CAMERON CREEK LINEAR RECHARGE PROJECT

DRAFT INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

OCTOBER 2024

PREPARED FOR:

City of Visalia
Community Development Department
315 East Acequia Avenue
Visalia, CA 93291

PREPARED BY:

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ACRONYMS

AB ..... Assembly Bill
APE ..... Area of Potential Effect
CalEEMod ..... California Emissions Estimator Modeling (software)
CalFire ..... California Department of Forestry and Fire Protection
CARB ..... California Air Resources Board
CDFW ..... California Fish and Wildlife
CGP ..... Construction General Permit
CH_4 ..... Methane
CHRIS ..... California Historical Resources Information System
City ..... City of Visalia
CNDDB ..... California Natural Diversity Database
CO_2 ..... Carbon dioxide
County ..... Tulare County
DTSC ..... Department of Toxic Substances Control
EIR ..... Environmental Impact Report
FEMA ..... Federal Emergency Management Agency
FMMP ..... Farmland Mapping and Monitoring Program
GAMAQI ..... Guidelines for Assessing and Mitigating Air Quality Impacts
GC ..... Government Code
GHG ..... Greenhouse Gas
GKGSA ..... Greater Kaweah Groundwater Sustainability Agency
IS ..... Initial Study
IS/MND ..... Initial Study/Mitigated Negative Declaration
MMRP ..... Mitigation Monitoring and Reporting Program
MND ..... Mitigated Negative Declaration
$MTCO_2e$ ..... Metric tons of carbon dioxide equivalent
NAHC ..... Native American Heritage Commission
ND ..... Negative Declaration
NO_X ..... Nitrogen oxides
O_3 ..... Ozone
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 ..... Cameron Creek Linear Recharge
RMA ..... Resource Management Agency
RWQCB ..... Regional Water Quality Control Board
SCE ..... Southern California Edison
SJVAPCD ..... San Joaquin Valley Air Pollution Control District
SMARA ..... Surface Mining and Reclamation Act
SO_2 ..... Sulfur Dioxide
SoCalGas ..... Southern California Gas Company
SR ..... State Route
SRA ..... State Responsibility Area
SSJVIC ..... Southern San Joaquin Valley Information Center
SWPPP ..... Storm Water Pollution Prevention Plan
SWRCB ..... State Water Resources Control Board
TCFD ..... Tulare County Fire Department
TCFO ..... Tulare County Sheriff's Office
TID ..... Tulare Irrigation District
USEPA ..... United States Environmental Protection Agency
USFWS ..... United States Fish and Wildlife Service
USGS ..... United States Geological Survey
UST ..... Underground Storage Tank
$\mu g/m^3$ ..... micrograms per cubic meter
VMT ..... Vehicle Miles Traveled

CHAPTER 1 INTRODUCTION

Provost & Pritchard Consulting Group (Provost & Pritchard) has prepared this Initial Study/Mitigated Negative Declaration (IS/MND) on behalf of the City of Visalia (City) to address the potential environmental effects of the Cameron Creek Linear Recharge Project (Project). This document has been prepared in accordance with the California Environmental Quality Act (CEQA), Public Resources Code Section 21000 et seq. The City of Visalia 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 provides 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 CalEEMod Output Files, Biological Resources Evaluation, and Class III Inventory/Phase I Survey are provided as technical Appendix A, Appendix B, and Appendix C respectively, at the end of this document.

CHAPTER 2 PROJECT DESCRIPTION

2.1 PROJECT BACKGROUND

2.1.1 Project Title

Cameron Creek Linear Recharge Project

2.1.2 Lead Agency Name and Address

City of Visalia
Community Development Department, Planning Division
315 East Acequia Avenue
Visalia, California 93291

2.1.3 Contact Person and Phone Number

Lead Agency Contact

Rebecca Keenan, Engineer
(559) 713-4541
Brandon Smith, Principal Planner
(559) 713-4636

CEQA Consultant

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

2.1.4 Project Location

The Project is located in Tulare County just outside of the southeastern quadrant of the City of Visalia, approximately 200 miles southeast of Sacramento and 62 miles north of Bakersfield (see Figure 2-1, Figure 2-2, and Figure 2-3). The centroid of the Project area is 36° 18’ 24.19” N, 119° 15’ 01.48” W.

2.1.5 General Plan Designation and Zoning

The land use designation for the project site as identified in the City of Visalia General Plan is Conservation. The Project area itself does not have a Zoning designation as it consists of the existing Cameron Creek channel. Lands surrounding Cameron Creek contain both County of Tulare and the City of Visalia designations. See Figure 2-4 and Figure 2-5 for the surrounding designations.

2.1.6 Description of Project

Project Background and Purpose

The City of Visalia is looking to construct three new check structures in Cameron Creek to utilize the Creek as a linear recharge facility. The proposed Project’s goal is to increase groundwater recharge through linear

water pools that will percolate over time to recharge the groundwater aquifer in the vicinity of the City limits.

This proposed Project was conceived through a cooperative program for groundwater management between the City of Visalia, Kaweah Delta Water Conservation District (KDWCD), and Tulare Irrigation District (TID). The proposed Project was further refined through a reconnaissance study conducted in 2010. The study included a pool capacity analysis that was performed on several sections within Cameron Creek. This study has guided some of the check structure location, however through coordination with KDWCD and TID, the potential check structure locations were selected based upon access and operability.

The proposed Project is being funded by the California Department of Water Resources through the Sustainable Groundwater Management Grant program.

Project Description

The proposed Project proposes to construct up to three (3) reinforced concrete check structure facilities within the Cameron Creek channel. All check structures would be equipped with control gates and weir boards capable of passing high flows (250 cubic feet per second) while maintaining high water levels in the channel making Cameron Creek a linear recharge basin. The section of the Cameron Creek to be utilized begins near the start of Cameron Creek where it diverts from TID's Main Intake Canal east of Road 156, with the end location northeast of the Lovers Lane and Caldwell Avenue intersection. See Figure 2-3 for specific locations for each proposed check structure.

For each check structure, it is anticipated that excavation through the creek channel and embankment would reach approximately 65 feet horizontally at a depth of about 10 feet from channel top (excavation from channel bottom will likely only 3-4 feet). Excavation for construction will be minimal and would only be the amount necessary for constructing the structures. Once completed, excavated soil would be backfilled around the structure and the channel prism re-graded to match existing conditions. No material export is anticipated, and earthwork would be balanced on site.

The Area of Potential Effect contains a total of 14 acres. This includes the proposed Project construction areas and an additional 25-foot buffer surrounding the proposed Project site.

Construction Schedule

The Project is anticipated to be constructed over the course of approximately four months, beginning in September of 2025. Generally, construction would occur between the hours of 6 am and 6 pm, Monday through Saturday, excluding holidays. Construction would require temporary staging and storage of materials and equipment onsite. Post-construction activities would include system testing, commissioning, site clean-up, and then operation.

Equipment

Construction equipment will likely include excavators, backhoes, graders, skid steers, loaders, water trucks, concrete trucks, and hauling trucks. Post-construction activities will include system testing, commissioning, and site clean-up. Construction will require temporary staging and storage of materials and equipment located at each site. The post-construction activities will largely be handled via pick-up trucks.

Operation and Maintenance

This Project would be operated in coordination with TID. Under a pending agreement, TID would take over the responsibilities for post-construction operation of the three check structures. Maintenance is

anticipated to be a joint effort between the two agencies to perform as-needed cleaning of debris and sediment as well as equipment monitoring and maintenance.

2.1.7 Other Public Agencies Whose Approval May Be Required

- County of Tulare
- Tulare Irrigation District
- Central Valley Water Quality Control Board
- United States Army Corps of Engineers
- California Department of Fish and Wildlife

2.1.8 Consultation with California Native American Tribes

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

While the City has received one letter from the Santa Rosa Rancheria Tachi Yokut Tribe pursuant to PRC § 21080.3.1 (AB 52), as a best practice, the City of Visalia notifies all Native American tribes listed on the Native American Heritage Commission (NAHC) provided list (see Section 4.18 Tribal Cultural Resources for the full NAHC tribal list). On June 13, 2024, the City sent thirteen tribal representatives representing eight tribes a formal notification letter that included a description of the proposed Project. In accordance with the law, the letter provided 30 days from receipt of the letter to request consultation in writing. No response was received. Further discussion of the AB 52 process can be found in the Section 4.18 Tribal Cultural Resources.

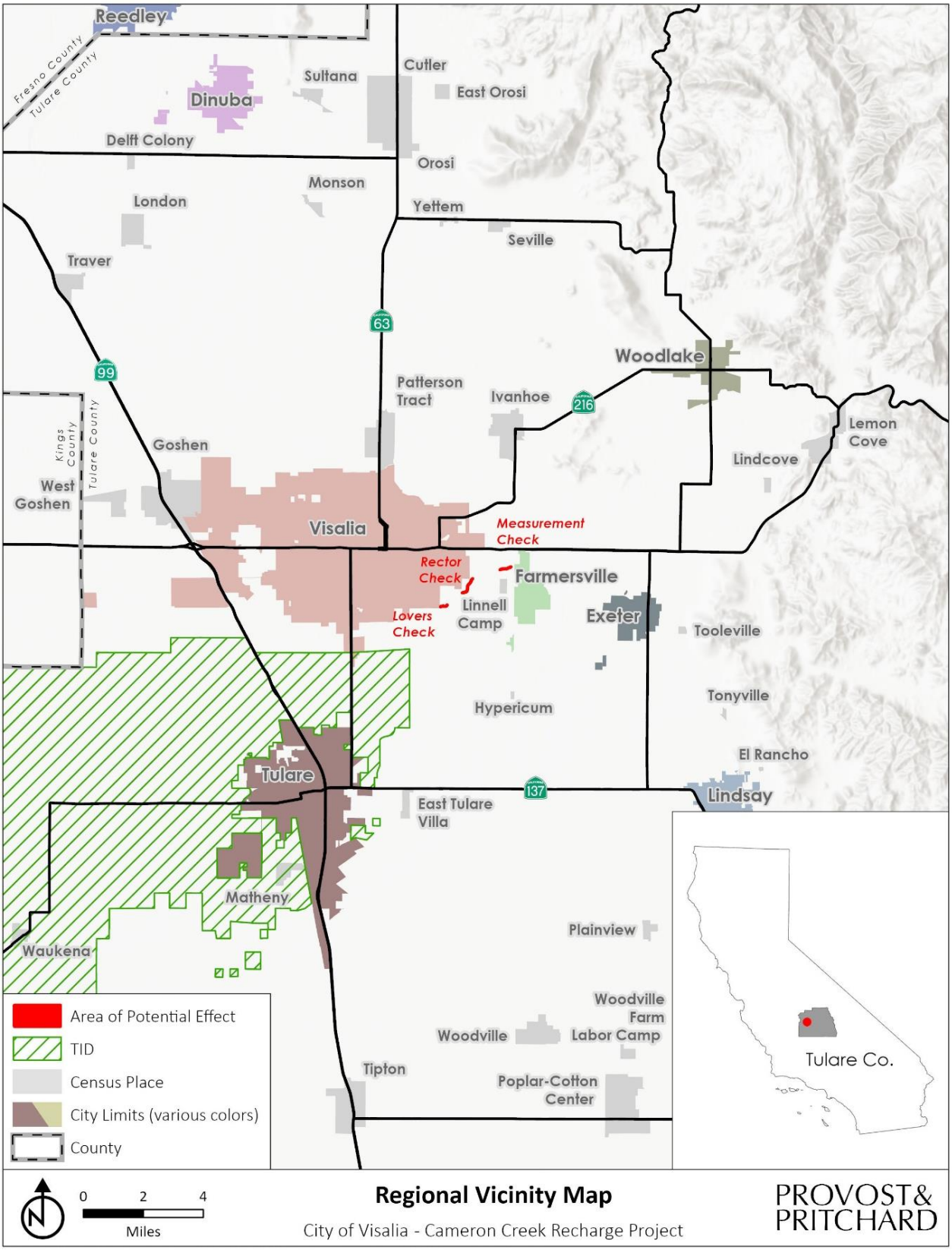


Figure 2-1:Regional Location Map

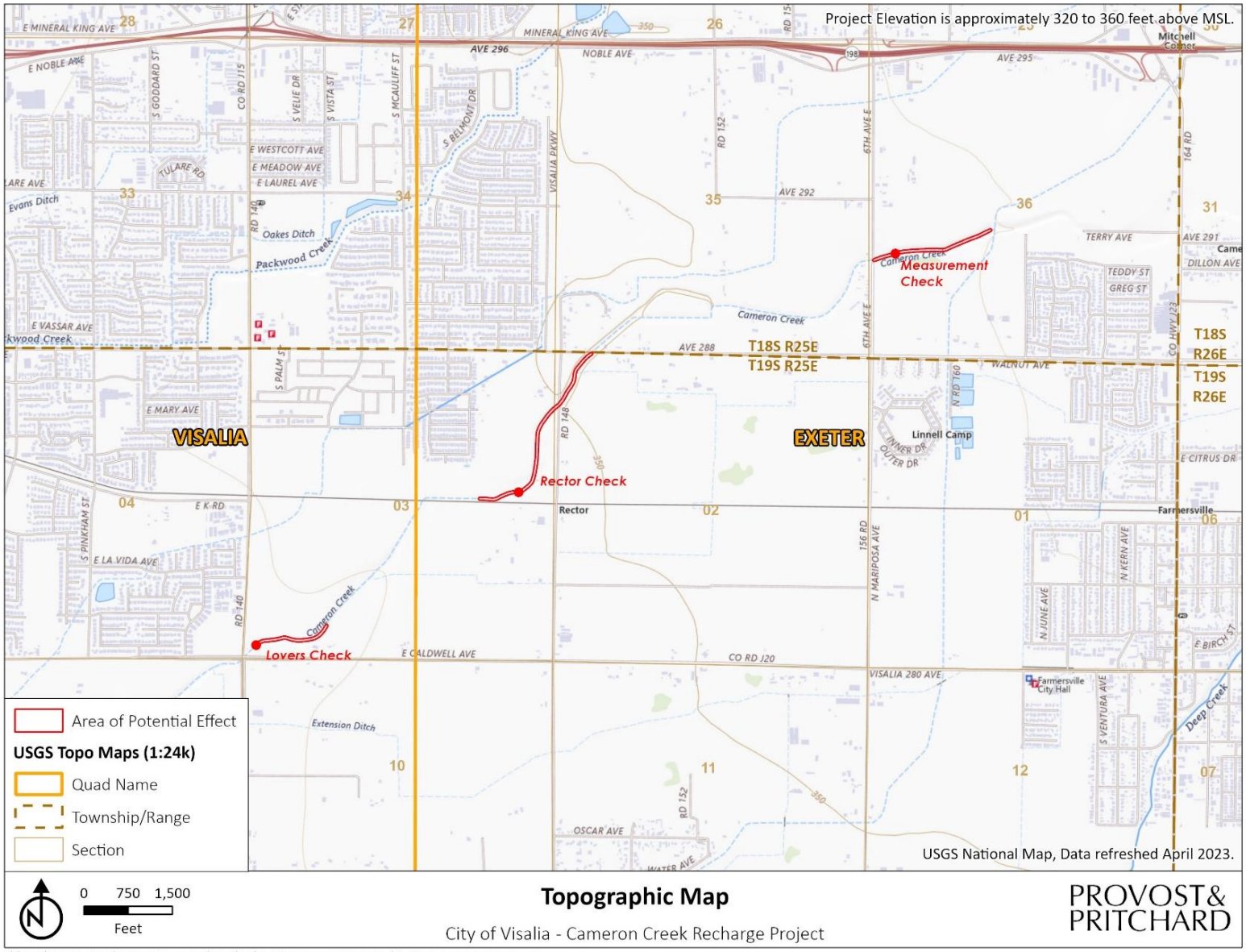


Figure 2-2: Topographic Quadrangle Map

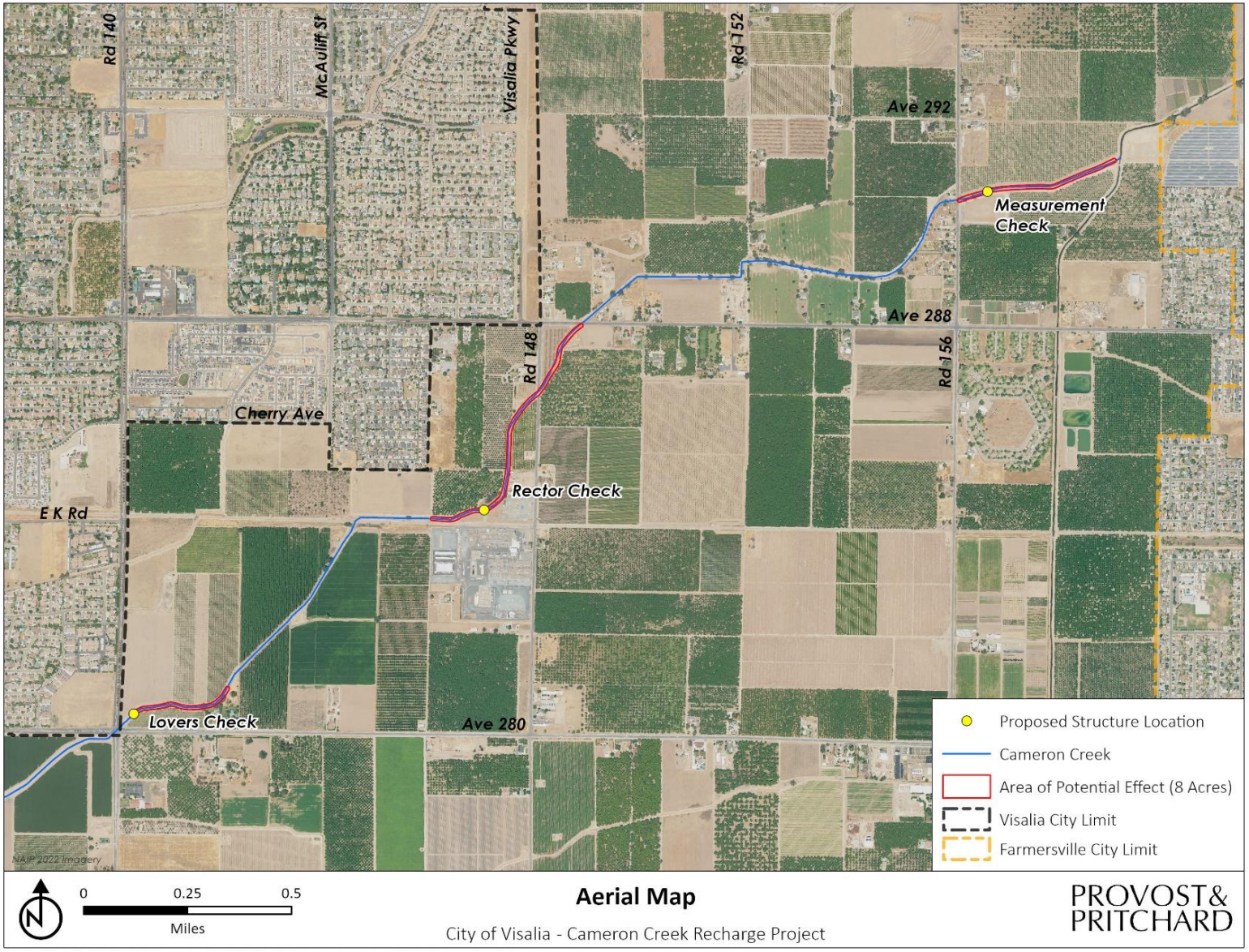


Figure 2-3: Aerial Map

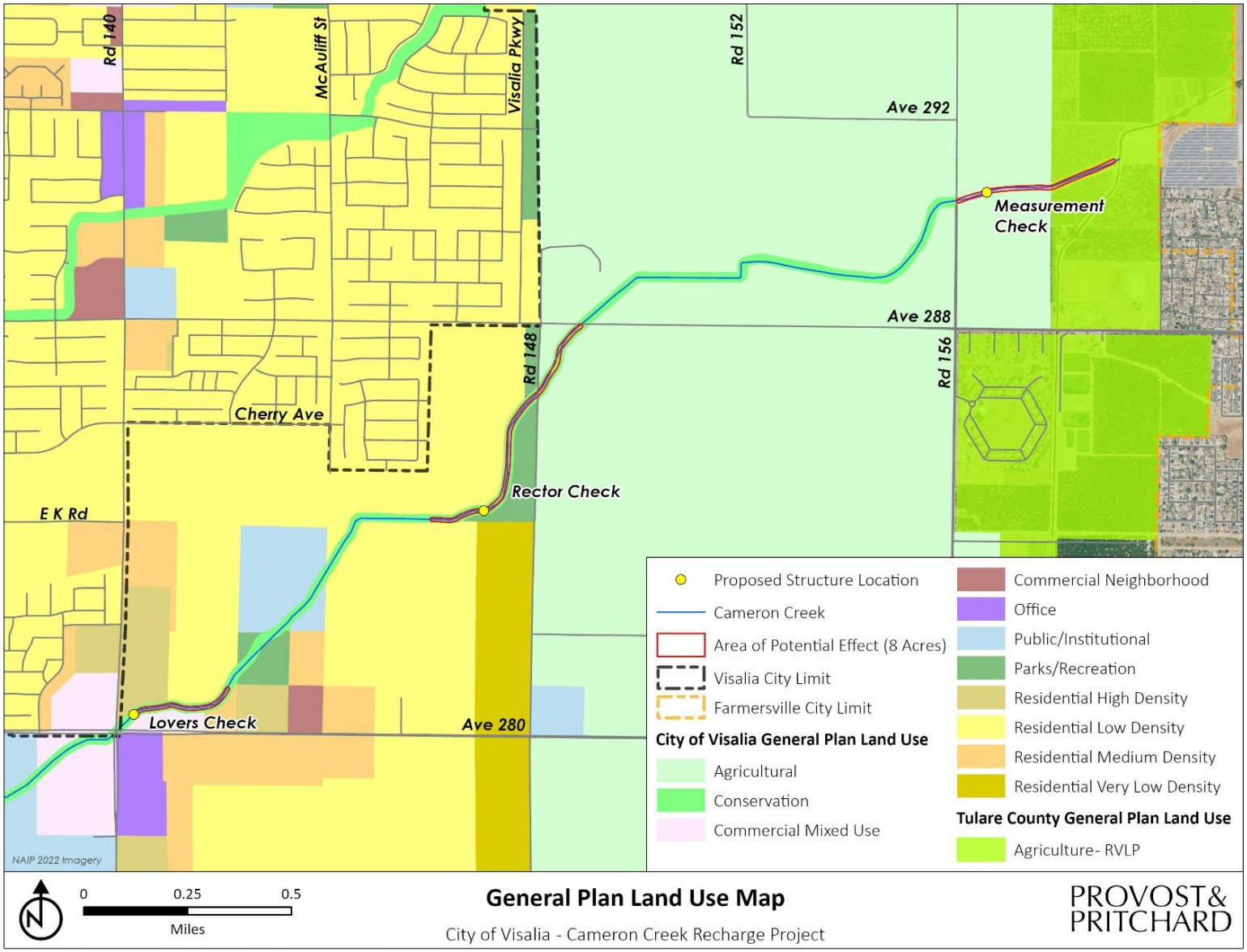


Figure 2-4: General Plan Land Use Designation Map

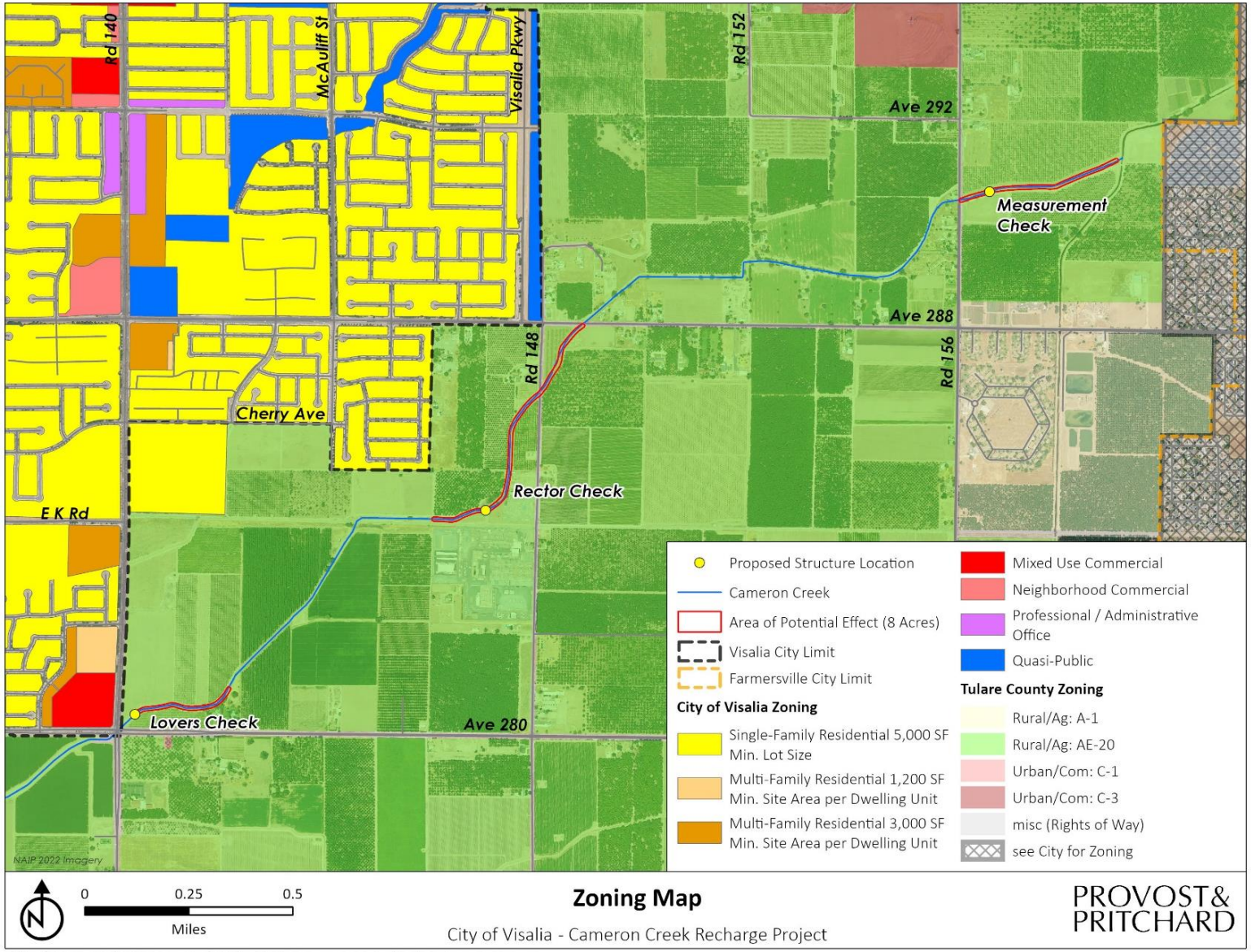


Figure 2-5: Zone District Map

CHAPTER 3 DETERMINATION

3.1 POTENTIAL ENVIRONMENTAL IMPACTS

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

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

The analyses of environmental impacts in Chapter 4 Environmental 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):

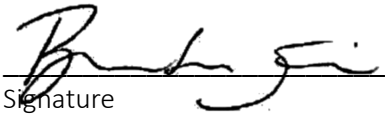
☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ 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

October 4, 2024

Date

Brandon Smith, Principal Planner

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 proposed Project is located along the floor of the San Joaquin Valley near the southeast quadrant of the City of Visalia in Tulare County. The San Joaquin Valley is known for its prominent agricultural land; and has been termed the "breadbasket of the world." To the east lies the Sierra Nevada Mountain range and Sequoia National Park, which is known for its large mountains, rugged foothills, deep canyons, vast caverns, and the world's largest trees, the giant sequoias.[1] California State Route (SR) 198, which runs east-west through Visalia, connects to SR 99, located near the western boundary of Visalia's city limits. SR 99 runs north-south through a large part of Central California. The 44-mile stretch of SR 198 between SR 99 and Sequoia National Park is classified as eligible for State Scenic Highway status but is not officially designated.[2] Regional views from the valley floor are generally limited due to the flatness of the region; however, on

[1] (National Park Service 2022)
[2] (CIty of Visalia, Dyett & Bhatia, Urban and Regional Planners, ICF International, Provost and Pritchard Consulting Group, Omni-Means, Transportation Planners and Engineers 2014)

clear days the Sierra Nevada mountains are visible to the east. The City of Visalia is characterized as a freestanding city with a small-town feel, but also with big city amenities.

The Project area currently consists of Cameron Creek and the various lands that abut its channel within the proposed Project's boundaries. These surrounding lands consist of mostly crops, vacant lots, graded access roads, and scattered residences.

4.1.2 Impact Analysis

a) Have substantial adverse effect on a scenic vista?

Less than Significant Impact. Views of the Sierra Nevada Mountain range to the east and the surrounding agricultural lands help showcase the scenery from the proposed Project. The development of check structures within Cameron Creek would not impede any views as they would be located within Cameron Creek's channel, which is below grade. Impacts to a scenic vista would be 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. The proposed Project is not located near a state scenic highway. There are no scenic resources onsite. Surrounding lands contain some oak trees; however, the proposed Project would not result in the removal or disturbance of any of said trees. Impacts would be less than significant.

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 proposed Project is located adjacent to the City of Visalia, which is considered an urbanized area. The Project area includes a portion of Cameron Creek that runs through the city of Visalia and Tulare County. Construction of the three check structures would not conflict with applicable zoning or other regulations governing scenic quality. Any impacts would be less than significant.

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

No Impact. The proposed Project does not include any new sources of light, nor would check structure materials be constructed in a manner that would result in substantial glaring effects. Therefore, 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

The proposed Project is located in Tulare County just outside of the southeastern quadrant of the City of Visalia. Agriculture has been the predominant land use in the Project area since the late 1800s. Tulare County is known for its agricultural production as it was the number one agriculture producing county in the United States for 2020.[3] In 2022, Tulare County's agriculture production grossed 8.6 billion dollars, an increase in 6.5% from the previous year.[4]

Due to the region's rich soils, water resources, and favorable geographic and climatic conditions, agricultural activity in and around Visalia is highly productive Visalia's agricultural heritage has contributed significantly to the City's economy – much of the region's economic activity is related to the cultivation, processing, and distribution of agricultural products – as well as its visual and cultural character. Historically, Visalia's General Plan policies have acknowledged the value of the local and regional agricultural resources

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

and sought to preserve them through urban growth management strategies and monitoring despite the prevalence of development pressures on local landowners and a growing urban population.[5]

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

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

As demonstrated in Figure 4-1, the FMMP for the Project area is designated as Prime Farmland and Vacant and Disturbed Land.[6]

[5] (Dyett & Bhatia Urban and Regional Planners 2014)
[6] (California Department of Conservation 2023)

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 proposed Project would be located within the existing Cameron Creek channel which intermittently contains water. Lands surrounding Cameron Creek are planned and zoned for agricultural purposes. Implementation of the Project would not make any changes to any of the surrounding farmland. The proposed Project would utilize laydown areas outside the creek channel for construction equipment; however, these laydown areas would not encroach or destroy any existing crops or other agricultural commodities. Therefore, impacts would be less than significant.

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

Less than Significant Impact. The Project area covers the Cameron Creek channel and three laydown areas adjacent to the creek. The creek itself is un-zoned; however, the laydown areas are in areas zoned AE-20 under the jurisdiction of the County of Tulare. Implementation of the proposed Project would not conflict with the purpose of the agricultural zone district or a Williamson Act contract. The proposed check structures would slow down the flow in the creek and allow water to pool, thereby resulting in increased linear recharge. Increasing recharge would ultimately provide benefits to agricultural operations, of which are prioritized under agricultural zoning and lands subject to Williamson Act contracts. In addition, the proposed laydown areas would not disturb active farming operations, and would only be temporary, lasting during the proposed Project's construction period. Therefore, impacts would 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. The proposed Project would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production. The proposed Project, nor its surroundings, are designated as Forest Land, Timberland, or timberland zoned for Timberland Production. Therefore, there would be no impact.

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

No Impact. The proposed Project would not result in the loss of forest land or conversion of forest land to non-forest use as there are none in the proposed Project region. Therefore, there would be no impact.

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

No Impact. As mentioned, the proposed check structures would ultimately provide benefits to agricultural operations by slowing down the flow in the creek, allowing water to pool and recharge the underlying aquifer. No aspect of the proposed Project would result in any conversion of farmland to another use. Furthermore, the Project area does not contain any forest lands or lands designated forest use; therefore, there would be no impact.

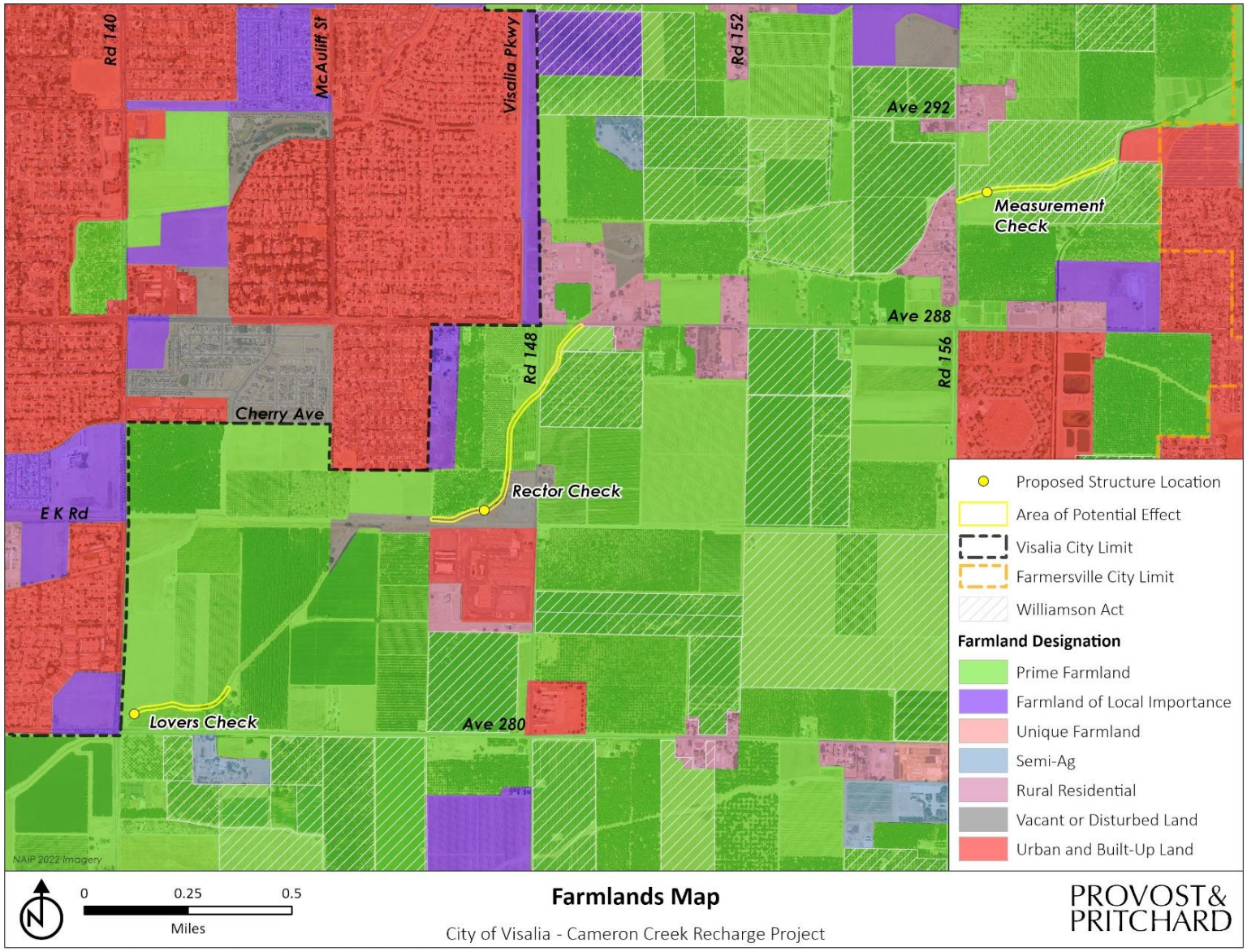


Figure 4-1: Farmland Map

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

Regulatory Attainment Designations

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

The United States Environmental Protection Agency (USEPA) designates areas for ozone, carbon monoxide (CO), and nitrogen dioxide (NO_2) as "does not meet the primary standards," "cannot be classified," or

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

"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 USEPA uses the same sub-categories for nonattainment status: serious, severe, and extreme. In 1991, USEPA assigned new nonattainment designations to areas that had previously been classified as Group I, II, or III for PM_{10} based on the likelihood that they would violate national PM_{10} standards. All other areas are designated "unclassified."

According to the USEPA the SJVAPCD was in non-attainment for two pollutant concentrations, with $PM_{2.5}$ (2012) being classified as in serious non-attainment, and 8-hour Ozone (2015) classified as being in extreme non-attainment as of August 7th, 2024.[8]

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

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

[8] (United States Environmental Protection Agency 2024)

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

** For more information on standards visit: https://ww3.arb.ca.gov/research/aaqs/aaqs2.pdf*
*** No Federal 1-hour standard. Reclassified extreme nonattainment for the Federal 8-hour standard*
****Secondary Standard*
Source: (San Joaquin Valley Air Pollution Control District 2012)

Construction-Generated Emissions

Short-term construction emissions associated with the proposed Project were calculated using CalEEMod, Version 2022.1.1.26.26. The emissions modeling includes emissions generated by off-road equipment, haul trucks, and worker commute trips. Emissions were quantified based on an anticipated construction schedule of approximately four months. The Project proposes to construct three check structures along Cameron Creek. For modeling purposes, inputs assumed construction of a singular check structure, however the analysis contained herein triples the estimated emissions to quantify the expected emissions for the entirety of the Project. Localized air quality impacts associated with the proposed Project would be minor and qualitatively assessed. Modeling assumptions and output files are included in Appendix A.

Thresholds of Significance

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

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

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

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

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

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

Source: SJVAPCD. 2015. Guidance for Assessing and Mitigating Air Quality Impacts. Website: https://www.valleyair.org/transportation/GAMAQI-2015/FINAL-DRAFT-GAMAQI.PDF. Accessed August 7, 2024.

4.3.2 Impact Analysis

Construction-Generated Emissions

Estimated construction-generated emissions are summarized in Table 4-6 and Table 4-7. Operational emissions of the proposed Project would be considered negligible due to the type of use proposed on-site.

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

Source	Annual Emissions (Tons per Year)					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Maximum Annual Project Construction Emissions	0.06	0.66	0.90	< 0.005	0.06	0.03
SJVAPCD Threshold	*10*	*10*	*100*	*27*	*15*	*15*
Threshold Exceeded?	No	No	No	No	No	No

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

Source	Daily Emissions Maximum (in pounds)					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Construction – Summer	3.39	30.3	31.2	0.06	17.46	9.00
SJVAPCD Threshold	*100*	*100*	*100*	*100*	*100*	*100*
Threshold Exceeded?	No	No	No	No	No	No

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

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

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

Less than Significant Impact. The proposed Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the proposed Project region is in non-attainment. As shown in Table 4-6 and Table 4-7, the proposed Project would not exceed an emissions threshold which has been set by the SJVAPCD for construction related emissions. The proposed Project would result in negligible quantities of operational emissions. Therefore, impacts would be less than significant.

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

Less than Significant Impact. The proposed Project would result in the construction of three check structures along Cameron Creek, southeast of the City of Visalia. The construction area of each check structure would be approximately 7,500 square feet in size and would be constructed over the span of approximately four months. While the Project would be constructed within the vicinity of some rural residences, the construction timeline is relatively short and construction would be focused in a limited area for each check structure. Given the short duration of construction and the limited area of construction, significant impacts are not expected to result from completion of the Project. Therefore, impacts 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. During construction activities, construction equipment exhaust and application of asphalt, structural coating and other construction applications would temporarily emit odors. Construction would be completed within the County of Tulare, near the Visalia and Farmersville city limits, and could have an effect on some residences that would be located near the construction area of the proposed Project. Construction of the proposed Project would be temporary, and no odors would remain after proposed Project completion. Therefore, impacts would be less than significant.

