	**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

130—Nord fine sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hp51
Elevation: 190 to 520 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 61 to 64 degrees F
Frost-free period: 250 to 275 days
Farmland classification: Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Nord and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nord

Setting

Landform: Alluvial fans, flood plains
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Convex, linear
Parent material: Alluvium derived from mixed

Typical profile

Ap - 0 to 11 inches: fine sandy loam
C1 - 11 to 38 inches: stratified sandy loam to loam
C2 - 38 to 50 inches: stratified loamy coarse sand to coarse sandy loam
2Btb - 50 to 72 inches: stratified sandy loam to silt loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches; More than 80 inches
Drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Very rare
Frequency of ponding: None
Calcium carbonate, maximum content: 4 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water supply, 0 to 60 inches: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 4c
Hydrologic Soil Group: B
Ecological site: R017XY906CA - Non-Alkali San Joaquin Valley Desert
Hydric soil rating: No

Minor Components

Grangeville, saline-sodic
Percent of map unit: 3 percent
Landform: Alluvial fans, flood plains
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: Yes

Hanford
Percent of map unit: 3 percent
Landform: Alluvial fans, flood plains
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: No

Tujunga
Percent of map unit: 3 percent
Landform: Flood plains
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: No

Tagus
Percent of map unit: 2 percent
Landform: Fan remnants
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: No

Akers
Percent of map unit: 2 percent
Landform: Fan remnants
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: No

Colpien
Percent of map unit: 2 percent
Landform: Fan remnants
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: No

138—Tujunga loamy sand, 0 to 2 percent slopes

Map Unit Setting
National map unit symbol: hp59
Elevation: 210 to 520 feet
Mean annual precipitation: 10 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
Tujunga and similar soils: 85 percent
Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tujunga

Setting

Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

Ap - 0 to 14 inches: loamy sand
C - 14 to 70 inches: stratified coarse sand to loamy sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Grangeville

Percent of map unit: 5 percent
Landform: Alluvial fans, flood plains
Hydric soil rating: Yes

Yettem

Percent of map unit: 4 percent
Landform: Alluvial fans, flood plains
Hydric soil rating: No

Akers

Percent of map unit: 3 percent
Landform: Fan remnants
Hydric soil rating: No

Akers, saline-sodic

Percent of map unit: 3 percent
Landform: Fan remnants
Hydric soil rating: No

143—Yettem sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hp5g
Elevation: 270 to 530 feet
Mean annual precipitation: 9 to 12 inches
Mean annual air temperature: 62 to 65 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

Yettem and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Yettem

Setting

Landform: Alluvial fans, flood plains
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

Ap - 0 to 13 inches: sandy loam
C - 13 to 63 inches: sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 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)
Sodium adsorption ratio, maximum: 5.0
Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 4c
Hydrologic Soil Group: A
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans

Hydric soil rating: No

Minor Components

Grangeville

Percent of map unit: 5 percent
Landform: Alluvial fans, flood plains
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: Yes

Kimberlina

Percent of map unit: 5 percent
Landform: Flood plains
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: No

Colpien

Percent of map unit: 3 percent
Landform: Fan remnants
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: No

Tujunga

Percent of map unit: 2 percent
Landform: Flood plains
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: No

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Appendix E: NMFS EFH Mapper

DELANO-EARLIMART IRRIGATION DISTRICT

TURNIPSEED BASIN PHASE VI EXPANSION PROJECT

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
Alaska Regional Office

Query Results

Degrees, Minutes, Seconds: Latitude = 35º 51' 43" N, Longitude = 120º 47' 44" W
Decimal Degrees: Latitude = 35.862, Longitude = -119.204

The query location intersects with spatial data representing EFH and/or HAPCs for the following species/management units.

EFH

No Essential Fish Habitats (EFH) were identified at the report location.

Salmon EFH

No Pacific Salmon Essential Fish Habitat (EFH) 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, DELANO-EARLIMART IRRIGATION DISTRICT TURNIPSEED WATER BANK EXPANSION PROJECT, PHASE VI, TULARE COUNTY, CALIFORNIA

Prepared for:

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July 2022
PN 36510.19

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MANAGEMENT SUMMARY

An intensive Class III inventory/Phase I cultural resources survey was conducted for the Delano-Earlimart Irrigation District (DEID) Turnipseed Water Bank Expansion Project (Project), Phase VI, Tulare County, California. This study was conducted by ASM Affiliates, Inc., with David S. Whitley, Ph.D., RPA, serving as principal investigator. Background studies and fieldwork for the survey were completed in March – June 2022. The study was undertaken to assist with compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (16 USC 470; 36 CFR Part 800), and the California Environmental Quality Act (CEQA).

The proposed project consists of the construction of a groundwater recharge basin on 170-acres (ac). The area of potential effect (APE) for the project was defined as all areas of potential ground-surface disturbance including staging, lay-down, and work areas. For this project, the entire 170-ac DEID property is considered the horizontal APE. The vertical APE, defined as the maximum depth of excavation for the pipelines to the settling basin, is 10-feet (ft).

A records search of site files and maps was obtained from the Southern San Joaquin Valley Archaeological Information Center (SSJVIC), California State University, Bakersfield. According to the records search results, no previous archaeological surveys had been completed within the Project APE and no cultural resources were known within the APE or within a 0.5-mile (mi) radius of the Project. Only one previous archaeological survey had been completed within 0.5-mi of the Project APE.

A search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was also completed. Based on the NAHC records, no sacred sites or traditional cultural places had been identified within or adjacent to the Project APE. Outreach letters and follow-up emails were sent to tribal organizations on the NAHC contact-list. The Santa Rosa Rancheria – Tachi Yokut Tribe responded, requesting a meeting on the Project. This meeting has been scheduled and will occur in the near future.

The Class III inventory/Phase I survey fieldwork was conducted in June 2022 with parallel transects spaced at approximately 15-meter (m) intervals walked across the APE. Ground surface visibility within the APE was excellent. No cultural resources of any kind were present within the APE. Based on these findings, a determination of No Historic Properties Affected/No Significant Impact is recommended for the Project. It is further recommended an archaeologist be contacted if cultural resources are identified during the construction of the proposed Project.

1. INTRODUCTION AND REGULATORY CONTEXT

ASM Affiliates was retained by Provost and Pritchard Consulting Group to conduct an intensive Class III Inventory/Phase I cultural resources survey for the DEID Turnipseed Water Bank Expansion Project, Phase VI, Tulare County, California. The purpose of this investigation was to assist with compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (54 USC § 300101 et seq.; 36 CFR Part 800), and the California Environmental Quality Act (CEQA). The investigation was undertaken, specifically, to ensure that no significant adverse effects or impacts to historical resources or historic properties occur as a result of the construction of this project.