4.4 BIOLOGICAL RESOURCES

Table 4-8: Biological Resources Impacts

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

4.4.1 Baseline Conditions

General

The proposed Project is located along the floor of the San Joaquin Valley in Tulare County near the southeast quadrant of the City of Visalia in Tulare County. The Project area includes dirt roads and a section of Cameron Creek for a total of 14 acres. Surrounding lands on both sides of Cameron Creek are orchards, a recharge basin, agricultural and scattered residential homes. The topography of the Area of Potential Effect (APE) is relatively flat with elevations ranging from 318 to 352 feet above mean sea level.

Like most of California, the Area of Potential Effect (APE) experiences a Mediterranean climate. Warm, dry summers are followed by cool, moist winters. In the summer, average high temperatures range between 88- and 95 degrees Fahrenheit (°F), but often exceed 95 °F, and the humidity is generally low. Winter temperatures are often below 57 °F during the day and rarely exceed 64 °F. On average, the City of Visalia receives approximately 10.6 inches of precipitation in the form of rain yearly, most of which occurs between October and May, and the APE would be expected to receive similar amounts of precipitation.[9]

Soils

One soil mapping unit representing one soil type was identified within the APE (see Appendix D of Appendix B for the Web Soil Survey Report). The only soil type within the APE is Grangeville and the soil map unit is sandy loam, drained, with 0 to 2 percent slopes. Grangeville soils are somewhat poorly drained, with negligible to very low runoff, and moderately rapid permeability. This soil type is primarily used for wildlife habitat and agriculture.

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 interpretive group and one minor soil component were identified as hydric.

Biotic Habitats

A reconnaissance level field survey of the APE was conducted on June 3, 2024 (see Appendix B for the Biological Resources Evaluation prepared for the proposed Project). The APE includes approximately eight (8) acres with an additional 25-foot buffer surrounding the proposed Project site. It includes dirt roads and a section of Cameron Creek for a total of 14 acres. During the field survey, two biotic habitats were observed within the APE and included creek and ruderal (see Figure 4-2, Figure 4-3, and Figure 4-4 for the specific locations of each habitat found within the APE). These habitats and their constituent plant and animal species are described in more detail in the following sections.

Creek

The APE is located within Cameron Creek (see Figure 4-5 and Figure 4-6 for representative photos of the creek habitat observed during the field survey). The vegetation abundance varied throughout the creek, however the species richness remained consistent. The water level in the creek varied from dry to ponded for no more than a few hundred feet. There was trash and tire marks observed throughout the creek. There were two bridges that overlapped the boundary of the APE. The first bridge was west of the measurement check and the second bridge was north of the rector check.

The survey of the APE resulted in the identification of the following species: tall flatsedge (*Cyperus eragrostis*), horseweed (*Erigeron canadensis*), stinging nettle (*Urtica dioica*), common cocklebur, (*Xanthium orientale*), seep monkeyflower (*Erythranthe guttata*), Johnson grass (*Sorghum halepense*), shortpod mustard (*Hirschfeldia incana*), watermelon (*Citrullus lanatus*), common sunflower (*Helianthus annuus*), Spanish clover, (*Acmispon americanus*), tree tobacco (*Nicotiana glauca*), and prickly pear (*Opuntia ficus-indica*).

The survey of the APE resulted in the identification of the following species or their sign; cliff swallow (*Petrochelidon pyrrhonota*) nests, house finch (*Haemorhous mexicanus*), mourning dove (*Zenaida*

[9] (Weatherspark)

marcoura), northern mockingbird (*Mimus polyglottos*), turkey vulture (*Cathates aura*), and striped skunk (*Mephitis mephitis*) scat.

Ruderal

The majority of the ruderal area was comprised of a dirt road that runs parallel on both sides of Cameron Creek. Soils were generally, bare with occasional sparse, non-native vegetation throughout the habitat, and scatted valley oak trees (*Quercus lobata*) (see Figure 4-7 and Figure 4-8 for representative photos of the ruderal habitat observed during the field survey).

The survey of the APE resulted in the identification of the following species; California ground squirrel (*Otospermophilus beechyi*) was observed alarm calling, barn swallow (*Hirundo rustica*), slide-blotched lizard (*Uta stansburiana*) was observed seeking shelter between some rocks along Cameron Creek, red-tailed hawk (*Buteo jamaincensis*), common raven (*Corvus corax*), brown-headed cowbird (*Molothrus ater*), black phoebe (*Sayornis nigricans*), California scrub-jay (*Aphelocoma californica)*, an American kestrel (*Falco sparverius*) was dive bombing an American crow (*Corvus brachyrhynochos*) that was perched in an orchard tree, and a Swainson's hawk (*Buteo swainsoni*) was observed flying over the APE and into a valley oak tree outside the APE.

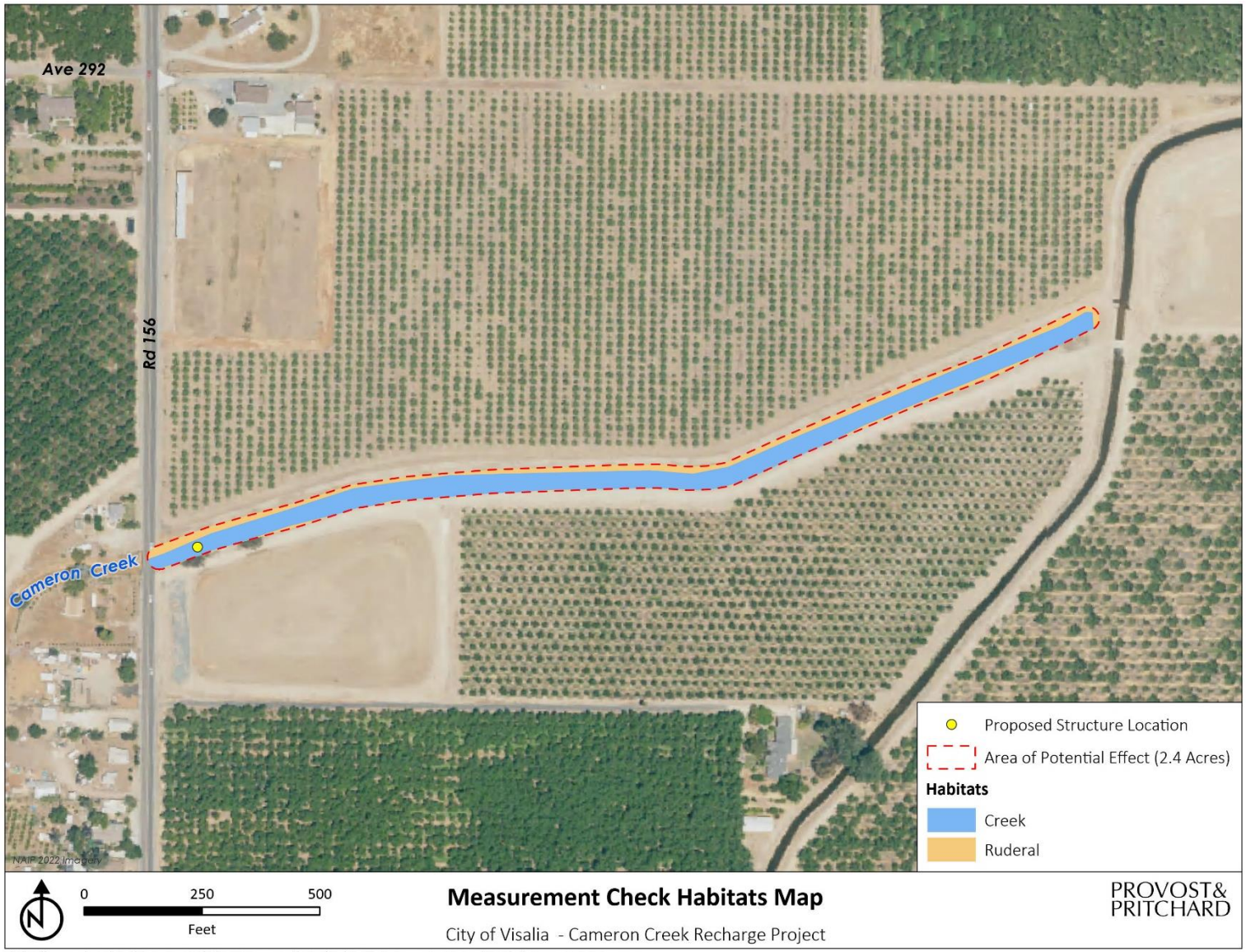


Figure 4-2: Habitats Map – Measurement Check Structure

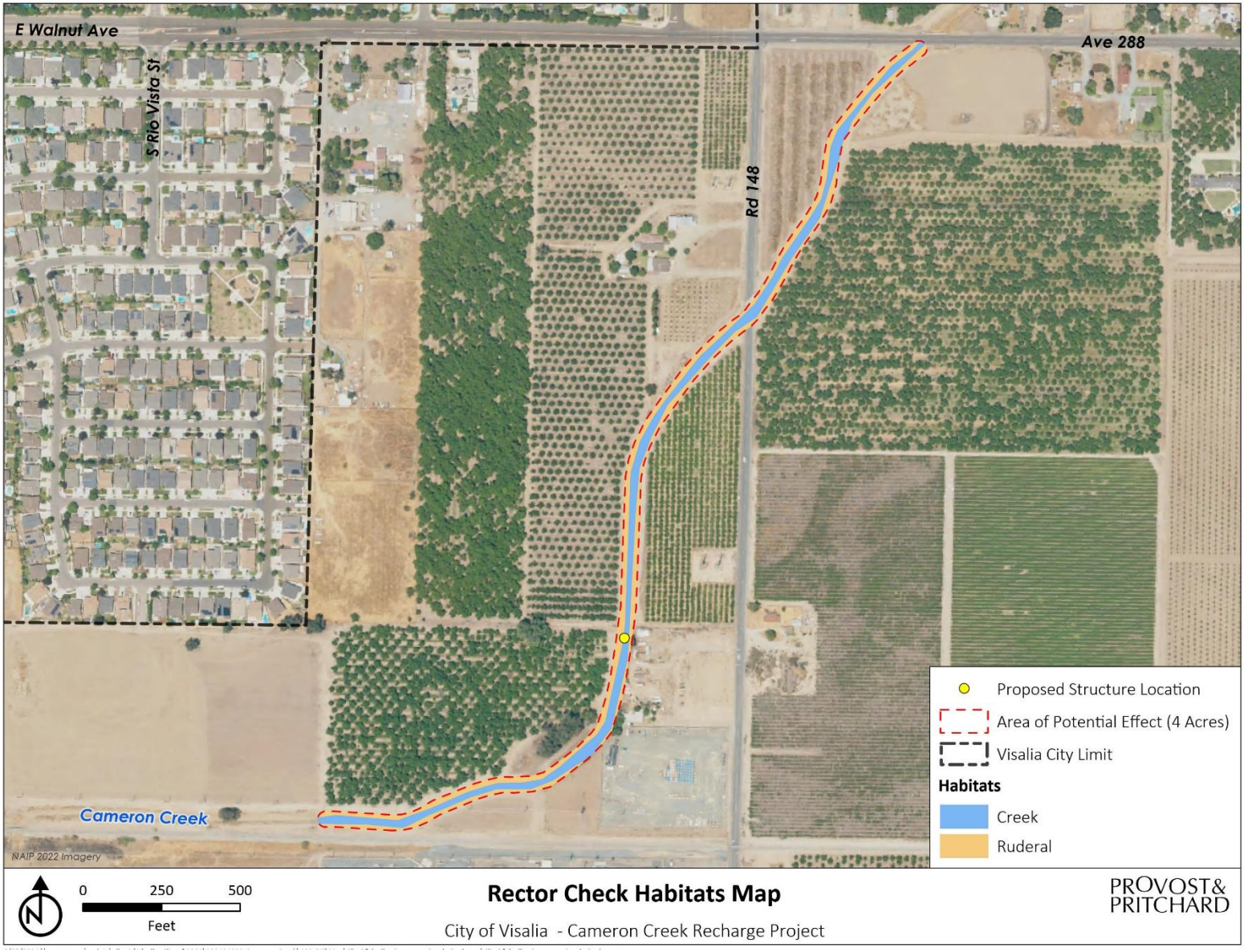


Figure 4-3: Habitats Map – Rector Check Structure

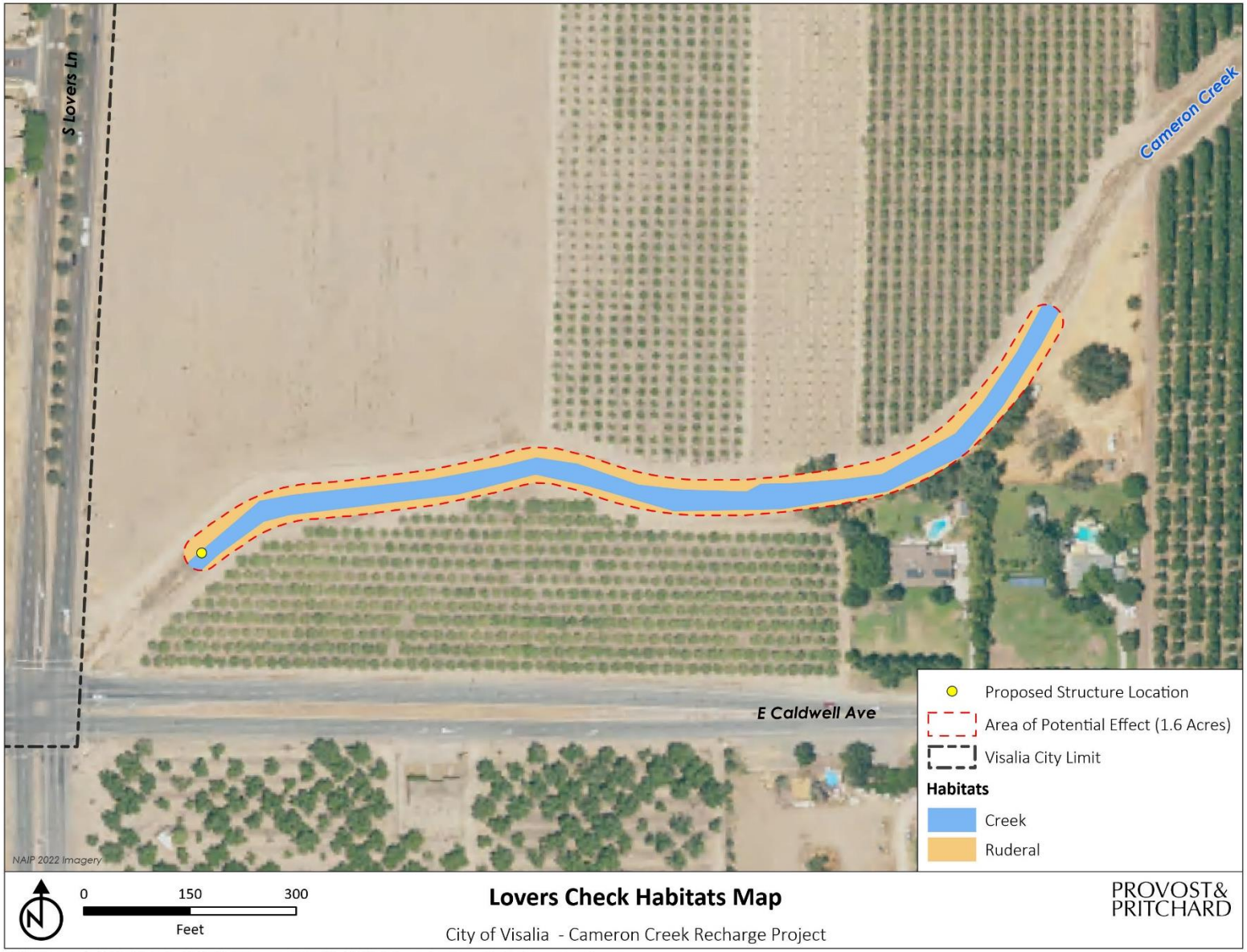


Figure 4-4: Habitats Map – Lovers Check Structure



Figure 4-5: Creek Habitat



Figure 4-6: Creek Habitat



Figure 4-7: Ruderal Habitat



Figure 4-8: Ruderal Habitat

Natural Communities of Special Concern and Riparian Habitat

Natural communities of special concern are those that are of limited distribution, distinguished by significant biological diversity, or home to special status species. CDFW has classified and mapped all natural communities in California. Just as the special status plant and animal species (see Section 3.6), these natural communities of special concern can be found within the CNDDB. No natural communities of special concern were observed during the field survey.

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

Designated Critical Habitat

The USFWS often designates areas of "critical habitat" when it lists species as threatened or endangered. Critical habitat is a specific geographic area that contains features essential for the conservation of a threatened or endangered species, which may require special management and protection. According to the IPaC, designated critical habitat is absent from the APE how there are areas of designated critical habitat in the region, including 13 miles east of the APE for California condors (*Gymnogyps californianus*) and 9 miles northeast and northwest of the APE for Hoover's spurge (*Chamesyce hooveri*) and San Joaquin Valley Orcutt grass (*Orcuttia inaequalis*).

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, rivers and creeks supporting riparian vegetation.

It is unlikely Cameron Creek serves as a movement corridor with the unpredictable water volume of Cameron Creek. Additionally, there are alternative routes such as the creek roads and the Western Pacific Railroad.

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. Several large valley oak trees were observed in Cameron Creek that could be used as maternity bat roosts within the APE.

Special Status Plants and Animals

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

A query of the CNDDB for occurrences of special status plant and animal species was conducted for the *Visalia* and *Exeter* U.S. Geological Survey (USGS) 7.5-minute quadrangles that contain the APE, and for the 10 surrounding USGS quadrangles: *Traver, Monson, Ivanhoe, Woodlake, Goshen, Visalia, Exeter, Rocky Hill, Paige, Tulare, Cairns Corner, Lindsay*. A query of the IPaC was also completed for the APE. These species, and their potential to occur within the APE, are listed in Table 4-9 and Table 4-10 below. 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 4-10. Species lists obtained from CNDDB and IPaC are available in Appendix B. All relevant sources of information, as discussed in this section, as well as field observations, were used to determine if any special status species have the potential to occur within the APE.

Table 4-9: List of Special Status Plants with Potential to Occur on the APE

Species	Status*	Habitat	Occurrence within the APE
Alkali-sink goldfields (*Lasthenia chrysantha*)	CNPS 1B	Found in vernal pool and wet saline flat habitats in the San Joaquin Valley region at elevations below 700 feet. Blooms February – April.	**Absent.** Vernal pools were not observed within the APE.
Brittlescale (*Atriplex depressa*)	CNPS 1B	Found in the Central Valley in alkaline or clay soils, typically in meadows or annual grasslands at elevations below 1,100 feet. Sometimes associated with vernal pools. Blooms June – October.	**Absent.** The soil and habitat required for this species were not observed within the APE.
Calico monkeyflower (*Diplacus pictus*)	CNPS 1B	Found in the Sierra Nevada foothills and the Tehachapi mountains in bare, sunny, shrubby areas, around granite outcrops within foothill woodland communities at elevations between 450 and 4,100 feet. Blooms March – May.	**Absent.** The APE is outside of the current known range of 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 200 and 6,100 feet. Blooms February – April.	**Absent.** The soil and habitat required for this species were not observed within the APE.
California alkali grass (*Puccinellia simplex*)	CNPS 1B	Found in the San Joaquin Valley and other parts of California in saline flats and mineral springs within valley grassland and wetland-riparian communities at elevations below 3,000 feet. Blooms March – May.	**Absent.** The habitat required for this species was not observed within the APE.
California satintail (*Imperata brevifolia*)	CNPS 2B	Often found in wet springs, meadows, streambanks, and floodplains, and can also be found in coastal scrub, riparian scrub, Mojavean desert scrub, chaparral, and alkali seeps at elevations below 1,600 feet. Blooms September – May.	**Unlikely.** The habitat required for this species was not observed within the APE. The most recent recorded observation occurred in an undetermined location two miles northwest of the APE in 1895.
Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*)	CNPS 1B	Found on alkaline and saline soils in vernal pools and playas in grassland at elevations below 4,500 feet. Blooms April – May.	**Absent.** Vernal pools were not observed within the APE.
Earlimart orache (*Atriplex cordulata* var. *erecticaulis*)	CNPS 1B	Found in the San Joaquin Valley in saline and alkaline soils, typically within valley grasslands at elevations below 400 feet. Blooms August – September.	**Absent.** The soils and habitat required by this species were not observed within the APE.

Species	Status*	Habitat	Occurrence within the APE
Greene's tuctoria (*Tuctoria greenei*)	FE, CNPS 1B	Found in the San Joaquin Valley and other parts of California in vernal pools within valley grassland, wetland, and riparian communities at elevations below 3,500 feet. Blooms May – September.	**Absent**. The habitat required for this species was not observed within the APE.
Heartscale (*Atriplex cordulata* var. *cordulata*)	CNPS 1B	Found in the Central Valley in saline or alkaline soils within shadscale scrub, valley grassland, and wetland-riparian communities at elevations below 250 feet. Blooms June – July.	**Absent.** The soil and habitat required for this species were not observed within the APE.
Hoover's spurge (*Euphorbia hooveri*)	FT, CNPS 1B	Found in vernal pools within valley grassland, freshwater wetland, and riparian communities at elevations below 800 feet. Blooms July – September.	**Absent.** Vernal pools were not observed within the APE.
Kaweah brodiaea (*Brodiaea insignis*)	CE, CNPS 1B	Found in the Sierra Nevada foothills in foothill woodland and valley grassland communities at elevations between 650 and 1,700 feet. Blooms May – June.	**Absent.** The APE is outside the current known range of this species.
Lassics lupine (*Lupinus constancei*)	FE, CE, CNPS 1B	Found near the summits of mountains in Humboldt and Trinity County in serpentine communities between 5,000 to 6,000 feet in elevation. Blooms July.	**Absent.** The APE is outside the current known range of this species.
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.** The soils and the habitat required by this species were not observed within the APE.
Recurved larkspur (*Delphinium recurvatum*)	CNPS 1B	Occurs in chenopod scrub, cismontane woodland, and grassland habitats on poorly drained, fine, alkaline soils; often in valley saltbush or valley chenopod scrub communities at elevations between 100 and 2,600 feet. Blooms March – June.	**Absent.** The soils and habitat required by this species were not observed within the APE.
Sanford's arrowhead (*Sagittaria sanfordii*)	CNPS 1B	This species is an aquatic plant and is found in the San Joaquin Valley and other parts of California in freshwater marshes, ponds, canals, and ditches at elevations below 1,000 feet. Blooms May – October.	**Unlikely.** Cameron Creek does not contain water on a regular basis to be able to support this species. The most recent recorded observation occurred nine miles northeast of the APE in 2018.
San Joaquin adobe sunburst (*Pseudobahia peirsonii*)	FT, CE, CNPS 1B	Found in the San Joaquin Valley and the Sierra Nevada foothills in bare, dark clay soils in valley and foothill grassland and cismontane woodland communities at elevations between 300 and 3,000 feet. Blooms March – May.	**Absent.** Soils and habitat required by this species were not observed within the APE.
San Joaquin Valley Orcutt grass (*Orcuttia inaequalis*)	FT, CE, CNPS 1B	Found in the eastern San Joaquin Valley and the Sierra Nevada foothills in vernal pools within valley grassland, freshwater wetland, and wetland-riparian communities at elevations below 2,600 feet. Blooms April – September.	**Absent.** Vernal pool and wetland communities were not observed within the APE**.**

Species	Status*	Habitat	Occurrence within the APE
Spiny-sepaled button-celery (*Eryngium spinosepalum*)	CNPS 1B	Found in the Sierra Nevada foothills and the San Joaquin Valley in vernal pools, swales, and roadside ditches. Often associated with clay soils in vernal pools within grassland communities. Occurs at elevations between 50 and 4,200 feet. Blooms April – July.	**Absent.** Vernal pools were not observed within the APE.
Striped adobe-lily (*Fritillaria striata*)	CT, CNPS 1B	Found in the Sierra Nevada foothills in adobe soil within valley grassland and foothill woodland communities at elevations below 3,300 feet. Blooms February – April.	**Absent.** The APE is outside the current known range of this species.
Subtle orache (*Atriplex subtilis*)	CNPS 1B	Found in the San Joaquin Valley in saline depressions in alkaline soils within valley and foothill grassland communities at elevations below 300 feet. Blooms June – October.	**Unlikely.** The soils required by this species were not present within the APE. The most recent recorded observation occurred in an unconfirmed location eight miles northwest of the in 2002.
Vernal pool smallscale (*Atriplex persistens*)	CNPS 1B	Occurs in the Central Valley in alkaline vernal pools at elevations below 400 feet. Blooms June – September.	**Absent.** No vernal pools were observed within the APE.
Winter's sunflower (*Helianthus winteri*)	CNPS 1B	Found in the Sierra Nevada foothills on steep, south-facing grassy slopes, rock outcrops, and road-cuts at elevations ranging from 600 to 1,500 feet. Blooms year-round.	**Absent.** The APE is located outside the current known elevational range of this species.

Table 4-10: List of Special Status Animals with Potential to Occur on the APE

Species	Status*	Habitat	Occurrence within the APE
American badger (*Taxidea taxus*)	CSSC	Prefers drier open stages of shrub, forest, and herbaceous habitats with friable soils to burrow, but can be found within numerous habitats throughout California, including the margins of agricultural lands. Needs a sufficient prey base of burrowing rodents.	**Possible.** The banks along Cameron Creek can provide suitable denning habitat for this species. Also, numerous California ground squirrel burrows were observed throughout the creek providing a prey source for this species. The most recent recorded observation occurred two miles northeast of the APE in 1994.
Blunt-nosed leopard lizard (*Gambelia sila*)	FE, CE, CFP	Occurs in the San Joaquin Valley region in expansive, arid areas with scattered vegetation. Today they inhabit non-native grassland and alkali sink scrub communities of the valley floor marked by poorly drained, alkaline, and saline soils. They can be found at elevations ranging from approx. 100 to 2,600 feet. They are absent from areas with steep slopes and dense vegetation, and areas subject to seasonal flooding. Adults may excavate shallow burrows but rely on deeper pre-existing rodent burrows for hibernation and reproduction.	**Absent.** No suitable habitat was observed within the APE.
Buena Vista Lake ornate shrew	FE, CSSC	Prefers moist soils, inhabiting marshes, swamps, and riparian shrublands in the	**Absent.** No suitable habitat was observed within the APE.

Species	Status*	Habitat	Occurrence within the APE
(*Sorex ornatus relictus*)		Tulare Basin. Uses stumps, logs, and leaf litter for cover.	
Burrowing owl (*Athene cunicularia*)	CSSC	Resides in open, dry grasslands, deserts, scrublands, and other areas with low growing vegetation. Nests and roosts underground in existing burrows created by mammals, most often by ground squirrels, and human-made structures.	**Possible.** The APE had numerous California ground squirrel burrows that could be used by the species that were observed along the creek. The most recent recorded sighting occurred 12 miles northwest of the APE in 2017.
California tiger salamander – central California DPS (*Ambystoma californiense*)	FT, CT	Requires vernal pools or seasonal ponds for breeding and small mammal burrows for aestivation. Generally found in grassland and oak savannah plant communities in central California from sea level to 1,500 feet in elevation. Can migrate up to 1.3 miles to breed.	**Unlikely.** The APE had small mammal burrows for the adults of this species to use during the non-breeding season as upland habitat. There were no vernal pools or seasonal ponds within the APE or surrounding area for this species to breed in. The most recent recorded observation occurred 9 miles northwest of the APE in 2002.
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 expanses of open savannah, grassland, and/or foothill chaparral in mountain ranges of moderate altitude. Forages for carrion up to 100 miles from their roost/nest sites.	**Unlikely.** The species could forage in the area, but the APE lacks suitable nesting habitat. The CNDDB has no observation records for this species within the APE and the entire 11 quads.
Crotch's bumble bee (*Bombus crotchii*)	CCE	Occurs throughout coastal California, as well as east to the Sierra Nevada-Cascade crest, and south into Mexico. Food plant genera include snapdragons, scorpionweeds, primroses, poppies, and buckwheats.	**Unlikely.** The APE lacked any of the necessary forage plants for this species. The most recent recorded observation of the species occurred in an undetermined location approximately seven miles east of the APE in 2010.
Foothill yellow-legged frog – south Sierra Distinct Population Segment (*Rana boylii*)	FC, CE	Frequents rocky streams and rivers with rocky substrate and open, sunny banks in forests, chaparral, and woodlands. Occasionally found in isolated pools, vegetated backwaters, and deep, shaded, spring-fed pools.	**Absent**. The habitat and habitat features required by this species were not observed within the APE.
Loggerhead shrike (*Lanius ludovicianus*)	CSSC	Frequents open habitats with sparse shrubs and trees, other suitable perches, bare ground, and low herbaceous cover. In the Central Valley, this species nests in riparian areas, desert scrub, and agricultural hedgerows.	**Possible.** Nesting habitat such as trees greater than five feet tall with dense foliage was observed. Also, the creek and agricultural fields provided ample foraging opportunities for this species within the APE. The most recent recorded observation occurred 12 miles northwest of the APE in 1992.
Monarch butterfly (*Danaus plexippus*)	FC	Roosts in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby. Larval host plants consist of milkweeds. Winter roost sites extend along the Pacific Coast from northern Mendocino to Baja California, Mexico.	**Possible.** Suitable overwintering habitat in the form of valley oak trees with suitable wind protection was observed with the APE. However, the trees in the APE are not expected to be removed and therefore will not impact this species. The most recent recorded observation occurred three miles east of the APE in 2019 in the Kaweah Oaks Preserve.

Species	Status*	Habitat	Occurrence within the APE
Northern California legless lizard (*Anniella pulchra*)	CSSC	Found primarily underground, burrowing in loose, sandy soil. Forages in loose soil and leaf litter during the day. Occasionally observed on the surface at dusk and night.	**Unlikely.** The soil was too compacted for this species to burrow through. The nearest recorded sighting occurred three miles northeast of the APE in 2015.
Northern leopard frog (*Lithobates pipiens*)	CSSC	Inhabits grassland, wet meadows, potholes, forests, woodland, brushlands, springs, canals, bogs, marshes, and reservoirs in scattered locations in California. Generally, prefers permanent water with abundant riparian vegetation.	**Unlikely**. Cameron Creek does not contain water regularly for the creek to be a suitable breeding habitat for this species. Cameron Creek also has sparse aquatic vegetation making it less likely this species would inhabit the creek. The surrounding areas are either orchards or residential homes, with little to no tall vegetation for non-breeding adults to inhabit during the summer. The most recent recorded observation occurred 10 miles north of the APE in 1961.
Northwestern pond turtle (*Actinemys marmorata*)	FPT, CSSC	An aquatic turtle of ponds, marshes, slow-moving rivers, streams, and irrigation ditches with riparian vegetation. Requires adequate basking sites and sandy banks or grassy open fields to deposit eggs.	**Unlikely.** Cameron Creek does not contain enough water regularly to be considered suitable habitat for this species. Cameron Creek also contains sparse aquatic vegetation and basking location for this species. The nearest recorded observation occurred in an undetermined location 2.5 miles northwest of the APE in 1897.
Pallid bat (*Antrozous pallidus*)	CSSC	Found in grasslands, chaparral, and woodlands, where it feeds on ground- and vegetation-dwelling arthropods, and occasionally takes insects in flight. Prefers to roost in rock crevices, but may also use tree cavities, caves, bridges, and other human-made structures.	**Possible.** Bare open habitat suitable for foraging was observed within the APE. Valley oak trees and bridges that could be used by the females during the breeding were also observed within the APE**.** The nearest recorded observation occurred 2.5 miles north of the APE in 2004.
San Joaquin kit fox (*Vulpes macrotis mutica*)	FE, CT	Opportunistically forages in a variety of habitats. Dens in burrows within alkali sink, valley grassland, and woodland habitats in valleys and adjacent foothills and in human-made structures in cities, rangeland, and agricultural areas.	**Possible.** The creek banks could provide denning habitat for this species. Additionally, California ground squirrels and their burrows were observed throughout the APE which would provide denning opportunity and a stable prey base for this species. Also, there were some ruderal fields adjacent to the APE this species could use to forage in. The nearest recorded observation occurred a quarter square mile from the APE in 1975.
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.	**Present.** A Swainson's hawk was observed flying over the APE and into a nearby tree within the APE during the recon survey. The Swainson's hawk was then observed flying into a valley oak tree that was in an agricultural field approximately a half mile west of the APE.

Species	Status*	Habitat	Occurrence within the APE
Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*)	FE, CE	Inhabits saltbush scrub and sink scrub communities in the Tulare Lake Basin of the southern San Joaquin Valley. This species needs soft friable soils to burrow.	**Absent.** Suitable habitat and soils required by this species were not observed within 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 foraging in dairy farm feed fields.	**Unlikely.** Cameron Creek did not contain enough aquatic vegetation to support nesting activity for this species. The nearest recorded observation occurred eight miles east of the APE in 2014.
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	FT	Lives in mature elderberry shrubs in the Central Valley and adjacent foothills from Tehama County south through Merced and Mariposa Counties with two scattered populations in Madera and Fresno Counties. Adults are active from March to June.	**Absent.** No elderberry shrubs were observed within the APE.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	Occupies vernal and seasonal pools, with clear to tea-colored water, in grass or mud-bottomed swales, and basalt depression pools.	**Absent.** No vernal pools were observed within the APE.
Vernal pool tadpole shrimp (*Lepidurus packardi*)	FE	Occurs in vernal pools, clear to tea-colored water, in grass or mud-bottomed swales, and basalt depression pools.	**Absent.** No vernal pools were observed within the APE.
Western mastiff bat (*Eumops perotis californicus*)	CSSC	Found in open, arid to semi-arid habitats, including dry desert washes, flood plains, chaparral, oak woodland, open ponderosa pine forest, grassland, and agricultural areas, where it feeds on insects in flight. Roosts most commonly in crevices in cliff faces but may also use high buildings and tunnels.	**Possible**. The species could use the bridge as roosting habitat. Particularly when water is in Cameron Creek which would create forage opportunities for this species. The nearest recorded observation occurred three and a half miles west of the APE in 2005.
Western spadefoot (*Spea hammondii*)	FPT, CSSC	The majority of the time this species is terrestrial and occurs in small mammal burrows and soil cracks, sometimes in the bottom of dried pools. Prefers open areas with sandy or gravelly soils, in a variety of habitats including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Vernal or seasonal pools, that hold water for a minimum of three weeks, are necessary for breeding.	**Unlikely.** Small mammal burrows for adults of this species to occupy in the non-breeding season were observed within the APE. However, no breeding habitat was observed within the APE. The most recent recorded observation occurred eight miles east of the APE in 1991.
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	FT, CE	Suitable nesting habitat in California includes dense riparian willow-cottonwood and mesquite habitats along a perennial river. Once common in the California Central Valley, as well as coastal valleys and riparian habitats east of the Sierra Nevada, habitat loss now constrains the California breeding population to small numbers of birds.	**Absent.** The APE is outside the current known range of this species.

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

Present:	Species observed on the APE at time of field surveys or during recent past.
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	CE	California Endangered
FT	Federally Threatened	CT	California Threatened
FPT	Federally Threatened (Proposed)	CSSC	California Species of Special Concern

CNPS LISTING

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

4.4.2 Impact Analysis

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

Less than Significant Impact with Mitigation Incorporated. Of the 23 regionally occurring special status plant species, all 23 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 sink goldfields, brittlescale, calico monkeyflower, California jewelflower, California alkali grass, California satintail, Coulter's goldfields, Earlimart orache, Greene's tuctoria, heartscale, Hoover's spurge, Kaweah brodiaea, lassics lupine, lesser saltscale, recurved larkspur, Sanford's arrowhead, San Joaquin adobe sunburst, San Joaquin Valley Orcutt grass, spiny-sepaled button-celery, striped adobe-lily, subtle orache, vernal pool smallscale, and winter's sunflower.

Since it is unlikely that these species would occur onsite, implementation of the proposed Project should have no impact on these 23 special status species through construction mortality, disturbance, or loss of habitat. Mitigation measures are not warranted.

Of the 23 regionally occurring special status animal species, 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 blunt-nosed leopard lizard, Buena Vista Lake ornate shrew, California condor, California tiger salamander, Crotch's bumble bee, foothill yellow-legged frog, northern California legless lizard, northern leopard frog, northwestern pond turtle, Tipton kangaroo rat, tricolored blackbird, valley elderberry longhorn beetle, vernal pool fairy shrimp, vernal pool tadpole shrimp, western spadefoot, and western yellow-billed cuckoo.

Since it is unlikely that these species would occur onsite, implementation of the proposed Project should have no impact on these 16 special status species through construction mortality, disturbance, or loss of habitat. Mitigation measures are not warranted.

General Project-Related Impacts

The proposed Project has the potential to impact a number of sensitive resources, as described in more detail in the following sections. Impacts to these resources would be a violation of State and federal laws or considered a potentially significant impact under CEQA and NEPA. Implementation of mitigation

measures BIO-1 and BIO-2 will help reduce potential impacts to these resources to a less than significant level and will help with complying with state and federal laws protecting these resources. These mitigation measures are identified in Section 4.4.3 below.

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

The APE contains suitable nesting and foraging habitat for a variety of protected bird species, such as migratory birds, raptors, and special status birds. The survey was conducted within the nesting bird season, and no active nests were observed. However, protected birds could nest on the ground or in shrubs, trees, or structures within the APE and forage within the APE. Swainson's hawk and loggerhead shrike are the special status birds observed during the field survey. Protected birds located within or adjacent to the APE during construction have the potential to be injured or killed by project-related activities. In addition to the direct "take" of protected birds within the APE or adjacent areas, these 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 significant impact under CEQA.

While foraging habitat for protected birds is present on the site, suitable foraging habitat is located adjacent to the site and within the vicinity of the site. Loss of the foraging habitat from implementation of the proposed Project is not considered a significant impact.

Implementation of mitigation measures BIO-3 through BIO-5 will reduce potential impacts to protected nesting birds to a less than significant level under CEQA and will help the project comply with State and federal laws protecting these bird species. These mitigation measures are identified in Section 4.4.3 below.

Project-Related Mortality and/or Disturbance to Burrowing Owl

The Project area contains suitable nesting and foraging habitat for burrowing owls (BUOWs). Construction activities that adversely affect the nesting success of burrowing owls or result in the mortality of individuals constitute a violation of State and federal laws and would be considered a significant impact under CEQA and NEPA. While the proposed Project may remove some potential foraging habitat for BUOW, there is abundant foraging habitat adjacent to the site that could be used, and implementation of the project would not significantly reduce potential foraging habitat for this species. Therefore, no mitigation measures are warranted for loss of BUOW foraging habitat.

Implementation of mitigation measures BIO-6 through BIO-8 would reduce potential impacts to nesting or roosting BUOW to a less than significant level under CEQA and NEPA and ensure compliance with state and federal laws protecting this avian species. These mitigation measures are identified in Section 4.4.3 below.

Project-Related Mortality and/or Disturbance of Maternity Roosting Bats and Special Status Bats

The oak trees and bridges adjacent to the APEs could support maternity roosting bats and roosting special status roosting bats, including the pallid bat and western mastiff bat, which are California species of special concern. Roosting habitat becomes especially sensitive to all bat species during the maternity roosting season (generally March 1 to August 31, depending on location and temperatures during a given year) and winter season. During the winter, some bats, including pallid bat and western mastiff bat, may roost within the bridges adjacent to the APE. Bats are not expected to overwinter in the oak trees due to

their inability to retain heat in the winter. Projects that impact maternity roosting bats or roosting special status bats would be considered a significant impact under CEQA.

Implementation of mitigation measures BIO-9 through BIO-11 will reduce potential impacts to maternity roosting bats and roosting special status bats to a less than significant level under CEQA. These mitigation measures are identified in Section 4.4.3 below.

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

The Project area contains suitable denning and foraging habitat for San Joaquin kit fox (SJKF). SJKF denning within the Project area during construction have the potential to be injured or killed by project-related activities. Projects that result in the mortality of individuals would be considered a violation of state and federal laws and considered a potentially significant impact under CEQA and NEPA. While the Project area may remove some potential foraging habitat for SJKF, there is abundant foraging habitat adjacent to the site that could be used, and implementation of the proposed Project would not significantly reduce potential foraging habitat for this species. Therefore, no mitigation measures are warranted for loss of SJKF foraging habitat.

Implementation of mitigation measures BIO-12 through BIO-14 will reduce potential impacts to SJKF to a less than significant level under CEQA and NEPA and will ensure compliance with state and federal laws protecting this species. These mitigation measures are identified in Section 4.4.3 below.

Project-Related Mortality and/or Disturbance to American Badger

The Project area contains grassland habitat that could potentially be used by American badger. American badgers denning within the Project area during construction have the potential to be injured or killed by project-related activities. Projects that result in the mortality of individuals would be considered a potentially significant impact under CEQA and NEPA.

Implementation of mitigation measures BIO-15 through BIO-18 will reduce potential impacts to American badgers to a less than significant level under CEQA and NEPA. The following measures will be implemented prior to the start of construction. These mitigation measures are identified in Section 4.4.3 below.

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. 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.

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

Less than Significant Impact. The appropriate permits required through the U.S. Army Corps of Engineers, CDFW, and/or the Central Valley Regional Water Quality Control Board (RWQCB) will be obtained if required. An Aquatic Resources Delineation will be conducted to document the boundaries of potential jurisdictional aquatic features within the Project area.

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

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 site?

Less than Significant Impact with Mitigation Incorporated. Most of the Project area does not contain features that would be likely to function as wildlife movement corridors. Cameron Creek could be potentially used as a wildlife movement corridor, but disturbance to this creek would be temporary in nature and would not disturb wildlife movement. Furthermore, the proposed Project is located in an area regularly disturbed by humans which would discourage dispersal and migration.

The Project area has suitable features (buildings and trees) that could be used by maternity roosting bats, which are considered native wildlife nursery sites. The potential impacts to maternity roosting bats have been addressed in mitigation measures BIO-9 through BIO-11. It is likely other native species would utilize any features of the APE as a wildlife nursery site.

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

No Impact. The Project appears to be consistent with the goals and policies of the Tulare County General Plan and the City of Visalia Oak Tree Preservation Ordinance. While there are valley oak trees present within the vicinity of the Project, the Project would not necessitate the removal or disturbance of any oak trees whatsoever. There are no known Habitat Conservation Plans (HCPs) or Natural Communities Conservation Plan (NCCPs) in the Project vicinity. There would be no impact 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. The proposed Project is not located within the boundaries of an adopted HCP, NCCP, or other approved local, regional, or State habitat conservation plan. There would be no impact and mitigation measures are not warranted.

4.4.3 Mitigation

General Project-Related Impacts

BIO-1 ***(WEAP Training)***: Prior to initiating construction activities (including staging and mobilization), all personnel associated with project construction will attend a mandatory Worker Environmental Awareness Program (WEAP) training, conducted by a "qualified biologist"(someone who is familiar with the species on the document), to aid workers in identifying special status resources that may occur in the APE. The specifics of this program will include identification of the sensitive species and suitable habitats, a description of the regulatory status and general ecological characteristics of sensitive

resources, and review of the limits of construction and mitigation measures required to reduce impacts to biological resources within the work area. This training will discuss special status species, describe the laws and regulations in place to provide protection of these species, identify the penalties for violation of applicable environmental laws and regulations, and include a list of required protective measures to avoid "take." A fact sheet summarizing this information, along with photographs or illustrations of sensitive species with potential to occur on the APE, will also be prepared for distribution to all contractors, their employees, and all other personnel involved with construction of the project. All trainees will sign a form documenting that they have attended WEAP training and understand the information presented to them.

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

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

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

BIO-3 **(*Avoidance*):** The project's construction activities will occur, if feasible, between September 16 and January 31 (outside of the nesting bird season) to avoid impacts to nesting birds.

BIO-4 **(*Pre-construction Surveys*):** If activities must occur within nesting bird season (February 1 to September 15), a "qualified biologist"(someone who is familiar with bird identification and nesting bird surveys) will conduct a pre-construction survey for Swainson's hawk nests onsite and within a 0.5-mile radius within 5 calendar days prior to the start of construction. This survey will be conducted in accordance with the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (Swainson's Hawk Technical Advisory Committee 2000), or current guidance. The Swainson's hawk survey will not be completed between April 21 to June 10 due to the difficulty of identifying nests during this time of year. The survey would also include inspecting for nesting migratory birds within the APE and up to 50 feet outside of the APE, and for other nesting raptors within and up to 450 feet outside of the APE. All raptor nests would be considered "active" upon the nest-building stage. If no active nests are observed, no further mitigation is required.

BIO-5 (*Avoidance Buffers*): On discovery of any active nests or breeding colonies near work areas, a "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.

Project-Related Mortality and/or Disturbance to Burrowing Owl

BIO-6 (*Pre-construction Take Avoidance Survey*): A "qualified biologist" (someone who is familiar with species identification and their sign, and habitat use) will conduct a pre-construction take avoidance survey for BUOW and suitable burrows, in accordance with CDFW's Staff Report on Burrowing Owl Mitigation (2012), within seven (7) days prior to the start of construction activities. The survey shall include the proposed work area and surrounding lands up to 500 feet. If no BUOW individuals or active burrows are observed, no further mitigation is required. If construction is hauled for (7) consecutive days another pre-activity survey shall be completed.

BIO-7 (*Avoidance*): If an active BUOW burrow is detected, the occurrence will be reported to the CNDDB, and avoidance buffers shall be implemented. A "qualified biologist" will determine appropriate avoidance buffer distances based on applicable CDFW and/or USFWS guidelines, the biology of the species, conditions of the burrow(s), and the level of project disturbance. If necessary, avoidance buffers will be identified with flagging, fencing, or other easily visible means, and will be maintained until the biologist has determined that the nestlings have fledged and all BUOW have left the Project area.

BIO-8 (*Passive Relocation*): If avoidance of an active BUOW burrow is not feasible, passive relocation during the non-breeding season (September 1 through January 31) could be utilized or during the breeding season (February 1 through August 31) if a "qualified biologist" determines that there are no young in the burrow. Prior to completion a "qualified biologist" will prepare a passive relocation plan that would detail the methods to be used. It would include the tools to exclude the BUOW from its burrow (i.e., one-way doors or other devices) and excavate the burrow (hand tools and machinery, if needed). Following completion of passive relocation, a report will be prepared that would document the methods and results of these efforts.

Project-Related Mortality and/or Disturbance of Maternity Roosting Bats and Special Status Bats

BIO-9 *(Focused Surveys)*: Within seven days prior to the start of construction activities focused surveys will be conducted by a "qualified biologist" (someone who is familiar with the roosting behavior and habitat of the species and can identify the species sign). They will include a daytime roost survey and dusk emergence survey. The daytime roost survey will include surveying for roosting bats within potentially suitable structures (i.e., oak trees and bridges) within and adjacent to each APE, where accessible.

The dusk emergence survey will include surveying for emerging bats at areas where bat sign or likely bat roost areas were observed during the daytime roost survey. It should be conducted on a warm night during dry weather conditions and from approximately

15 minutes before sunset to 1 hour after sunset. If no roosting bats are discovered tree or branch removal must be completed within two days.

BIO-10 (*Avoidance Buffers*): Should any active bat roosts be observed during the focused surveys, a "qualified biologist" will determine appropriate avoidance buffers (i.e., construction setback distances) based on the biology of the species, conditions of the roost(s), and the level of project disturbance, if appropriate. 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 roost will no longer be impacted by construction.

BIO-11 (*Eviction*): If avoidance buffers are not feasible and it has been determined by a "qualified biologist" that the bats are no longer raising their young or are overwintering, the bats may be evicted. An eviction plan will first be prepared by a "qualified biologist" that identifies the materials and methods that will be used to safely evict the bats.

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

BIO-12 (*Pre-Construction Survey*): Within fourteen (14) days prior to the start of construction a "qualified biologist" will conduct a pre-construction survey for San Joaquin kit fox will be conducted on and within 200 feet of proposed work areas.

BIO-13 (*Establish Buffers*): On discovery of any SJKF dens near the project area a "qualified biologist" (someone familiar with the identification and sign of this species) will determine appropriate construction setback distances (buffer zones) based on applicable CDFW and/or USFWS guidelines (see below). If needed, construction buffers will be identified with flagging, fencing, or other easily visible means. They will be maintained until the biologist has determined that the den will no longer be impacted by construction.

1. At least 100 feet around den(s);
2. At least 200 feet around natal dens (which SJKF young are reared); and
3. At least 500 feet around any natal dens with pups (except for any portions of the buffer zone that is already fully developed).

BIO-14 (*Avoidance and Minimization*): The project will observe all avoidance and minimization measures during construction and on-going operational activities as required by the "qualified biologist" and the USFWS's Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance (2011), including, but not limited to: maintaining buffer zones, construction speed limits, covering of pipes, installation of escape structures, restriction of herbicide and rodenticide use, proper disposal of food items and trash, prohibition of pets and firearms, and completion of an employee education program (see BIO-1).

Project-Related Mortality and/or Disturbance to American Badger

BIO-15 (*Pre-construction Take Avoidance Survey*): A "qualified biologist" (someone familiar with the identification and sign of this species) will conduct a pre-construction survey of project areas within seven (7) days prior to vegetation clearing or ground disturbing activities. The goal of this survey is to search for potential badger dens.

BIO-16 (*Remote Cameras*): If potential dens for American badger are detected during the pre-construction survey, each potential den will be monitored with remote cameras for a period of three consecutive nights. If there is no activity at the den location recorded for three consecutive nights, the den can be deemed "inactive" or "unoccupied" and closed or excavated.

BIO-17 (*Den Avoidance*): If an American badger is denning on or within 50 feet of the project site, the project proponent shall avoid the den by a minimum 50-foot buffer.

BIO-18 (*Eviction and Den Excavation*): If an American badger is denning on or within 50 feet of the project site and it cannot be avoided, the badger may be evicted, and the den excavated outside of the natal season (generally March 15 – June 15) or if it is determined that there are no kits in the den. Prior to the planned eviction and den excavation, a remote camera will be placed at the den entrance for a minimum of three consecutive nights to record the general time when the badger leaves the den. If it is outside of the natal season or it is determined by a "qualified biologist" that there are no "kits" present in the den the badger will be evicted from the den and the den excavated by hand, with the assistance of machinery, after it has left the den for that night. Should any "kits" be discovered during the excavation the work will stop and the crew will leave the site immediately so the female can rescue her kits and relocate them.

4.5 CULTURAL RESOURCES

Table 4-11: 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

As the oldest Central Valley city south of Stockton, Visalia hosts an impressive collection of historic sites and structures, including four that are listed on the National Register of Historic Places. Numerous distinctive architectural styles are present in Visalia, concentrated in the city's historic core; particularly notable examples are recorded in the city's local registry.[10]

Visalia was settled in 1852 and incorporated as a city in 1874. In its early years the City was a supply center for nearby gold mining operations, and had an agricultural economy based on livestock. The construction of the Southern Pacific Railroad through the Valley in 1872 triggered a shift in the agricultural economy from cattle toward field crops. The next major economic change was brought about by the availability of irrigation water, resulting in the conversion of large grain fields to small farms, where citrus, grapes, olives, and deciduous fruits were raised. These crops are a mainstay of the region's economy today. [11]

Class III Inventory/Phase I Survey

An intensive Phase I Cultural Resource survey of the Project area was conducted by ASM Associates (ASM) Archaeologists in July 2024. The field methods employed included intensive pedestrian examination of the ground surface for evidence of archaeological sites in the form of artifacts, surface features (such as bedrock mortars, historical mining equipment), and archaeological indicators (e.g., organically enriched midden soil, burnt animal bone); the identification and location of any discovered sites, should they be present; tabulation and recording of surface diagnostic artifacts; site sketch mapping; preliminary evaluation of site integrity; and site recording, following the California Office of Historic Preservation Instructions for Recording Historic Resources (See Appendix C).

The Phase I survey fieldwork employed parallel transects spaced at 15-meter intervals walked across the survey area. (See Appendix C)

[10] (Dyett & Bhatia Urban and Regional Planners 2014)
[11] Ibid.

Records Search

A records search from the Southern San Joaquin Valley Information Center (SSJVIC) of the California Historical Resources Information System (CHRIS), located at California State University, Bakersfield was conducted in June 2024. The SSJVIC records search includes a review of all recorded archaeological and built-environment resources as well as a review of cultural resource reports on file. In addition, the California Points of Historical Interest, the California Historical Landmarks, the California Register of Historical Resources, the National Register of Historic Places, and the California State Built Environment Resources Directory listings were reviewed for the Project area and an additional 0.5-mile radius. Due to the sensitive nature of cultural resources, archaeological site locations are not released. Additional sources included the State Office of Historic Preservation Historic Properties Directory, Archaeological Determinations of Eligibility, and the California Inventory of Historic Resources. (See Appendix C)

Native American Outreach

The NAHC in Sacramento was contacted in June 2024. They were provided with a brief description of the proposed 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 Project area. The NAHC identifies, catalogs, and protects Native American cultural resources -- ancient places of special religious or social significance to Native Americans and known ancient graves and cemeteries of Native Americans on private and public lands in California. The NAHC is also charged with ensuring California Native American tribes' accessibility to ancient Native American cultural resources on public lands, overseeing the treatment and disposition of inadvertently discovered Native American human remains and burial items, and administering the California Native American Graves Protection and Repatriation Act, among many other powers and duties. NAHC provided a current list of Native American Tribal contacts in the Project area to notify of the proposed Project.

The results of the search indicated that no known sacred sites or tribal cultural resources were located within the Project area. On June 24, 2024, the City of Visalia sent outreach letters by certified mail to all the tribes listed on the NAHC contact list. Details of those outreach letter can be found below Section 4.18 Tribal Cultural Resources. No responses have been received to date.

4.5.2 Impact Analysis

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

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

a and b) Less than Significant Impact with Mitigation Incorporated. A CHRIS records search, from the SSJVIC, was conducted by ASM in June 2024 and confirmed there have been six previous cultural resource studies conducted within the Project area and seven previous cultural resource studies conducted within the one-half mile radius. The search also confirmed that there are four recorded resources within the Project area and 12 within one-half mile radius of the Project area. It is unlikely that the proposed Project has the potential to result in significant impacts or adverse effects to any known unknown cultural or historical resources, such as archaeological remains, artifacts or historic properties or structures. However, in the improbable event that unknown cultural resources are encountered during proposed Project construction, implementation of mitigation measure **CUL-1** outlined below will reduce impacts to any historical or archaeological resource to less than significant.

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

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

4.5.3 Mitigation

CUL-1 In the event that previously unidentified archaeological remains are encountered during development or ground-moving activities in the APE, all work should be halted until a qualified archaeologist can identify the discovery and assess its significance. In the event of accidental discovery of unidentified archaeological remains during development or ground-moving activities in the APE, all work shall be halted in the immediate vicinity until a qualified archaeologist can identify the discovery and assess its significance.

CUL-2 If human remains are uncovered during construction, the Tulare County Coroner is to be notified to investigate the remains and arrange proper treatment and disposition. If the remains are identified on the basis of archaeological context, age, cultural associations, or biological traits to be those of a Native American, California Health and Safety Code 7050.5 and PRC 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 be afforded an opportunity to make recommendations regarding the treatment and disposition of the remains.

4.6 ENERGY

Table 4-12: Energy Impacts

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

4.6.1 Baseline Conditions

The proposed Project would be located within Tulare County, southeast of the City of Visalia. The Project area is served by Southern California Edison (SCE) for both its electric energy needs, while it is served by Southern California Gas Company (SoCalGas) for its natural gas energy needs.

4.6.2 Impact Analysis

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

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

Construction is estimated to consume a total of approximately 7,596.88 gallons of diesel fuel and approximately 546.5 gallons of gasoline fuel (see Appendix A). California Code of Regulations Title 13, Motor Vehicles, Section 2449(d)(2), Idling, limits idling times of construction vehicles to no more than 5 minutes, thereby precluding unnecessary and wasteful consumption of fuel because of unproductive idling of construction equipment. In addition, the energy consumption for construction activities would not be ongoing as they would be limited to the duration of Project construction.

Energy consumption of non-residential uses is currently governed by the 2022 California Building Code, Part 6 for structures, and Title 20 of the California Code of Regulations for appliances. Energy consumption is anticipated to decrease over time as more energy efficient standards take effect and

energy-consuming equipment reaches its end-of-life and necessitates replacement. Therefore, impacts would be less than significant.

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

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

4.7 GEOLOGY AND SOILS

Table 4-13: 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 proposed Project is located in western 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. 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.[12]

Faults and Seismicity

The proposed Project is not located within an Alquist-Priolo Earthquake Fault Zone and there are no known active faults within the City of Visalia or the region of Tulare County that the proposed Project is located in. The nearest major faults are the Owens Valley and San Andreas Fault, located approximately 58 miles east and 72 miles southwest of the Project area, respectively.[13] 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. The Kern Canyon Fault is located approximately 42 miles east and the Poso Fault is located approximately 50 miles south of the Project area.[14]

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 Tulare County or the City of Visalia, this potential is recognized throughout the San Joaquin Valley where unconsolidated sediments and a high-water table coincide. Soil types along the Valley floor are not generally conducive to liquefaction because they are generally too coarse. Furthermore, according to the California Department of Water Resources Live Groundwater Levels map, the groundwater levels measured at a location approximately one mile to the southwest of the Project area was approximately 127 feet below ground surface as of October 16, 2023; this further reduces potential for liquefaction. [15]

Soil Subsidence

There are two types of Subsidence: Land subsidence and hydrocompaction subsidence. Hydrocompaction subsidence occurs when a large land area settles due to over-saturation. These areas are typically composed of open-textured soils that become saturated, high in silt or clay content. Land subsidence occurs when an extensive amount of ground water, oil, or natural gas is withdrawn from below the ground surface.

Soils within the Project area consist of Grangeville Sandy Loam and Nord Fine Sandy Loam, which are coarse-textured, low in clay content, and have a low shrink-swell potential. Therefore, soils onsite represent a low risk of subsidence.

Dam and Levee Failure

The nearest dam with a high likelihood of breaching is the Bravo Lake Reservoir Dam, located approximately 10 miles to the northeast.[16]

[12] (California Department of Conservation 2002)
[13] (California Department of Conservation 2023)
[14] Ibid.
[15] (California Department of Water Resources 2023)
[16] (California Department of Water Resources 2022)

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. Seismic-related ground failure, including liquefaction?

i and ii) Less than Significant Impact. The Project area is located in an area traditionally characterized by relatively low seismic activity. The 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).

Although there are no known earthquake faults within the vicinity of the proposed Project and strong ground shaking is unlikely, construction of the check structures would comply with the most recent seismic standards as set forth in the California Building Standards Code. Compliance with these standards would ensure potential impacts related to strong seismic ground shaking would be less than significant.

iii. Seismic-related ground failure, including liquefaction?

Less than Significant Impact. Liquefaction occurs when loose, water-saturated sediments lose strength and fail during strong ground shaking. Although no specific liquefaction hazard areas have been identified in Tulare County and the City of Visalia, this potential is recognized throughout the San Joaquin Valley where unconsolidated sediments and a high-water table coincide. Using the United States Department of Agriculture Natural Resources Conservation Service soil survey, an analysis of the soils onsite was performed. Soils in the area consists of Grangeville Sandy Loam and Nord Fine Sandy Loam, which are well-drained and coarse-textured, representing a low risk for liquefaction or seismic-related ground failure. In addition, using California Department of Water Resources Live Groundwater Levels map, the groundwater levels measured at a location approximately one mile to the southwest of the Project area was approximately 127.6 feet below ground surface as of October 16, 2023; this further reduces potential for liquefaction.[17] Furthermore, as mentioned above in Impact Assessments 4.7.2 a) i-ii, strong seismic ground shaking is unlikely to occur. Any impacts related to seismic-related ground failure, including liquefaction, would be less than significant.

iv. Landslides?

No Impact. Landslides usually occur in locations with steep slopes and unstable soils. The Project area is located on the Valley floor where no major geologic landforms exist, and the topography is essentially flat and level. The nearest foothills are approximately nine miles east of the Project area. Therefore, the Project area has minimal-to-no landslide susceptibility, and there would be no impact.

[17] (California Department of Water Resources 2023)

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

Less than Significant Impact. Earthmoving activities associated with the proposed Project would include grading, and construction within the Cameron Creek channel. Construction would take place when the channel is empty. 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 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 (CGP) requires the development of a SWPPP by a certified Qualified SWPPP Developer. Through the completion of a SWPPP, any possible impacts from construction related activities involving soil erosion and loss of topsoil would be reduced. Therefore, impacts 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?

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?

c and d) Less than Significant Impact. Soils within the Project area consist of Grangeville Sandy Loam and Nord Fine Sandy Loam, which are coarse-textured, low in clay content, and well-drained. These soils have a low shrink-swell potential and a low plasticity index, and therefore, are not considered expansive soils. Furthermore, the aforementioned physical properties of these soils make subsidence, liquefaction, lateral spreading, or other ground failure unlikely. Any impacts would be considered 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. Septic installation or alternative wastewater disposal systems are not necessary for the proposed Project. There would 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. No known paleontological resources have been identified at the Project area. Therefore, impacts would be less than significant.

4.8 GREENHOUSE GAS EMISSIONS

Table 4-14: Greenhouse Gas Emissions Impacts

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

4.8.1 Baseline Conditions

Commonly identified GHG emissions and sources include the following:

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

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

Nitrous oxide (N_2O), also known as laughing gas, is a colorless GHG. N_2O 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 GHG. It is not considered a pollutant; in the atmosphere, it maintains a climate necessary for life.

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

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

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

Hydrofluorocarbons (HFCs) are synthetic chemicals that are used as a substitute for CFCs. Of all the GHGs, 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 (SF_6) 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.

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

Emissions of GHGs contributing to global climate change are largely attributable to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. About three-quarters of human emissions of CO_2 to the global atmosphere during the past 20 years are due to fossil fuel burning. Atmospheric concentrations of CO_2, CH_4, and N_2O have increased by at least 40 percent, 150 percent, and 20 percent respectively since the year 1750. GHG emissions are typically expressed in carbon dioxide-equivalents (CO_2e), based on the GHG's 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 CH_4 has the same contribution to the greenhouse effect as approximately 25 tons of CO_2. Therefore, CH_4 is a much more potent GHG than CO_2. In accordance with SJVAPCD's *CEQA Greenhouse Gas Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects*, proposed projects complying with Best Performance Standards (BPS) would be determined to have a less-than-significant impact.[18] Projects not complying with BPS would be considered less than significant if operational GHG emissions would be reduced or mitigated by a minimum of 29 percent, in comparison to business-as-usual (year 2004) conditions. In addition, project-generated emissions complying with an approved plan or mitigation program would also be determined to have a less-than-significant impact.

4.8.2 Impact Analysis

Project Related Emissions

Short-term construction emissions associated with the proposed Project were calculated using CalEEMod, Version 2022.1.1.26. The emissions modeling includes emissions generated by off-road equipment, haul trucks, and worker commute trips. Emissions were quantified based on an anticipated construction schedule of approximately four months. The Project proposes to construct three check structures along Cameron Creek. For modeling purposes, inputs assumed construction of a singular check structure,

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

however the analysis contained herein triples the estimated emissions to quantify the expected emissions for the entirety of the Project. Remaining assumptions were based on the default parameters contained in the model. Modeling assumptions and output files are included in Appendix A. Estimated construction-generated emissions are summarized in Table 4-15. GHGs impact the environment over time as they increase and contribute to climate change. As discussed in Section 4.3, the amount of operational related emissions generated would be considered negligible.

Table 4-15: Short Term Construction Related GHG Emissions

	Emissions (MT CO2e) in Tons per Year
Maximum Annual Construction CO2e Emissions	150.6
AB 32 Consistency Threshold for Land-Use Development Projects*	1,1OO
AB 32 Consistency Threshold for Stationary Source Projects*	10,000
Threshold Exceeded?	No

* As published in the Bay Area Air Quality Management District's CEQA Air Quality Guidelines. Available online at http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en. Accessed 8/7/24.

Construction related generation of GHGs would be a maximum of 150.6 Metric Tons of Carbon Dioxide Equivalent (MT CO_2e) per year. While some operational emissions could result from the proposed Project, this quantity would be negligible. The proposed Project would not exceed the AB 32 consistency threshold for land use projects for both short term construction emissions and long-term operational emissions as a result.

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

Less than Significant Impact. The proposed Project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. As shown in Table 4-15, the proposed Project is not expected to result in the generation of GHG emissions that would exceed the AB32 consistency threshold of 1,100 MT CO_2e annually during both construction and operational activities. Long term operational activities would result in negligible quantities of GHG emissions being generated due to use of pumps, valves, and associated water conveyance infrastructure. Therefore, impacts would be less than significant.

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

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

4.9 HAZARDS AND HAZARDOUS MATERIALS

Table 4-16: 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 to develop an updated Cortese List at least annually. 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 sites, Department of Defense sites, and Land Disposal program. A search of the DTSC EnviroStor[19] database and the SWRCB GeoTracker[20] performed on July 11, 2024, determined that there are no known active hazardous waste generators or hazardous material spill sites within the Project area or immediate surrounding vicinity.

Airports

The Project area would be located approximately seven miles southeast of the Visalia Municipal Airport. The proposed Project would not be located within an adopted Airport Land Use Compatibility Plan (ALUCP).

Emergency Response Plan

The City of Visalia has an Emergency Operations Plan that was adopted in 2011. The plan lays out the planned procedures that the City would follow in the event of an emergency.

The Tulare County Office of Emergency Services coordinates the development and maintenance of the Tulare County Operational Area Master Emergency Services Plan.

Sensitive Receptors

Sensitive Receptors are groups that would be more affected by air, noise, and light pollution, pesticides, and other toxic chemicals than others. This includes infants, children under 16, elderly over 65, athletes, and people with cardiovascular and respiratory diseases. High concentrations of these groups would include daycares, residential areas, hospitals, elder care facilities, schools and parks. The nearest sensitive receptors include the scattered residences adjacent to Cameron Creek.

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. Equipment and materials used during construction activities would include fuels, oils and lubricants. The routine use or an accidental spill of hazardous materials used in construction could result in inadvertent releases, which could adversely affect construction workers, the public, and the environment. Construction activities would be required to comply with numerous hazardous materials regulations designed to ensure that hazardous materials are transported, used, stored, and disposed of in a safe manner to protect worker safety, and to reduce the potential for a release of construction-related fuels or other hazardous materials into the environment, including stormwater and downstream receiving water bodies. As discussed in Section 4.7 Geology and Soils, the construction contractor would be required to apply for coverage under the CGP, which requires the

[19] (California Department of Toxic Substances Control 2022)
[20] (State of California 2022)

preparation and implementation of a SWPPP for construction activities on sites with more than one acre of ground disturbance. Compliance with applicable laws and regulations would minimize hazards associated with the routine transport, use, or disposal of hazardous materials to the maximum extent practicable. In addition, compliance with applicable laws and regulations would lower any potential impacts from foreseeable upset and accident conditions involving the release of hazardous materials into the environment to a less than significant level. Therefore, impacts would be less than significant.

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

No Impact. The proposed Project is not located within a quarter mile of any schools. Therefore, there would be no impact.

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

No Impact. The Project area is not on a list of hazardous materials sites compiled pursuant to GC Section 65962.5, according to the EnviroStor and GeoTracker databases identified above. As a result, the proposed Project would not create a significant hazard to the public or environment due to the Project being located on an existing hazardous material site. Therefore, there would be no impact.

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

No Impact. The Project area is not located within an ALUCP, nor is it located within two miles of a public airport or public use airport. Therefore, there would be no impact.

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

Less than Significant Impact. The proposed Project includes the construction of three check structures in Cameron Creek to control flow rates to improve in-creek recharge. Construction traffic associated with the proposed Project would be minimal and temporary, lasting approximately four months. Operational traffic would consist of as-needed maintenance trips and would have no effect on roadways or emergency access. Road closures and detours are not anticipated as part of the construction phase of the proposed Project. Therefore, proposed Project-related impacts to emergency evacuation routes or emergency response routes on local roadways would be considered less than significant.

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

No Impact. The proposed Project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires. As discussed more thoroughly in Section 4.20, the Project area is not located in an area that has been designated as being a State Responsibility Area (SRA) or as being a very high fire hazard severity zone. Therefore, there would be no impact.

4.10 HYDROLOGY AND WATER QUALITY

Table 4-17: 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**

Hydrology in the Project area is associated with the Tulare Lake Hydrologic Region, containing three main subbasins. The Tulare Lake subbasin is in the northern alluvial fan and basin subarea characterized by southwest to south flowing rivers, creeks, and irrigation canal systems that convey water from the Sierra Nevada to the west toward the Tulare Lakebed. The southern portion of the basin is internally drained by the Kings, Kaweah, Tule, and Kern Rivers.[21] The Tulare Lake Basin comprises the drainage area of the San Joaquin Valley south of the San Joaquin River and is essentially a closed basin because surface water drains

[21] (California Department of Water Resources. Natural Resources Agency 2015)

north into the San Joaquin River only in years of extreme rainfall. The Project area is located within two watersheds, the Lower Cross Creek and the Middle Branch Cross Creek.[22] A watershed is the topographic region that drains into a stream, river, or lake. Watersheds are made up of many smaller subwatersheds that drain into a particular stream, river, or lake. The nearest surface water to the proposed Project is Cameron Creek which is a part of the Project area. Cameron Creek is a controlled water way that is inundated infrequently. The creek runs southwest of Visalia where it eventually splits and spills into a water basin but also continues a short distance before it merges with Packwood Creek.

The Project area is located within the Greater Kaweah Groundwater Sustainability Agency's (GKGSA) boundary.[23] The GKGSA is one of the three GSAs that manage the underlying Kaweah Subbasin.[24]

4.10.2 Impact Analysis

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

Less than Significant Impact. Construction of the proposed Project could introduce sediments and other contaminants typically associated with construction into stormwater runoff. Although the Project would be constructed during the dry season when there is no water in Cameron Creek, the unlikely potential of stormwater flowing through the proposed Project during construction could carry various pollutants downstream. Potential pollutants include sediment, nutrients, bacteria and viruses, oil and grease, heavy metals, organics, pesticides, and miscellaneous waste. These pollutants could originate from soil disturbances, construction equipment, building materials, and workers. Erosion potential and water quality impacts are always present during construction and occur when protective vegetative cover is removed, and soils are disturbed. In the case of the proposed Project, grading and cut and fill are the primary construction activities associated with facility improvements.

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

[22] (United States Environmental Protection Agency (USEPA) 2023)
[23] (California Department of Water Resources 2023)
[24] (Greater Kaweah GSA 2023)

Less than Significant Impact. The purpose of the proposed Project is to improve groundwater recharge within the existing Cameron Creek channel. Implementation of the Project would increase the local groundwater table. Any impacts to the underlying groundwater supply 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?

c i-iv) Less than Significant Impact.. The addition of the three proposed check structures within Cameron Creek would increase water recharge capabilities by pooling waters within Cameron Creek, facilitating passive recharge. Alteration of the course of Cameron Creek would not occur, as the check structures would be placed within the existing Creek. In addition, potential damaging storm and/or flood waters would be detained on site, to the extent of available capacity, where a portion of such detained flows would percolate to useable groundwater. The remaining detained supply would be released when either damage is occurring due to the continued detention, or sufficient downstream channel capacity exists to allow for non-damaging passage of such retained volumes. Therefore, impacts would be less than significant.

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

Less than Significant Impact.. As seen in Figure 4-9, two of the three proposed check structures would be located in a Federal Emergency Management Act (FEMA) flood zone. The construction and operation of the proposed Project is subject to water quality standards based on Clean Water Act Section 401 and Section 404 requirements. Furthermore, as mentioned throughout this document, the proposed Project would be required to comply with the requirements of the RWQCB CGP, which requires implementation of a SWPPP. Therefore, by complying with said regulations, 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. As mentioned, the proposed Project would require coverage under the RWQCB CGP. In accordance with the requirements of the CGP, a risk assessment would be prepared and submitted to the Central Valley RWQCB to determine the proposed Project's risk level and associated water quality control requirements. These requirements would include the preparation and implementation of a SWPPP identifying specific BMPs to be implemented and maintained on the site in order to comply with the applicable effluent standards and prevent any potential groundwater quality impacts. Therefore, the proposed Project would not conflict with a water quality control plan.

Additionally, the proposed Project would increase recharge in Cameron Creek, ultimately enhancing groundwater levels. Therefore, the proposed Project would not conflict with the GKGSA Groundwater Sustainability Plan but would align with it. Impacts would be less than significant.

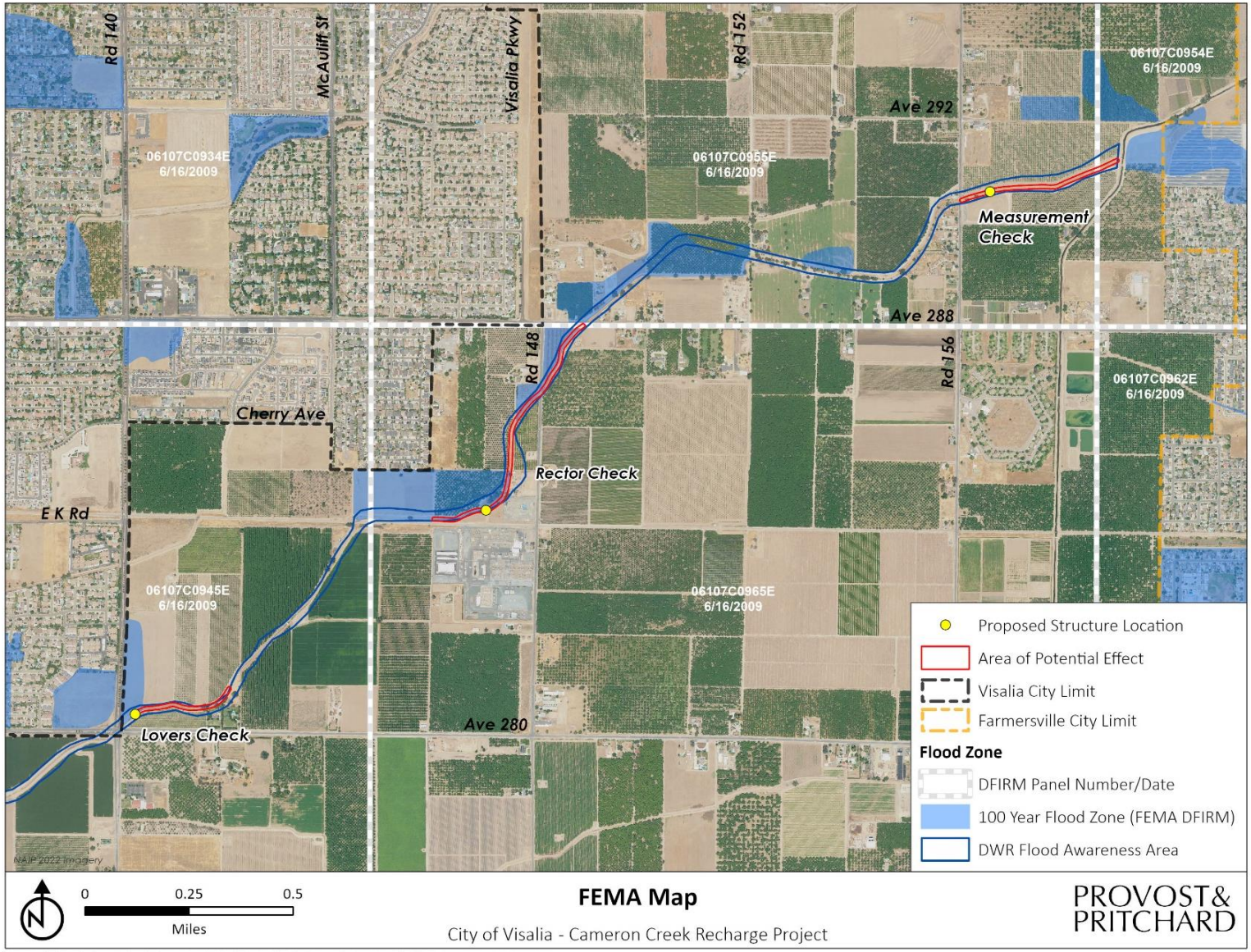


Figure 4-9: FEMA Flood Map

4.11 LAND USE AND PLANNING

Table 4-18: Land Use and Planning Impacts

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

4.11.1 Baseline Conditions

The proposed Project is located in Tulare County, which is the land use authority for the Project area. The land use designation for the project site as identified in the City of Visalia General Plan is Conservation. The Project area itself does not have a Zoning designation as it consists of the existing Cameron Creek channel. Lands surrounding Cameron Creek contain both County of Tulare and the City of Visalia designations (see Figure 2-4 and Figure 2-5).

4.11.2 Impact Analysis

a) Would the project physically divide an established community?

Less than Significant Impact. The proposed Project entails constructing three check structures along Cameron Creek in Tulare County adjacent to the southeast quadrant of Visalia. Developing the site further would benefit agricultural operations by slowing down creek flow and allowing water to pool, thereby increasing recharge. Since the creek is already an established entity, the construction of the check structures would not disrupt existing communities. In addition, no aspect of the proposed Project would result any obstructions that would physically divide an established community. Therefore, the proposed Project would have a less than significant 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?

Less than Significant Impact. The land use designation for the project site as identified in the City of Visalia General Plan is Conservation. The Project area does not have a Zoning designation as it consists of the existing Cameron Creek channel. The surrounding lands adjacent to the proposed check structures are designated for various uses, as seen in Figure 2-4 and Figure 2-5. While the proposed Project would utilize some of these lands for construction equipment laydown purposes, it would be temporary, and all construction equipment would be removed once construction is complete. At the conclusion of construction activities, the laydown areas would be returned to existing conditions as it was prior to proposed Project implementation. Implementation of the proposed Project would not create any significant environmental conflicts with existing land use plans, policies, or regulations, as it conforms to established land use standards. Impacts would be less than significant.

4.12 MINERAL RESOURCES

Table 4-19: 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

Visalia is part of the Central Valley region, one of several geomorphic provinces in California. The most economically significant mineral resources in Tulare County are sand, gravel, and crushed stone, used as sources for aggregate (road materials and other construction). The two major sources of aggregate are alluvial deposits (riverbeds, and floodplains), and hard rock quarries. Consequently, most Tulare County mines are located along rivers at the base of the Sierra foothills. Surface mining in California is regulated through the Surface Mining and Reclamation Act (SMARA), a State law adopted in 1975 to address the dual goals of protecting the state's need for a continuing supply of mineral resources, while protecting public and environmental health. SMARA requires that all cities incorporate into their general plans mapped mineral resource designations approved by the State Mining and Geology Board. The Visalia Planning Area contains three former sand and gravel mines, but no currently operating mines and no designated Mineral Resource Zones.[25]

4.12.2 Impact Analysis

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

No Impact. According to the City of Visalia General Plan Update Draft Environmental Impact Report, the City of Visalia Planning Area, which includes the Project area, does not contain land designated as mineral resource zone[26]. Also, there are no active mining operations, therefore there would be no impact.

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?

No Impact. As discussed above, there are no active mining operations or lands designated as a mineral resource zone in the City of Visalia's Planning Area, therefore the proposed Project would not result in

[25] (CIty of Visalia, Dyett & Bhatia, Urban and Regional Planners, ICF International, Provost and Pritchard Consulting Group, Omni-Means, Transportation Planners and Engineers 2014)
[26] Ibid.

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. There would be no impact.