This current study included:

- A background records search and literature review to determine if any known archaeological sites were present in the project zone and/or whether the APE had been previously and systematically studied by archaeologists;
- A search of the NAHC *Sacred Lands File* to determine if any traditional cultural places or cultural landscapes have been identified within the APE, with outreach letters sent and follow-up calls made to the NAHC tribal contact list;
- An on-foot, intensive inventory of the Project APE 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.

This study was conducted by ASM Affiliates, Inc., of Tehachapi, California, with David S. Whitley, Ph.D., RPA, serving as principal investigator. Fieldwork was conducted by ASM Crew Chief/Associate Archaeologist Robert Azpitarte, B.A., with the help of Maggie Lemus, B.A., and Cameron Jackson, B.A., ASM Assistant Archaeologists.

This manuscript 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 APE.

1.1 PROJECT LOCATION, DESCRIPTION, AND APE

The proposed Project is located at the southwest corner of Avenue 40 and Road 168, in Tulare County, California; specifically, the Project is within Section 7, Township 24 South, Range 26 East (Mount Diablo Base and Meridian). This is approximately 3.2-mi east of Highway 99, roughly midway between Earlimart and Delano. The Project elevation is only about 360-ft above mean sea level (amsl).

DEID acquired a 150-acre parcel and is in the process of acquiring a 20-acre parcel that would be used for the construction of a recharge basin with multiple cells to provide for sustainable management of surface and groundwater. The current project is identified as Turnipseed Basin Phase VI Expansion. Project components could include ponds/cells within the basin separated by

levees, performance testing, and demobilization. DEID will excavate approximately 200,000 cubic yards of material from the site to form the overall basin. The basin will be further divided into approximately eight cells to increase storage over varying topography. New berm construction would not exceed six feet, measured from the exterior toe to the top of new berm. The Project design will balance the earthwork, and no export of soil is anticipated. The Project will include a settling channel on the east side and an overflow basin along its western edge.

The Project may also construct a network of monitoring and/or recovery wells if needed to supplement existing monitoring and recovery wells associated with the existing banking operations that currently exist in proximity to the Project. Construction of those Project components would likely occur after construction of the basins are complete. The only pipelines contemplated in the Project would serve to introduce water for recharge/banking via construction of a tee in the existing Ave 40 Lateral. DEID envisions that the basin will receive water from Lateral 113.7W which originates at a 97 cfs, 66-inch (in) turnout on the Friant-Kern Canal (FKC), then extends west along Avenue 40 and beyond the Project site. At the Project location, the lateral is 48-in diameter RCP and has an approximate capacity of 75 cfs. If recovery wells are constructed, they would tie into District laterals through newly constructed intertie facilities. Any banking return via District recovery wells on the 170-acre site would flow back to the Ave 40 mainline or other laterals. None of the recovered water would be returned to the FKC.

The Project includes several phases of construction, including equipment mobilization, earthwork for excavation of recharge/regulation basins and construction of basin perimeter berms of no greater than six feet in external height. The project will be constructed within a nine-months period.

Operation of the facility would be consistent with that of the DEID's other similar facilities in that groundwater conditions will be monitored to minimize negative impacts on the surrounding areas (such as nearby wells, crops, and septic systems). Water delivered to the Project Site would be expressly intended by DEID to be available for recovery only by District landowners within the original DEID services area, that area under DEID jurisdiction prior to the annexation of lands that occurred in 2016. The accounting of water delivered to the Project site, and the intended recovery by landowners, will occur through the water balance or other similar mechanisms under the Groundwater Sustainability Plan developed by the DEID Groundwater Sustainability Agency.

The Project APE was defined as all areas of potential ground-surface disturbance including staging, lay-down, and work areas. For this project, the entire 170-ac DEID property is considered the horizontal APE. The vertical APE, defined as the maximum depth of excavation for the basins, is 10-ft.

1.2 REGULATORY CONTEXT

1.2.1 National Historic Preservation Act

The NHPA of 1966, as amended (54 United States Code § 300101 *et seq*.), is the primary federal legislation that outlines the federal government's responsibility to consider the effects of its actions on historic properties and affords the Advisory Council on Historic Preservation a reasonable opportunity to comment. Section 106 of the NHPA and its implementing regulations at 36 CFR

Part 800 describes the process that the federal agency shall take to identify cultural resources and assess the level of effect that the proposed undertaking will have on historic properties. An undertaking is defined as a "…project, activity or program funded in whole or in part, under the direct or indirect jurisdiction of a federal agency." This includes projects that are carried out by, or on behalf of, the agency; those carried out with federal assistance; those requiring a federal permit, license, or approval; and those subject to state or local regulation administered pursuant to a delegation, or approval by, a federal agency.

A cultural resource is a broad term that includes prehistoric, historic, architectural, and traditional cultural properties. Those cultural resources that are listed on, or are eligible for inclusion in, the National Register of Historic Places (NRHP) are referred to as historic properties. The criteria for NRHP eligibility are outlined at 36 CFR Part 60. Other applicable federal cultural resources laws and regulations that could apply include, but are not limited to, the Native American Graves Protection and Repatriation Act (NAGPRA), and the Archaeological Resources Protection Act (ARPA).

Compliance with Section 106 of the NHPA (36 CFR Part 800) follows a series of steps that are designed to identify and consult with interested parties, determine the APE, determine if historic properties are present within the APE, and assess the effects the undertaking will have on historic properties. Section 106 requires consultation with Indian Tribes concerning the identification of sites of religious or cultural significance and with individuals or groups who are entitled, or requested, to be consulting parties. The regulations at 36 CFR Part 800.5 require federal agencies to apply the criteria of adverse effect to the historic properties identified within the APE. The criteria of adverse effect, defined at 36 CFR Part 800.5(a)(1), states that:

> "An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association."

The 36 CFR Part 800 regulations include consultation with the State Historic Preservation Officer (SHPO) to provide an opportunity to comment on, and concur with, a federal agency's determinations. If the undertaking would result in adverse effects to historic properties, these adverse effects must be resolved in consultation with the SHPO and other parties identified during the Section 106 process before the undertaking can proceed to implementation.

1.2.2 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.

1.2.3 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 impacted, 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 for significance applied under Section 106 are generally (although not entirely) consistent with CRHR criteria (see PRC § 5024.1, Title 14 CCR, Sections § 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.