4.13 NOISE

Table 4-20: 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 area is located in an area that has historically been used for agricultural purposes. The Project area contains Cameron Creek which is substantially surrounded by agriculture uses with the exception of single-family residences scattered in the vicinity. In addition, there are two schools within a one-mile radius of the Project area. Blue Oak Academy, a public charter school in Tulare County is located approximately 0.5 miles southeast and Annie R Mitchell Elementary, located in Visalia's city limits, is located approx. 0.9 miles northwest. The major intersections surrounding the proposed Project are W. Caldwell and S. Lovers Lane (southern terminus of proposed Project), W. Walnut Ave (Ave 288) and S. Road 148, and Road 156 (northern terminus of proposed Project). W. Caldwell, S. Lovers Lane, W. Walnut Ave (Ave 288), Road 148, and Road 156 are designated Arterial roadways by the City of Visalia. The San Joaquin Valley Railroad, which sees approximately two trains per day, maintains a rail line that bisects the Project area. The Project area is within proximity of two railroad crossings and is not located in a Federal Railroad Administration Quiet Zone.[27]

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. Construction of the proposed Project would create a temporary increase in ambient noise levels in the vicinity of the proposed Project in excess of the standards established in the

[27] (California Public Utilities Commission 2024)

local general plan, noise ordinance, or applicable standards of other agencies for approximately 90-120 days. The construction required for the completion of this proposed Project would temporarily increase noise levels above what is allowed by the City's Noise Ordinance; however, construction related activities are allowed between 6 am – 7 pm during the week and between 9 am – 7 pm on the weekends. Construction-related noise would be temporary and would cease upon completion of the proposed Project. The Project area currently has varying levels of noise due to historical agricultural equipment use and daily train noise. In addition, according to the inverse square law, noise diminishes from its source by six A-weighed decibels with each doubling of distance from origin. As a result, any noise generated from the Project area would have a diminished effect when heard from people in the surrounding area. Therefore, impacts 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. Construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance from the source. Construction and agricultural activities can result in varying degrees of ground vibration, depending on the equipment and methods used, distance to the affected structures, and soil type. The generation of vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight damage at the highest levels. Ground-borne vibration or ground-borne noise levels from construction would be temporary in nature. In addition, vibration levels subside with increased distance from the source, diminishing the effect the proposed Project would have. Therefore, impacts would be less than significant.

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

No Impact. The proposed Project is not located in the vicinity of a private airstrip or within an airport land use plan. The nearest airport or airstrip to the Project area is the Visalia Municipal Airport, located approximately seven miles northwest. Therefore, there would be no impact.

4.14 POPULATION AND HOUSING

Table 4-21: 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 proposed Project is located in Tulare County just outside of the southeastern quadrant of the City of Visalia. The proposed Project would be located within Cameron Creek channel which contains water intermittently. Lands surrounding Cameron Creek are planned and zoned for agricultural purposes. According to the United States Census Bureau, as of July 2023, the City of Visalia has an estimated population of 144,998, while Tulare County, which includes the City of Visalia, is estimated at 479,468.[28]

4.14.2 Impact Analysis

a) Would the project 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)?

Less than Significant Impact. The proposed Project's primary purpose is to increase water resources in the region that are increasingly being lost to over pumping of groundwater. The proposed Project would not induce substantial unplanned growth in an area directly or indirectly as it intends to assist in bringing the basin to a net balance of pumping and extracting. Therefore, impacts would be less than significant.

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

No Impact. Implementation of the proposed Project would not make any changes to residential zones. The proposed Project would utilize laydown areas outside the creek channel for construction equipment; however, these laydown areas would not encroach any existing residential areas. The proposed Project would not displace substantial numbers of existing people or housing, necessitating the construction of

[28] (United States Census Bureau 2023); (United States Census Bureau 2023)

replacement elsewhere. No residences exist onsite, nor would any in the vicinity be demolished to facilitate the proposed Project. Therefore, there would be no impact.

4.15 PUBLIC SERVICES

Table 4-22: 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 is served by the Tulare County Fire Department (TCFD). The closest TCFD station is located at 25456 Road 140, approximately 3.2 miles south.

Police Protection: Police protection is provided by the Tulare County Sheriff's Office (TCFO). The closest TCFO station is located 5.3 miles northwest at 833 S. Akers Street.

Schools: The nearest school is Annie R. Mitchell Elementary, located approximately 0.9 miles northwest of the proposed Project.

Parks: The nearest park is Cherry Meadow Park, located approximately 0.75 miles northwest of the Project.

Other Public Facilities: The nearest landfill to the Project area is the Resource Management Agency-Visalia Landfill, located approximately nine miles to the northwest.

4.15.2 Impact Analysis

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

i. Fire Protection:

ii. Police Protection:

iii. Schools:

iv. Parks:

v. Other public facilities:

a-i – a-iv) No Impact. The proposed Project would not require new or altered governmental facilities in order to maintain acceptable service ratios, response times, or other performance objectives for public services. There would be no impact to public services.

4.16 RECREATION

Table 4-23: 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

Visalia classifies parks and public open space into five general categories. Facilities at each park type vary according to size. Most neighborhood parks have picnic tables, play equipment, and drinking fountains. Community and regional parks have these amenities as well as a combination of sports fields/courts, barbecue areas, parking, restrooms and facilities for other types of recreation. Parks are classified as follows:

- Pocket Park: A park typically between one-half acre and two acres in size intended to serve the needs of a specific neighborhood within a half-mile radius.
- Neighborhood Park: A park typically two to five acres in size that provides basic recreation activities for one or more neighborhoods. The service area ranges from a half-mile to a one-mile radius. These parks may include facilities such as children's playgrounds, picnic tables, benches, and walkways. Many neighborhood parks are planned adjacent to new schools, and actual neighborhood park sizes may be as large as 10 acres depending on neighborhood size and need.
- Community Park: A park typically ranging from 5 to 12 acres in size or larger, depending on the needs of the quadrant. Community parks are intended to serve the recreational needs of a larger area of the city, and particularly those residents living or working within a two-mile radius. These parks may include facilities such as sport fields, exercise courses, recreation buildings, and restrooms. Other facilities may include community centers, swimming pools, tennis courts, and concession stands.
- Large City Park: A park generally larger than 40 acres in size intended to serve the recreational needs of all city residents and to create opportunities for contact with the natural environment. These parks may include a concentration of sports fields, golf courses, and areas for picnicking and passive enjoyment of open space.
- Natural Corridors and Greenways: A network of greenways of varying size intended to serve the recreational needs of city residents. These parks may include facilities such as bikeways, walkways, and riding trails, and are primarily developed along the city's waterways.

Currently, Visalia has 37 parks dispersed throughout the City. Four community parks (Fairview Village Park, Recreation Park, Seven Oaks Park, and Whitendale Park) provide a fuller range of community amenities or are co-located with community centers and range from approximately 9 to 14 acres. Three larger facilities, Mooney's Grove Park (County), Plaza Park and Riverway Sports Park, are located at the periphery. The St. John's Trail (St. John's Riverway) forms much of the northern edge of the City. Altogether, there are 678 acres of parkland within the City. Tulare County's Cutler Park provides another 50 acres just outside of the City; this acreage is not counted as park acreage for the City of Visalia.

The closest parks to the Project area are Cherry Meadow Park and Kiwanis Park, located approximately 0.75 miles and one mile away, respectively.

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?

Less than Significant Impact. The proposed Project would not increase the demand for recreational facilities, nor would it impose a strain on the existing recreational facilities such that substantial physical deterioration of existing recreational facilities would occur or be accelerated. Therefore, the impact would be less than significant.

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

Less than Significant Impact. The proposed Project does not propose or intend to include recreational facilities. Therefore, there would be no impact.

4.17 TRANSPORTATION

Table 4-24: 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 area is located in Tulare County near the southeast quadrant of the City of Visalia. The major intersections surrounding the proposed Project are W. Caldwell and S. Lovers Lane (southern terminus of proposed Project), W. Walnut Ave (Ave 288) and S. Road 148, and Road 156 (northern terminus of proposed Project). W. Caldwell, S. Lovers Lane, W. Walnut Ave (Ave 288), Road 148, and Road 156 are designated Arterial roadways by the City of Visalia.

4.17.2 Impact Analysis

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

Less than Significant Impact. Construction of the proposed Project would temporarily generate increases in vehicle trips by workers and vehicles on adjacent roadways. There could be a minimal increase in truck trips for construction; however, given the scale of the proposed Project and the length of the construction period, the capacity of local roads used to access the Project area would not likely be substantially reduced. Proposed Project operation and maintenance would require regular inspection to assess flow control structure integrity and would result in a minor increase in vehicle trips. Considering the minor increase in traffic, the proposed Project would not worsen any existing levels of service. Therefore, this impact would be less than significant.

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

Less than Significant Impact. Section 15064.3 of the State CEQA Guidelines establishes specific considerations for evaluating a project's transportation impacts. The State CEQA Guidelines identify vehicle miles traveled (VMT), which is defined as the amount and distance of automobile travel attributable to a project, as the most appropriate measure of transportation impacts. Other relevant considerations may include the effects of a project on transit and nonmotorized travel. Construction of

the proposed Project would last approximately four months and would use existing construction crews. Operation of the proposed Project would not add a substantial amount of VMT to the Project area. Therefore, 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 proposed Project would not increase hazards due to a geometric design feature or incompatible use. The proposed Project would not make any changes to the City or County's circulation system. There would be no impact.

d) Would the project result in inadequate emergency access?

Less than Significant Impact. The proposed Project would not result in inadequate emergency access as no changes would be made to the existing roadway. All work would be done with the channel of Cameron Creek. Project construction would only require minor construction equipment and would be stored on site adjacent to the proposed construction areas. Therefore, impacts would be less than significant.

4.18 TRIBAL CULTURAL RESOURCES

Table 4-25: 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

Public Resources Code Section 21080.3.1, et seq. (codification of AB 52, 2013-14)

Public Resources Code Section 21080.3.1, et seq. (codification of AB 52, 2013-14) requires that a lead agency, within 14 days of determining that it would 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 would be made.

While the City has received one letter from the Santa Rosa Rancheria Tachi Yokut Tribe pursuant to PRC § 21080.3.1 (AB 52), as a best practice, the City of Visalia notifies all Native American tribes listed in the NAHC

provided list. On June 13, 2024, the City of Visalia sent outreach letters by certified mail to the following thirteen tribal representatives representing eight tribes, informing each of the proposed Project.

1. Big Sandy Rancheria of Western Mono Indians, Elizabeth D. Kipp, Chairperson
2. Dunlap Band of Mono Indians, Benjamin Charley Jr., Tribal Chair
3. Dunlap Band of Mono Indians, Dirk Charley, Tribal Secretary
4. Kern Valley Indian Community, Julie Turner, Secretary
5. Kern Valley Indian Community, Brandy Kendricks
6. Kern Valley Indian Community, Robert Robinson, Chairperson
7. North Fork Mono Tribe, Ron Goode, Chairperson
8. Santa Rosa Rancheria Tachi Yokut Tribe, Leo Sisco, Chairperson
9. Tubatulabals of Kern County, Robert Gomez, Chairperson
10. Tule River Indian Tribe, Neil Peyron, Chairperson
11. Tule River Indian Tribe, Kerri Vera, Environmental
12. Tule River Indian Tribe, Joey Garfield, Tribal Archaeologist
13. Wuksache Indian Tribe/Eshom Valley Band, Kenneth Woodrow

Records Search

A records search from the SSJVIC of the CHRIS, located at California State University, Bakersfield was conducted in June 2024. The SSJVIC records search includes a review of all recorded archaeological and built-environment resources as well as a review of cultural resource reports on file. In addition, the California Points of Historical Interest, the California Historical Landmarks, the California Register of Historical Resources, the National Register of Historic Places, and the California State Built Environment Resources Directory listings were reviewed for the above referenced Project area and an additional 0.5-mile radius. Due to the sensitive nature of cultural resources, archaeological site locations are not released. (Appendix C).

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

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

Less than Significant Impact with Mitigation Incorporated. A record search of the NAHC Sacred Lands File was completed for the Project area and the results were negative for the presence of Native American tribal cultural resources. A CHRIS records search from the SSJVIC confirmed that there are four recorded resources within the Project area and 12 within one-half mile radius of the Project area; however, these resources are not considered tribal cultural resources. Although unlikely, Mitigation Measures **CUL-1** and **CUL-2**, described above in Section 4.5.3 are recommended in the event tribal cultural materials or human remains are unearthed during excavation or construction.

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. The City of Visalia, as the public lead agency, received a letter from the Santa Rosa Rancheria Tachi Yokut Tribe pursuant to AB 52 officially requesting notification of projects within the Santa Rosa Rancheria's geographic area of traditional and cultural affiliation. On June 13, 2024, the City sent the tribes listed above a formal letter including a project description and a map of the Project APE. In accordance with the law, the letter provided 30 days from receipt of the letter to request consultation in writing. No response was received.

Although there is little chance the proposed Project would cause a substantial adverse change to the significance of a tribal cultural resource as defined. Mitigation Measure **CUL-1 and CUL-2,** described in Section 4.5.3 are recommended in the event cultural materials or human remains are unearthed during excavation or construction.

4.18.3 Mitigation

See **CUL-1** and **CUL-2** in Section 4.5.3.

4.19 UTILITIES AND SERVICE SYSTEMS

Table 4-26: 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 area is located in Tulare County near the southeast quadrant of the City of Visalia.

Wastewater

Wastewater generated in Tulare County is either operated and maintained privately via septic systems or through a special district that operates a sanitary sewer system.

The City of Visalia's existing sanitary sewer system consists of over 468 miles of gravity-flow sanitary sewer pipe ranging in size from four to 48 inches, with 12 Supervisory Control and Data Acquisition-connected lift stations. The system currently serves most developed areas of the city limits. The Visalia Department of Public Works develops and maintains the sewer systems. The City of Visalia typically utilizes a wastewater generation factor of 100 to 125 gallons per day per capita.

Solid Waste

Solid waste in the Project area is managed by the Tulare County Solid Waste Department.

Solid waste disposal is provided to the City by the Tulare County Resource Management Agency (RMA), which operates the Visalia Landfill approximately 5.4 miles northwest of the proposed Project. The facility is located at 8614 Avenue 328 in Visalia and serves the cities of Visalia, Farmersville, Dinuba, Exeter, Tulare, Woodlake, Fresno, and unincorporated areas of northern Tulare and southern Fresno Counties. The approximate amount of waste disposed at Visalia in 2003 was estimated to be 120,000 tons.[29] This landfill has a maximum permitted throughput of 2,000 tons per day, a maximum permitted capacity of 18,630,666 cubic yards, and a remaining capacity of 16,145,591 cubic yards. The Visalia Landfill is expected to cease operation in January of 2024.[30] Solid waste collection is provided by the City and recyclable material processing is provided to the City by Sunset Waste Systems.

Electricity

Power is provided to the City by SCE. SCE is a subsidiary of Edison International and provides electricity to over 15 million Californians. It is one of the largest electric utilities in the nation, and the nation's single largest purchaser of renewable power. The electrical facilities network includes both overhead and underground lines, with new development required to install underground service lines.

Natural Gas

Natural gas service in the City is provided by SoCalGas.

Communications

There are three major companies that provide communications services in Visalia: AT&T, Sprint, and Verizon. Comcast is the primary cable television and internet provider.

Water Service Company

Residents located within the unincorporated area of Tulare County either rely on private wells or special districts for water service. The California Water Service Company Visalia district is the primary water purveyor in the City of Visalia.

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. Construction of three check structures in Cameron Creek to improve recharge capabilities flow control structure would not require the relocation or construction of new or expanded services. There would be no impact.

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. There is no anticipated increase in water demand resulting from implementation of the proposed Project. The proposed Project would improve groundwater supplies by decreasing Cameron

[29] (ESA 2010)
[30] (Dyett & Bhatia Urban and Regional Planners 2014)

Creek's flow rate, allowing more water to infiltrate the channel floor to recharge the underlying aquifer. 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. No wastewater would be generated as part of the proposed Project. There would be no change to nearby wastewater facilities or operations. 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. Construction associated with the proposed Project could generate minor solid waste, but the amount generated would be negligible. Construction and operation would not 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. Impacts would be less than significant.

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

No Impact. The proposed Project would conform to all applicable statutes and regulations related to solid waste disposal. The proposed Project would comply with the adopted policies related to solid waste, and would comply with all applicable federal, State, and local statutes and regulations pertaining to disposal of solid waste, including recycling. Therefore, the proposed Project would have no impact on solid waste regulations.

4.20 WILDFIRE

Table 4-27: 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 area covers a portion of Cameron Creek from Lovers Lane and Caldwell Avenue to an area located near Walnut Avenue and Road 156 in Tulare County. Lands surrounding Cameron Creek predominantly includes agricultural land. Various residences are also scattered in the vicinity, along with a Southern California Edison substation. The Project area is located within the jurisdiction of Tulare County and receives fire protection services from the TCFD. As mentioned in Section 4.15, the closest TCFD station to the proposed Project is located at 25456 Road 140, approximately 3.2 miles south.

According to California Department of Forestry and Fire Protection (CalFire), the proposed Project is not located within an SRA, meaning CalFire does not assume responsibility for wildfire prevention and protection but is managed at the local level.[31] Furthermore, according to CalFire, the Project area is not located within a very high fire hazard severity zone, nor is the proposed Project located within a high or moderate fire hazard severity zone.[32]

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

4.20.2 Impact Analysis

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

b) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project due to slope, prevailing winds, and other factors, exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

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

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

a-d) No Impact. The Project area is located in a section of Tulare County that has not been designated as either a very high fire hazard severity zone or an SRA. The proposed Project is a linear recharge project for groundwater recharge in the area. If there was a fire in the Project area, water from the Project could be used to fight fire. Therefore, further analysis is not required and there would be no impact.

4.21 CEQA MANDATORY FINDINGS OF SIGNIFICANCE

Table 4-28: 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 Mitigated Incorporated. The analysis conducted in this IS/MND results in a determination that the proposed 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 implementation of the proposed Project will be less than significant with the incorporation of the mitigation measures discussed in this analysis. Accordingly, the proposed Project would involve no potential for significant impacts through the degradation of the quality of the environment, the reduction in the habitat or population of fish or wildlife, including endangered plants or animals, the elimination of a plant or animal community or example of a major period of California history or prehistory.

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

Less than Significant Impact. CEQA Guidelines Section 15064(i) States that a Lead Agency shall consider whether the cumulative impact of a project is significant and whether the effects of the project are cumulatively considerable. The assessment of the significance of the cumulative effects of a project must, therefore, be conducted in connection with the effects of past projects, other current projects, and probable future projects. As discussed above, the Project would result in less than significant impacts to biological resources, cultural resources, and tribal cultural resources with mitigation incorporated. Project operations would not require any on-site personnel. Maintenance would be performed on an as-needed basis and would not require any permanent on-site personnel. As such, the Project operations would generate minimal Project-related vehicle trips as a result of implementation. Therefore, implementation of the proposed 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 proposed 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 analysis conducted in this IS/MND results in a determination that the proposed Project would have a less than a substantial adverse effect on human beings, either directly or indirectly.

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 Cameron Creek Linear Recharge Project in the County of Tulare. The MMRP lists mitigation measures recommended in the IS/MND for the proposed Project and identifies monitoring and reporting requirements.

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

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

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

Mitigation, Monitoring, and Reporting Program						
Item	Mitigation Measure	When Monitoring is to Occur	Frequency of Monitoring	Agency Responsible for Monitoring	Method to Verify Compliance	Verification of Compliance
Biological Resources						
General Project-Related Impacts						
BIO-1	(WEAP Training): Prior to initiating construction activities (including staging and mobilization), all personnel associated with project construction will attend a mandatory Worker Environmental Awareness Program (WEAP) training, conducted by a "qualified biologist" (someone who is familiar with the species on the document), to aid workers in identifying special status resources that may occur in the APE. The specifics of this program will include identification of the sensitive species and suitable habitats, a description of the regulatory status and general ecological characteristics of sensitive resources, and review of the limits of construction and mitigation measures required to reduce impacts to biological resources within the work area. This training will discuss special status species, describe the laws and regulations in place to provide protection of these species, identify the penalties for violation of applicable environmental laws and regulations, and include a list of required protective measures to avoid "take." A fact sheet summarizing this information, along with photographs or illustrations of sensitive species with potential to occur on the APE, will also be prepared for distribution to all contractors, their employees, and all other personnel involved with construction of the project. All trainees will sign a form documenting that they have attended WEAP training and understand the information presented to them	Prior to the start of any construction activities	As needed for any new construction personnel during construction activities	City of Visalia		
BIO-2	(BMPs): The project proponent will require that all workers employ the following best management practices (BMPs) in order to avoid and minimize potential impacts to special status species: • Vehicles will observe a 15-mph speed limit while on unpaved access routes. • Workers will inspect areas beneath parked vehicles, equipment, and materials prior to mobilization. If	Prior to the start of any construction activities	During Construction activities	City of Visalia		

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
	special status species are detected, the individual will either be allowed to leave of its own volition or will be captured by the "qualified biologist" (must possess appropriate collecting/handling permits) and relocated out of harm's way to the nearest suitable habitat beyond the influence of the project work area. "Take" of a state or federal special status (rare, California Species of Special Concern, threatened, or endangered) species is prohibited. • The presence of any special status species will be reported to the project's "qualified biologist", who will submit the occurrence to the CNDDB. If necessary, the biologist will report the occurrence to CDFW and/or USFWS					
Project-Related Mortality and/or Nest Abandonment of Migratory Birds, Raptors, and Special Status Birds						
BIO-3	(Avoidance): The project's construction activities will occur, if feasible, between September 16 and January 31 (outside of the nesting bird season) to avoid impacts to nesting birds.	September 16 to January 31	Once	City of Visalia		
BIO-4	(Pre-construction Surveys): If activities must occur within nesting bird season (February 1 to September 15), a "qualified biologist"(someone who is familiar with bird identification and nesting bird surveys) will conduct a pre-construction survey for Swainson's hawk nests onsite and within a 0.5-mile radius within 5 calendar days prior to the start of construction. This survey will be conducted in accordance with the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (Swainson's Hawk Technical Advisory Committee 2000), or current guidance. The Swainson's hawk survey will not be completed between April 21 to June 10 due to the difficulty of identifying nests during this time of year. The survey would also include inspecting for nesting migratory birds within the APE and up to 50 feet outside of the APE, and for other nesting raptors within and up to 450 feet outside of the APE. All raptor nests would be considered "active" upon the nest-building stage. If no active nests are observed, no further mitigation is required.	Prior to construction activities	Once, as determined by qualified biologist prior to construction activities	City of Visalia		

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
BIO-5	(Avoidance Buffers): On discovery of any active nests or breeding colonies near work areas, a "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.	On discovery of any active nests or breeding colonies near work areas	Once, as determined by qualified biologist prior to construction activities	City of Visalia		
Project-Related Mortality and/or Disturbance to Burrowing Owl						
BIOI-6	(Pre-construction Take Avoidance Survey): A "qualified biologist" (someone who is familiar with species identification and their sign, and habitat use) will conduct a pre-construction take avoidance survey for BUOW and suitable burrows, in accordance with CDFW's Staff Report on Burrowing Owl Mitigation (2012), within seven (7) days prior to the start of construction activities. The survey shall include the proposed work area and surrounding lands up to 500 feet. If no BUOW individuals or active burrows are observed, no further mitigation is required. If construction is hauled for (7) consecutive days another pre-activity survey shall be completed.	7 days prior to construction	Once, as determined by qualified biologist prior to construction activities	City of Visalia		
BIO-7	(Avoidance): If an active BUOW burrow is detected, the occurrence will be reported to the California Natural Diversity Database, and avoidance buffers shall be implemented. A "qualified biologist" will determine appropriate avoidance buffer distances based on applicable CDFW and/or USFWS guidelines, the biology of the species, conditions of the burrow(s), and the level of project disturbance. If necessary, avoidance buffers will be identified with flagging, fencing, or other easily visible means, and will be maintained until the biologist has determined that the nestlings have fledged and all BUOW have left the Project area.	Upon discovery of BUOW burrow	Once, as determined by qualified biologist during construction activities	City of Visalia		
BIO-8	(Passive Relocation): If avoidance of an active BUOW burrow is not feasible, passive relocation during the non-breeding season (September 1 through January 31) could be utilized or during the breeding season (February 1 through August 31) if a	September 1 to January 31 or	Once, as determined by qualified biologist	City of Visalia		

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
	"qualified biologist" determines that there are no young in the burrow. Prior to completion a "qualified biologist" will prepare a passive relocation plan that would detail the methods to be used. It would include the tools to exclude the BUOW from its burrow (i.e., one-way doors or other devices) and excavate the burrow (hand tools and machinery, if needed). Following completion of passive relocation, a report will be prepared that would document the methods and results of these efforts.	February 1 to August 31	during construction activities			
Project-Related Mortality and/or Disturbance of Maternity Roosting Bats and Special Status Bats						
BIO-9	(Focused Surveys): Within seven days prior to the start of construction activities focused surveys will be conducted by a "qualified biologist" (someone who is familiar with the roosting behavior and habitat of the species and can identify the species sign). They will include a daytime roost survey and dusk emergence survey. The daytime roost survey will include surveying for roosting bats within potentially suitable structures (i.e., oak trees and bridges) within and adjacent to each APE, where accessible. The dusk emergence survey will include surveying for emerging bats at areas where bat sign or likely bat roost areas were observed during the daytime roost survey. It should be conducted on a warm night during dry weather conditions and from approximately 15 minutes before sunset to 1 hour after sunset. If no roosting bats are discovered tree or branch removal must be completed within two days.	Within seven days prior to the start of construction activities	Once, as determined by qualified biologist during construction activities	City of Visalia		
BIO-10	(Avoidance Buffers): Should any active bat roosts be observed during the focused surveys, a "qualified biologist" will determine appropriate avoidance buffers (i.e., construction setback distances) based on the biology of the species, conditions of the roost(s), and the level of project disturbance, if appropriate. 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 roost will no longer be impacted by construction.	Upon discovery of any active maternity roosts	Once, as determined by qualified biologist during construction activities	City of Visalia		
BIO-11	(Eviction): If avoidance buffers are not feasible and it has been determined by a "qualified biologist" that the bats are no	During construction activities	Once, as determined	City of Visalia		

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
	longer raising their young or are overwintering, the bats may be evicted. An eviction plan will first be prepared by a "qualified biologist" that identifies the materials and methods that will be used to safely evict the bats.		by qualified biologist during construction activities			
Project-Related Mortality and/or Disturbance to San Joaquin Kit Fox						
BIO-12	(Pre-Construction Survey): Within fourteen (14) days prior to the start of construction a "qualified biologist" will conduct a pre-construction survey for San Joaquin kit fox will be conducted on and within 200 feet of proposed work areas.	Within fourteen (14) days prior to the start of construction	Once, as determined by qualified biologist during construction activities	City of Visalia		
BIO-13	(Establish Buffers): On discovery of any SJKF dens near the project area a "qualified biologist" (someone familiar with the identification and sign of this species) will determine appropriate construction setback distances (buffer zones) based on applicable CDFW and/or USFWS guidelines (see below). If needed, construction buffers will be identified with flagging, fencing, or other easily visible means. They will be maintained until the biologist has determined that the den will no longer be impacted by construction. 1. At least 100 feet around den(s); 2. At least 200 feet around natal dens (which SJKF young are reared); and 3. At least 500 feet around any natal dens with pups (except for any portions of the buffer zone that is already fully developed.	Upon discovery of any SJKF dens	Once, as determined by qualified biologist during construction activities	City of Visalia		
BIO-14	(Avoidance and Minimization): The project will observe all avoidance and minimization measures during construction and on-going operational activities as required by the "qualified biologist" and the USFWS's Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance (2011), including, but not limited to: maintaining buffer zones, construction speed limits, covering of pipes, installation of escape structures, restriction of herbicide and rodenticide use, proper disposal of food items	During construction activities and operation	As determined by qualified biologist during construction activities	City of Visalia		

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
	and trash, prohibition of pets and firearms, and completion of an employee education program (see **BIO-1**).					
Project-Related Mortality and/or Disturbance to American Badger						
BIO-15	(Pre-construction Take Avoidance Survey): A "qualified biologist" (someone familiar with the identification and sign of this species) will conduct a pre-construction survey of project areas within seven (7) days prior to vegetation clearing or ground disturbing activities. The goal of this survey is to search for potential badger dens.	Seven days prior to vegetation clearing or ground disturbing activities	Once, as determined by qualified biologist during construction activities	City of Visalia		
BIO-16	(Remote Cameras): If potential dens for American badger are detected during the pre-construction survey, each potential den will be monitored with remote cameras for a period of three consecutive nights. If there is no activity at the den location recorded for three consecutive nights, the den can be deemed "inactive" or "unoccupied" and closed or excavated.	Upon discovery of potential American Badger dens	Once, as determined by qualified biologist during construction activities	City of Visalia		
BIO-17	(Den Avoidance): If an American badger is denning on or within 50 feet of the project site, the project proponent shall avoid the den by a minimum 50-foot buffer.	Upon discovery of denning	Once, as determined by qualified biologist during construction activities	City of Visalia		
BIO-18	(Eviction and Den Excavation): If an American badger is denning on or within 50 feet of the project site and it cannot be avoided, the badger may be evicted, and the den excavated outside of the natal season (generally March 15 – June 15) or if it is determined that there are no kits in the den. Prior to the planned eviction and den excavation, a remote camera will be placed at the den entrance for a minimum of three consecutive nights to record the general time when the badger leaves the den. If it is outside of the natal season or it is determined by a "qualified biologist" that there are no "kits" present in the den the badger will be evicted from the den and the den excavated by hand, with the assistance of machinery, after it has left the den for that night. Should any "kits" be discovered during the	March 15 to June 15	Once, as determined by qualified biologist during construction activities	City of Visalia		

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
	excavation the work will stop and the crew will leave the site immediately so the female can rescue her kits and relocate them.					
Cultural Resources						
CUL-1	In the event that previously unidentified archaeological remains are encountered during development or ground-moving activities in the APE, all work should be halted until a qualified archaeologist can identify the discovery and assess its significance. In the event of accidental discovery of unidentified archaeological remains during development or ground-moving activities in the APE, all work shall be halted in the immediate vicinity until a qualified archaeologist can identify the discovery and assess its significance.	During construction activities	Continuously	City of Visalia		
CUL-2	If human remains are uncovered during construction, the Tulare County Coroner is to be notified to investigate the remains and arrange proper treatment and disposition. If the remains are identified on the basis of archaeological context, age, cultural associations, or biological traits to be those of a Native American, California Health and Safety Code 7050.5 and PRC 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 be afforded an opportunity to make recommendations regarding the treatment and disposition of the remains.	Upon discovery of human remains	Continuously	Applicant/Contractor		
Tribal Cultural Resources						
See **CUL-1** and **CUL-2** above.						

CHAPTER 6 REFERENCES

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

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

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

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

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

California Department of Water Resources. 2023. *California's Groundwater Live: Groundwater Levels.* https://storymaps.arcgis.com/stories/b3886b33b49c4fa8adf2ae8bdd8f16c3.

—. 2022. *Dam Breach Inundation Map Web Publisher.* https://fmds.water.ca.gov/webgis/?appid=dam_prototype_v2.

—. 2023. *GSA Map Viewer.* https://sgma.water.ca.gov/webgis/index.jsp?appid=gasmaster&rz=true.

California Department of Water Resources. Natural Resources Agency. 2015. "California's Groundwater Update 2013." https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Data-and-Tools/Files/Statewide-Reports/California-Groundwater-Update-2013/California-Groundwater-Update-2013---Chapter-9---Tulare-Lake.pdf.

California Public Utilities Commission. 2024. *Quiet Zone.* Accessed July 2024. https://www.cpuc.ca.gov/industries-and-topics/rail-safety/rail-crossings-and-engineering/quiet-zone.

CIty of Visalia, Dyett & Bhatia, Urban and Regional Planners, ICF International, Provost and Pritchard Consulting Group, Omni-Means, Transportation Planners and Engineers. 2014. "City of Visalia General Plan Update Draft Environmental Impact Report." Visalia. https://www.visalia.city/civicax/filebank/blobdload.aspx?BlobID=30497.

Dyett & Bhatia Urban and Regional Planners. 2014. "Visalia General Plan - Chapter 3: Historic Preservation." Visalia. https://www.visalia.city/civicax/filebank/blobdload.aspx?BlobID=30475.

Dyett & Bhatia Urban and Regional Planners. 2014. "Visalia General Plan Update. Chapter 2: Land Use." Visalia. https://www.visalia.city/civicax/filebank/blobdload.aspx?BlobID=30474.

Dyett & Bhatia Urban and Regional Planners. 2014. "Visalia General Plan Update: Parks, Schools, Community Facilities, and Utilities." https://www.visalia.city/civicax/filebank/blobdload.aspx?BlobID=30477.

ESA. 2010. "Tulare County General Plan Recirculated Draft Environmental Impact Report." http://generalplan.co.tulare.ca.us/documents/GP/002Board%20of%20Supervisors%20Materials/001BOS%20Agenda%20Items%20-%20Public%20Hearing%20August,%2028%202012/002Attachment%20A.%20FEIR/001Exhibit%201.%20FEIR%20Exec%20Summary%20&%20Chap%201-6/Recirculated%20.

Greater Kaweah GSA. 2023. *About Us.* https://greaterkaweahgsa.org/en/about-us.

National Park Service. 2022. *Sequoia & Kings Canyon.* March 28. https://www.nps.gov/seki/index.htm.

San Joaquin Valley Air Pollution Control District. 2012. *Air Quality Attainment Plans.* Accessed August 7, 2024. http://valleyair.org/Air_Quality_Plans/air-quality-plans.htm.

—. 2012. *Air Quality Attainment Plans.* Accessed August 7, 2023. http://valleyair.org/Air_Quality_Plans/air-quality-plans.htm.

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

State of California. 2022. *State Water Resources Control Board Geo Tracker.* https://geotracker.waterboards.ca.gov/.

Swainson's Hawk Technical Advisory Committee. 2000. "Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley." May. Accessed January 2024.

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

United States Census Bureau. 2023. "Quick Facts. Visalia City, California." https://www.census.gov/quickfacts/visaliacitycalifornia.

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

United States Environmental Protection Agency. 2024. *Current Nonattainment Counties for All Criteria Pollutants.* Accessed August 7, 2024. https://www3.epa.gov/airquality/greenbook/ancl.html.

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

n.d. "Weatherspark." *Climate and Average Weather Year Round in Visalia.* Accessed 06 14, 2024. https://weatherspark.com/y/1510/Average-Weather-in-Visalia-California-United-States-Year-Round.

Appendix A: CalEEMod Output Files

Cameron Creek Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Cameron Creek
Construction Start Date	4/7/2025
Operational Year	2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	1.90
Precipitation (days)	24.4
Location	36.30774986435178, -119.2445160879941
County	Tulare
City	Unincorporated
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2779
EDFZ	9
Electric Utility	Eastside Power Authority
Gas Utility	Southern California Gas
App Version	2022.1.1.26

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 Asphalt Surfaces	7.50	1000sqft	0.17	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.	1.34	1.13	10.1	10.4	0.02	0.46	5.35	5.82	0.43	2.58	3.00	—	1,759	1,759	0.07	0.02	0.23	1,766
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.15	0.13	1.23	1.64	< 0.005	0.05	0.04	0.09	0.05	0.02	0.06	—	302	302	0.01	< 0.005	< 0.005	303
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.03	0.02	0.22	0.30	< 0.005	0.01	0.01	0.02	0.01	< 0.005	0.01	—	50.1	50.1	< 0.005	< 0.005	< 0.005	50.2

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.34	1.13	10.1	10.4	0.02	0.46	5.35	5.82	0.43	2.58	3.00	—	1,759	1,759	0.07	0.02	0.23	1,766
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2025	0.15	0.13	1.23	1.64	< 0.005	0.05	0.04	0.09	0.05	0.02	0.06	—	302	302	0.01	< 0.005	< 0.005	303
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.03	0.02	0.22	0.30	< 0.005	0.01	0.01	0.02	0.01	< 0.005	0.01	—	50.1	50.1	< 0.005	< 0.005	< 0.005	50.2

2.4. Operations 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.	< 0.005	< 0.005	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	—	—	—	0.00	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	—	—	—	0.00	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	—	—	—	0.00	—

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	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
Area	< 0.005	< 0.005	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

Energy	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
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	NaN	NaN	NaN	NaN	—	NaN
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NaN	NaN	NaN	NaN	0.00	NaN
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	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
Area	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	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
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	NaN	NaN	NaN	NaN	—	NaN
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NaN	NaN	NaN	NaN	0.00	NaN
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	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
Area	< 0.005	< 0.005	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Energy	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
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	NaN	NaN	NaN	NaN	—	NaN
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NaN	NaN	NaN	NaN	0.00	NaN
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	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
Area	< 0.005	< 0.005	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Energy	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
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	NaN	NaN	NaN	NaN	—	NaN
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NaN	NaN	NaN	NaN	0.00	NaN

3. Construction Emissions Details

3.1. Demolition (2025) - 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	0.56	0.47	4.33	5.65	0.01	0.16	—	0.16	0.14	—	0.14	—	852	852	0.03	0.01	—	855
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.32	2.32	< 0.005	< 0.005	—	2.33
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	0.06	0.05	0.03	0.48	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	60.3	60.3	< 0.005	< 0.005	0.23	61.4
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.91	0.91	< 0.005	< 0.005	< 0.005	0.93
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	—	0.15	0.15	< 0.005	< 0.005	< 0.005	0.15
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. Site Preparation (2025) - 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	0.56	0.47	4.16	5.57	0.01	0.21	—	0.21	0.20	—	0.20	—	859	859	0.03	0.01	—	862
Dust From Material Movement	—	—	—	—	—	—	0.53	0.53	—	0.06	0.06	—	—	—	—	—	—	—
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.41	9.41	< 0.005	< 0.005	—	9.45
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	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.56	1.56	< 0.005	< 0.005	—	1.56
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.24	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	30.2	30.2	< 0.005	< 0.005	0.12	30.7
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	0.30	0.30	< 0.005	< 0.005	< 0.005	0.31
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	—	0.05	0.05	< 0.005	< 0.005	< 0.005	0.05
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

3.5. Grading (2025) - 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	1.29	1.09	10.1	10.0	0.02	0.46	—	0.46	0.43	—	0.43	—	1,714	1,714	0.07	0.01	—	1,720
Dust From Material Movement	—	—	—	—	—	—	5.31	5.31	—	2.57	2.57	—	—	—	—	—	—	—
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.39	9.39	< 0.005	< 0.005	—	9.42
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	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	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.55	1.55	< 0.005	< 0.005	—	1.56
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.02	0.36	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	45.3	45.3	< 0.005	< 0.005	0.17	46.1
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	0.23	0.23	< 0.005	< 0.005	< 0.005	0.23
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	—	0.04	0.04	< 0.005	< 0.005	< 0.005	0.04
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

3.7. Building Construction (2025) - 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	0.62	0.52	5.14	6.94	0.01	0.22	—	0.22	0.20	—	0.20	—	1,305	1,305	0.05	0.01	—	1,309
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	1.06	1.43	< 0.005	0.04	—	0.04	0.04	—	0.04	—	268	268	0.01	< 0.005	—	269
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	0.02	0.02	0.19	0.26	< 0.005	0.01	—	0.01	0.01	—	0.01	—	44.4	44.4	< 0.005	< 0.005	—	44.5
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	0.00	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
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
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	0.00	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
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

4.1. Mobile Emissions by Land Use

4.1.1. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	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
Total	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	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
Total	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	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
Total	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

4.2. Energy

4.2.1. Electricity Emissions By Land Use - 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

4.2.3. Natural Gas Emissions By Land Use - 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Other Asphalt Surfaces	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
Total	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	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
Total	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	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
Total	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

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landscape Equipm	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
Total	< 0.005	< 0.005	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	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
Total	< 0.005	< 0.005	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.4. Water Emissions by Land Use

4.4.1. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	NaN	NaN	NaN	NaN	—	NaN
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	NaN	NaN	NaN	NaN	—	NaN
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	NaN	NaN	NaN	NaN	—	NaN
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	NaN	NaN	NaN	NaN	—	NaN
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	NaN	NaN	NaN	NaN	—	NaN
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	NaN	NaN	NaN	NaN	—	NaN

4.5. Waste Emissions by Land Use

4.5.1. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

4.6. Refrigerant Emissions by Land Use

4.6.1. 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

Equipment Type	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

Equipment Type	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

Equipment Type	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. 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
Demolition	Demolition	4/7/2025	4/14/2025	5.00	6.00	—
Site Preparation	Site Preparation	4/15/2025	4/18/2025	5.00	4.00	—
Grading	Grading	4/19/2025	4/22/2025	5.00	2.00	—
Building Construction	Building Construction	4/23/2025	8/5/2025	5.00	75.0	—

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
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	2.00	6.00	84.0	0.37
Demolition	Rubber Tired Dozers	Diesel	Average	1.00	1.00	367	0.40
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Site Preparation	Graders	Diesel	Average	1.00	8.00	148	0.41
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	6.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	6.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	4.00	367	0.29
Building Construction	Forklifts	Diesel	Average	2.00	6.00	82.0	0.20
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	10.0	7.70	LDA,LDT1,LDT2
Demolition	Vendor	—	6.80	HHDT,MHDT
Demolition	Hauling	0.00	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	5.00	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	7.50	7.70	LDA,LDT1,LDT2
Grading	Vendor	—	6.80	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	0.00	7.70	LDA,LDT1,LDT2
Building Construction	Vendor	0.00	6.80	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	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 (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	—	—
Site Preparation	—	—	2.00	0.00	—
Grading	—	—	1.50	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Other Asphalt Surfaces	0.17	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	453	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

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)
0	0.00	0.00	0.00	450

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Other Asphalt Surfaces	0.00	453	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Other Asphalt Surfaces	0.00	NaN

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Other Asphalt Surfaces	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

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)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	35.8	annual days of extreme heat
Extreme Precipitation	1.10	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	5	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	5	1	1	4
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A

Wildfire	N/A	N/A	N/A	N/A
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	91.1
AQ-PM	97.8
AQ-DPM	22.5
Drinking Water	69.2
Lead Risk Housing	12.9
Pesticides	79.1
Toxic Releases	68.7
Traffic	19.1
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	15.1

Haz Waste Facilities/Generators	26.7
Impaired Water Bodies	12.5
Solid Waste	59.2
Sensitive Population	—
Asthma	41.5
Cardio-vascular	71.3
Low Birth Weights	11.9
Socioeconomic Factor Indicators	—
Education	51.2
Housing	35.3
Linguistic	33.9
Poverty	42.6
Unemployment	14.4

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	50.64801745
Employed	49.30065443
Median HI	36.5199538
Education	—
Bachelor's or higher	43.17977672
High school enrollment	15.95021173
Preschool enrollment	41.02399589
Transportation	—
Auto Access	64.27563198
Active commuting	12.5882202

Social	—
2-parent households	51.0714744
Voting	61.59373797
Neighborhood	—
Alcohol availability	67.48363916
Park access	34.55665341
Retail density	6.813807263
Supermarket access	5.41511613
Tree canopy	44.98909278
Housing	—
Homeownership	52.53432568
Housing habitability	58.27024253
Low-inc homeowner severe housing cost burden	58.3472347
Low-inc renter severe housing cost burden	52.59848582
Uncrowded housing	32.9013217
Health Outcomes	—
Insured adults	57.69280123
Arthritis	49.4
Asthma ER Admissions	48.9
High Blood Pressure	56.0
Cancer (excluding skin)	36.4
Asthma	46.1
Coronary Heart Disease	61.0
Chronic Obstructive Pulmonary Disease	50.7
Diagnosed Diabetes	73.9
Life Expectancy at Birth	52.2
Cognitively Disabled	30.7
Physically Disabled	24.6

Heart Attack ER Admissions	21.4
Mental Health Not Good	51.7
Chronic Kidney Disease	64.9
Obesity	36.0
Pedestrian Injuries	79.3
Physical Health Not Good	59.3
Stroke	70.4
Health Risk Behaviors	—
Binge Drinking	16.3
Current Smoker	57.8
No Leisure Time for Physical Activity	62.4
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	45.9
Elderly	61.9
English Speaking	54.3
Foreign-born	18.0
Outdoor Workers	16.9
Climate Change Adaptive Capacity	—
Impervious Surface Cover	76.8
Traffic Density	26.4
Traffic Access	0.0
Other Indices	—
Hardship	60.8
Other Decision Support	—
2016 Voting	56.1

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	43.0
Healthy Places Index Score for Project Location (b)	41.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Construction schedule of 4 months

Construction Equipment Vehicles

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horsepower	Load Factor	Number of Days	Average Daily Factor	Gallons Diesel
Demolition	Tractors/Loaders/Backhoes	2	6	84	0.37	6	0.6	90.72
Demolition	Rubber Tired Dozers	1	1	367	0.4	6	0.6	66.06
Demolition	Concrete/Idustrial Saws	1	8	33	0.73	6	0.6	47.52
Grading	Rubber Tired Dozers	1	6	367	0.4	2	0.6	132.12
Grading	Graders	1	6	148	0.41	2	0.6	53.28
Grading	Tractors/Loaders/Backhoes	1	7	84	0.37	2	0.6	35.28
Building Construction	Cranes	1	4	367	0.29	72	0.6	3,170.88
Building Construction	Forklifts	2	6	82	0.2	72	0.6	1,062.72
Building Construction	Tractors/Loaders/Backhoes	2	8	84	0.37	72	0.6	1,451.52
Site Preparation	Graders	1	8	148	0.41	4	0.6	142.08
Site Preparation	Tractors/Loaders/Backhoes	1	8	84	0.37	4	0.6	80.64
Total								**6,332.82**

Construction Worker Vehicles

Phase Name	Daily Worker Trip	Daily Vendor Trip	Days per Year	Total Worker Trips	Total Vendor Trips	Worker Trip Length (miles)	Vendor Trip Length (miles)	Total Worker VMT	Total Vendor VMT	Average Daily Factor	Total Gallons Gasoline	Total Gallons Diesel
Grading	8		2	15	-	7.7	6.8	116	-	0.6	4.33	-
Building Construction	25	10	72	1,800	720	7.7	6.8	13,860	4,896	0.6	519.11	1,264.06
Demolition	10		6	60	-	7.7	6.8	462	-	0.6	17.30	-
Site Preparation	5		4	20	-	7.7	6.8	154	-	0.6	5.77	-
Total											**546.50**	**1,264.06**

Appendix B: Biological Resources Evaluation

CITY OF VISALIA

CAMERON CREEK PROJECT BIOLOGICAL EVALUATION

VISALIA
AUGUST 2024

PREPARED FOR:
City of Visalia
Visalia, California

PREPARED BY:
PROVOST & PRITCHARD CONSULTING GROUP
1518 Mill Rock Way #100, Bakersfield, California 93311

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ACRONYMS AND ABBREVIATIONS

APE ..... Area of Potential Effect
BMP ..... Best Management Practices
BUOW ..... Burrowing Owl
CDFW ..... California Department of Fish and Wildlife
CEQA ..... California Environmental Quality Act
CNDDB ..... California Natural Diversity Database
CNPS ..... California Native Plant Society
County ..... Tulare County
District ..... Tulare
ECOS ..... United States Fish and Wildlife Service's Environmental Conservation Online System
EPA ..... Environmental Protection Agency
°F ..... degrees Fahrenheit
IPaC ..... United States Fish and Wildlife Service's Information for Planning and Consultation system
MBTA ..... Migratory Bird Treaty Act
NEPA ..... National Environmental Policy Act
NRCS ..... Natural Resources Conservation Service
Project ..... Cameron Creek Project
Provost & Pritchard ..... Provost & Pritchard Consulting Group
RWQCB ..... Regional Water Quality Control Board
SJKF ..... San Joaquin Kit Fox
SWPPP ..... Storm Water Pollution Prevention Plan
SWRCB ..... State Water Resources Control Board
USACE ..... United States Army Corps of Engineers
USC ..... United States Code
USDA ..... United States Department of Agriculture
USFWS ..... United States Fish and Wildlife Service
USGS ..... United States Geological Survey

1 INTRODUCTION

This Biological Evaluation, prepared by Provost & Pritchard Consulting Group (Provost & Pritchard) in compliance with the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA), includes descriptions of the biological resources present or with potential to occur within the proposed Cameron Creek Project (or "project") and surrounding areas, potential project-related impacts or effects to those resources, and mitigation measures to reduce these impacts and effects to a less-than-significant level under CEQA and NEPA.

1.1 PROJECT DESCRIPTION

The area of potential effect (APE) was located in the San Joaquin Valley, southwest of the City of Visalia and east of the City of Exeter in the northeast corner of Tulare County, California (see Figure 1). The APE includes approximately 8 acres with an additional 25-foot buffer surrounding the project site. It includes dirt roads and a section of Cameron Creek for a total of 14 acres (see Figure 2). Surrounding lands on both sides of Cameron Creek are orchards, a recharge basin, agricultural and scattered residential homes.

The City of Visalia (or "City") proposes to construct three reinforced concrete check structures within Cameron Creek. The objective of the project is to convert Cameron Creek into a linear recharge facility. This will be accomplished by excavating through the creek channel and embankment at a depth of about 10 feet in the channel top and two to three feet at the channel bottom. Each check structure will be equipped with automatic gates capable of passing high water levels. The sections of Cameron Creek that will be utilized start where the creek diverts from Tulare Irrigation District's (TID) Main Intake Canal east of Road 156, with the end location northeast of Lovers Lane and Caldwell Avenue intersection.

1.2 REPORT OBJECTIVES

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

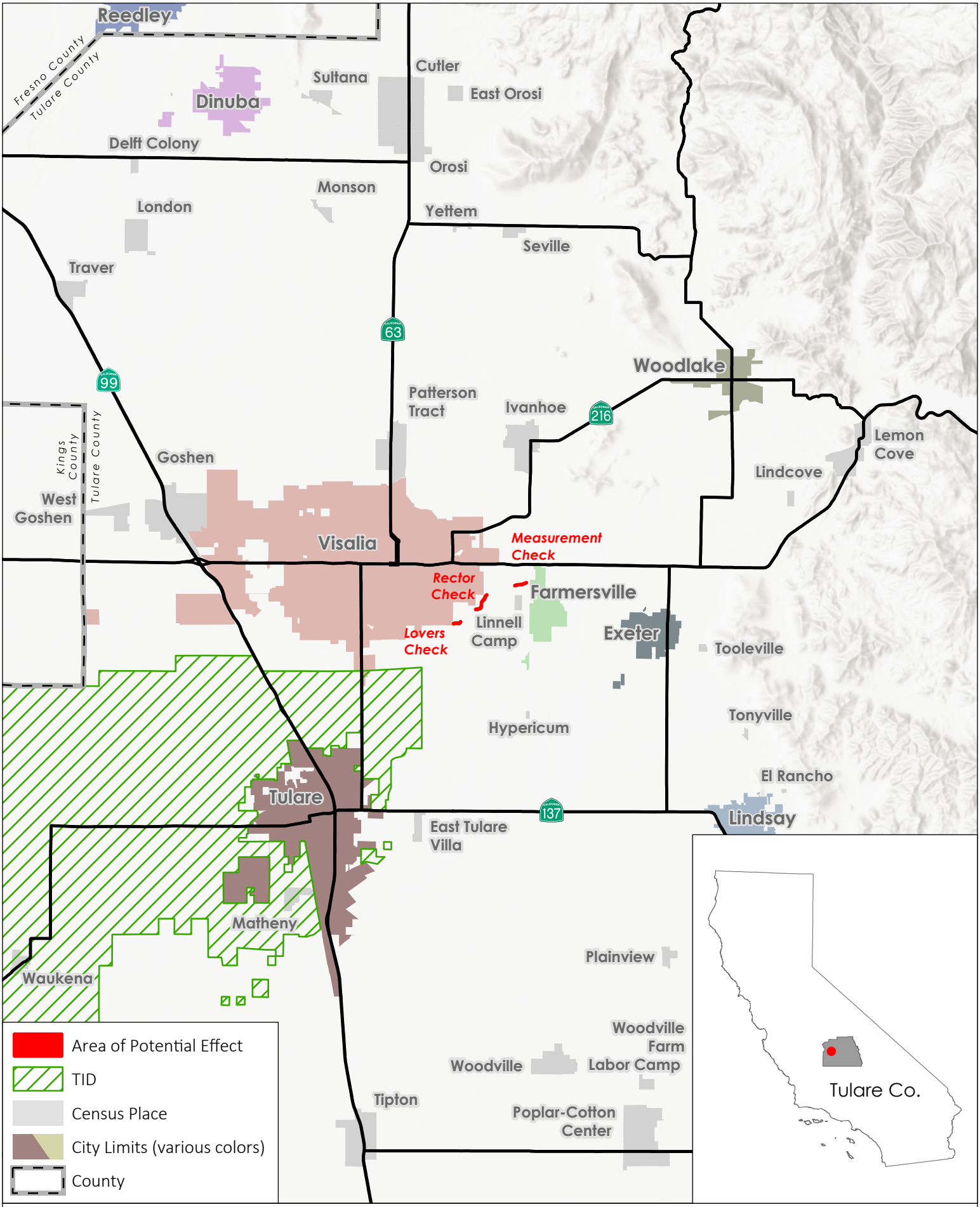
This report addresses issues related to the following:

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

Therefore, the objectives of this report are to:

- Summarize all APE-specific information related to existing biological resources.
- 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.
- Summarize all state and federal natural resource protection laws that may be relevant to implementation of the project.
- Identify and discuss project impacts and effects to biological resources likely to occur onsite within the context of CEQA, NEPA, and/or state or federal laws.
- Identify and prescribe a set of avoidance and minimization 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.

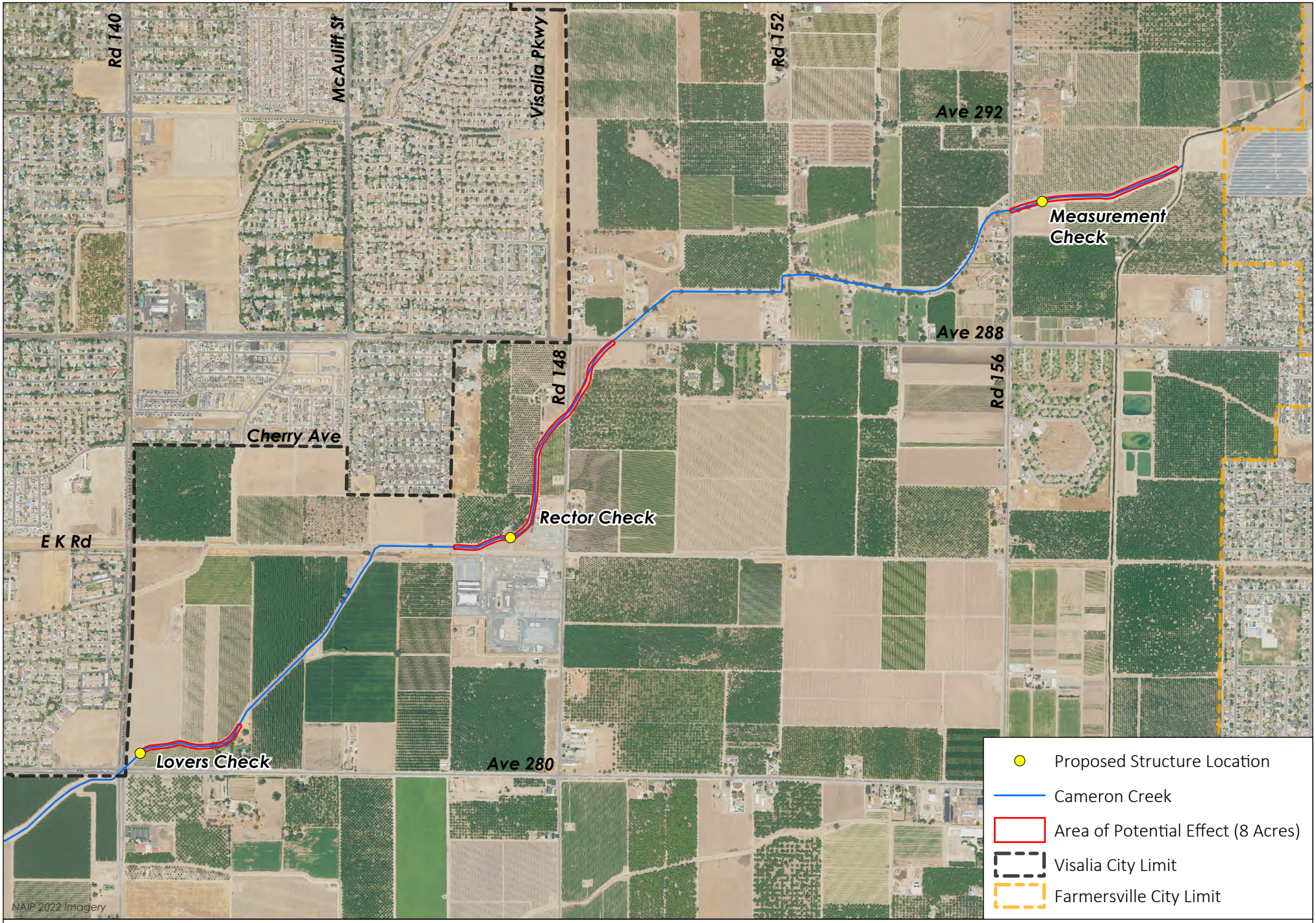


Regional Map

City of Visalia - Cameron Creek Recharge Project

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Fig. 1 Page 1-2



Area of Potential Effect Map

City of Visalia - Cameron Creek Recharge Project

PROVOST& PRITCHARD

Fig. 2 Page 1-4

9/4/2024 G:\Visalia_City of-1391\139124002-Cameron Creek\400 GIS\Map\CityOfVisalia_Cameron_Creek_Recharge\CityOfVisalia_Cameron_Creek_Recharge.aprx

1.3 STUDY METHODOLOGY

A reconnaissance-level field survey of the APE was conducted on June 3, 2024, by Provost & Pritchard biologist, Jenny McCarthy. The survey consisted of walking in the APE while identifying and noting land uses, biological habitats and communities, and plant and animal species encountered. Habitats were also assessed to help with determining if they could be suitable for various rare or protected plant and animal species. Representative photographs of the site were taken and are presented in Appendix A.

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

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

2 EXISTING CONDITIONS

2.1 REGIONAL SETTINGS

2.1.1 TOPOGRAPHY

The APE is located within the southwest corner of Section 03, and the northwest corner of Section 02, Township 19, Range 25 East, and the southeast corner of Section 35 Township 18, Range 25 East Township 19, Range 25 East in the Visalia and Exeter quad. The topography of the APE is relatively flat with elevations ranging from 318 to 352 feet above mean sea level (see Figure 3).

2.1.2 CLIMATE

Like most of California, the APE experiences a Mediterranean climate. Warm, dry summers are followed by cool, moist winters. In the summer, average high temperatures range between 88- and 95 degrees Fahrenheit (°F), but often exceed 95 °F, and the humidity is generally low. Winter temperatures are often below 57 °F during the day and rarely exceed 64 °F. On average, the City of Visalia receives approximately 10.6 inches of precipitation in the form of rain yearly, most of which occurs between October and May (Weatherspark), and the APE would be expected to receive similar amounts of precipitation.

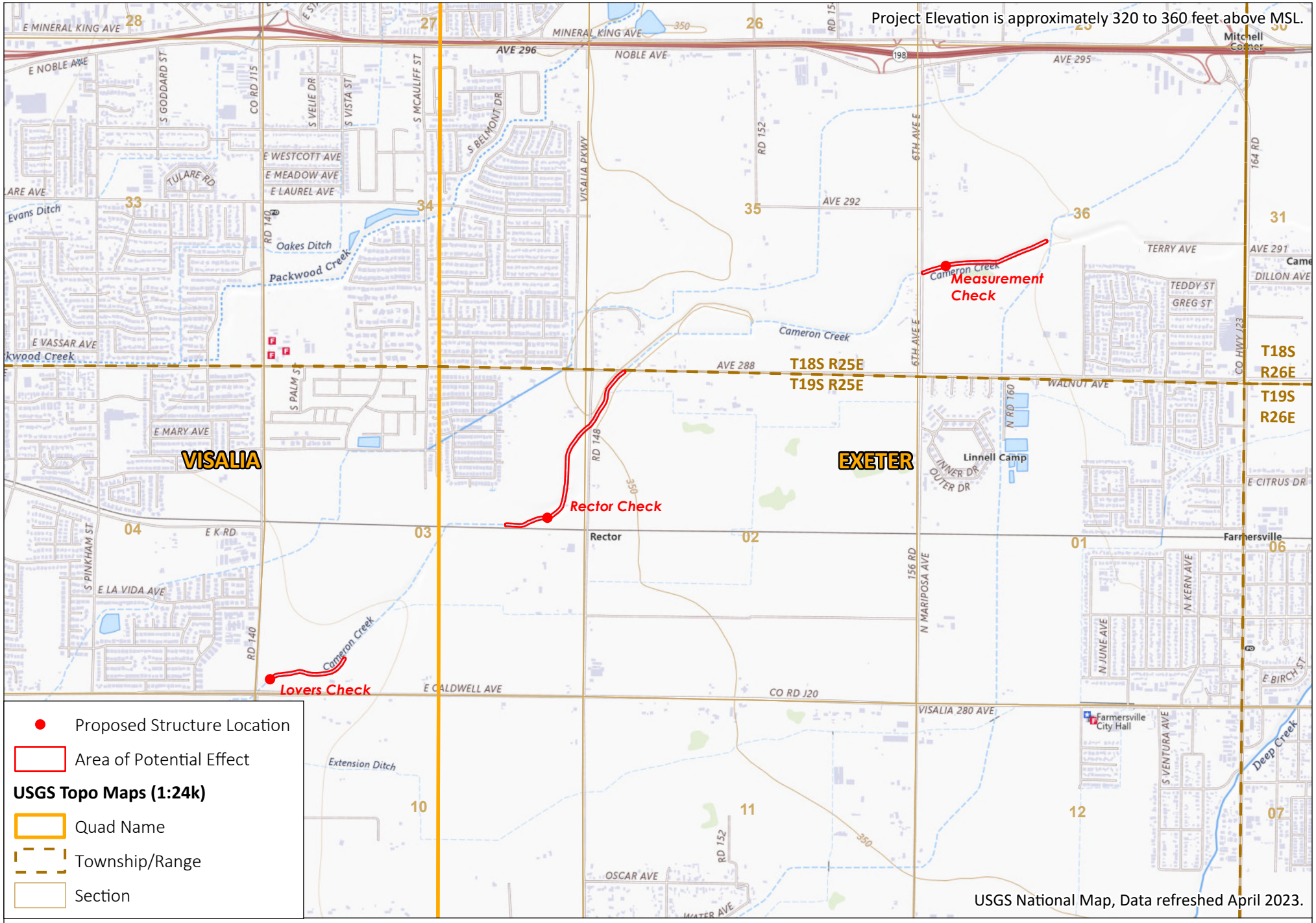
2.1.3 HYDROLOGY

The nearest surface water to the project is Cameron Creek which runs through the APE. Cameron Creek is a controlled waterway that is inundated infrequently. The creek runs southwest of Visalia where it eventually splits and spills into a water basin but also continues a short distance before it merges with Packwood Creek.

2.1.4 SOILS

One soil mapping unit representing one soil type was identified within the APE (see Appendix D for the Web Soil Survey Report). The only soil type within the APE is Grangeville and the soil map unit is sandy loam, drained, with 0 to 2 percent slopes. Grangeville soils are somewhat poorly drained, with negligible to very low runoff, and moderately rapid permeability. This soil type is primarily used for wildlife habitat and agriculture.

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 interpretive group and one minor soil component were identified as hydric.



Topographic Quadrangle Map

City of Visalia - Cameron Creek Recharge Project

PROVOST& PRITCHARD

Fig. 2 Page 1-3

9/4/2024 G:\Visalia_City of-1391\139124002-Cameron Creek\400 GIS\Map\CityOfVisalia_Cameron_Creek_Recharge\CityOfVisalia_Cameron_Creek_Recharge.aprx

2.2 BIOTIC HABITATS

Two biotic habitats were observed within the APE and included creek and ruderal (see Figure 4, Figure 5, and Figure 6). These habitats and their constituent plant and animal species are described in more detail in the following sections.

2.2.1 CREEK

The APE is located within Cameron Creek. The vegetation abundance varied throughout the creek, however the species richness remained consistent. The water level in the creek varied from dry to ponded for no more than a few hundred feet. There was trash and tire marks observed throughout the creek. There were two bridges that overlapped the boundary of the APE. The first bridge was west of the measurement check and the second bridge was north of the rector check.

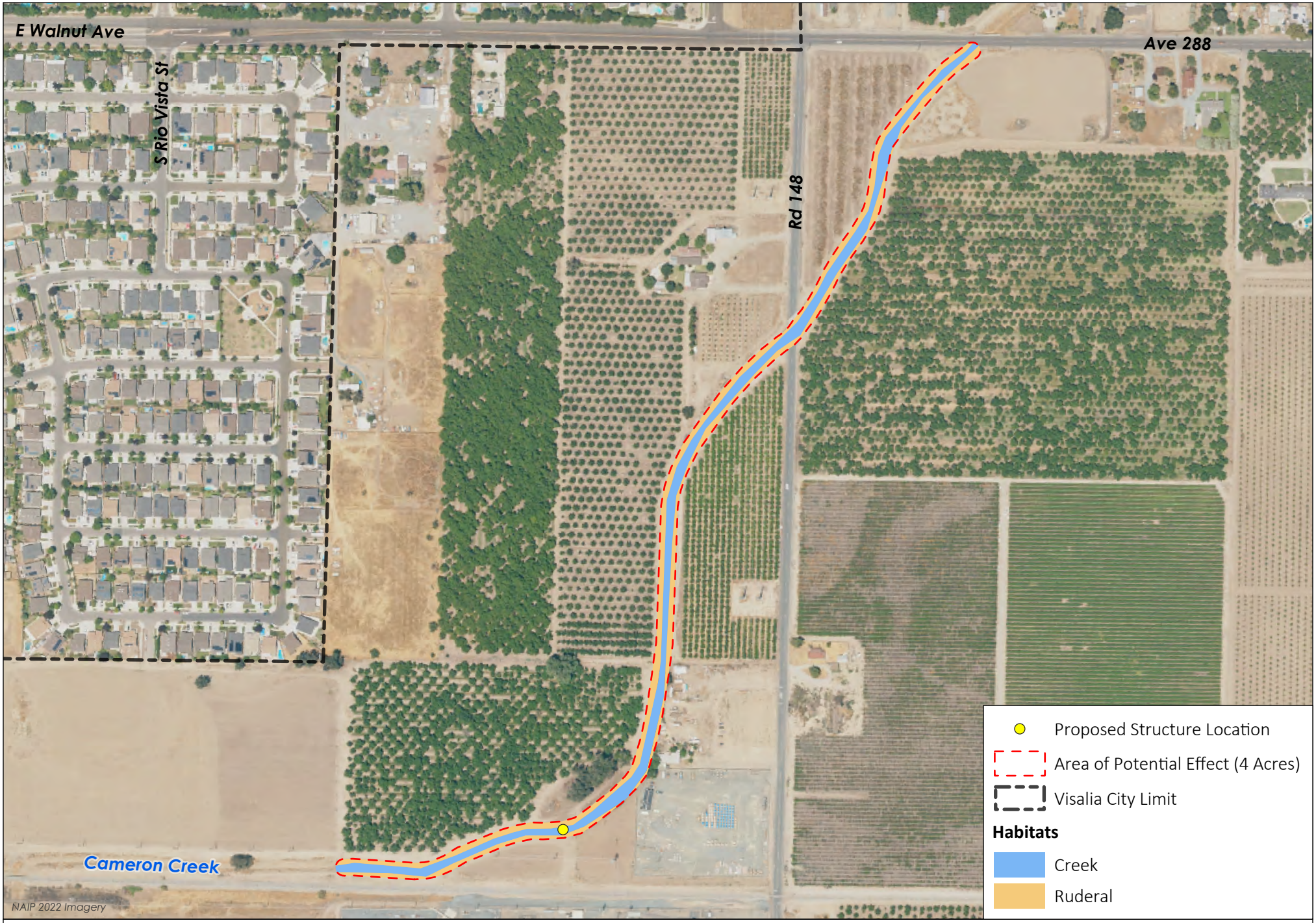
The survey of the APE resulted in the identification of the following species: tall flatsedge (*Cyperus eragrostis*), horseweed (*Erigeron canadensis*), stinging nettle (*Urtica dioica*), common cocklebur, (*Xanthium orientale*), seep monkeyflower (*Erythranthe guttata*), Johnson grass (*Sorghum halepense*), shortpod mustard (*Hirschfeldia incana*), watermelon (*Citrullus lanatus*), common sunflower (*Helianthus annuus*), Spanish clover, (*Acmispon americanus*), tree tobacco (*Nicotiana glauca*), and prickly pear (*Opuntia ficus-indica*).

The survey of the APE resulted in the identification of the following species or their sign; cliff swallow (*Petrochelidon pyrrhonota*) nests, house finch (*Haemorhous mexicanus*), mourning dove (*Zenaida marcoura*), northern mockingbird (*Mimus polyglottos*), turkey vulture (*Cathates aura*), and striped skunk (*Mephitis mephitis*) scat.

2.2.2 RUDERAL

The majority of the ruderal area was comprised of a dirt road that runs parallel on both sides of Cameron Creek. Soils were generally bare with occasional sparse, non-native vegetation throughout the habitat, and scatted valley oak trees (*Quercus lobata*).

The survey of the APE resulted in the identification of the following species; California ground squirrel (*Otospermophilus beechyi*) was observed alarm calling, barn swallow (*Hirundo rustica*), slide-blotched lizard (*Uta stansburiana*) was observed seeking shelter between some rocks along Cameron Creek, red-tailed hawk (*Buteo jamaincensis*), common raven (*Corvus corax*), brown-headed cowbird (*Molothrus ater*), black phoebe (*Sayornis nigricans*), California scrub-jay (*Aphelocoma californica)*, an American kestrel (*Falco sparverius*) was dive bombing an American crow (*Corvus brachyrhynochos*) that was perched in an orchard tree, and a Swainson's hawk (*Buteo swainsoni*) was observed flying over the APE and into a valley oak tree outside the APE.



Rector Check Habitats Map

City of Visalia - Cameron Creek Recharge Project

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Fig. 4 Page 2-4

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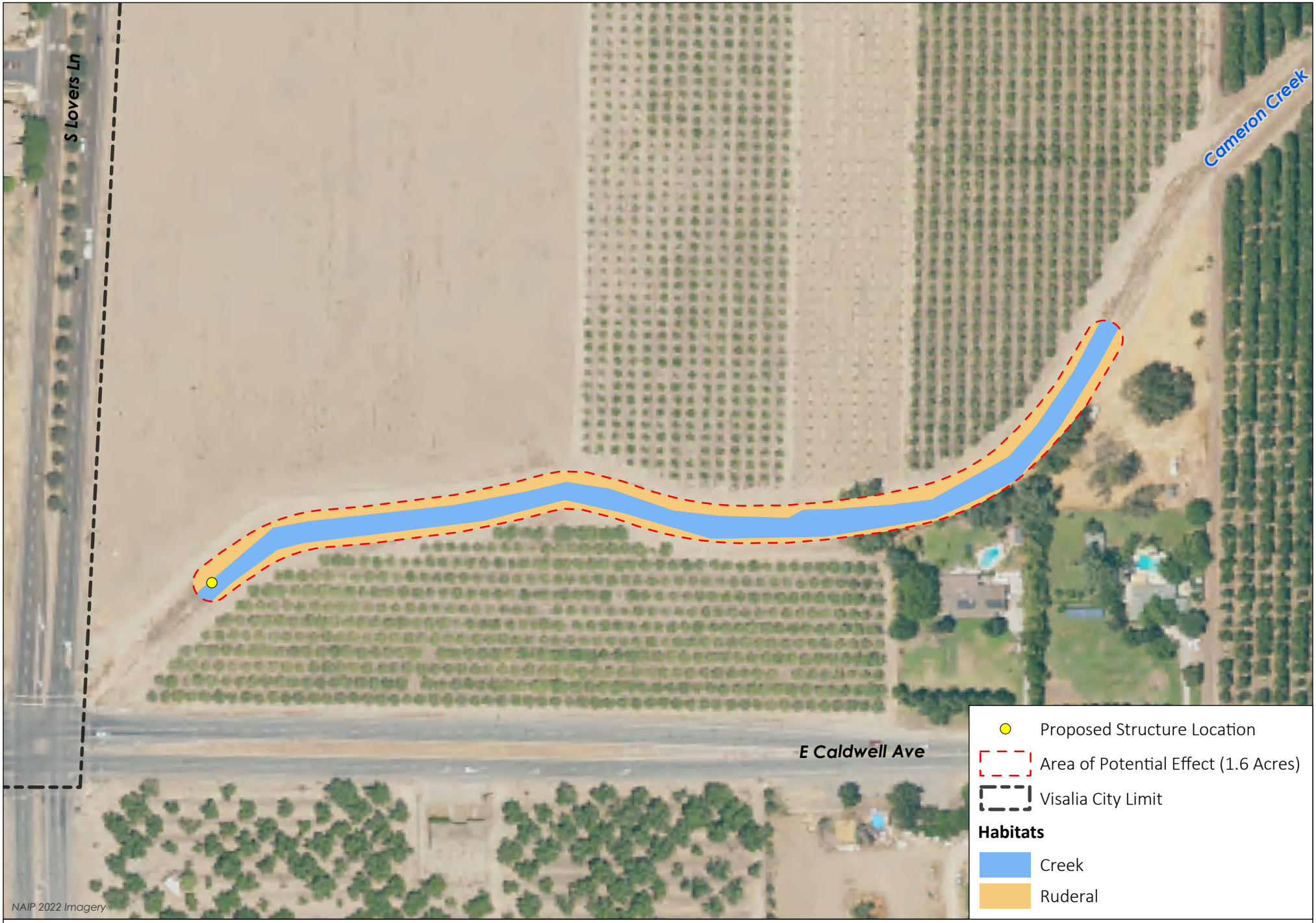
Measurement Check Habitats Map

City of Visalia - Cameron Creek Recharge Project

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Fig. 5 Page 2-5

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Lovers Check Habitats Map

City of Visalia - Cameron Creek Recharge Project

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Fig. 6 Page 2-6

6/25/2024 \\ppeng.com\pzdata\clients\Visalia_City of-1391\139124002-Cameron Creek\400 GIS\Map\CityOfVisalia_Cameron_Creek_Recharge\CityOfVisalia_Cameron_Creek_Recharge.aprx

2.3 NATURAL COMMUNITIES OF SPECIAL CONCERN AND RIPARIAN HABITAT

Natural communities of special concern are those that are of limited distribution, distinguished by significant biological diversity, or home to special status species. CDFW has classified and mapped all natural communities in California. Just as the special status plant and animal species (see Section 3.6), these natural communities of special concern can be found within the CNDDB. No natural communities of special concern were observed during the field survey.

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

2.4 DESIGNATED CRITICAL HABITAT

The USFWS often designates areas of "critical habitat" when it lists species as threatened or endangered. Critical habitat is a specific geographic area that contains features essential for the conservation of a threatened or endangered species, which may require special management and protection. According to the IPaC, designated critical habitat is absent from the APE how there are areas of designated critical habitat in the region, including 13 miles east of the APE for California condors (*Gymnogyps californianus*) and 9 miles northeast and northwest of the APE for Hoover's spurge (*Chamesyce hooveri*) and San Joaquin Valley Orcutt grass (*Orcuttia inaequalis*).

2.5 WILDLIFE MOVEMENT CORRIDORS AND NATIVE WILDLIFE NURSERY SITES

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

It is unlikely Cameron Creek serves as a movement corridor with the unpredictable water volume of Cameron Creek. Additionally, there are alternative routes such as the creek roads and the Western Pacific Railroad.

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. Several large valley oak trees were observed in Cameron Creek that could be used as maternity bat roosts within the APE.

2.6 SPECIAL STATUS PLANTS AND ANIMALS

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

A query of the CNDDB for occurrences of special status plant and animal species was conducted for the *Visalia* and *Exeter* U.S. Geological Survey (USGS) 7.5-minute quadrangles that contain the APE, and for the 10 surrounding USGS quadrangles: *Traver, Monson, Ivanhoe, Woodlake, Goshen, Visalia, Exeter, Rocky Hill, Paige, Tulare, Cairns Corner, Lindsay*. A query of the IPaC was also completed for the APE. These species, and their potential to occur within the APE, are listed in Table 1 and Table 2 below. Other special status species that did not show up in the CNDDB query, but have the potential to occur in the vicinity, are also included in Table 3. Species lists obtained from CNDDB and IPaC are available in Appendix B and Appendix C, respectively. All relevant sources of information, as discussed in the Study Methodology section of this report, as well as field observations, were used to determine if any special status species have the potential to occur within the APE

Table 1: List of Special Status Plants with Potential to Occur on the APE

Species	Status*	Habitat	Occurrence within the APE
Alkali-sink goldfields (*Lasthenia chrysantha*)	CNPS 1B	Found in vernal pool and wet saline flat habitats in the San Joaquin Valley region at elevations below 700 feet. Blooms February – April.	**Absent.** Vernal pools were not observed within the APE.
Brittlescale (*Atriplex depressa*)	CNPS 1B	Found in the Central Valley in alkaline or clay soils, typically in meadows or annual grasslands at elevations below 1,100 feet. Sometimes associated with vernal pools. Blooms June – October.	**Absent.** The soil and habitat required for this species were not observed within the APE.
Calico monkeyflower (*Diplacus pictus*)	CNPS 1B	Found in the Sierra Nevada foothills and the Tehachapi mountains in bare, sunny, shrubby areas, around granite outcrops within foothill woodland communities at elevations between 450 and 4,100 feet. Blooms March – May.	**Absent.** The APE is outside of the current known range of 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 200 and 6,100 feet. Blooms February – April.	**Absent.** The soil and habitat required for this species were not observed within the APE.
California alkali grass (*Puccinellia simplex*)	CNPS 1B	Found in the San Joaquin Valley and other parts of California in saline flats and mineral springs within valley grassland and wetland-riparian communities at elevations below 3,000 feet. Blooms March – May.	**Absent.** The habitat required for this species was not observed within the APE.

Species	Status*	Habitat	Occurrence within the APE
California satintail (*Imperata brevifolia*)	CNPS 2B	Often found in wet springs, meadows, streambanks, and floodplains, and can also be found in coastal scrub, riparian scrub, Mojavean desert scrub, chaparral, and alkali seeps at elevations below 1,600 feet. Blooms September – May.	**Unlikely.** The habitat required for this species was not observed within the APE. The most recent recorded observation occurred in an undetermined location two miles northwest of the APE in 1895.
Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*)	CNPS 1B	Found on alkaline and saline soils in vernal pools and playas in grassland at elevations below 4,500 feet. Blooms April – May.	**Absent.** Vernal pools were not observed within the APE.
Earlimart orache (*Atriplex cordulata* var. *erecticaulis*)	CNPS 1B	Found in the San Joaquin Valley in saline and alkaline soils, typically within valley grasslands at elevations below 400 feet. Blooms August – September.	**Absent.** The soils and habitat required by this species were not observed within the APE.
Greene's tuctoria (*Tuctoria greenei*)	FE, CNPS 1B	Found in the San Joaquin Valley and other parts of California in vernal pools within valley grassland, wetland, and riparian communities at elevations below 3,500 feet. Blooms May – September.	**Absent**. The habitat required for this species was not observed within the APE.
Heartscale (*Atriplex cordulata* var. *cordulata*)	CNPS 1B	Found in the Central Valley in saline or alkaline soils within shadscale scrub, valley grassland, and wetland-riparian communities at elevations below 250 feet. Blooms June – July.	**Absent.** The soil and habitat required for this species were not observed within the APE.
Hoover's spurge (*Euphorbia hooveri*)	FT, CNPS 1B	Found in vernal pools within valley grassland, freshwater wetland, and riparian communities at elevations below 800 feet. Blooms July – September.	**Absent.** Vernal pools were not observed within the APE.
Kaweah brodiaea (*Brodiaea insignis*)	CE, CNPS 1B	Found in the Sierra Nevada foothills in foothill woodland and valley grassland communities at elevations between 650 and 1,700 feet. Blooms May – June.	**Absent.** The APE is outside the current known range of this species.
Lassics lupine (*Lupinus constancei*)	FE, CE, CNPS 1B	Found near the summits of mountains in Humboldt and Trinity County in serpentine communities between 5,000 to 6,000 feet in elevation. Blooms July.	**Absent.** The APE is outside the current known range of this species.
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	**Absent.** The soils and the habitat required by this species were not observed within the APE.