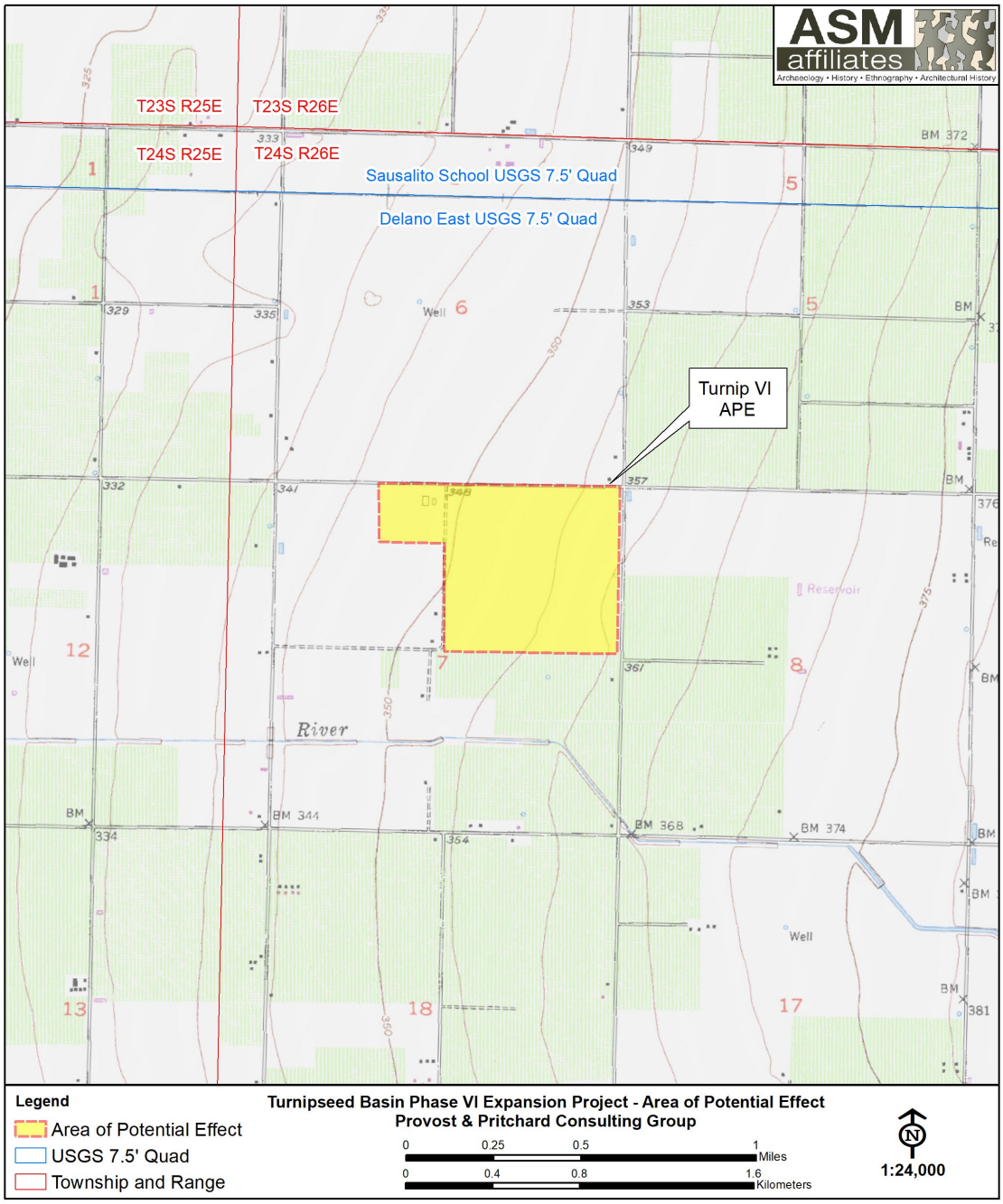

Figure 1. Location of the Turnipseed Water Basin Expansion Project, Phase VI APE, Tulare County, California.

2. ENVIRONMENTAL AND CULTUAL BACKGROUND

2.1 ENVIRONMENTAL BACKGROUND

At the time of the Class III Inventory/ Phase I survey, the study area consisted of fallow agricultural land adjacent to active farm fields (Figure 2). Although this location currently may be characterized as a dry open valley bottom, historically it may have included swampy lands, lying roughly 16-mi east of the historical Tule Lake shoreline and about 100-ft north of White River, or dry valley grassland with possible oak groves. Prior to changes resulting from the agricultural development of the area, Deer Creek, located north of the APE, was an effective divide between mesic environments to the north and more xeric environments to the south (Preston 1981:80). Lying to the south of Deer Creek, the Project APE would have been on the drier side of the Deer Creek alluvial fan. Deer Creek, and White River approximately 2-mi south, may have been occasionally inundated by floodwaters during heavy spring snowmelt, but in most years these drainages would have been perennial only in their upper reaches in the foothills, and intermittent lower on their courses (Preston 1981:17), nearer the APE.

Historical and recent land-use has thus changed the vegetation that was once present within and near the Project APE. Prior to development, oak groves and valley grasslands would have dominated (Preston 1981:70). However, it is likely that Riparian Woodlands were once found along local drainages, including along Deer Creek and White River (see Schoenherr 1992).

2.2 GEOARCHAEOLOGICAL CONTEXT

The project is located on the San Joaquin Valley flats, a deep basin that has been filled primarily with sediment originating in the Sierra Nevada to the east. More accurately, the project is located on the White River alluvial fan, which itself is broad and, in the immediate project area, gentle in slope. Preston (1981:17) describes the geomorphological and hydrological setting as follows:

> "The lower distributaries and sloughs are barely deep enough to contain ordinary spring run-off, and localized flooding occurs annually. White River and Deer Creek are smaller still. Like the Tule [River], both are downcutting in their upper reaches, and both are barely perennial even in the foothills. White River and Deer Creek ordinarily disappear underground within ten to twelve miles of their entry into the basin, even during springtime, but occasional floods have carried their waters to Tulare Lake. The fans deposited by these streams are steeper than the Tule River fan."

The implications are, first, that the project area historically and prehistorically was a dynamic geomorphological environment, at least periodically, due to seasonal flooding. No records are known that allow us to estimate the impact this flooding may have had on the landscape but, due to changing climatic conditions prehistorically, this is likely to have varied over time, with greater dynamism occurring during wetter periods. The existing topography in the general region, however, provides some indication of how the landscape has been changed by seasonal flooding

events. The 1892 "Thompson Map of Tulare County" shows the "Old Channel" of Deer Creek heading north from the current stream channel, creating what appears to have been an oxbow, to the northeast of the project area. The "Old Channel" is still shown on current USGS topographical quadrangles, and it apparently has not carried water for over a century. At some point in the past the stream straightened its course and eliminated this earlier, meandering course, suggesting that relatively recent hydrological events have been of sufficient magnitude to move the channel southwards to its current location. The course of the river, in other words, has been historically unstable, indicating that the current land-surface is relatively youthful in age.

Second, this occasional flooding has sporadically inundated the area, depositing alluvial soils. Storie et al (1942) characterize the region, in fact, as an outwash plain and describe the deposited soils as recent (and pedologically-undeveloped) sandy loam or fine sandy loam with permeable subsoils.

Third, while occasional flooding has blanketed the area with alluvium, surface water was only present sporadically—during floods. As noted by Preston (1992:17), White River is "barely perennial even in the foothills."

Fourth, due to the limitations the lack of surface water had on prehistoric and historic human settlement, it is unlikely that the project area experienced more than sporadic human use prior to the Euro-American period. Earlier use most likely consisted of occasional hunting and gathering but not inhabitation. This supposition is supported by the distribution of known ethnographic villages, the closest of which was the Koyete Yokuts hamlet of *Chetetik Nowsuh* (Latta 1977:196). This is located on Deer Creek miles northeast of the project, near where the creek exits the foothills. Other ethnographic villages likewise are located primarily on streams near the foothills, or along the shores of Tulare Lake.

A Caltrans geoarchaeological study that included the Project area classified this location as having Moderate to Very Low sensitivity for subsurface sites (Meyer et al. 2010). 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 7 ordinal classes for sensitivity for buried soils, from Very Low to Very High. Given the Project area's Moderate to Very Low sensitivity for buried deposits according to this analysis, its distance from known centers of prehistoric occupation, and the previously disturbed nature of the location, it is unlikely that the Project APE would contain subsurface archaeological deposits.

Based on these factors and conditions, the Project area is considered to have a low to moderate archaeological sensitivity, with limited potential for subsurface archaeological remains.

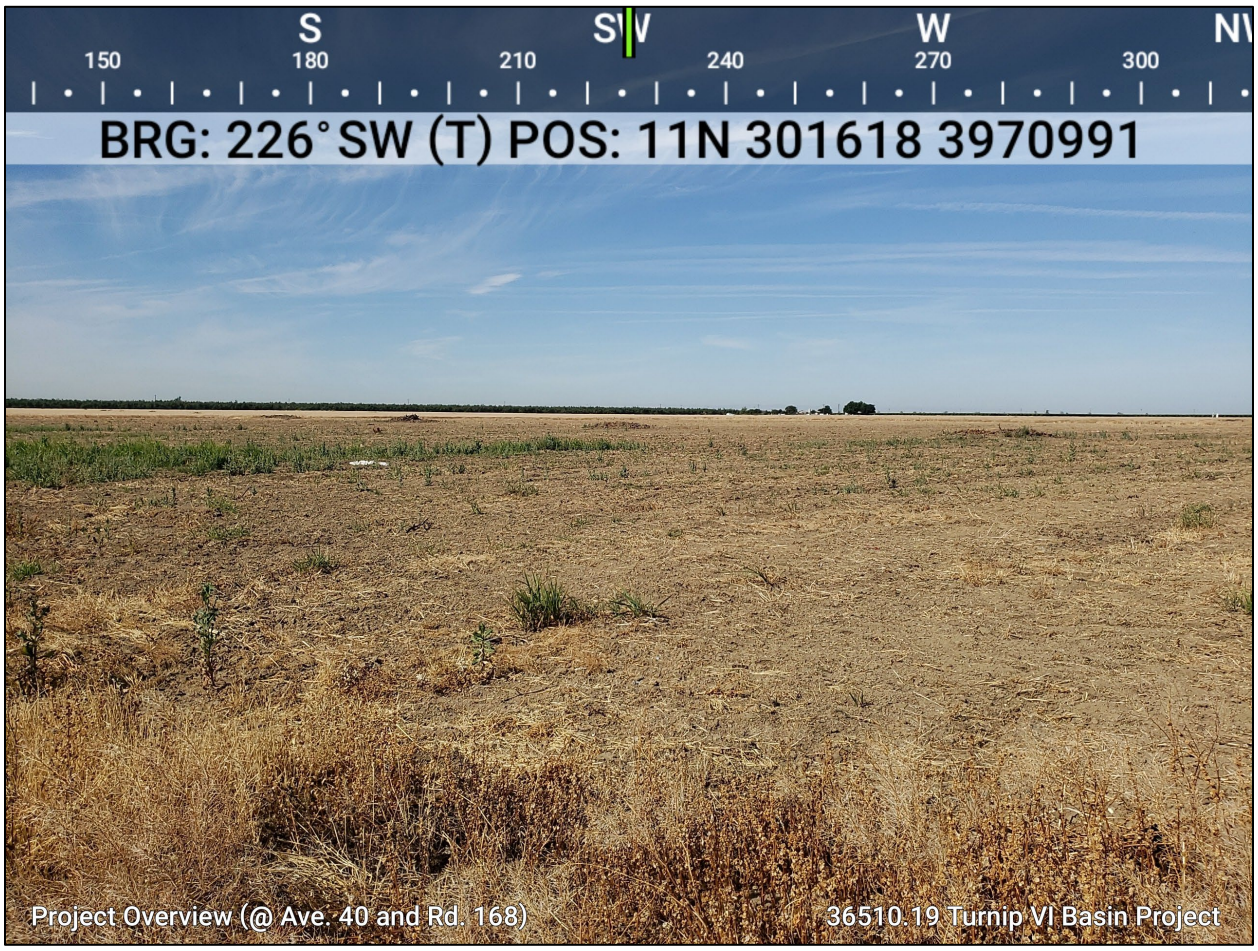

Figure 2. Overview of APE showing field conditions.

2.3 ETHNOGRAPHIC CONTEXT

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), Latta (1977) and Harrington (n.d.). 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.

This scarcity of specific detail is particularly apparent in terms of southern valley tribal group distribution. Kroeber (1925) places the western extent of the White River area in Creek and White River at the foothills, near the Project area, in Koyeti territory. Latta (1977:195-196) also places the Project area with the Koyete (Koyeti in Kroeber [1925]). As noted above, he identifies the closest Koyete village as *Chetetik Nowsuh*, near Terra Bella, northeast of the Project area.

Regardless of tribal affiliation, historical village distribution was similar across the region. Winter villages were typically located along lakeshores and major stream courses (as these existed circa AD 1800), with dispersal phase family camps located at elevated spots on the valley floor and near gathering areas in the foothills.

Most Yokuts groups, 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 peoples (Kroeber 1925).

Each tribelet was headed by a chief who was assisted 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 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 most 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 based on 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 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 Euro-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 continue to live in Tulare, Fresno and Kings counties to this day.