Species	Status*	Habitat	Occurrence within the APE
		750 feet. Blooms April – October.	
Recurved larkspur (*Delphinium recurvatum*)	CNPS 1B	Occurs in chenopod scrub, cismontane woodland, and grassland habitats on poorly drained, fine, alkaline soils; often in valley saltbush or valley chenopod scrub communities at elevations between 100 and 2,600 feet. Blooms March – June.	**Absent.** The soils and habitat required by this species were not observed within the APE.
Sanford's arrowhead (*Sagittaria sanfordii*)	CNPS 1B	This species is an aquatic plant and is found in the San Joaquin Valley and other parts of California in freshwater marshes, ponds, canals, and ditches at elevations below 1,000 feet. Blooms May – October.	**Unlikely.** Cameron Creek does not contain water on a regular basis to be able to support this species. The most recent recorded observation occurred nine miles northeast of the APE in 2018.
San Joaquin adobe sunburst (*Pseudobahia peirsonii*)	FT, CE, CNPS 1B	Found in the San Joaquin Valley and the Sierra Nevada foothills in bare, dark clay soils in valley and foothill grassland and cismontane woodland communities at elevations between 300 and 3,000 feet. Blooms March – May.	**Absent.** Soils and habitat required by this species were not observed within the APE.
San Joaquin Valley Orcutt grass (*Orcuttia inaequalis*)	FT, CE, CNPS 1B	Found in the eastern San Joaquin Valley and the Sierra Nevada foothills in vernal pools within valley grassland, freshwater wetland, and wetland-riparian communities at elevations below 2,600 feet. Blooms April – September.	**Absent.** Vernal pool and wetland communities were not observed within the APE.
Spiny-sepaled button-celery (*Eryngium spinosepalum*)	CNPS 1B	Found in the Sierra Nevada foothills and the San Joaquin Valley in vernal pools, swales, and roadside ditches. Often associated with clay soils in vernal pools within grassland communities. Occurs at elevations between 50 and 4,200 feet. Blooms April – July.	**Absent.** Vernal pools were not observed within the APE.
Striped adobe-lily (*Fritillaria striata*)	CT, CNPS 1B	Found in the Sierra Nevada foothills in adobe soil within valley grassland and foothill woodland communities at elevations below 3,300 feet. Blooms February – April.	**Absent.** The APE is outside the current known range of this species.
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	**Unlikely.** The soils required by this species were not present within the APE. The most recent recorded observation occurred in an

Species	Status*	Habitat	Occurrence within the APE
		elevations below 300 feet. Blooms June – October.	unconfirmed location eight miles northwest of the in 2002.
Vernal pool smallscale (*Atriplex persistens*)	CNPS 1B	Occurs in the Central Valley in alkaline vernal pools at elevations below 400 feet. Blooms June – September.	**Absent.** No vernal pools were observed within the APE.
Winter's sunflower (*Helianthus winteri*)	CNPS 1B	Found in the Sierra Nevada foothills on steep, south-facing grassy slopes, rock outcrops, and road-cuts at elevations ranging from 600 to 1,500 feet. Blooms year-round.	**Absent.** The APE is located outside the current known elevational range of this species.

Table 2: List of Special Status Animals with Potential to Occur on the APE

Species	Status*	Habitat	Occurrence within the APE
American badger (*Taxidea taxus*)	CSSC	Prefers drier open stages of shrub, forest, and herbaceous habitats with friable soils to burrow, but can be found within numerous habitats throughout California, including the margins of agricultural lands. Needs a sufficient prey base of burrowing rodents.	**Possible.** The banks along Cameron Creek can provide suitable denning habitat for this species. Also, numerous California ground squirrel burrows were observed throughout the creek providing a prey source for this species. The most recent recorded observation occurred two miles northeast of the APE in 1994.
Blunt-nosed leopard lizard (*Gambelia sila*)	FE, CE, CFP	Occurs in the San Joaquin Valley region in expansive, arid areas with scattered vegetation. Today they inhabit non-native grassland and alkali sink scrub communities of the valley floor marked by poorly drained, alkaline, and saline soils. They can be found at elevations ranging from approx. 100 to 2,600 feet. They are absent from areas with steep slopes and dense vegetation, and areas subject to seasonal flooding. Adults may excavate shallow burrows but rely on deeper pre-existing rodent burrows for hibernation and reproduction.	**Absent.** No suitable habitat was observed within the APE.
Buena Vista Lake ornate shrew (*Sorex ornatus relictus*)	FE, CSSC	Prefers moist soils, inhabiting marshes, swamps, and riparian shrublands in the Tulare Basin. Uses stumps, logs, and leaf litter for cover.	**Absent.** No suitable habitat was observed within the APE.
Burrowing owl (*Athene cunicularia*)	CSSC	Resides in open, dry grasslands, deserts, scrublands, and other areas with low growing vegetation. Nests and roosts underground in existing burrows created by mammals, most often	**Possible.** The APE had numerous California ground squirrel burrows that could be used by the species that were observed along the creek. The most recent recorded sighting

Species	Status*	Habitat	Occurrence within the APE
		by ground squirrels, and human-made structures.	occurred 12 miles northwest of the APE in 2017.
California tiger salamander – central California DPS (*Ambystoma californiense*)	FT, CT	Requires vernal pools or seasonal ponds for breeding and small mammal burrows for aestivation. Generally found in grassland and oak savannah plant communities in central California from sea level to 1,500 feet in elevation. Can migrate up to 1.3 miles to breed.	**Unlikely.** The APE had small mammal burrows for the adults of this species to use during the non-breeding season as upland habitat. There were no vernal pools or seasonal ponds within the APE or surrounding area for this species to breed in. The most recent recorded observation occurred 9 miles northwest of the APE in 2002.
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 expanses of open savannah, grassland, and/or foothill chaparral in mountain ranges of moderate altitude. Forages for carrion up to 100 miles from their roost/nest sites.	**Unlikely.** The species could forage in the area, but the APE lacks suitable nesting habitat. The CNDDB has no observation records for this species within the APE and the entire 11 quads.
Crotch's bumble bee (*Bombus crotchii*)	CCE	Occurs throughout coastal California, as well as east to the Sierra Nevada-Cascade crest, and south into Mexico. Food plant genera include snapdragons, scorpionweeds, primroses, poppies, and buckwheats.	**Unlikely.** The APE lacked any of the necessary forage plants for this species. The most recent recorded observation of the species occurred in an undetermined location approximately seven miles east of the APE in 2010.
Foothill yellow-legged frog – south Sierra Distinct Population Segment (*Rana boylii*)	FC, CE	Frequents rocky streams and rivers with rocky substrate and open, sunny banks in forests, chaparral, and woodlands. Occasionally found in isolated pools, vegetated backwaters, and deep, shaded, spring-fed pools.	**Absent**. The habitat and habitat features required by this species were not observed within the APE.
Loggerhead shrike (*Lanius ludovicianus*)	CSSC	Frequents open habitats with sparse shrubs and trees, other suitable perches, bare ground, and low herbaceous cover. In the Central Valley, this species nests in riparian areas, desert scrub, and agricultural hedgerows.	**Possible.** Nesting habitat such as trees greater than five feet tall with dense foliage was observed. Also, the creek and agricultural fields provided ample foraging opportunities for this species within the APE. The most recent recorded observation occurred 12 miles northwest of the APE in 1992.
Monarch butterfly (*Danaus plexippus*)	FC	Roosts in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby. Larval host plants consist of milkweeds. Winter roost sites extend along	**Possible.** Suitable overwintering habitat in the form of valley oak trees with suitable wind protection was observed with the APE. However, the trees in the APE are not expected to be removed and

Species	Status*	Habitat	Occurrence within the APE
		the Pacific Coast from northern Mendocino to Baja California, Mexico.	therefore will not impact this species. The most recent recorded observation occurred three miles east of the APE in 2019 in the Kaweah Oaks Preserve.
Northern California legless lizard (*Anniella pulchra*)	CSSC	Found primarily underground, burrowing in loose, sandy soil. Forages in loose soil and leaf litter during the day. Occasionally observed on the surface at dusk and night.	**Unlikely.** The soil was too compacted for this species to burrow through. The nearest recorded sighting occurred three miles northeast of the APE in 2015.
Northern leopard frog (*Lithobates pipiens*)	CSSC	Inhabits grassland, wet meadows, potholes, forests, woodland, brushlands, springs, canals, bogs, marshes, and reservoirs in scattered locations in California. Generally, prefers permanent water with abundant riparian vegetation.	**Unlikely**. Cameron Creek does not contain water regularly for the creek to be a suitable breeding habitat for this species. Cameron Creek also has sparse aquatic vegetation making it less likely this species would inhabit the creek. The surrounding areas are either orchards or residential homes, with little to no tall vegetation for non-breeding adults to inhabit during the summer. The most recent recorded observation occurred 10 miles north of the APE in 1961.
Northwestern pond turtle (*Actinemys marmorata*)	FPT, CSSC	An aquatic turtle of ponds, marshes, slow-moving rivers, streams, and irrigation ditches with riparian vegetation. Requires adequate basking sites and sandy banks or grassy open fields to deposit eggs.	**Unlikely.** Cameron Creek does not contain enough water regularly to be considered suitable habitat for this species. Cameron Creek also contains sparse aquatic vegetation and basking location for this species. The nearest recorded observation occurred in an undetermined location 2.5 miles northwest of the APE in 1897.
Pallid bat (*Antrozous pallidus*)	CSSC	Found in grasslands, chaparral, and woodlands, where it feeds on ground- and vegetation-dwelling arthropods, and occasionally takes insects in flight. Prefers to roost in rock crevices, but may also use tree cavities, caves, bridges, and other human-made structures.	**Possible.** Bare open habitat suitable for foraging was observed within the APE. Valley oak trees and bridges that could be used by the females during the breeding were also observed within the APE**.** The nearest recorded observation occurred 2.5 miles north of the APE in 2004.
San Joaquin kit fox (*Vulpes macrotis mutica*)	FE, CT	Opportunistically forages in a variety of habitats. Dens in burrows within alkali sink, valley grassland, and woodland habitats in valleys and adjacent foothills and in human-made structures in cities, rangeland, and agricultural areas.	**Possible.** The creek banks could provide denning habitat for this species. Additionally, California ground squirrels and their burrows were observed throughout the APE which would provide denning opportunity and a stable prey base for this species. Also, there were some ruderal fields adjacent to the

Species	Status*	Habitat	Occurrence within the APE
			APE this species could use to forage in. The nearest recorded observation occurred a quarter square mile from the APE in 1975.
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.	**Present.** A Swainson's hawk was observed flying over the APE and into a nearby tree within the APE during the recon survey. The Swainson's hawk was then observed flying into a valley oak tree that was in an agricultural field approximately a half mile west of the APE.
Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*)	FE, CE	Inhabits saltbush scrub and sink scrub communities in the Tulare Lake Basin of the southern San Joaquin Valley. This species needs soft friable soils to burrow.	**Absent.** Suitable habitat and soils required by this species were not observed within 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 foraging in dairy farm feed fields.	**Unlikely.** Cameron Creek did not contain enough aquatic vegetation to support nesting activity for this species. The nearest recorded observation occurred eight miles east of the APE in 2014.
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	FT	Lives in mature elderberry shrubs in the Central Valley and adjacent foothills from Tehama County south through Merced and Mariposa Counties with two scattered populations in Madera and Fresno Counties. Adults are active from March to June.	**Absent.** No elderberry shrubs were observed within the APE.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	Occupies vernal and seasonal pools, with clear to tea-colored water, in grass or mud-bottomed swales, and basalt depression pools.	**Absent.** No vernal pools were observed within the APE.
Vernal pool tadpole shrimp (*Lepidurus packardi*)	FE	Occurs in vernal pools, clear to tea-colored water, in grass or mud-bottomed swales, and basalt depression pools.	**Absent.** No vernal pools were observed within the APE.
Western mastiff bat (*Eumops perotis californicus*)	CSSC	Found in open, arid to semi-arid habitats, including dry desert washes, flood plains, chaparral, oak woodland, open ponderosa pine forest, grassland, and agricultural areas, where it feeds on insects in flight. Roosts most commonly in crevices in cliff faces but may also use high buildings and tunnels.	**Possible**. The species could use the bridge as roosting habitat. Particularly when water is in Cameron Creek which would create forage opportunities for this species. The nearest recorded observation occurred three and a half miles west of the APE in 2005.

Species	Status*	Habitat	Occurrence within the APE
Western spadefoot (*Spea hammondii*)	FPT, CSSC	The majority of the time this species is terrestrial and occurs in small mammal burrows and soil cracks, sometimes in the bottom of dried pools. Prefers open areas with sandy or gravelly soils, in a variety of habitats including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Vernal or seasonal pools, that hold water for a minimum of three weeks, are necessary for breeding.	**Unlikely.** Small mammal burrows for adults of this species to occupy in the non-breeding season were observed within the APE. However, no breeding habitat was observed within the APE. The most recent recorded observation occurred eight miles east of the APE in 1991.
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	FT, CE	Suitable nesting habitat in California includes dense riparian willow-cottonwood and mesquite habitats along a perennial river. Once common in the California Central Valley, as well as coastal valleys and riparian habitats east of the Sierra Nevada, habitat loss now constrains the California breeding population to small numbers of birds.	**Absent.** The APE is outside the current known range of this species.

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

Present:	Species observed on the APE at time of field surveys or during recent past.
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	CE	California Endangered
FT	Federally Threatened	CT	California Threatened
FPT	Federally Threatened (Proposed)	CSSC	California Species of Special Concern

CNPS LISTING

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

3 IMPACTS AND MITIGATION

3.1 SIGNIFICANCE CRITERIA

3.1.1 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."

3.1.2 NEPA

Federal projects are subject to the provisions of NEPA. The purpose of NEPA is to assess the effects of a proposed action on the human environment, assess the significance of those effects, and recommend measures that if implemented would mitigate those effects. As used in NEPA, a determination that certain

effects on the human environment are "significant" requires considerations of both context and intensity (40 Code of Federal Regulations (CFR) 1508.27).

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

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

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

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

- *"No effect" - means there will be no impacts, positive or negative, to listed or proposed resources. Generally, this means no listed resources will be exposed to action and its environmental consequences. Concurrence from the Service is not required.*

- *"May affect, but not likely to adversely affect" means that all effects are beneficial, insignificant, or discountable. Beneficial effects have contemporaneous positive effects without any adverse effects to the species or habitat. Insignificant effects relate to the size of the impact and include those effects that are undetectable, not measurable, or cannot be evaluated. Discountable effects are those extremely unlikely to occur. These determinations require written concurrence from the Service.*

- *"May affect, likely to adversely affect" means that listed resources are likely to be exposed to the action or its environmental consequences and will respond in a negative manner to the exposure.*

3.2 RELEVANT POLICIES AND GOALS

3.2.1 THE TULARE COUNTY ORDINANCE

The Tulare County General Plan contains the following objectives and policies related to the project:

3.2.1.1.1 BIOLOGICAL RESOURCES

ERM-1: To preserve and protect sensitive significant habitats, enhance biodiversity, and promote healthy ecosystems throughout the County.

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

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

ERM-1.9: Coordination of Management on Adjacent Lands The County shall work with other government land management agencies (such as the Bureau of Land Management, US Forest Service, National Park Service) to preserve and protect biological resources, including those within and adjacent to designated critical habitat, reserves, preserves, and other protected lands, while maintaining the ability to utilize and enjoy the natural resources in the County.

ERM-1.12: Management of Oak Woodland Communities The County shall support the conservation and management of oak woodland communities and their habitats.

3.2.1.1.2 ENVIRONMENTAL PROTECTION

FGMP-8.8: Erosion Mitigation Measures The County shall require erosion mitigation measures in new developments to prevent soil loss.

3.2.1.1.3 WATER QUALITY

WR-2: To provide for the current and long-range water needs of the County and for the protection of the quality of surface water and groundwater resources.

WR-2.3: Best Management Practices (BMPs) The County shall continue to require the use of feasible BMPs and other mitigation measures designed to protect surface water and groundwater from the adverse effects of construction activities, agricultural operations requiring a County Permit and urban runoff in coordination with the Water Quality Control Board.

3.2.2 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.

3.2.3 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.

3.2.4 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).

3.2.5 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.

3.2.6 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.

3.2.7 WETLANDS AND OTHER "JURISDICTIONAL WATERS"

The definition of "waters of the United States" (WOTUS) often changes from one presidential administration to the next and can also be affected by the outcomes of court cases involving federal jurisdiction of waters. The current definition (i.e. "Conforming Rule") was adopted under the Biden Administration in early 2023 and was subsequently revised in September 2023 to incorporate the U.S. Supreme Court's May 25, 2023, decision in the case of *Sackett* v. *Environmental Protection Agency* (EPA). The Conforming Rule has adopted much of the same WOTUS designations as the pre-2015 rules but has incorporated the most recent science and court case rulings. The extent of jurisdiction has been defined in the Code of Federal Regulations (CFR) but is also subject to interpretation by the federal courts. Jurisdictional waters generally include the following categories:

1) *Traditional Navigable Waters, the territorial seas, or interstate waters (not including interstate wetlands);*
2) *Impoundments of waters of the United States;*
3) *Tributaries of:*
    a. *Traditional Navigable Waters, territorial seas, or interstate waters (not including interstate wetlands); or*
    b. *Impoundments of water of the United States when the tributaries meet the relatively permanent standard.*
4) *Wetlands:*
    a. *Adjacent to Traditional Navigable Waters, the territorial seas, or interstate waters;*
    b. *Adjacent to and with a continuous surface connection to relatively permanent impoundments of waters of the United States*
    c. *Adjacent to and with a continuous surface connection to relatively permanent jurisdictional tributaries.*
5) *Intrastate lakes and ponds not identified in items 1 through 4 of this section that are relatively permanent, standing or continuously flowing bodies of water with a continuous surface connection to the waters identified in items 1 or 3 above.*

Exclusions under the new definition include the following:

1) *Waste treatment systems, including treatment ponds or lagoons, designed to meet the requirements of the CWA;*
2) *Prior converted cropland designated by the Secretary of Agriculture. The exclusion would cease upon a change of use, which means that the area is no longer available for the production of agricultural commodities. Notwithstanding the determination of an area's status as prior converted cropland by any other Federal agency, for the purposes of the CWA, the final authority regarding CWA jurisdiction remains with USEPA;*
3) *Ditches (including roadside ditches) excavated wholly in and draining only dry land and that do not carry a relatively permanent flow of water;*
4) *Artificially irrigated areas that would revert to dry land if the irrigation ceased;*
5) *Artificial lakes or ponds created by excavating or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing;*
6) *Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating or diking dry land to retain water for primarily aesthetic reasons;*
7) *Waterfilled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States; and*
8) *Swales and erosional features (e.g., gullies, small washes) characterized by low volume, infrequent, or short duration flow.*

The Conforming Rule has incorporated the best available science, relevant supreme court cases, public comment, technical expertise, and experience gained from more than 45 years of implementing the pre-2015 "waters of the United States" framework to inform jurisdictional limits. One significant court case involves the U.S. Supreme Court in its *2001 Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers (SWANCC)* decision. It was determined that channels and wetlands isolated from other jurisdictional waters cannot be considered jurisdictional on the basis of their use, hypothetical or observed, by migratory birds.

Similarly, in its 2006 consolidated *Carabell/Rapanos* decision, the United States Supreme Court ruled that a significant nexus between a wetland and other navigable waters must exist for the wetland itself to be considered a jurisdictional water. The Supreme Court heard *Sackett* v. *United States EPA* in May 2023, to determine governing standards of a significant nexus between waters of the United States and adjacent wetlands. The court decided that adjacent wetlands would be protected under the CWA only if it maintained a continuous surface water connection with a federal water body. This decision has limited protection for networks of wetlands connected to navigable waters through subsurface flow. The final decision was enacted in September 2023.

The USACE regulates the filling or grading of waters of the United States. under the authority of Section 404 of the CWA. The extent of jurisdiction within drainage channels is defined by "ordinary high-water marks" on opposing channel banks. All activities that involve the discharge of dredge or fill material into waters of the United States are subject to the permit requirements of the USACE. Such permits are typically issued on the condition that the applicant agrees to provide mitigation that results in no net loss of wetland functions or values. No permit can be issued until the RWQCB issues a Section 401 Water Quality Certification (or waiver of such certification) verifying that the proposed activity will meet state water quality standards.

Under the Porter-Cologne Water Quality Control Act of 1969, the SWRCB has regulatory authority to protect the water quality of all surface water and groundwater in 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 WOTUS 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 WOTUS, 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 WOTUS may require an 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 any material from their bed or bank, or deposits debris within them 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 avoidance and minimization measures will be implemented to protect the habitat values of the lake or drainage in question and the plant, fish, and wildlife species that may be present within these resources.

3.3 POTENTIALLY SIGNIFICANT PROJECT-RELATED IMPACTS AND MITIGATION

Species protected by California Fish and Game Code, CDFW, USFWS, CEQA, or NEPA that have the potential to be impacted by project activities include American badger, burrowing owl, pallid bat, loggerhead strike San Joaquin kit fox, western mastiff bat, and Swainson's hawk. Corresponding mitigation measures can be found below.

3.3.1 GENERAL PROJECT-RELATED IMPACTS

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

> Mitigation Measure BIO-1a (*WEAP Training*): Prior to initiating construction activities (including staging and mobilization), all personnel associated with project construction will attend a mandatory Worker Environmental Awareness Program (WEAP) training, conducted by a "qualified biologist"(someone who is familiar with the species on the document), to aid workers in identifying special status resources that may occur in the APE. The specifics of this program will include identification of the sensitive species and suitable habitats, a description of the regulatory status and general ecological characteristics of sensitive resources, and review of the limits of construction and mitigation measures required to reduce impacts to biological resources within the work area. This training will discuss special status species, describe the laws and regulations in place to provide protection of these species, identify the penalties for violation of applicable environmental laws and regulations, and include a list of required protective measures to avoid

"take." A fact sheet summarizing this information, along with photographs or illustrations of sensitive species with potential to occur on the APE, will also be prepared for distribution to all contractors, their employees, and all other personnel involved with construction of the project. All trainees will sign a form documenting that they have attended WEAP training and understand the information presented to them.

Mitigation Measure BIO-1b (*BMPs*): The project proponent will require that all workers employ the following best management practices (BMPs) in order to avoid and minimize potential impacts to special status species:

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

3.3.2 PROJECT-RELATED MORTALITY AND/OR NEST ABANDONMENT OF MIGRATORY BIRDS, RAPTORS, AND SPECIAL STATUS BIRDS

The APE contains suitable nesting and foraging habitat for a variety of protected bird species, such as migratory birds, raptors, and special status birds. The survey was conducted within the nesting bird season, and no active nests were observed. However, protected birds could nest on the ground or in shrubs, trees, or structures within the APE and forage within the APE. Swainson's hawk and loggerhead shrike are the special status birds observed during the field survey. Protected birds located within or adjacent to the APE during construction have the potential to be injured or killed by project-related activities. In addition to the direct "take" of protected birds within the APE or adjacent areas, these 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 significant impact under CEQA.

While foraging habitat for protected birds is present on the site, suitable foraging habitat is located adjacent to the site and within the vicinity of the site. 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 will help the project comply with state and federal laws protecting these bird species.

Mitigation Measure BIO-2a (*Avoidance*): The project's construction activities will occur, if feasible, between September 16 and January 31 (outside of the nesting bird season) to avoid impacts to nesting birds.

Mitigation Measure BIO-2b (*Pre-construction Surveys*): If activities must occur within nesting bird season (February 1 to September 15), a "qualified biologist"(someone who is familiar with bird identification and nesting bird surveys) will conduct a pre-construction survey for Swainson's hawk nests onsite and within a 0.5-mile radius within 5 calendar days prior to the start of construction.

This survey will be conducted in accordance with the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (Swainson's Hawk Technical Advisory Committee 2000), or current guidance. The Swainson's hawk survey will not be completed between April 21 to June 10 due to the difficulty of identifying nests during this time of year. The survey would also include inspecting for nesting migratory birds within the APE and up to 50 feet outside of the APE, and for other nesting raptors within and up to 450 feet outside of the APE. All raptor nests would be considered "active" upon the nest-building stage. If no active nests are observed, no further mitigation is required.

Mitigation Measure BIO-2c (*Avoidance Buffers*): On discovery of any active nests or breeding colonies near work areas, a "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.

3.3.3 PROJECT-RELATED MORTALITY AND/OR DISTURBANCE TO BURROWING OWL

The Project area contains suitable nesting and foraging habitat for burrowing owls. Construction activities that adversely affect the nesting success of burrowing owls or result in the mortality of individuals constitute a violation of state and federal laws and would be considered a significant impact under CEQA and NEPA. While the project site may remove some potential foraging habitat for BUOW, there is abundant foraging habitat adjacent to the site that could be used, and implementation of the project would not significantly reduce potential foraging habitat for this species. Therefore, no mitigation measures are warranted for loss of BUOW foraging habitat.

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

Mitigation Measure BIO-3a (*Pre-construction Take Avoidance Survey*): A "qualified biologist" (someone who is familiar with species identification and their sign, and habitat use) will conduct a pre-construction take avoidance survey for BUOW and suitable burrows, in accordance with CDFW's Staff Report on Burrowing Owl Mitigation (2012), within seven (7) days prior to the start of construction activities. The survey shall include the proposed work area and surrounding lands up to 500 feet. If no BUOW individuals or active burrows are observed, no further mitigation is required. If construction is hauled for (7) consecutive days another pre-activity survey shall be completed.

Mitigation Measure BIO-3b (*Avoidance*): If an active BUOW burrow is detected, the occurrence will be reported to the CNDDB, and avoidance buffers shall be implemented. A "qualified biologist" will determine appropriate avoidance buffer distances based on applicable CDFW and/or USFWS guidelines, the biology of the species, conditions of the burrow(s), and the level of project disturbance. If necessary, avoidance buffers will be identified with flagging, fencing, or other easily visible means, and will be maintained until the biologist has determined that the nestlings have fledged and all BUOW have left the Project area.

Mitigation Measure BIO-3c (*Passive Relocation*): If avoidance of an active BUOW burrow is not feasible, passive relocation during the non-breeding season (September 1 through January 31) could be utilized or during the breeding season (February 1 through August 31) if a "qualified

biologist" determines that there are no young in the burrow. Prior to completion a "qualified biologist" will prepare a passive relocation plan that would detail the methods to be used. It would include the tools to exclude the BUOW from its burrow (i.e., one-way doors or other devices) and excavate the burrow (hand tools and machinery, if needed). Following completion of passive relocation, a report will be prepared that would document the methods and results of these efforts.

3.3.4 PROJECT-RELATED MORTALITY AND/OR DISTURBANCE OF MATERNITY ROOSTING BATS AND SPECIAL STATUS BATS

The oak trees and bridges within or adjacent to the APEs could support maternity roosting bats and roosting special status roosting bats, including the pallid bat and western mastiff bat, which are California species of special concern. Roosting habitat becomes especially sensitive to all bat species during the maternity roosting season (generally March 1 to August 31, depending on location and temperatures during a given year) and winter season. During the winter, some bats, including pallid pat and western mastiff bat, may roost within the bridges adjacent to the APE. Bats are not expected to overwinter in the oak trees due to their inability to retain heat in the winter. Projects that impact maternity roosting bats or roosting special status bats would be considered a significant impact under CEQA.

Implementation of the following measures will reduce potential impacts to maternity roosting bats and roosting special status bats to a less than significant level under CEQA.

Mitigation Measure BIO-3a (*Focused Surveys*): Within seven days prior to the start of construction activities focused surveys will be conducted by a "qualified biologist" (someone who is familiar with the roosting behavior and habitat of the species and can identify the species sign). They will include a daytime roost survey and dusk emergence survey. The daytime roost survey will include surveying for roosting bats within potential suitable structures (i.e., oak trees and bridges) within and adjacent to each APE, where accessible.

The dusk emergence survey will include surveying for emerging bats at areas where bat sign or likely bat roost areas were observed during the daytime roost survey. It should be conducted on a warm night during dry weather conditions and from approximately 15 minutes before sunset to 1 hour after sunset. If no roosting bats are discovered tree or branch removal must be completed within two days.

Mitigation Measure BIO-3b (*Avoidance Buffers*): Should any active bat roosts be observed during the focused surveys, a "qualified biologist" will determine appropriate avoidance buffers (i.e., construction setback distances) based on the biology of the species, conditions of the roost(s), and the level of project disturbance, if appropriate. 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 roost will no longer be impacted by construction.

Mitigation Measure BIO-3c (*Eviction*): If avoidance buffers are not feasible and it has been determined by a "qualified biologist" that the bats are no longer raising their young or are overwintering, the bats may be evicted. An eviction plan will first be prepared by a "qualified biologist" that identifies the materials and methods that will be used to safely evict the bats.

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

The project site contains suitable denning and foraging habitat for San Joaquin kit fox (SJKF). SJKF denning within the project site during construction have the potential to be injured or killed by project-related activities. Projects that result in the mortality of individuals would be considered a violation of state and

federal laws and considered a potentially significant impact under CEQA and NEPA. While the project site may remove some potential foraging habitat for SJKF, there is abundant foraging habitat adjacent to the site that could be used, and implementation of the project would not significantly reduce potential foraging habitat for this species. Therefore, no mitigation measures are warranted for loss of SJKF foraging habitat.

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

Mitigation Measure BIO-4a (*Pre-Construction Survey*): Within fourteen (14) days prior to the start of construction a "qualified biologist" will conduct a pre-construction survey for San Joaquin kit fox will be conducted on and within 200 feet of proposed work areas.

Mitigation Measure BIO-4b (*Establish Buffers*): On discovery of any SJKF dens near the project area a "qualified biologist" (someone familiar with the identification and sign of this species) will determine appropriate construction setback distances (buffer zones) based on applicable CDFW and/or USFWS guidelines (see below). If needed, construction buffers will be identified with flagging, fencing, or other easily visible means. They will be maintained until the biologist has determined that the den will no longer be impacted by construction.

1. *At least 100 feet around den(s);*
2. *At least 200 feet around natal dens (which SJKF young are reared); and*
3. *At least 500 feet around any natal dens with pups (except for any portions of the buffer zone that is already fully developed).*

Mitigation Measure BIO-4c (*Avoidance and Minimization*): The project will observe all avoidance and minimization measures during construction and on-going operational activities as required by the "qualified biologist" and the USFWS's Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance (2011), including, but not limited to: maintaining buffer zones, construction speed limits, covering of pipes, installation of escape structures, restriction of herbicide and rodenticide use, proper disposal of food items and trash, prohibition of pets and firearms, and completion of an employee education program (see BIO-1a).

3.3.6 PROJECT-RELATED MORTALITY AND/OR DISTURBANCE TO AMERICAN BADGER

The project site contains grassland habitat that could potentially be used by American badger. American badgers denning within the project site during construction have the potential to be injured or killed by project-related activities. Projects that result in the mortality of individuals would be considered a potentially significant impact under CEQA and NEPA.

Implementation of the following measures will reduce potential impacts to American badgers to a less than significant level under CEQA and NEPA. The following measures will be implemented prior to the start of construction:

Mitigation Measure BIO-5a (*Pre-construction Take Avoidance Survey*): A "qualified biologist" (someone familiar with the identification and sign of this species) will conduct a pre-construction survey of project areas within seven (7) days prior to vegetation clearing or ground disturbing activities. The goal of this survey is to search for potential badger dens.

Mitigation Measure BIO-5b (*Remote Cameras*): If potential dens for American badger are detected during the pre-construction survey, each potential den will be monitored with remote cameras for

a period of three consecutive nights. If there is no activity at the den location recorded for three consecutive nights, the den can be deemed "inactive" or "unoccupied" and closed or excavated.

Mitigation Measure BIO-5c (*Den Avoidance*): If an American badger is denning on or within 50 feet of the project site, the project proponent shall avoid the den by a minimum 50-foot buffer.

Mitigation Measure BIO-5d (*Eviction and Den Excavation*): If an American badger is denning on or within 50 feet of the project site and it cannot be avoided, the badger may be evicted, and the den excavated outside of the natal season (generally March 15 – June 15) or if it is determined that there are no kits in the den. Prior to the planned eviction and den excavation, a remote camera will be placed at the den entrance for a minimum of three consecutive nights to record the general time when the badger leaves the den. If it is outside of the natal season or it is determined by a "qualified biologist" that there are no "kits" present in the den the badger will be evicted from the den and the den excavated by hand, with the assistance of machinery, after it has left the den for that night. Should any "kits" be discovered during the excavation the work will stop and the crew will leave the site immediately so the female can rescue her kits and relocate them.

3.4 SECTION 7 DETERMINATIONS

In addition to the occurrence analysis performed in Table 1and Table 2 of this document, Table 3 summarizes project effect determinations for federally-listed species found on the CNDDB list generated on May 30, 2024, and the USFWS IPaC list generated on May 30, 2024 (see Appendix B and Appendix C, respectively), in accordance with Section 7 of the Endangered Species Act.

Table 3: Section 7 Determinations

Species	Determination	Rationale for Determination
Blunt-nosed leopard lizard (*Gambelia sila*)	No effect	**Habitat absent.** APE is outside of the known distribution range of this species.
Buena Vista Lake ornate shrew (*Sorex ornatus relictus*)	No effect	**Habitat absent.** Habitat required by this species for burrowing and foraging are absent from the APE.
California condor (*Gymnogyps californianus*)	No effect	**Habitat absent.** Habitats required by this species for nesting and foraging are absent from the APE.
California jewelflower (*Caulanthus californicus*)	No effect	**Habitat absent.** Habitats and soils required by this species are absent from the APE.
California tiger salamander (*Ambystoma californiense*)	No effect	**Habitat absent.** Breeding habitat for this species is missing from the APE.
Greene's tuctoria (*Tuctoria greenei*)	No effect	**Habitat absent**. The required soil and habitat for this species were missing from the APE.
Hoover's spurge (*Euphorbia hooveri*)	No effect	**Habitat absent**. The required soil and habitat for this species were missing from the APE.
Lassics lupine (Lupinus constancei)	No effect	**Habitat absent.** The APE is outside the species range.
San Joaquin adobe sunburst *(Pseudobahia peirsonii)*	No effect	**Habitat absent.** The required soil and habitat for this species were missing from the APE.
San Joaquin kit fox (*Vulpes macrotis mutica*)	May effect, but not likely to	**Habitat absent.** Some potential denning habitat and foraging sites were observed within the APE.

Species	Determination	Rationale for Determination
	adversely affect	Plus, California ground squirrels and their burrows were observed within the APE providing denning and a prey base. Implementation of BIO-5a, BIO-5b, BIO-5c will avoid and minimize effects to this species.
San Joaquin Valley Orcutt grass *(Orcuttia inaequalis)*	No effect	**Habitat absent.** The required soil and habitat for this species were missing from the APE.
Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*)	No effect	**Habitat absent**. Habitats required by this species are absent from the APE.
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	No effect	**Habitat absent.** No valley elderberry shrubs were observed in the APE.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	No effect	**Habitat absent**. Vernal pool habitat was absent within the APE.
Vernal pool tadpole shrimp (*Lepidurus packardi*)	No effect	**Habitat absent.** Vernal pool habitat was absent within the APE.
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	No effect	**Habitat absent.** APE is out of 0000the species range.

3.5 LESS THAN SIGNIFICANT PROJECT-RELATED IMPACTS

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

Of the 23 regionally occurring special status plant species, all 23 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 sink goldfields, brittlescale, calico monkeyflower, California jewelflower, California alkali grass, California satintail, Coulter's goldfields, Earlimart orache, Greene's tuctoria, heartscale, Hoover's spurge, Kaweah brodiaea, lassics lupine, lesser saltscale, recurved larkspur, Sanford's arrowhead, San Joaquin adobe sunburst, San Joaquin Valley Orcutt grass, spiny-sepaled button-celery, striped adobe-lily, subtle orache, vernal pool smallscale, and winter's sunflower.

Since it is unlikely that these species would occur onsite, implementation of the project should have no impact on these 23 special status species through construction mortality, disturbance, or loss of habitat. Mitigation measures are not warranted.

3.5.2 PROJECT-RELATED IMPACTS TO SPECIAL STATUS ANIMAL SPECIES ABSENT FROM, OR UNLIKELY TO OCCUR ON THE APE

Of the 23 regionally occurring special status animal species, 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: blunt-nosed leopard lizard, Buena Vista Lake ornate shrew, California condor, California tiger salamander, Crotch's bumble bee, foothill yellow-legged frog, northern California legless lizard, northern leopard frog, northwestern pond turtle, Tipton kangaroo rat, tricolored blackbird, valley

elderberry longhorn beetle, vernal pool fairy shrimp, vernal pool tadpole shrimp, western spadefoot, and western yellow-billed cuckoo.

Since it is unlikely that these species would occur onsite, implementation of the project should have no impact on these 16 special status species through construction mortality, disturbance, or loss of habitat. Mitigation measures are not warranted.

3.5.3 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.

3.5.4 PROJECT-RELATED IMPACTS TO REGULATED WATERS, WETLANDS, AND WATER QUALITY

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

3.5.5 PROJECT-RELATED IMPACTS TO WILDLIFE MOVEMENT CORRIDORS AND NATIVE WILDLIFE NURSERY SITES

The APE has suitable features (buildings and trees) that could be used by maternity roosting bats, which are considered native wildlife nursery sites. The potential impacts to maternity roosting bats have been addressed in Mitigation Measures BIO 3a-3c. It is likely other native species would utilize any features of the APE as a wildlife nursery site.

Most of the APE does not contain features that would be likely to function as wildlife movement corridors. Cameron Creek could be potentially used as a wildlife movement corridor, but disturbance to this creek would be temporary in nature and would not disturb wildlife movement. Furthermore, the project was located in an area regularly disturbed by humans which would discourage dispersal and migration.

3.5.6 PROJECT-RELATED IMPACTS TO CRITICAL HABITAT

Designated critical habitat is absent from the APE and surrounding lands. Therefore, there would be no impact to critical habitat, and mitigation measures are not warranted.

3.5.7 LOCAL POLICIES OR HABITAT CONSERVATION PLANS

The project appears to be consistent with the goals and policies of the Tulare County General Plan. There are no known HCPs or NCCPs in the project vicinity. Mitigation measures are not warranted.

3.5.8 PROJECT-RELATED IMPACT TO ESSENTIAL FISH HABITAT

Essential Fish Habitat (EFH) and Habitat Areas of Particular Concern (HAPC) are absent from the project site and surrounding lands, and consultation with the National Marine Fisheries (NMFS) Service would not be required. Query results of the NMFS EHF Mapper can be found in Appendix E at the end of this document. Mitigation measures are not warranted

4 REFERENCES

n.d. "Califorina Department of Fish and Wildlife ." *Lassics Lupine (Lupinus constancei).* Accessed 06 20, 2024. https://wildlife.ca.gov/Conservation/Plants/Endangered/Lupinus-constancei.

California Department of Fish and Wildlife. 2024a. *California Natural Diversity Database- RareFind.* Accessed June 2024.

California Department of Fish and Wildlife. 2024b. "State and federally listed endangered, threatened, and rare plants of California." Accessed June 2024. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109390&inline.

Cornell Lab of Ornithology. 2024. *eBird.* Accessed June 2024. https://ebird.org/.

Department of Water Resources. 2019. *Groundwater Basin Boundary Assessment Tool.* Accessed June 2024. https://gis.water.ca.gov/app/bbat/.