2.4 PRE-CONTACT ARCHAEOLOGICAL BACKGROUND

The 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 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 Schenk 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 YBP (years before present). 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. (In each case, these are locations many miles distant from the study area.)

Both fluted and stemmed points are particularly common around the Tulare 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. Over 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 specifically (see Fenenga 1993). Additional finds consist of a Clovis-like projectile point discovered in a flash-flood 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 is 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 a 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 of California first occurs during the middle Holocene, roughly 7,500 to 4,000 YBP. This period is known as the *Early Horizon*, or alternatively as the Early Millingstone along the Santa Barbara Channel. In the south, populations concentrated along the coast with minimal visible use of inland areas. Adaptation emphasized hard seeds and nuts with tool-kits 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. 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 4,000 YBP during the *Middle Horizon* (or Intermediate Period). This period known climatically as the Holocene Maximum (circa 3,800 YBP) and was characterized by significantly warmer and wetter conditions than previously experienced. Archaeologically, it was marked 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 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 or the Takic speaking groups that include the Gabrielino/Fernandeño, Tataviam and Kitanemuk, may have moved into the region at this time, rather than at about 1,500 BP 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 3,500 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 4,000 years ago. 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 study area, is yet to be determined.

The beginning of the *Late Horizon* is set variously at 1,500 and 800 YBP, with a consensus for the shorter chronology. Increasing evidence suggests the importance of the Middle-Late Horizons transition (AD 800 to 1200) in the understanding of south-central California. This corresponds to the so-called Medieval Climatic Anomaly, a period of climatic instability that included major droughts and resulted in demographic disturbances across much of the west (Jones et al. 1999). It is also 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. What is clear is that Middle Period villages and settlements were widely dispersed across the landscape; many at locations that lack contemporary evidence of fresh water sources. Late Horizon sites, in contrast, are typically located 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 (~1,500 – 500 YBP) is the Redtfeldt Mound (CA-KIN-66/H), located near the Santa Rosa Rancheria, northwest of the study area. 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 subsequent Late Horizon can be best 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 life-ways recorded by anthropologists extend roughly 800 years into the past.

The position of 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 can be expected 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.

2.5 HISTORIC CONTEXT

Spanish explorers first visited the southern end of 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 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).

Following the passage of state-wide '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. Settlers began reclamation of swampland in 1866, and built small dams across the Kern River to divert water into the fields. By 1880, 86 different groups were taking water from the Kern River. Ten years later, 15 major canals provided water to thousands of acres in Kern County.

During the period of reclamation of unproductive lands in the southern San Joaquin Valley, grants were given to individuals who had both the resources and the finances to undertake the operation alone. One small agricultural settlement, founded by Colonel Thomas Baker in 1861 after procuring one such grant, took advantage of reclaimed swampland along the Kern River. This settlement became the City of Bakersfield in 1869, and quickly became the center of activity in the southern San Joaquin Valley, and in the newly formed Kern County. Located on the main stage road through the San Joaquin Valley, the town became a primary market and transportation hub for stock and crops, as well as a popular stopping point for travelers on the Los Angeles and Stockton Road. The Southern Pacific Railroad reached the Bakersfield area in 1873, connecting it with important market towns elsewhere in the state, dramatically impacting both agriculture and oil production (Pacific Legacy 2006).

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 (three feet wide by two feet 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 miles, and their impacts were widespread. 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 miles 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.

Numerous private irrigation systems were initially developed by individuals. The earliest such improvement in the general project area was the "Saucelito Ditch," which is shown on the 1892 "Thompson Map of Tulare County" running south of and parallel to Deer Creek. The Wright Act of 1887, however, allowed the creation of public irrigation districts, greatly facilitating the funding and construction of water conveyance systems. With increasing demand, the Central Valley Project (CVP) was developed to supply water to Fresno, Tulare and Kern counties. Friant Dam, which created Millerton Lake, was completed in 1942 and supplies water for the FKC and Madera Canals. The FKC was constructed between 1945 and 1951 and is approximately 152 miles in length.

Alila, as Earlimart was originally known, was established in 1880. In 1910, the current name of Earlimart was adopted, highlighting the fact that crops ripened early in the region and could be taken "early to market." (Tulare County Resource Management Agency Economic Development and Planning Branch 2017). It is currently a "census-designated place." Delano was founded in 1869 when the Southern Pacific Railroad reached this part of the valley and established a station. The town was named by the railroad after the then-current Secretary of the Interior, Christopher Delano. The first post office was opened in 1874 with the town incorporating in 1915. Delano was the site of one of the first farm worker strikes, the Delano Grape Strike, in 1965, ultimately resulting in the formation of the United Farm Workers of America (UFW) (City of Delano n.d.)).

The DEID was formed in 1938 due to consistently lowering groundwater depths in the region. It obtained its first CVP water contract with the Bureau of Reclamation in 1951. The district currently services 56,500-ac, representing 450 landowners, in southern Tulare and northern Kern counties. The DEID uses 172-mi of pressurized pipelines for its delivery system. Table grapes continue to be the leading produce grown in the district (DEID n.d.).

2.6 RESEARCH DESIGN

2.6.1 Pre-Contact Archaeology

Previous research and the nature of the pre-contact archaeological record suggest two significant NRHP themes, both of which fall under the general Pre-Contact Archaeology area of significance. These are the Expansion of Pre-Contact Populations and Their Adaptation to New Environments; and Adaptation to Changing Environmental Conditions.

The Expansion of Pre-Contact Populations and Their Adaptation to New Environments theme primarily concerns the Middle Horizon/Holocene Maximum. Its period of significance runs from about 4,000 to 1,500 YBP. It involves a period during which the prehistoric population appears to have expanded into a variety of new regions, developing new adaptive strategies in the process.

The Adaptation to Changing Environmental Conditions theme is partly related to the Holocene Maximum, but especially to the Medieval Climatic Anomaly. The period of significance for this theme, accordingly, extends from about 4,000 to 800 YBP. This theme involves the apparent collapse of many inland populations, presumably with population movements to better environments such as the coast. It is not yet known whether the southern San Joaquin Valley, with its system of lakes, sloughs and swamps, experienced population decline or, more likely, population increase due to the relatively favorable conditions of this region during this period of environmental stress.

The range of site types that are present in this region include:

- Villages, primarily located on or near permanent water sources, occupied by large groups during the winter aggregation season;
- Seasonal camps, again typically located at water sources, occupied during other parts of the year tied to locally and seasonally available food sources;
- Special activity areas, especially plant processing locations containing bedrock mortars (BRMs), commonly (though not exclusively) near existing oak woodlands, and invariably at bedrock outcrops or exposed boulders;
- Stone quarries and tool workshops, occurring in two general contexts: at or below naturally occurring chert exposures on the eastern front of the Temblor Range; and at quartzite cobble exposures, often on hills or ridges;
- Ritual sites, most commonly pictographs (rock art) found at rockshelters or large exposed boulders, and cemeteries, both commonly associated with villages; and
- A variety of small lithic scatters (low density surface scatters of stone tools).

The first requisites in any research design are the definition of site age/chronology and site function. The ability to determine either of these basic kinds of information may vary between survey and test excavation projects, and due to the nature of the sites themselves. BRM sites without associated artifacts, for example, may not be datable beyond the assumption that they post-date the Early Horizon and are thus less than roughly 4,000 years old.

A second fundamental issue involves the place of site in the settlement system, especially with respect to water sources. Because the locations of the water sources have sometimes changed over time, villages and camps are not exclusively associated with existing (or known historical) water sources (W & S Consultants 2006). The size and locations of the region's lakes, sloughs and delta channels, to cite the most obvious example, changed significantly during the last 12,000 years due to major paleoclimatic shifts. This altered the area's hydrology and thus prehistoric settlement patterns. The western shoreline of Tulare Lake was relatively stable, because it abutted the Kettleman Hills. But the northern, southern and eastern shorelines comprised the near-flat valley floor. Relatively minor fluctuations up or down in the lake level resulted in very significant changes in the areal expression of the lake on these three sides, and therefore the locations of villages and camps. Although perhaps not as systematic, similar changes occurred with respect to stream channels and sloughs, and potential site locations associated with them. This circumstance has implications for predicting site locations and archaeological sensitivity. Site sensitivity is then hardest to predict in the open valley floor, where changes in stream courses and lake levels occurred on numerous occasions.

Nonetheless, the position of San Joaquin Valley prehistory relative to the changing settlement and demographic patterns seen in surrounding areas is still somewhat unknown (cf. Siefkin 1999), including to the two NRHP themes identified above. The presence of large lake systems in the valley bottoms can be expected to have mediated some of the effects of 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 San Joaquin Valley, and determining how these trends (if present) correlate with those seen elsewhere, is another primary regional research objective.

Archaeological sites would primarily be evaluated for NRHP eligibility under Criterion D, research potential.

2.6.2 Historical Archaeology: Native American

Less research has been conducted on the regional historical archaeological record, both Native American and Euro-American. For Native American historical sites, the ethnographic and ethnohistoric periods in the southern San Joaquin Valley extended from first Euro-American contact, in AD 1772, to circa 1900, when tribal populations were first consolidated on reservations. The major significant historic NRHP themes during this period of significance involve the related topics of Historic-Aboriginal Archaeology, and Native American Ethnic Heritage. More specifically, these concern the Adaptation of the Indigenous Population to Euro-American Encroachment and Settlement, and their Acculturation to Western Society. These processes included the impact of missionization on the San Joaquin Valley (circa 1800 to about 1845); the introduction of the horse and the development of a San Joaquin Valley "horse culture," including raiding onto the coast and Los Angeles Basin (after about 1810); the use of the region as a refuge for mission neophyte escapees (after 1820); responses to epidemics from introduced diseases (especially in the 1830s); armed resistance to Euro-American encroachment (in the 1840s and early 1850s); the origins of the reservation system and the development of new tribal organizations and

ethnic identities; and, ultimately, the adoption of the Euro-American society's economic system and subsistence practices, and acculturation into that society.

Site types that have been identified in the region dating to the ethnographic/ethnohistoric period of significance primarily include villages and habitations, some of which contain cemeteries and rock art (including pictographs and cupules). Dispersed farmsteads, dating specifically from the reservation period or post-1853, would also be expected. The different social processes associated with this historical theme may be manifest in the material cultural record in terms of changing settlement patterns and village organization (from traditional nucleated villages to single family dispersed farmsteads); the breakdown of traditional trading networks with their replacement by new economic relationships; changing subsistence practices, especially the introduction of agriculture initially via escaped mission neophytes; the use of Euro-American artifacts and materials rather than traditional tools and materials; and, possibly, changing mortuary practices.

Inasmuch as culture change is a primary intellectual interest in archaeology, ethnographic villages and habitations may be NRHP eligible under Criterion D, research potential. Rock art sites, especially pictographs, may be eligible under Criterion C as examples of artistic mastery. They may also be eligible under Criterion A, association with events contributing to broad patterns of history. Ethnographic sites, further, may be NRHP eligible as Traditional Cultural Properties due to potential continued connections to tribal descendants, and their resulting importance in traditional practices and beliefs, including their significance for historical memory, tribal- and self-identity formation, and tribal education.

For Criteria A, C and D, eligibility requires site integrity (including the ability to convey historical association for Criterion A). These may include intact archaeological deposits for Criterion D, as well as setting and feel for Criteria C and A. Historical properties may lack physical integrity, as normally understood in heritage management, but still retain their significance to Native American tribes as Traditional Cultural Properties if they retain their tribal associations and uses.

2.6.3 Historical Archaeology: Euro-American

Approaches to historical Euro-American archaeological research relevant to the region have been summarized by Caltrans (1999, 2000, 2007, 2008). These concern the general topics of historical landscapes, agriculture and farming, irrigation (water conveyance systems), and mining. Caltrans has also identified an evaluation matrix to aid in determinations of eligibility. The identified research issues include site structure and land-use (lay-out, land use, feature function); economics (self-sufficiency, consumer behavior, wealth indicators); technology and science (innovations, methods); ethnicity and cultural diversity (religion, race); household composition and lifeways (gender, children); and labor relations. Principles useful for determining the research potential of an individual site or feature are conceptualized in terms of the mnemonic AIMS-R, as follows:

> 1. *Association* refers to the ability to link an assemblage of artifacts, ecofacts, and other cultural remains with an individual household, an ethnic or socioeconomic group, or a specific activity or property use.

2. *Integrity* addresses the physical condition of the deposit, referring to the intact nature of the archaeological remains. In order for a feature to be most useful, it should be in much the same state as when it was deposited. However, even disturbed deposits can yield important information (e.g., a tightly dated deposit with an unequivocal association).

3. *Materials* refers to the number and variety of artifacts present. Large assemblages provide more secure interpretations as there are more datable items to determine when the deposit was made, and the collection will be more representative of the household, or activity. Likewise, the interpretive potential of a deposit is generally increased with the diversity of its contents, although the lack of diversity in certain assemblages also may signal important behavioral or consumer patterns.