2023. "Fedcenter.gov." *Endangered Species Status for Lassics Lupine and Designation of Critical Habitat (Final).* 10 5. Accessed 20 06, 2024. https://www.fedcenter.gov/Articles/index.cfm?id=41445.

2019. "iNaturalist." *Monarch (Danaus plexippus).* Accessed 06 24, 2024. https://www.inaturalist.org/taxa/48662-Danaus-plexippus.

iNaturalist. 2024. *Observations of Special Status Species.* Accessed June 2024. https://www.inaturalist.org/.

State of California Natural Resources Agency Department of Fish and Game. 2012. "Staff Report on Burrowing Owl Mitigation." Accessed June 2024.

State Water Resources Control Board. 2021. "State Wetland Definition and Procedures for Discharge of Dredged or Fill Material to Waters of the State." Accessed June 2024.

Swainson's Hawk Technical Advisory Committee. 2000. "Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley." May. Accessed January 2024.

The California Burrowing Owl Consortium. 1993. "Burrowing Owl Survey Protocol and Mitigation Guidelines." Accessed June 2024.

The National Oceanic and Atmospheric Administration. 2024. *Essential Fish Habitat Mapper.* Accessed June 2024. https://www.habitat.noaa.gov/apps/efhmapper/?page=page_5.

2012. "Tulare.ca.us." *generalplan.co.tulare.ca.us.* 08. Accessed 06 20, 2024. https://generalplan.co.tulare.ca.us/documents/GP/001Adopted%20Tulare%20County%20General%20Plan%20Materials/000General%20Plan%202030%20Part%20I%20and%20Part%20II/GENERAL%20PLAN%202012.pdf.

United States Army Corps of Engineers. 1987. "Corps of Engineers Wetlands Delineation Manual." Accessed June 2024.

United States Department of Agriculture Natural Resource Conservation Service. 2024. *Soil Survey Area.* Accessed June 2024. https://www.nrcs.usda.gov/publications/Lists%20of%20Hydric%20Soils%20-%20Query%20by%20Soil%20Survey%20Area%20Map%20Unit%20Rating.html.

United States Environmental Protection Agency. 2024a. *Waters GeoViewer.* Accessed June 2024. https://www.epa.gov/waterdata/waters-geoviewer.

United States Fish and Wildlife Service. 2024b. *Information on Planning and Consultation.* Accessed June 2024. https://ecos.fws.gov/ipac/.

—. 2024c. *National Wetlands Inventory.* Accessed June 2024. https://www.fws.gov/wetlands/data/mapper.html.

—. 1998. "Recovery Plan for Upland Species of the San Joaquin Valley, California." Accessed June 2024.

United States Fish and Wildlife Service. 2011. "Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance." Accessed June 2024.

United States Fish and Wildlife Service. 2024d. *Environmental Conservation Online System.* Accessed June 2024. https://ecos.fws.gov/ecp/.

University of California, Berkeley. 2024. *The Jepson Herbarium.* Accessed June 2024. http://ucjeps.berkeley.edu/eflora/.

n.d. "Weatherspark." *Climate and Average Weather Year Round in Visalia.* Accessed 06 14, 2024. https://weatherspark.com/y/1510/Average-Weather-in-Visalia-California-United-States-Year-Round.

Appendix A: Representative Photos of the APE



Photograph 1

Valley oak trees in the ruderal portion of the APE.



Photograph 2

Overview of the vegetation in Cameron Creek.



Photograph 3

Overview of Cameron Creek with orchards adjacent to the creek .



Photograph 4

Overview of pooled water in Cameron Creek.



Photograph 5

Overview of the habitat where the Swainson's hawk was observed.



Photograph 6.

Agricultural field adjacent to the APE.



Photograph 7

A fallow field south of the Rector Check.



Photograph 8

A water recharge basin adjacent to the APE near the Measurement Check.



Photograph 9

Cliff swallow nests under one of the bridges in Cameron Creek north of the Rector Check.



Photograph 10

Owl nest box near the APE east of the Measurement Check .



Photograph 11

Striped sunk scat observed near the Rector Check.



Photograph 12

The lower jaw bone of a canine observed near the Measurement Check.



Photograph 12

Active stick nest within the APE east of the Lovers Check.



Photograph 14

Overview of an small mammal burrow with a California scrub jay chick carcass.

Appendix B: CNDDB 11-QUAD SPECIES LIST

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Traver (3611944) OR Monson (3611943) OR Ivanhoe (3611942) OR Woodlake (3611941) OR Goshen (3611934) OR Visalia (3611933) OR Exeter (3611932) OR Rocky Hill (3611931) OR Paige (3611924) OR Tulare (3611923) OR Cairns Corner (3611922) OR Lindsay (3611921))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G1G2	S2	SSC
Ambystoma californiense pop. 1 California tiger salamander - central California DPS	AAAAA01181	Threatened	Threatened	G2G3T3	S3	WL
Andrena macswaini An andrenid bee	IIHYM35130	None	None	G2	S2	
Anniella pulchra Northern California legless lizard	ARACC01020	None	None	G3	S2S3	SSC
Antrozous pallidus pallid bat	AMACC10010	None	None	G4	S3	SSC
Ardea herodias great blue heron	ABNGA04010	None	None	G5	S4	
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S2	SSC
Atriplex cordulata var. cordulata heartscale	PDCHE040B0	None	None	G3T2	S2	1B.2
Atriplex cordulata var. erecticaulis Earlimart orache	PDCHE042V0	None	None	G3T1	S1	1B.2
Atriplex depressa brittlescale	PDCHE042L0	None	None	G2	S2	1B.2
Atriplex minuscula lesser saltscale	PDCHE042M0	None	None	G2	S2	1B.1
Atriplex persistens vernal pool smallscale	PDCHE042P0	None	None	G2	S2	1B.2
Atriplex subtilis subtle orache	PDCHE042T0	None	None	G1	S1	1B.2
Bombus crotchii Crotch's bumble bee	IIHYM24480	None	Candidate Endangered	G2	S2	
Bombus pensylvanicus American bumble bee	IIHYM24260	None	None	G3G4	S2	
Branchinecta lynchi vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
Brodiaea insignis Kaweah brodiaea	PMLIL0C060	None	Endangered	G1	S1	1B.2
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S4	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Caulanthus californicus California jewelflower	PDBRA31010	Endangered	Endangered	G1	S1	1B.1
Chrysis tularensis Tulare cuckoo wasp	IIHYM72010	None	None	G1G2	S2	
Coccyzus americanus occidentalis western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
Delphinium recurvatum recurved larkspur	PDRAN0B1J0	None	None	G2?	S2	1B.2
Desmocerus californicus dimorphus valley elderberry longhorn beetle	IICOL48011	Threatened	None	G3T3	S3	
Diplacus pictus calico monkeyflower	PDSCR1B240	None	None	G2	S2	1B.2
Dipodomys nitratoides nitratoides Tipton kangaroo rat	AMAFD03152	Endangered	Endangered	G3T1T2	S2	
Emys marmorata western pond turtle	ARAAD02030	Proposed Threatened	None	G3G4	S3	SSC
Eryngium spinosepalum spiny-sepaled button-celery	PDAPI0Z0Y0	None	None	G2	S2	1B.2
Eumops perotis californicus western mastiff bat	AMACD02011	None	None	G4G5T4	S3S4	SSC
Euphorbia hooveri Hoover's spurge	PDEUP0D150	Threatened	None	G1	S1	1B.2
Fritillaria striata striped adobe-lily	PMLIL0V0K0	None	Threatened	G1	S1	1B.1
Great Valley Valley Oak Riparian Forest Great Valley Valley Oak Riparian Forest	CTT61430CA	None	None	G1	S1.1	
Helianthus winteri Winter's sunflower	PDAST4N260	None	None	G2?	S2?	1B.2
Imperata brevifolia California satintail	PMPOA3D020	None	None	G3	S3	2B.1
Lanius ludovicianus loggerhead shrike	ABPBR01030	None	None	G4	S4	SSC
Lasthenia chrysantha alkali-sink goldfields	PDAST5L030	None	None	G2	S2	1B.1
Lasthenia glabrata ssp. coulteri Coulter's goldfields	PDAST5L0A1	None	None	G4T2	S2	1B.1
Lepidurus packardi vernal pool tadpole shrimp	ICBRA10010	Endangered	None	G3	S3	
Linderiella occidentalis California linderiella	ICBRA06010	None	None	G2G3	S2S3	
Lithobates pipiens northern leopard frog	AAABH01170	None	None	G5	S2	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Lytta hoppingi Hopping's blister beetle	IICOL4C010	None	None	G1G2	S2	
Lytta molesta molestan blister beetle	IICOL4C030	None	None	G2	S2	
Northern Claypan Vernal Pool Northern Claypan Vernal Pool	CTT44120CA	None	None	G1	S1.1	
Northern Hardpan Vernal Pool Northern Hardpan Vernal Pool	CTT44110CA	None	None	G3	S3.1	
Orcuttia inaequalis San Joaquin Valley Orcutt grass	PMPOA4G060	Threatened	Endangered	G1	S1	1B.1
Pseudobahia peirsonii San Joaquin adobe sunburst	PDAST7P030	Threatened	Endangered	G1	S1	1B.1
Puccinellia simplex California alkali grass	PMPOA53110	None	None	G2	S2	1B.2
Rana boylii pop. 5 foothill yellow-legged frog - south Sierra DPS	AAABH01055	Endangered	Endangered	G3T2	S2	
Rhaphiomidas trochilus San Joaquin Valley giant flower-loving fly	IIDIP05010	None	None	G1	S1	
Sagittaria sanfordii Sanford's arrowhead	PMALI040Q0	None	None	G3	S3	1B.2
Spea hammondii western spadefoot	AAABF02020	Proposed Threatened	None	G2G3	S3S4	SSC
Sycamore Alluvial Woodland Sycamore Alluvial Woodland	CTT62100CA	None	None	G1	S1.1	
Talanites moodyae Moody's gnaphosid spider	ILARA98020	None	None	G2G3	S2S3	
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Tuctoria greenei Greene's tuctoria	PMPOA6N010	Endangered	Rare	G1	S1	1B.1
Valley Sacaton Grassland Valley Sacaton Grassland	CTT42120CA	None	None	G1	S1.1	
Vulpes macrotis mutica San Joaquin kit fox	AMAJA03041	Endangered	Threatened	G4T2	S3	

Record Count: 56

Appendix C: IPAC SPECIES LIST

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: 06/01/2024 00:11:59 UTC
Project Code: 2024-0098238
Project Name: Cameron Creek

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

PROJECT SUMMARY

Project Code: 2024-0098238
Project Name: Cameron Creek
Project Type: Water Supply Facility - New Constr
Project Description: The proposed Project is for construction of three check structures in Cameron Creek to utilize the Creek as a linear recharge facility. The total area of potential effect covered under CEQA would be approximately 8 acres.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@36.29829695,-119.26089036054393,14z



Counties: Tulare County, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 11 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: Wherever found, 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* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/625	Endangered
Northwestern Pond Turtle *Actinemys marmorata* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1111	Proposed Threatened

AMPHIBIANS

NAME	STATUS
California Tiger Salamander *Ambystoma californiense* Population: U.S.A. (Central CA DPS) There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened
Western Spadefoot *Spea hammondii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5425	Proposed Threatened

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRUSTACEANS

NAME	STATUS
Vernal Pool Fairy Shrimp *Branchinecta lynchi* 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	Threatened

FLOWERING PLANTS

NAME	STATUS
Lassics Lupine *Lupinus constancei* 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/7976	Endangered

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Jenny McCarthy
Address: 1800 30th Street, Suite 280
City: Bakersfield
State: CA
Zip: 93308
Email jmccarthy@ppeng.com
Phone: 7073842510

Appendix D: NRCS WEB SOIL SURVEY REPORT

United States Department of Agriculture

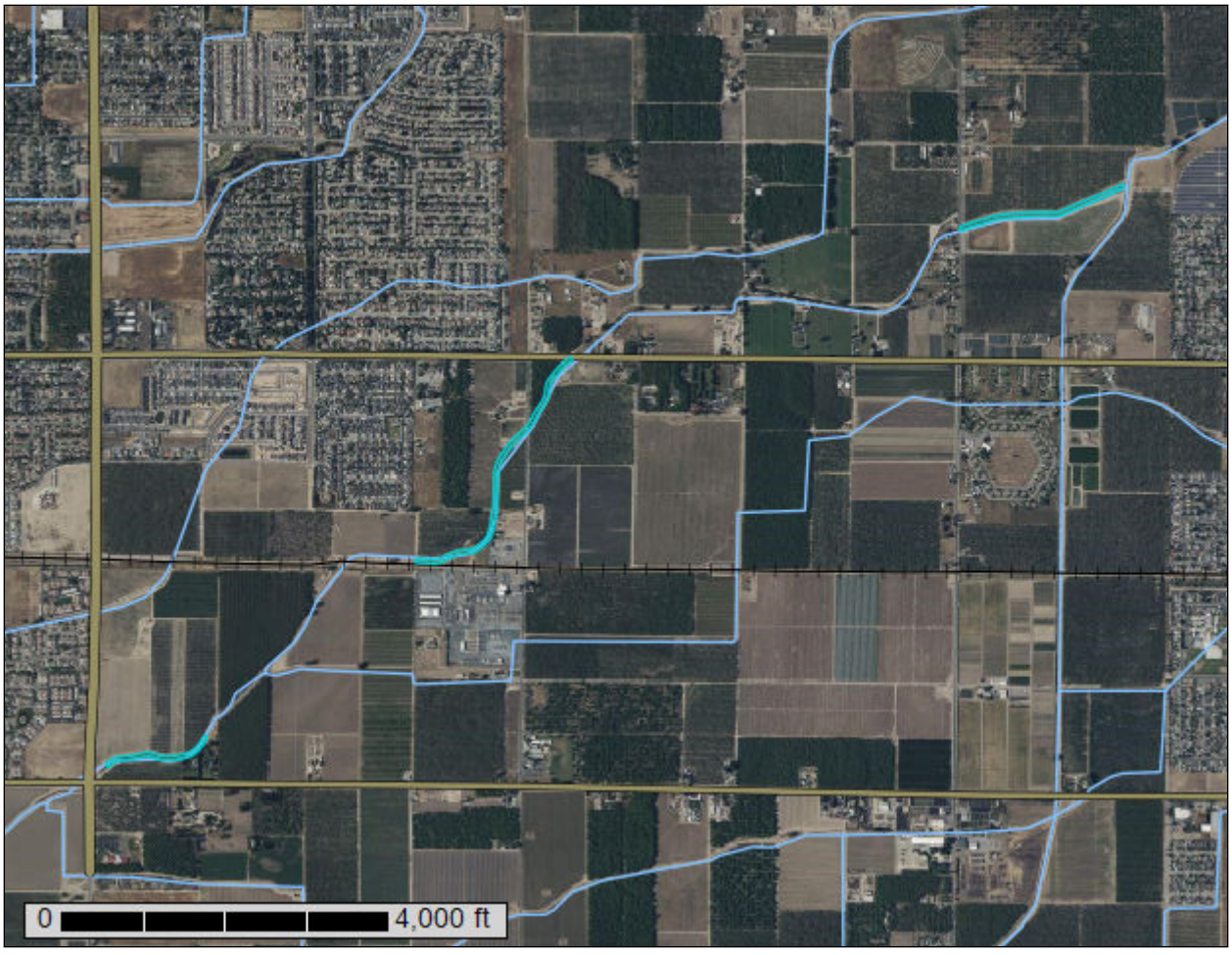
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Tulare County, Western Part, California

Cameron Creek



May 30, 2024

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.

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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.

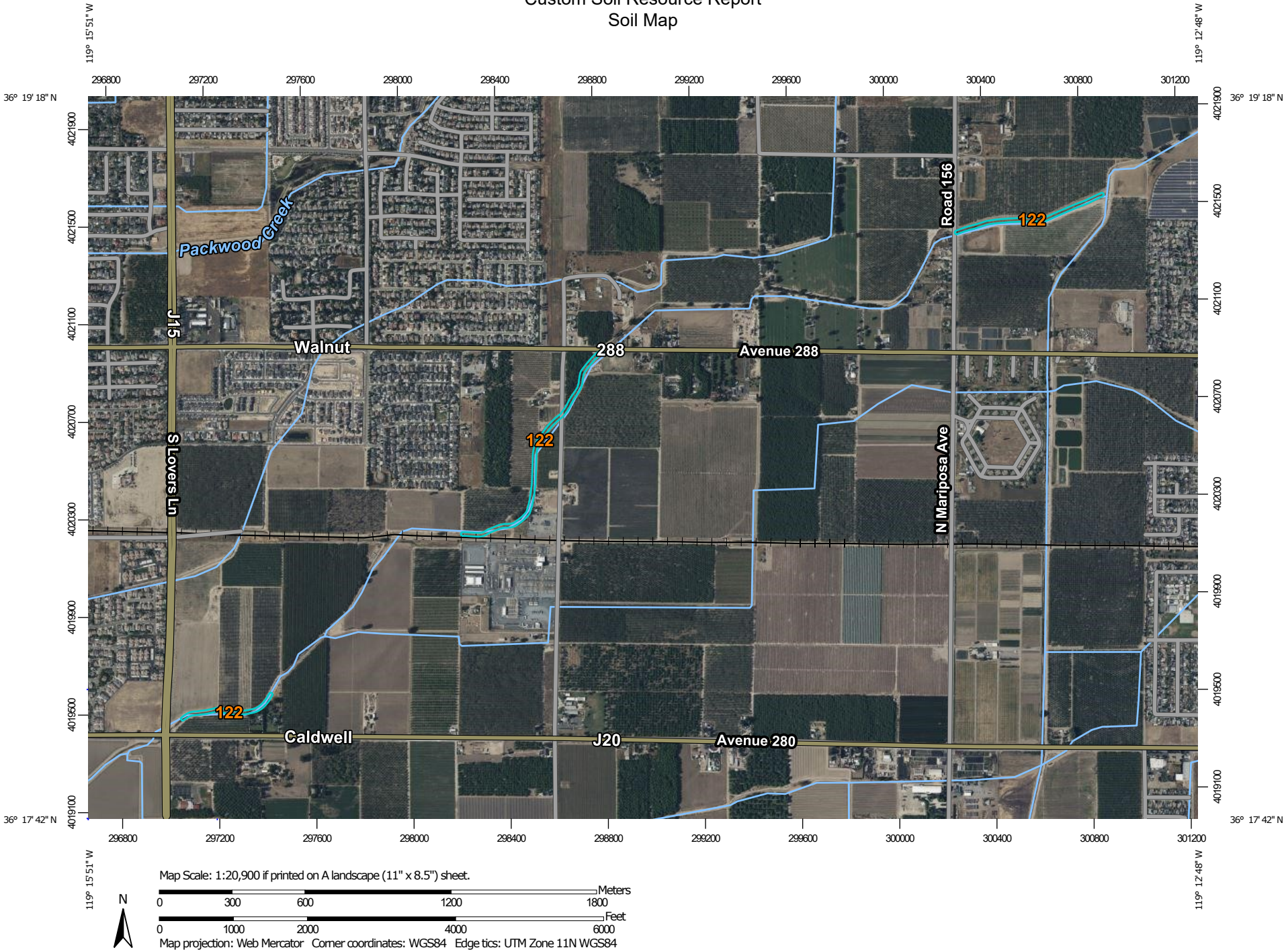
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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 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.

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Tulare County, Western Part, California
Survey Area Data: Version 17, Aug 31, 2023

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

Date(s) aerial images were photographed: Mar 16, 2022—May 30, 2022

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
122	Grangeville sandy loam, drained, 0 to 2 percent slopes	8.0	100.0%
Totals for Area of Interest		**8.0**	**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

122—Grangeville sandy loam, drained, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hp4s
Elevation: 190 to 400 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 63 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

Grangeville and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Grangeville

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 granitic rock sources

Typical profile

Ap - 0 to 16 inches: sandy loam
Bg - 16 to 27 inches: sandy loam
2C - 27 to 67 inches: stratified loamy sand to silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Negligible
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: Rare
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Moderate (about 6.6 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 4c
Hydrologic Soil Group: A
Ecological site: R017XY906CA - Non-Alkali San Joaquin Valley Desert
Hydric soil rating: Yes

Minor Components

Tujunga

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

Yettem

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

Grangeville, saline-sodic

Percent of map unit: 2 percent
Landform: Alluvial fans, flood plains
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: Yes

Hanford

Percent of map unit: 1 percent
Landform: Alluvial fans, flood plains
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: No

Nord

Percent of map unit: 1 percent
Landform: Alluvial fans, flood plains
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: No

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Appendix E: NMFS EFH MAPPER

EFH Mapper Report

EFH Data Notice

Essential Fish Habitat (EFH) is defined by textual descriptions contained in the fishery management plans developed by the regional fishery management councils. In most cases mapping data can not fully represent the complexity of the habitats that make up EFH. This report should be used for general interest queries only and should not be interpreted as a definitive evaluation of EFH at this location. A location-specific evaluation of EFH for any official purposes must be performed by a regional expert. Please refer to the following links for the appropriate regional resources.

West Coast Regional Office

EFH

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

Pacific Salmon EFH

No Pacific Salmon Essential Fish Habitat (EFH) were identified at the report location.

Atlantic Salmon

No Atlantic Salmon were identified at the report location.

HAPCs

No Habitat Areas of Particular Concern (HAPC) were identified at the report location.

EFH Areas Protected from Fishing

No EFH Areas Protected from Fishing (EFHA) were identified at the report location.

Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data. ****For links to all EFH text descriptions see the complete data inventory: open data inventory -->**
Pacific Coastal Pelagic Species, Jack Mackerel, Pacific (Chub) Mackerel, Pacific Sardine, Northern Anchovy - Central Subpopulation, Northern Anchovy - Northern Subpopulation, **Pacific Highly Migratory Species**, Bigeye Thresher Shark - North Pacific, Bluefin Tuna - Pacific, Dolphinfish (Dorado or Mahimahi) - Pacific, Pelagic Thresher Shark - North Pacific, Swordfish - North Pacific

Appendix C: Class III Inventory/Phase I Survey

CLASS III INVENTORY/PHASE I SURVEY, CAMERON CREEK CHECK STRUCTURE LINEAR RECHARGE PROJECT, TULARE COUNTY, CALIFORNIA

Prepared for:

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September 2024
PN 36510.64

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MANAGEMENT SUMMARY

An intensive Class III cultural resources inventory/Phase I survey was conducted for the Cameron Creek Check Structure Linear Recharge Project (Project), Tulare County, California. The Project is within Tulare County, approximately 6 to 8 miles (mi.) east of the incorporated city of Tulare. This places the Project on the open flats of the San Joaquin Valley. Specifically, the Project is within Section 36, Township 19 South, Range 25 East (T19S/R25E) and Sections 2 and 3 T18S/R25E, Mount Diablo Base and Meridian (MDBM), as depicted on the Visalia and Exeter topographic maps. The proposed Project site consists of water conveyance features and agricultural fields adjacent to unpaved and paved roads. The Area of Potential Effect (APE) for the Project is approximately 16.1 acres (ac.). This includes all construction staging and access areas needed for construction equipment. The vertical APE, defined as the maximum depth of excavation for the Project, is 3 ft. (ft.)

ASM Affiliates (ASM) conducted this study, with Director Peter A. Carey, M.A., RPA, serving as principal investigator. Senior Archaeologist Dustin Merrick, M.A., RPA was a contributing author of this report. Sarah Stringer-Bowsher, M.A., RPH, prepared the site-specific history and completed the evaluation and assessment of impacts for the built resources. The study was undertaken to assist with compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and the California Environmental Quality Act (CEQA).

To determine whether the Project APE had been previously surveyed for cultural resources, and/or whether any such resources were known to exist within or near to it, staff of the Southern San Joaquin Valley Information Center (SSJVIC) conducted an archival records search on June 10 24, 2024. According to the SSJVIC, three previous studies (TU-01383, TU-01690, TU-1966) have been conducted within the Project APE. Approximately five percent of the Project APE has been previously studied. An additional 12 previous studies were identified within the 0.5-mi. buffer. The SSJVIC data identified three previously recorded cultural resources (P-54-003229, P-54-004832, and P-54-004877) within the APE. An additional 13 previously recorded cultural resources were identified within 0.5 mi. of the Project APE. The closest of these resources is less than 0.1 mi. from the Project APE.

As part of the CEQA process, the Native American Heritage Commission (NAHC) was contacted to request a list of Tribes traditionally and culturally affiliated with the Project APE, as well as a Sacred Lands File (SLF). On June 10, 2024, the NAHC responded with negative SLF results and 21 Tribal contacts from 11 Tribes. Outreach letters were mailed and emailed to all listed Tribes on July 29, 2024. No responses were received.

The Class III inventory/Phase I survey fieldwork was conducted on July 30, 2024, with parallel transects spaced at maximum 15-meter (m) intervals walked throughout the Project APE. Much of the Project APE appears to have been disturbed to create the extant water conveyance features and roads. Due to the previous disturbances, ground surface visibility within the APE was excellent (greater than 95 percent) except for the portions of the water conveyance features that were filled with water for the Class III inventory/Phase I survey. Soils consisted of tan to brown sandy loam throughout the Project APE. Non-native vegetation inhibited visibility. Modern refuse including

plastic buckets, milled lumber, plastic sheeting, concrete fragments, and a mattress were observed. No archaeological resources of any kind were identified within the Project APE.

The APE includes three segments of Cameron Creek, which functions as part of Tulare Irrigation District's system as well as other irrigation districts. The entire Tulare Irrigation District has not been recorded or evaluated, which includes Cameron Creek, but it is clear that the Tulare Irrigation District system is critical to agricultural and community development in Tulare County. Therefore, for the purposes of this Project, ASM recommends that the segments of Cameron Creek (P-54-004877) within the APE are *assumed* eligible for listing in the NRHP/CRHR under Criteria A/1 for association with significant local historical events, namely the development of agriculture and population growth in Tulare County.

As a result of the physical effects and impacts to the segments of the segments of Cameron Creek within the three APEs, ASM recommends a finding of ***no adverse effect*** under Section 106 of the NHPA and ***less-than-significant impact*** under CEQA. It is further recommended that, in the unlikely event that cultural resources are identified during Project construction, work be halted within a 100-ft. radius of the find and a qualified archaeologist be contacted to evaluate the newly discovered resource. Appropriate project conditions and mitigation measures should be adopted by the lead agency to reduce those impacts to less-than-significant.

1. INTRODUCTION AND REGULATORY CONTEXT

ASM Affiliates (ASM) was retained by the Provost and Pritchard Consulting Group to conduct an intensive Class III inventory/Phase I survey for the Cameron Creek Check Structure Linear Recharge Project (Project), located approximately 6 to 8 miles (mi.) east of the City of Tulare, Tulare County, California (Figure 1). The study was undertaken to assist with compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and the California Environmental Quality Act (CEQA). The investigation was conducted, specifically, to ensure that significant impacts or adverse effects to historic properties or historical resources do not occur as a result of Project construction.

This study included:

- A background records search and literature review to determine if any known cultural resources were present in the Project zone and/or whether the area had been previously and systematically studied by archaeologists;
- An on-foot, intensive inventory of the Project site to identify and record previously undiscovered cultural resources and to examine known sites; and
- A preliminary assessment of any such resources found within the subject property.

Peter A. Carey, M.A., RPA, served as principal investigator, and ASM Assistant Archaeologist Daniel Ware, B.A., conducted the fieldwork. Dustin Merrick, M.A., RPA, was a contributing author of this report. Sarah Stringer-Bowsher, M.A., RPH, prepared the site-specific history, and completed the evaluation and assessment of impacts for the built resources.

This document constitutes a report on the Class III inventory/Phase I survey. Subsequent chapters provide background to the investigation, including historic context studies; the findings of the archival records search; a summary of the field surveying techniques employed; and the results of the fieldwork. We conclude with management recommendations for the Project.

1.1 PROJECT LOCATION

The Project is within Tulare County, approximately 6 to 8 miles (mi.) east of the City of Tulare. The Project sites are on Assessor's Parcel Numbers 158-040-019 and 158-040-004. This places the Project on the open flats of the San Joaquin Valley. Specifically, the Project is within Section 36, Township 19 South, Range 25 East (T19S/R25E) and Sections 2 and 3 (T18S/R25E), Mount Diablo Base and Meridian (MDBM), as depicted on the Visalia and Exeter topographic maps. The proposed Project site consists of water conveyance features adjacent to unpaved and paved roads. Elevations within the Project area, which is mostly flat, range from 335 ft. (ft.) above mean sea level (amsl) to 360 ft. amsl.

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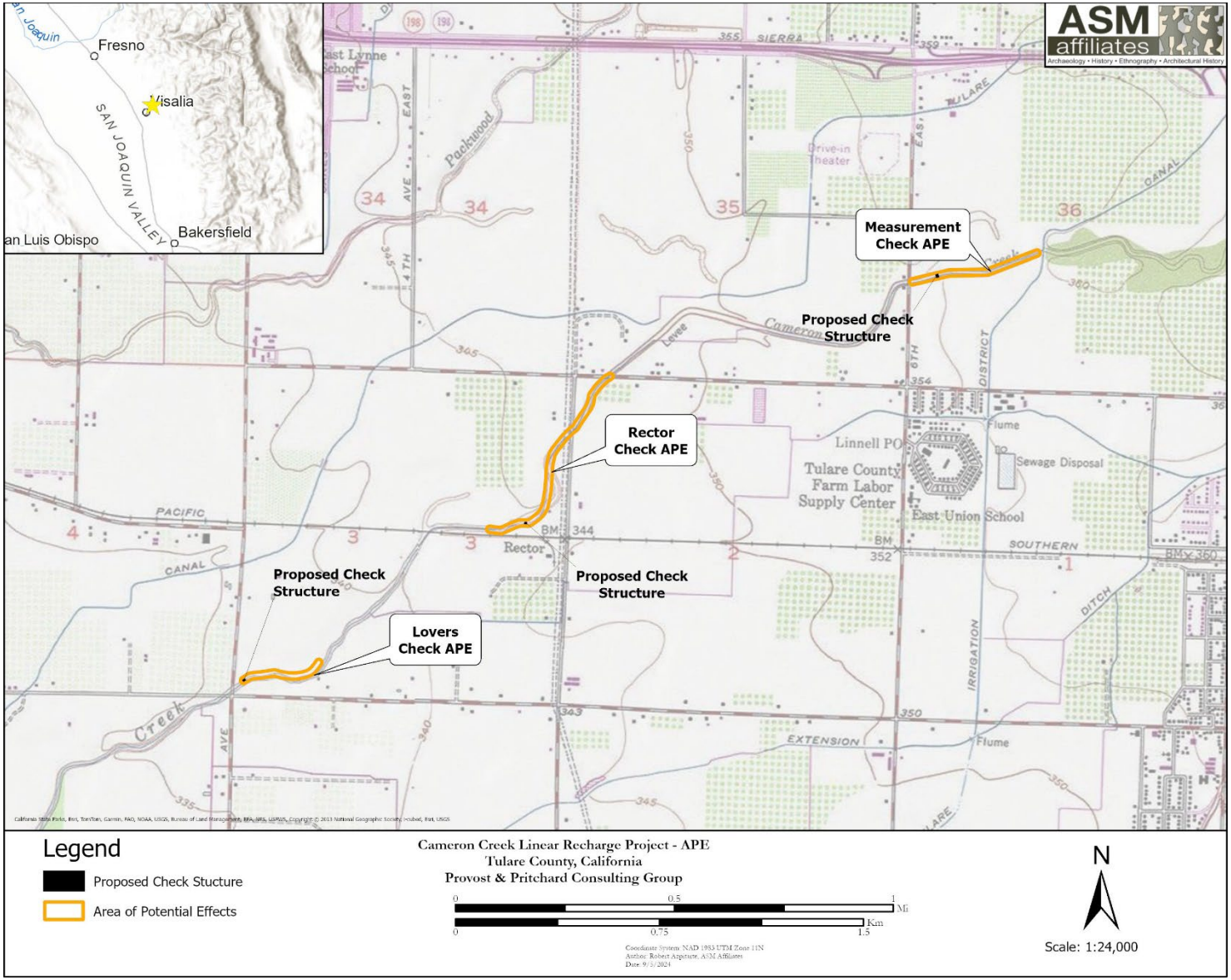


Figure 1. APE locations of the three segments and measurement locations, Tulare County, California.

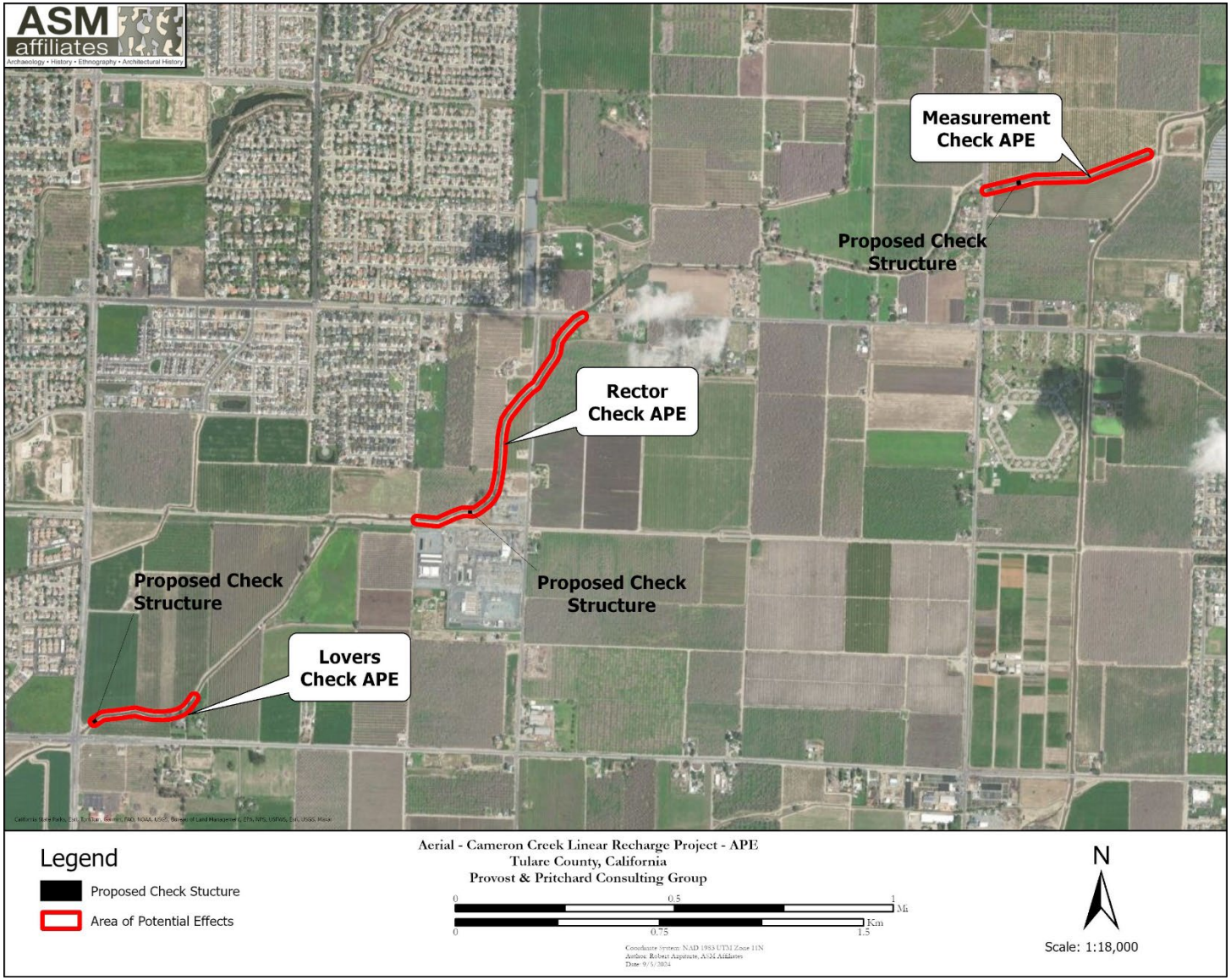


Figure 2. APE locations of the three segments included in the Project, Tulare County, California.

1.2 PROJECT DESCRIPTION AND AREA OF POTENTIAL EFFECTS

Project Background and Purpose

The City of Visalia (City) is looking to construct new check structures in Cameron Creek to utilize the Creek as a linear recharge facility. The proposed Project's goal is to increase groundwater recharge through linear water pools that will percolate over time to recharge the groundwater aquifer in the vicinity of the City limits.

This proposed Project was conceived through a cooperative program for groundwater management between the City of Visalia, Kaweah Delta Water Conservation District (KDWCD), and Tulare Irrigation District (TID). The proposed Project was further refined through a reconnaissance study conducted in 2010. The study included a pool capacity analysis that was performed on several sections within Cameron Creek. This study has guided some of the check structure location, however, through coordination with KDWCD and TID, the potential check structure locations were selected based upon access and operability.

The proposed Project is being funded by the California Department of Water Resources through the Sustainable Groundwater Management Grant program.

Project Description

The proposed Project proposes to construct up to three (3) reinforced concrete check structure facilities within Cameron Creek. All check structures would be equipped with automatic gates capable of passing high flows (250 cfs) while maintaining high water levels in the channel making Cameron Creek a linear recharge basin. The three intermittent sections of Cameron Creek that are included in the proposed Project begin at the Cameron Creek diversion from Tulare Irrigation District's Main Intake Canal (MIC) east of Road 156 and end at the intersection of Lovers Lane and Caldwell Avenue.

For each of the three check structures, it is anticipated that excavation in the creek channel and embankment would reach approximately 65 ft. horizontally at a depth of about 10 ft. from channel top (excavation from channel bottom will likely be only 2–3 ft.). Excavation for construction would only be the amount necessary for constructing the structures. Once completed, excavated soil would be backfilled around the structure and the channel prism re-graded to match existing conditions. No material export is anticipated, and earthwork will be balanced on site. The proposed Measurement Check APE does not include the Main Intake Canal.

The Area of Potential Effect (APE) for the Project site is approximately 16.1 acres (ac.). This includes all construction staging and access areas needed for construction equipment. The vertical APE, defined as the maximum depth of excavation for the check structures, is not expected to exceed 3 ft. Construction drawings for both locations are available in Appendix A

1.3 REGULATORY CONTEXT

1.3.1 National Historic Preservation Act Section 106

NHPA Section 106 is applicable to federal undertakings, including Projects financed or permitted by federal agencies regardless of whether the activities occur on federally managed or privately owned land. Its purpose is to determine whether adverse effects will occur to significant cultural resources, defined as "historical properties" that are listed in or determined eligible for listing in the National Register of Historic Places (NRHP). The criteria for NRHP eligibility are defined at 36 CFR § 60.4 as follows:

> The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and that:
>
> (A) are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> (B) are associated with the lives of persons significant in our past; or
>
> (C) embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> (D) have yielded or may be likely to yield, information important in prehistory or history.

There are, however, restrictions on the kinds of historical properties that can be NRHP listed. These have been identified by the Advisory Council on Historic Preservation (ACHP), as follows:

> Ordinarily cemeteries, birthplaces, or graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, properties primarily commemorative in nature, and properties that have achieved significance within the past 50 years shall not be considered eligible for the National Register. However, such properties will qualify if they are integral parts of districts that do meet the criteria or if they fall within the following categories:
>
> (a) A religious property deriving primary significance from architectural or artistic distinction or historical importance; or
>
> (b) A building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event; or
>
> (c) A birthplace or grave of a historical figure of outstanding importance if there is no appropriate site or building directly associated with his productive life.

(d) A cemetery which derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events; or

(e) A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived; or

(f) A property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or

(g) A property achieving significance within the past 50 years if it is of exceptional importance. (ACHP n.d.)

Integrity

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 history or prehistory 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 history can be identified and documented. Properties significant for their physical design or construction under Criterion C must have features with characteristics that exemplify such elements as architecture, landscape architecture, engineering, and artwork. Criterion D most commonly applies to properties that have the potential to answer, in whole or in part, important research questions about human history that can only be answered by the actual physical materials of cultural resources. A property eligible under Criterion D must demonstrate the potential to contain information relevant to the prehistory and history (*National Register Bulletin* 15).