4. *Stratigraphy* refers to the vertically or horizontally discrete depositional units that are distinguishable. Remains from an archaeological feature with a complex stratigraphic sequence representative of several events over time can have the added advantage of providing an independent chronological check on artifact diagnosis and the interpretation of the sequence of environmental or sociocultural events.

5. *Rarity* refers to remains linked to household types or activities that are uncommon. Because they are scarce, they may have importance even in cases where they otherwise fail to meet other thresholds of importance (Caltrans 2007:209).

For agricultural sites, most likely to be pertinent to the Project APE, Caltrans (2007) has identified six themes to guide research: Site Structure and Land Use Pattern; Economic Strategies; Ethnicity and Cultural Adaptation; Agricultural Technology and Science; Household Composition and Lifeways; and Labor History. Expected site types would include farm and ranch homesteads and facilities, line camps, and refuse dumps. In general terms, historical Euro-American archaeological sites would be evaluated for NRHP eligibility under Criterion D, research potential. However, they also potentially could be eligible under Criteria A and B for their associate values with major historical trends or individuals. Historical landscapes might also be considered.

Historical structures are typically evaluated for NRHP eligibility under Criteria A and/or B, for their associative values with major historical trends or individuals, and C for potential design or engineering importance.

With respect to irrigation canals and features, Caltrans (2000) has identified the *Development of Irrigated Agriculture* as a significant theme or event in California history, including in the San Joaquin Valley. In the years following California's statehood and the gold rush, increasing population created an increasing market for agricultural products. The total irrigated acreage in the state grew from 60,000 acres in 1860 to nearly 400,000 acres by 1880, an increase of more than 650 percent, and the San Joaquin Valley contained the highest percentage of that land (approximately 47 percent) (Caltrans 2000). Private water companies, land colonies, mutual water companies, and irrigation districts were established in the mid- to late nineteenth century to build irrigation systems to further develop the state's agriculture industry. Irrigation districts became the most influential of these organizations, especially after state legislation—the Wright Act of 1887—causing irrigation districts to grow in number, power, as well as the actual amount of

irrigated land throughout the state. Forty-nine irrigation districts were organized between 1887 and 1896, most of them located between Stockton and Bakersfield. However, by the late 1920s, only seven of the original districts were still in existence, among them the Modesto, Turlock, and Tulare irrigation districts (Caltrans 2000). Under the impetus of increased demand during World War I, agricultural production reached a new peak in 1920. Companies like Pacific Gas & Electric and San Joaquin Valley Light and Power helped finance large irrigation reservoirs to feed district canals in return for the power generated. By 1930, there were 94 active districts in California, and the land watered by these agencies mushroomed to 1.6 million acres (Caltrans 2000). Irrigation districts provided more than 90 percent of the surface water used for irrigation in the San Joaquin Valley before the Central Valley Project came on-line in the 1940s (Caltrans 2000). Most were located in the San Joaquin Valley, with the most successful in Modesto, Turlock, Merced, and Fresno.

The period of significance for this theme begins with the earliest development of irrigated agriculture in the San Joaquin Valley, with the construction of the earthen ditches in Visalia in 1852. Irrigated agriculture continues to be an important industry and influence in the Valley. The period of significance ends in 1964 following recommended guidance for closing a period of significance when activities continued to have importance, but no more specific date can be defined to end the historic period, and there is no justification for exceptional significance to extend the period of significance to an end date within the last 50 years (National Register of Historic Places 1997).

An associated property type for this theme would be a water conveyance system. Components and features of water conveyance systems include diversion structures, conduits, flow control devices, cleansing devices, and associated resources and settings. They would be eligible under NRHP Criterion A/CRHR Criterion 1 for their association with this significant theme if:

- The association with the theme is important--simply because a water conveyance existed during the period of significance is not enough for that system to be eligible;
- The resource retains high overall integrity because of the high number of comparable examples. The property should retain most of the seven aspects of integrity: location, design, setting, materials, workmanship, feeling, and association.
- Due to the nature of this type of resource, repairs and modifications are acceptable but not if they substantially changed the resource.

Water conveyance systems potentially would be eligible under NRHP Criterion B/CRHR Criterion 2 for their association with this significant theme if they:

- Are associated with an important person's productive life ***and*** represent the property that is most closely associated with that person;
- The resource retains high overall integrity. The property should retain most of the seven aspects of integrity: location, design, setting, materials, workmanship, feeling, and association.
- Due to the nature of this type of resource, repairs and modifications are acceptable but not if those modifications substantially changed the resource.

Water conveyance systems will rarely be found eligible under Criterion B. In California notable names for which there might be associations with water planning, construction, or engineering include Anthony Chabot, George Chaffey, Frederick Eaton, William Mulholland, George Maxwell, Robert Marshall, Elwood Mead and C. E. Grunsky (Caltrans 2000).

A second potential NRHP/CRHR theme identified by Caltrans (2000) that could be applicable to water conveyance systems is *Technological Innovation in Irrigated Agriculture in California, 1852-1964*. Water conveyance systems would be eligible under the technological innovation theme under Criterion C/3 if they have:

- Unique values.
- Are the best or are an excellent example of the property type that possess distinctive characteristics of the type and through those characteristics clearly illustrates at least one of the following;
    - the pattern of features common to a particular class of resources;
    - the individuality or variation of features that occurs within the class;
    - the evolution of that class; or
    - the transition between classes of resources.
- The earliest, best preserved, largest, or sole surviving example of particular types of water conveyance systems.
- A design innovation of evolutionary trends in engineering.
- Were designed by a figure of acknowledged greatness in the field or by someone unknown whose workmanship is distinguishable from others by its style and quality ***and*** represent a good example of that designer's work.
- The resource retains high overall integrity and most of the seven aspects of integrity: location, design, setting, materials, workmanship, feeling, and association.

A large water conveyance system with multiple components will often be evaluated as a district rather than as a single property. An eligible historic district must possess a significant concentration or linkage of resources that are united historically or aesthetically by plan or physical development. It should be a significant and distinguishable entity, although its components need not possess individual distinction (Caltrans 2000).

A third potential NRHP/CRHR theme identified by Caltrans (2000) is *Construction of the CVP Engineering and Associated Features, 1937 to 1956*. Property types associated with the CVP consist of structures built for storage, regulation, delivery of water, and hydro-electric power development. In addition, there are property types associated with the ongoing operation and maintenance of the CVP and with the protection of fish affected by construction of the CVP facilities. These properties include dams, power-plants, water conveyance structures, canals and appurtenant features, laterals, sub-laterals, drains, pumping plants, buildings, dikes, and fish facilities. A core feature of the CVP are the conveyance systems used to carry water from the storage and diversion facilities to the farmlands, or to pumping plants for further geographical redistribution. The backbone of the conveyance system is comprised of the 500-mi of main canals. These include the Contra Costa Canal, Delta Cross Channel, Delta-Mendota Canal, Friant-Kern Canal, and Madera Canal. All main canals but the Delta Cross Channel and the first section of the Contra Costa Canal (near Rock Slough) are concrete lined. All of the main canals are typically

defined to include operating roads on one or both sides of the canal prism. For the CVP, the water conveyance scope is huge: in addition to the over 500-mi of main canals, it contains thousands of miles of laterals (and sub- and sub-sub-laterals) that deliver water from the main canals to irrigation ditches on farms. Also falling within this property type are about 84-mi of drains that carry excess water away from farm fields (Bailey 2010). The period of significance for laterals, sub-laterals, and drains begins in 1937 with the initial construction of the first CVP canal, the Contra Costa Canal, and ends in 1956 with the end of construction for the facilities associated with this historic context.

Laterals, sub-laterals, and drains could be eligible under the following NRHP/CRHR criteria for their association with this significant theme as follows:

- Criterion A/1: They have had a significant impact on the settlement, agricultural economy, or development patterns of the project area; they have been defining elements in the evolution of the cultural landscape; they are directly associated with important events.
- Criterion B/2: not applicable.
- Criterion C/3: They are among the best or a rare surviving example of a distinctive type of latera, sub-lateral, or drain; they represent the evolving technology in the design of laterals, sub-laterals, and drains; they represent a unique design solution developed in response to a difficult engineering challenge; they were identified during the construction period as an individually significant feature; or
- Criterion D/4: They have the ability to yield information important to understanding the history of the CVP.

3. ARCHIVAL RECORDS SEARCH

An archival records search was conducted at the California State University, Bakersfield, Southern San Joaquin Valley Information Center (SSJVIC), by SSJVIC staff members 9 September 2021 and 10 May 2022 to determine: (i) if prehistoric or historical cultural resources had previously been recorded within the APE; (ii) if the APE had been systematically surveyed by archaeologists prior to the initiation of this field study; and/or (iii) whether the region of the Project was known to contain archaeological sites and to thereby be archaeologically sensitive. Additionally, a search of the NAHC *Sacred Lands File* was conducted in order to ascertain whether traditional cultural places or cultural landscapes had been identified within the APE. The results of this archival records search are summarized here and are available in Confidential Appendix A.

According to the records search results, no previous archaeological surveys had been completed within the APE, and no cultural resources were known within the APE or within a 0.5-mi radius of it. Only one previous archaeological survey had been completed within 0.5-mi of the APE: Report TU-1407, "Cultural Resources Assessment for the DEID Turnipseed Groundwater Banking Project," RSO Consulting, 2009.

A search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed on 6 October 2021. Based on the NAHC records, no sacred sites or traditional cultural places had been identified within or adjacent to the APE (Appendix A). Outreach letters and follow-up emails were sent to tribal organizations on the NAHC contact list. One email response, from the Santa Rosa Rancheria – Tachi Yokut Tribe. This requested consultation, monitoring for the Project, and a conference call to discuss the Project. Arrangements for this call are currently being made.

Historical USGS topographical quadrangles and aerial photographs (at historicaerials.com) were also examined to determine whether there was evidence of historical development within the APE. Based on these sources, the only development of the APE occurred circa 1956 when a series of farm outbuildings and a farm basin appeared in the northwest portion of the APE. The nature of the buildings is unknown although the main structure looks to have been a barn or packing shed. They are no longer standing but, based on geometry/dimensions and positioning, they clearly were not residences or a residential compound.

Based on the records search and other sources, the APE appeared to have low cultural resources sensitivity.

4. METHODS AND RESULTS

An intensive Class III inventory/Phase I survey of the DEID Turnipseed Water Bank Project APE was conducted on 2 June 2022 by ASM Associate Archaeologist/Crew Chief Robert Azpitarte, B.A., and ASM Assistant Archaeologists Maggie Lemus, B.A., and Cameron Jackson, B.A. The APE was examined with the field crew walking parallel transects space at approximately 15-m intervals, in order to identify surface artifacts, archaeological indicators (e.g., shellfish or animal bone), and/or archaeological deposits (e.g., organically enriched midden soil); 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, using DPR 523 forms. Special attention was paid to rodent burrow back dirt piles, in the hope of identifying sub-surface soil conditions that might be indicative of archaeological features or remains.

4.1 SURVEY RESULTS

The APE consists of fallow agricultural land adjacent to active agricultural properties. Visibility was excellent for Phase I/Class II survey.

Modern refuse in the form of plastics, clothing and cardboard was noted within the APE. Various forms of construction/demolition debris were also present, localized in three areas within the northwest block of the APE. These consisted of a pile of concrete rubble, including broken pieces of concrete irrigation pipes; a dump of household/industrial debris which contained a number of plastic automotive oil containers; and two piles of mostly wood. This last refuse area included a pile of farm stakes and a second pile of logs and branches, possibly from field clearing, along with a heavily deteriorated mattress and box springs. All the observed refuse was contemporary/modern in age. With the exception of the piles of wood, the refuse appears to represent individual, probably illicit, single dumps lacking associative context.

The area of the former/destroyed farm basin, again in the northwest block of the APE, now contains two irrigation stand-pipes, meters and related features, along with what appears to be abandoned farm equipment. These facilities no longer appear to be in use.

No extant cultural resources are currently present within the APE.

5. SUMMARY AND RECOMMENDATIONS

An intensive Class III inventory/Phase I cultural resources survey was conducted for the DEID Turnipseed Water Bank Expansion Project, Phase VI, Tulare County, California. A records search of site files and maps was conducted at the SSJVIC and a search of the NAHC *Sacred Lands File* was completed. No Native American sacred sites or cultural landscapes had been identified within or immediately adjacent to the study APE, and no archaeological sites had been recorded within the APE.

The survey fieldwork of the APE was conducted in June 2022 with parallel transects spaced at approximately 15-m intervals walked across the APE. No extant cultural resources of any kind were identified during the inventory of the APE.

5.1 RECOMMENDATIONS

An intensive Class III inventory/Phase I survey demonstrated that the DEID Turnipseed Water Bank expansion Project, Phase VI APE lacks significant historical resources or historic properties. The proposed Project therefore does not have the potential to result in adverse impacts or effects to significant historical resources or historic properties. A finding of No Significant Impacts/No Historic Properties Affected is recommended for the Project.

In the unlikely event that previously unknown cultural resources are identified during the development or use of the APE, it is recommended that a qualified archaeologist must be notified to evaluate the discovery and implement appropriate evaluation and/or protection measures.

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