A district, site, building, structure, or object may also be eligible for consideration as a historic property if that property meets the criteria considerations for properties generally less than 50 years old, in addition to possessing integrity and meeting the criteria for evaluation.

1.3.2 California Environmental Quality Act

CEQA is applicable to discretionary actions by state or local lead agencies. Under CEQA, lead agencies must analyze impacts to cultural resources. Significant impacts under CEQA occur when "historically significant" or "unique" cultural resources are adversely affected, which occurs when such resources could be altered or destroyed through Project implementation. Historically significant cultural resources are defined by eligibility for or by listing in the California Register of Historical Resources (CRHR). In practice, the federal NRHP criteria (below) for significance applied under Section 106 are generally (although not entirely) consistent with CRHR criteria (see PRC § 5024.1, Title 14 CCR, Section 4852 and § 15064.5(a)(3)).

CEQA Guidelines Section 15064.5 defines historical resources as:

1. A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR (Pub. Res. Code § 5024.1, Title 14 CCR, Section 14 CCR, Section 4850 et seq.).

2. A resource included in a local register of historical resources, as defined in section 5020.1(k) of the Public Resources Code or identified as significant in an historical resource survey meeting the requirements section 5024.1(g) of the Public Resources Code, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.

3. Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing in the CRHR (Pub. Res. Code, § 5024.1, Title 14 CCR, Section 14 CCR, Section 4852)

4. The fact that a resource is not listed in, or determined to be eligible for listing in the CRHR, not included in a local register of historical resources (pursuant to section 5020.1(k) of the Public Resources Code), or identified in an historical resources survey (meeting the criteria in section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be an historical resource as defined in Public Resources Code sections 5020.1(j) or 5024.1.

Unique resources under CEQA 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.

1.3.3 California Register of Historical Resources Significance Criteria

The CRHR program encourages public recognition and protection of resources of architectural, historical, archeological, and cultural significance, identifies historical resources for state and local

planning purposes, determines eligibility for state historic preservation grant funding and affords certain protections under CEQA. The criteria established for eligibility for the CRHR are directly comparable to the NRHP criteria.

To be eligible for listing in the CRHR, a resource must satisfy at least one of the following four criteria:

1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States.
2. It is associated with the lives of persons important to local, California, or national history.
3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values.
4. It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

Historical resources eligible for listing in the CRHR must meet at least one of the criteria of significance described above and retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. For the purposes of eligibility for CRHR, integrity is defined as "the authenticity of an historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance" (California Office of Historic Preservation 2001). This general definition is strengthened by the more specific definition offered by the NRHP—the criteria and guidelines on which the CRHR criteria and guidelines are based upon. In 2012, the California Office of Historic Preservation clarified that the intent of the CRHR regulations is to be the same as the NRHP (California Department of Transportation 2012).

1.

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2. ENVIRONMENTAL AND CULTURAL BACKGROUND

2.1 ENVIRONMENTAL BACKGROUND AND GEOARCHAEOLOGY

2.1.1 Environmental Setting

The Project area is directly south of the city of Visalia, California, in the eastern portion of the San Joaquin Valley. Bisected by Cameron Creek, the APE includes three segments: 1) Lovers Check Segment, 2) Rector Check Segment, and 3) Measurement Check Segment (Figure 1). These segments are located within three miles of each other and are associated with alluvial fans and floodplain deposits. The average elevation of the APE is approximately 331 ft. (ft.) above sea level with slopes ranging from zero to two percent. Bisected by Cameron Creek, the APE consists of the active channel and adjacent agricultural fields that flank the channel. As outlined below, soils in the Project area formed between the Historic era/modern times (<150 years before present [YBP]) and the late Holocene (4000–2000 YBP).

2.1.2 Geology and Geomorphology

The San Joaquin Valley consists of an asymmetric structural trough that is bounded to the west by the Coast Range, and to the east by the Sierra Nevada Range. As exhibited in Figure 3, the APE is in the eastern portion of the valley and is marked by extensive deposits of Quaternary alluvium. Great alluvial fans originating from the Sierra Nevada Range flank the eastern portion of the valley, delivering particles of granite, schist, quartzite, and other minerals eroded by glaciers and fluvial processes (Arroues et al. 2020:04). Post Euro-American developments including agricultural expansion, channelization, and levee construction have caused dramatic landscape changes in the San Joaquin Valley (Klingler and Dalldorf 2023:03). As discussed below, the soils mapped in the APE exhibit a fair degree of surface disturbance due to agricultural activities, which could obscure archaeological visibility at the surface.

2.1.3 Soils

Soils in the APE were identified through the US Department of Agriculture's National Resource Conservation Service (USDA-NRCS 2019) Soil Survey Geographic (SSURGO) soil data. Soils in the APE consist of alluvial deposits ranging in age from Historic era/modern (<150 YBP) to the late Holocene (4000–2000 YBP). The dates provided below originate from Meyer et al. (2010: Appendix C). Soil types accounting for less than three percent of the APE were not included. Soil map are as follows:

- Grangeville; (Latest Holocene; 2000–1000 YBP);
- Tujunga; (Historic era to modern; <150 YBP);
- Yettem; (Late Holocene; 4000–2000 YBP);

Soils in the APE consist of young to very young soils formed in alluvium derived from granite sources. The Grangeville soil series, which accounts for 90 percent of the study area, is marked by Ap1/Ap2 horizons that extend to a depth of 41 centimeters below surface (cmbs) (USDA-NRCS 2019). An Ap horizon is defined as a layer of soil that parallels the earth's surface, and is denoted by anthropogenic disturbances (e.g., agricultural ploughing). In short, soils that flank Cameron Creek are young and marked by recent disturbance via agricultural activities.

2.1.4 Buried Site Sensitivity

Traditional methods used to locate precontact sites (i.e., pedestrian survey, shovel scrapes) are not capable of detecting buried archaeological deposits because their scope of investigation is limited to the surface of selected landforms. In the Project APE, the majority of soils at the surface belong to the Grangeville series, which formed during the latest Holocene (2000–1000 YBP). As such, cultural materials pre-dating the latest Holocene are unlikely to be represented at the surface. In addition, the upper 41 cmbs of the APE exhibits Ap1/Ap2 soil horizons, which denotes a fair degree of disturbance at/near the surface. This indicates that the surface of the APE does not necessarily reflect the deposits that extend into the lower portions of the vertical APE.

Based on these data, the Project APE is mapped as having high buried site sensitivity, with limited archaeological visibility at or near the surface (Figures 4a through 4e). Construction activities in the active channel are less likely to impact archaeological deposits because of the active nature of the channel. However, the deposits on either side of the channel have high buried site potential.

As stated above, the Project would be constructed within the canal channel and embankments. Therefore, the disturbance of buried archaeological deposits during Project activities is considered unlikely.

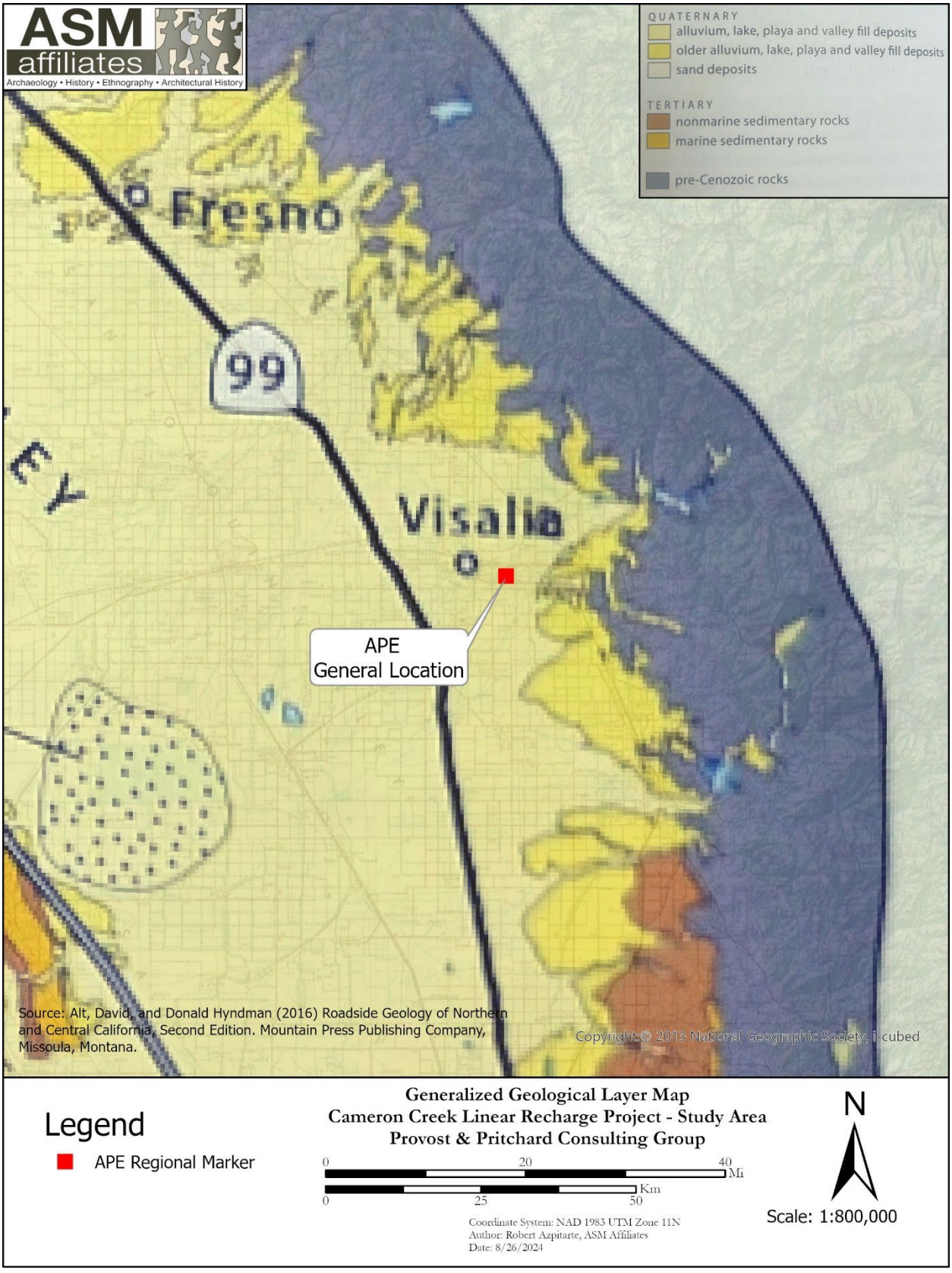


Figure 3. Geological Overview of the APE.



Figure 4a. Buried Site Sensitivity of the APE.



Figure 4b. Buried Site Sensitivity of the APE.

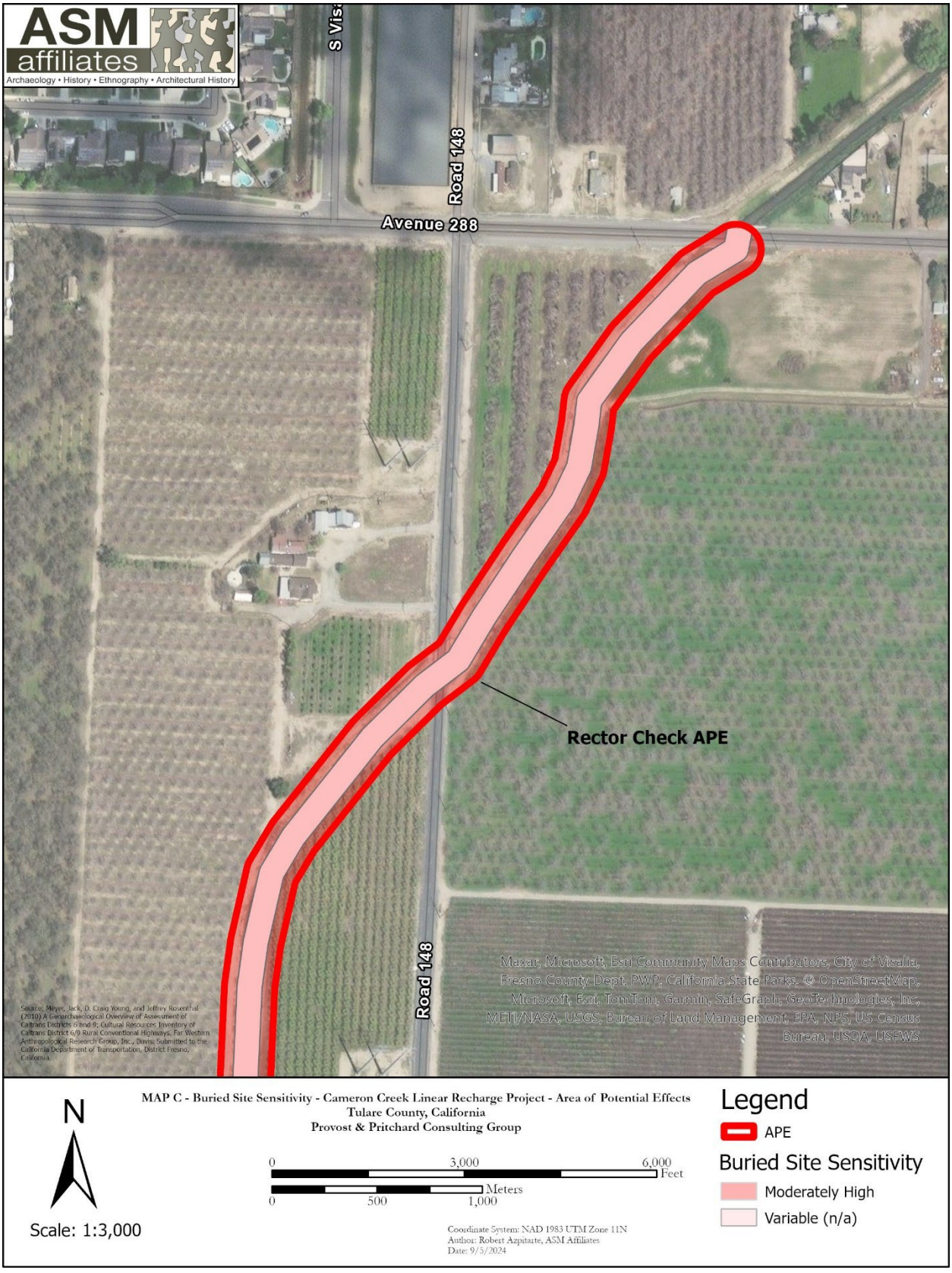


Figure 4c. Buried Site Sensitivity of the APE.

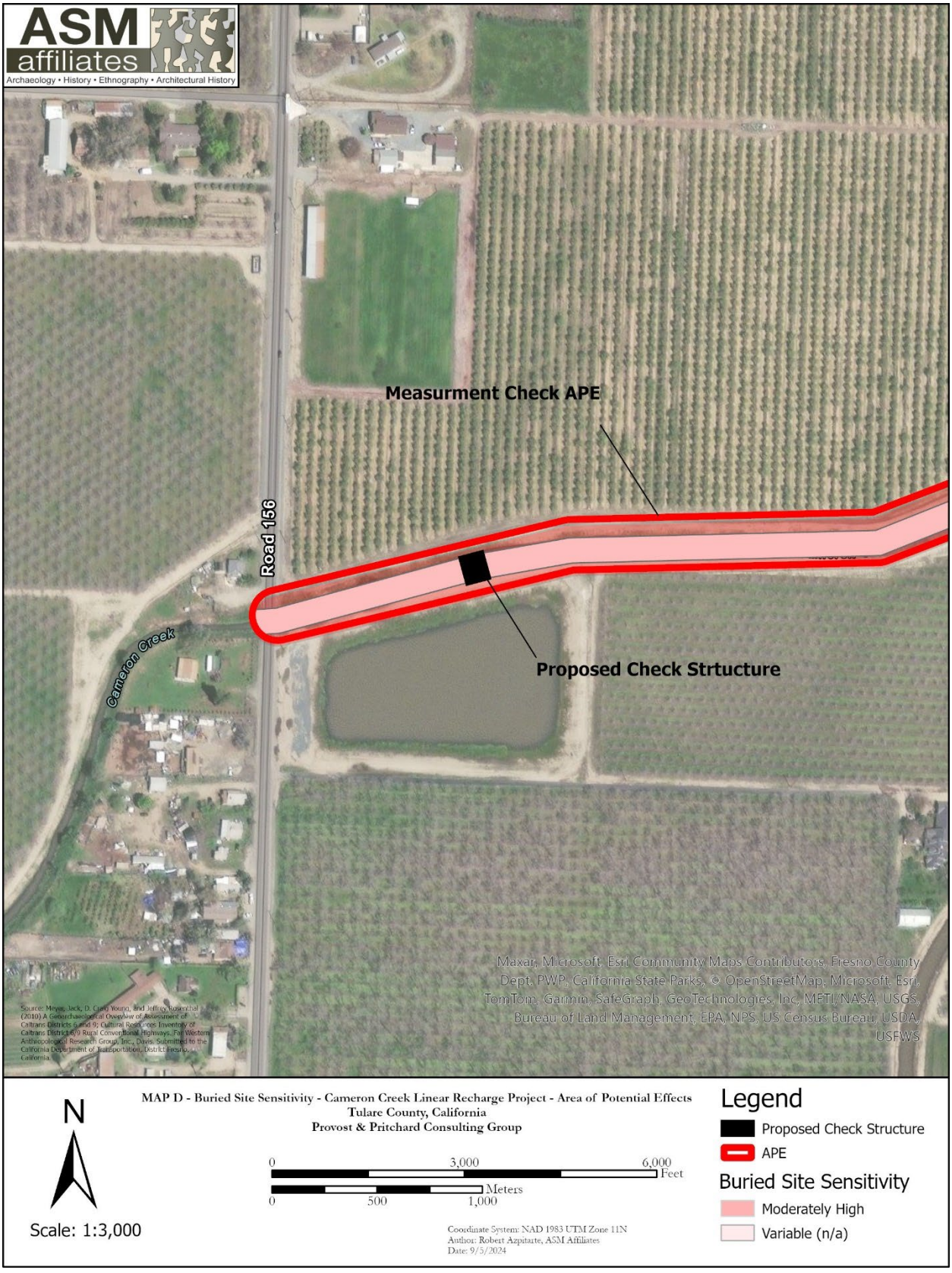


Figure 4d. Buried Site Sensitivity of the APE.

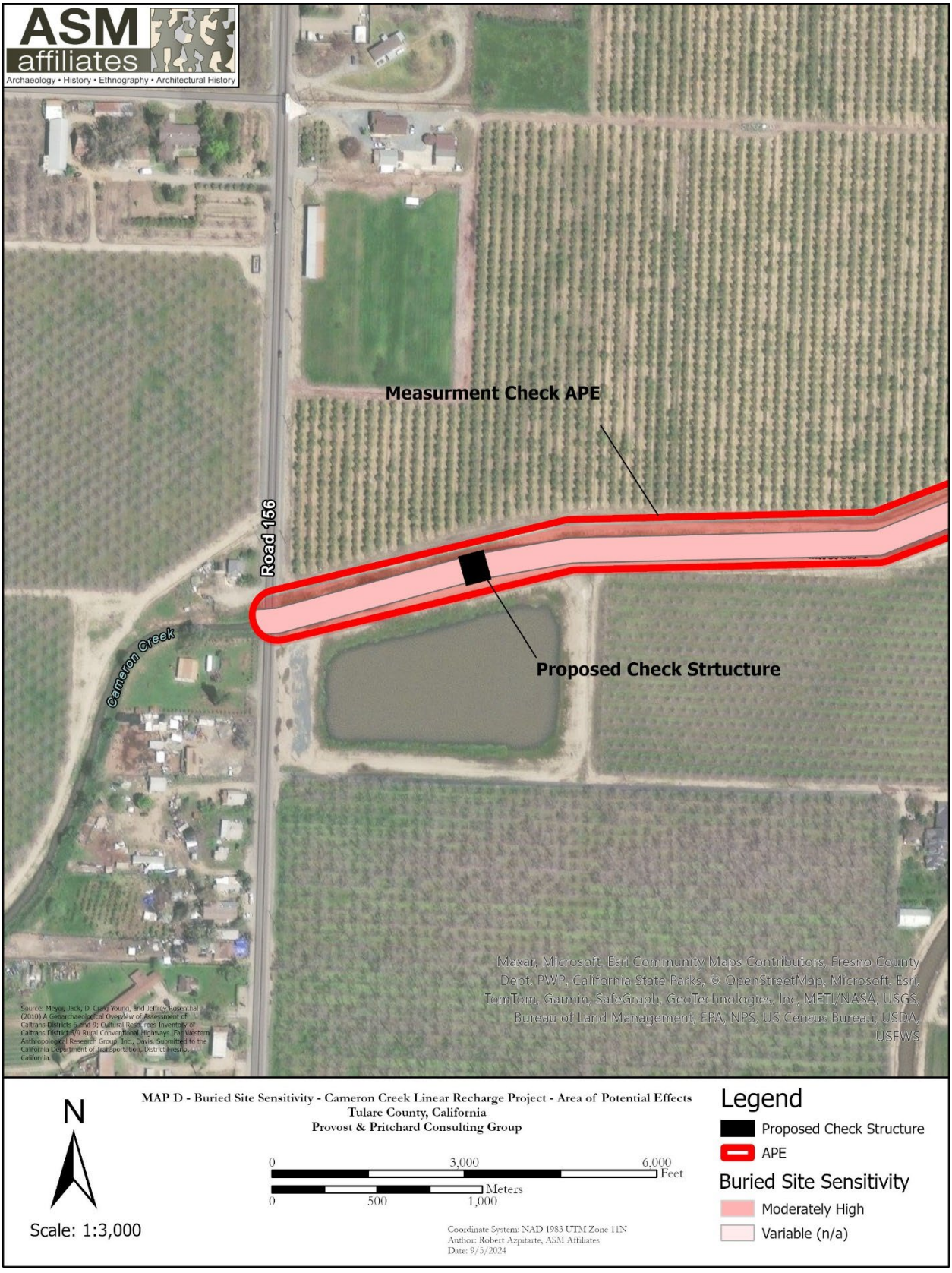


Figure 4e. Buried Site Sensitivity of the APE.

2.2 ETHNOGRAPHIC BACKGROUND

Penutian-speaking Yokuts tribal groups occupied the southern San Joaquin Valley region and much of the nearby Sierra Nevada. Ethnographic information about the Yokuts was collected primarily by Powers (1971, 1976 [originally 1877]), Kroeber (1925), Gayton (1930, 1948), Driver (1937), and Harrington (n.d.). For a variety of historical reasons, existing research information emphasizes the central Yokuts tribes which occupied both the valley and particularly the foot-hills of the Sierra Nevada. The northernmost tribes suffered from the influx of Euro Americans during the Gold Rush and their populations were in substantial decline by the time ethnographic studies began in the early twentieth century. In contrast, the southernmost tribes were partially removed by the Spanish to missions and eventually absorbed into multi-tribal communities on the Sebastian Indian Reservation (on Tejon Ranch), and later the Tule River Reservation and Santa Rosa Rancheria to the north. The result is a scarcity of ethnographic detail on southern Valley tribes, especially in relation to the rich information collected from the central foothills tribes where native speakers of the Yokuts dialects are still found. Regardless, the general details of indigenous lifeways were similar across the broad expanse of Yokuts territory, particularly in terms of environmentally influenced subsistence and adaptation and with regard to religion and belief, which were similar everywhere.

Following Kroeber (1925: Plate 47), the City of Visalia region lies in a contact zone between a series of Yokuts tribal groups. Kroeber places the Chunut to the south of the Project APE, along Tulare Lake, the Choinok to the southeast, Wolasi to the northeast along Cameron Creek, and the Telamni further north, near Visalia. No historic villages are recorded in the immediate Project area by Kroeber (1925).

The Yokuts settlement pattern was largely consistent, regardless of specific tribe involved. Winter villages were typically located along lakeshores and major stream courses (as these existed circa 150 YBP), with dispersal phase family camps at elevated spots on the valley floor and near gathering areas in the foothills.

Most Yokuts groups, again regardless of specific tribal affiliation, were organized as a recognized and distinct tribelet, a circumstance that almost certainly pertained to the tribal groups noted above. Tribelets were land-owning groups organized around a central village and linked by shared territory and descent from a common ancestor. The population of most tribelets ranged from about 150 to 500 people (Kroeber 1925).

Each tribelet was headed by a chief who was aided by a variety of assistants, the most important of whom was the *winatum*, a herald or messenger and assistant chief. A shaman also served as religious officer. While shamans did not have any direct political authority, as Gayton (1930) has illustrated, they maintained substantial influence within their tribelet.

Shamanism is a religious system common to many Native American tribes. It involves a direct and personal relationship between the individual and the supernatural world enacted by entering a trance or hallucinatory state (usually through the ingestion of psychotropic plants, such as jimsonweed or more typically native tobacco). Shamans were considered individuals with an unusual degree of supernatural power, serving as healers or curers, diviners, and controllers of

natural phenomena (such as rain or thunder). Shamans also produced the rock art of this region, depicting the visions they experienced in vision quests believed to represent their spirit helpers and events in the supernatural realm (Whitley 1992, 2000).

The centrality of shamanism to the religious and spiritual life of the Yokuts was demonstrated by the role of shamans in the yearly ceremonial round. The ritual round, performed the same way each year, started in the spring with the jimsonweed ceremony, followed by rattlesnake dance and (where appropriate) first salmon ceremony. After returning from seed camps, fall rituals began in the late summer with the mourning ceremony, followed by first seed and acorn rites, and then bear dance (Gayton 1930:379). In each case, shamans served as ceremonial officials responsible for specific dances involving a display of their supernatural powers (Kroeber 1925).

Subsistence practices varied from tribelet to tribelet based on the environment of residence. Throughout Native California, and Yokuts territory in general, the acorn was a primary dietary component, along with a variety of gathered seeds. Valley tribes augmented this resource with lacustrine and riverine foods, especially fish and wildfowl. As with many Native California tribes, the settlement and subsistence rounds included the winter aggregation into a few large villages, where stored resources (like acorns) served as staples, followed by dispersal into smaller camps, often occupied by extended families, where seasonally available resources would be gathered and consumed.

Although population estimates vary and population size was greatly affected by the introduction of 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 people continue to reside in the southern San Joaquin Valley today.

2.3 PRE-CONTACT ARCHAEOLOGICAL BACKGROUND

The southern San Joaquin Valley region has received minimal archaeological attention compared to other areas of the state. In part, this is because the majority of California archaeological work has been concentrated in the Sacramento Delta, Santa Barbara Channel, and central Mojave Desert areas (see Moratto 1984). Although knowledge of the region's prehistory is limited, enough is known to determine that the archaeological record is broadly similar to south-central California as a whole (see Gifford and 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. Evidence of early use of the region is indicated by characteristic fluted and stemmed points found around the margin of Tulare Lake, in the foothills of the Sierra, and in the Mojave Desert proper.

Both fluted and stemmed points are particularly common around lake margins, suggesting a terminal Pleistocene/early Holocene lakeshore adaptation similar to that found throughout western North America at the same time; little else is known about these earliest peoples. More than 250

fluted points have been recovered from the Witt Site (CA-KIN-32), located along the western shoreline of ancient Tulare Lake, west of the Project APE, demonstrating the importance of this early occupation in the San Joaquin Valley (see Fenenga 1993). Additional finds consist of a Clovis-like projectile point discovered in a flashflood cut-bank near White Oak Lodge in 1953 on Tejon Ranch (Glennan 1987a, 1987b). More recently, a similar fluted point was found near Bakersfield (Zimmerman et al. 1989), and a number are known from the Edwards Air Force Base and Boron area of the western Mojave Desert. Although human occupation of the state 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 much more substantial population and settlements which, instead of relying on big-game hunting, were tied to the lacustrine lake edge. Variability in subsistence and settlement patterns is thus apparent in California, in contrast to the Great Plains.

Substantial evidence for human occupation across California, however, first occurs during the middle Holocene, roughly 7500 to 4000 YBP. This period is known as the *Early Horizon*, or alternatively as the Early Millingstone, along the Santa Barbara Channel. In the south, populations concentrated along the coast with minimal visible use of inland areas. Adaptation emphasized hard seeds and nuts with toolkits dominated by mullers and grindstones (manos and metates). Additionally, little evidence for Early Horizon occupation exists in most inland portions of the state, partly due to a severe cold and dry paleoclimatic period occurring at this time, although a site deposit dating to this age has been identified along the ancient Buena Vista shoreline in Kern County to the south (Rosenthal et al. 2007). Regardless of specifics, Early Horizon population density was low with a subsistence adaptation more likely tied to plant food gathering than hunting.

Environmental conditions improved dramatically after about 4000 YBP during the *Middle Horizon* (or Intermediate Period). This period is known climatically as the Holocene Maximum (circa 3800 YBP) and was characterized by significantly warmer and wetter conditions than previously experienced. It was marked archaeologically by large population increase and radiation into new environments along coastal and interior south-central California and the Mojave Desert (Whitley 2000). In the Delta region to the north, this same period of favorable environmental conditions was characterized by the appearance of the Windmiller culture which exhibited a high degree of ritual elaboration (especially in burial practices) and perhaps even a rudimentary mound-building tradition (Meighan, personal communication, 1985). Along with ritual elaboration, Middle Horizon times experienced increasing subsistence specialization, perhaps correlating with the appearance of acorn processing technology. Penutian speaking peoples (including the Yokuts) are also posited to have entered the state roughly at the beginning of this period and, perhaps, to have brought this technology with them (cf. Moratto 1984). Likewise, it appears the so-called "Shoshonean Wedge" in southern California, the Takic-speaking groups that include the Gabrielino/Fernandeño, Tataviam, and Kitanemuk, may have moved into the region at that time (Sutton 2009), rather than at about 1500 YBP as first suggested by Kroeber (1925).

Evidence for Middle Horizon occupation of interior south-central California is substantial. For example, in northern Los Angeles County along the upper Santa Clara River, to the south of the

San Joaquin Valley, the Agua Dulce village complex indicates occupation extending back to the Intermediate Period, when the population of the village may have been 50 or more people (King et al. n.d.). Similarly, inhabitation of the Hathaway Ranch region, near Lake Piru, and the Newhall Ranch, near Valencia, appears to date to the Intermediate Period (W&S Consultants 1994). To the west, little or no evidence exists for pre-Middle Horizon occupation in the upper Sisquoc and Cuyama River drainages; populations first appear there at roughly 3500 YBP (Horne 1981). The Carrizo Plain, the valley immediately west of the San Joaquin, experienced a major population expansion during the Middle Horizon (W&S Consultants 2004; Whitley et al. 2007), and recently collected data indicates the Tehachapi Mountains region was first significantly occupied during the Middle Horizon (W&S Consultants 2006). A parallel can be drawn to the inland Ventura County region where a similar pattern has been identified (Whitley and Beaudry 1991), as well as the western Mojave Desert (Sutton 1988a, 1988b), the southern Sierra Nevada (W&S Consultants 1999), and the Coso Range region (Whitley et al. 1988). In all of these areas a major expansion in settlement, the establishment of large site complexes and an increase in the range of environments exploited appear to have occurred sometime roughly around 4,000 YBP. Although most efforts to explain this expansion have focused on local circumstances and events, it is increasingly apparent this was a major occurrence throughout southern California, and any explanation must be sought at a larger level of analysis (Whitley 2000). Additionally, evidence from the Carrizo Plain suggests the origins of the tribelet level of political organization developed during this period (W&S Consultants 2004; Whitley et al. 2007). Whether this same demographic process holds for the southern San Joaquin Valley, including the current Project APE, is yet to be determined.

The beginning of the *Late Horizon* is set variously at 1500 and 800 YBP, with a growing archaeological consensus for the shorter chronology. Increasing evidence suggests the importance of the Middle-Late Horizons transition (AD 800 to 1200) in the understanding of south-central California prehistory. This corresponds to the so-called Medieval Climatic Anomaly, followed by the Little Ice Age, and this general period of climatic instability extended to about AD 1860. It included major droughts matched by intermittent "mega-floods," and resulted in demographic disturbances across much of western North American (Jones et al. 1999). It is believed to have resulted in major population decline and abandonments across south-central California, involving as much as 90 percent of the interior populations in some regions, including the Carrizo Plain (Whitley et al. 2007). It is not clear whether site abandonment was accompanied by a true reduction in population or an agglomeration of the same numbers of people into fewer but larger villages in more favorable locations. Population along the Santa Barbara coast appears to have spiked at about the same time that it collapsed on the Carrizo Plain (Whitley et al. 2007). Along Buena Vista Lake, in Kern County, population appears to have been increasingly concentrated toward the later end of the Medieval Climatic Anomaly (Culleton 2006), and population intensification also appears to have occurred in the well-watered Tehachapi Mountains during this same period (W&S Consultants 2006).

What is clear is that Middle Period villages and settlements were widely dispersed across the south-central California landscape, including in the Sierra Nevada and the Mojave Desert. Many of these sites are found at locations that lack existing or historically known fresh water sources. Late Horizon sites, in contrast, are typically concentrated in areas where fresh water was available during the historical period, if not currently.

One extensively studied site that shows evidence of intensive occupation during the Middle-Late Horizons transition (~1500-500 YBP) is the Redtfeldt Mound (CA-KIN-66/H), located west of the current Project APE, near the north shore of ancient Tulare Lake. There, Siefkin (1999) reported on human burials and a host of artifacts and ecofacts excavated from a modest-sized mound. He found that both Middle Horizon and Middle-Late Horizons transition occupations were more intensive than Late Horizon occupations, which were sporadic and less intensive (Siefkin 1999:110-111).

The Late Horizon can then be understood as a period of recovery from a major demographic collapse. One result is the development of regional archaeological cultures as the precursors to ethnographic Native California, suggesting that ethnographic lifeways recorded by anthropologists extend roughly 800 years into the past.

The position of southern San Joaquin Valley prehistory relative to patterns seen in surrounding areas is still somewhat unknown. The presence of large lake systems in the valley bottoms appears to have mediated some of the desiccation seen elsewhere. But, as the reconstruction of Soda Lake in the nearby Carrizo Plain demonstrates (see Whitley et al. 2007) environmental perturbations had serious impacts on lake systems too. Identifying certain prehistoric demographic trends for the southern San Joaquin Valley, and determining how these trends (if present) correlate with those seen elsewhere, is a current important research objective.

2.4 HISTORICAL BACKGROUND

Spanish explorers first visited the San Joaquin Valley in 1772, but its lengthy distance from the missions and presidios along the Pacific Coast delayed permanent settlement for many years, including during the Mexican period of control over the Californian region. In the 1840s, Mexican rancho owners along the Pacific Coast allowed their cattle to wander and graze in the San Joaquin Valley (JRP Historical Consulting 2009). The Mexican government granted the first ranchos in the southern part of the San Joaquin Valley in the early 1840s, but these did not result in permanent settlement. It was not until the annexation of California in 1848 that the exploitation of the southern San Joaquin Valley began (Pacific Legacy 2006).

The discovery of gold in northern California in 1848 resulted in a dramatic increase of population, consisting in good part of fortune seekers and gold miners, who began to scour other parts of the state. After 1851, when gold was discovered in the Sierra Nevada Mountains in eastern Kern County, the population of the area grew rapidly. Some new immigrants began ranching in the San Joaquin Valley to supply the miners and mining towns. Ranchers grazed cattle and sheep, and farmers dry-farmed or used limited irrigation to grow grain crops, leading to the creation of small agricultural communities throughout the valley (JRP Historical Consulting 2009).

After the American annexation of California, the southern San Joaquin Valley became significant as a center of food production for this new influx of people in California. The expansive unfenced and principally public foothill spaces were well suited for grazing both sheep and cattle. As the Sierra Nevada gold rush presented extensive financial opportunities, ranchers introduced new breeds of livestock, consisting of cattle, sheep, and pig (Boyd 1997).

With the increase of ranching in the southern San Joaquin Valley came the dramatic change in the landscape, as ranchers replaced native flora with non-native grasses that were more beneficial for grazing and pasture (Preston 1981). After the passing of Swamp Land Act, also known as the Arkansas Act, in 1850, farming began incrementally supplanting ranching as a more profitable enterprise as large tracts of land began to be reclaimed for agricultural use, aided in part by the extension of the railroad in the 1870s (Pacific Legacy 2006).

The Santa Fe and Southern Pacific Railroads extended into Tulare County in the 1870s. Deliberations among the major owners of the rail companies resulted in a decision that one large town would be developed in the approximate middle of each San Joaquin Valley county, to serve as county seat and railroad hub. The location of the City of Tulare was one such selected spot, placed at the intersection of the Santa Fe and Southern Pacific railroads (Preston 1981). Prior to that time, this area had relatively few settlers due to the lack of surface water, with most Euro Americans settling either farther north and east, closer to the main branches of the Kaweah and Kings Rivers, or to the south and east, along the Tule River (Menafee and Dodge 1913). Irrigation in Tulare County[1] began in 1872 (Menafee and Dodge 1913:192).

Following the passage of the federal Homestead Act 1862 and the statewide "No-Fence" law in 1874, ranching practices began to decline, while farming expanded in the San Joaquin Valley in both large land holdings and smaller, subdivided properties (Robinson 1948). As the farming population grew, so did the demand for irrigation. During the period of reclaiming unproductive land in the southern San Joaquin Valley, grants were given to individuals who had both the resources and the finances to undertake the operation alone.

Three competing partnerships developed during this period which had a great impact on control of water, land reclamation and ultimately agricultural development in the San Joaquin Valley: Livermore and Chester, Haggin and Carr, and Miller and Lux, perhaps the most famous of the enterprises (Morgan 1914). Miller and Lux ultimately became one of the biggest private property holders in the country, controlling the rights to more than 22,000 square mi. Miller and Lux's impact extended far beyond Kern County, however. They recognized early on that control of water would have important economic implications, and they played a major role in the water development of the state. They controlled, for example, more than 100 mi. of the San Joaquin River with the San Joaquin and Kings River Canal and Irrigation System (Levine 2011).

The controversies associated with these endeavors and many others resulted in the Wright Act of 1887, which provided for the ownership of land and water as a collective rather than as separate rights. It further allowed the creation of irrigation districts comprised of local landowners.

2.4.1 Tulare Irrigation District

Local farmers recognized their precarious position as independent water rights users and the strength of water collectives that ultimately culminated in the support of the Wright Act of 1887 (Adams 1916:28). The first two districts created in Tulare County were the Alta Irrigation District, on the Kings River, and the Tulare Irrigation District (TID), which includes the Project APE (Preston 1981). The TID was organized on September 21, 1889. The original proposal for the

[1] This included Kings County at that time.

formation of an irrigation district covered 210,000 ac. that extended from the Sierra Nevada foothills to Tulare Lake. This was eventually reduced to 39,360 ac. (Figure 5) (Adams 1916:28). In January 1948, the so-called "Kaweah Lands" (approximately 11,000 ac.) were annexed. In October 1948, approximately 31,000 ac. previously served by the Packwood Canal Company were annexed to the TID (TID n.d.). Figure 6 shows the present-day boundaries of the TID.

The first waterworks that served the TID were the Kaweah Canal and Rocky Ford Canal (Adams 1916:29). Initially, $500,000 in bonds were issued with $250,000 paid for two canals: Settlers Canal and Kaweah Canal. The Main Canal was the first project of TID that also included construction of laterals (Adams 1916:28). Construction included diversion works on the St. Johns River, the main canal heading at the river (including a large flume over the river), together with the purchase of water rights of the Kaweah Canal and Irrigation Company, Rocky Ford Canal and Irrigation Company, and Settlers Ditch Company. The remainder was used for canal construction within the original TID boundaries. The 1893 depression caused financial difficulties—devalued agriculture prices prompted reduced or no crop planting, homeowners lost their homes, and businesses failed. The TID faltered as some questioned the legality of the TID's organization and therefore the bonds collected under that organization. By 1895, many bondholders could not pay the TID assessment. During 1893-1898, some water trickled through the canals, but TID operations fundamentally ceased. During this period, litigation over the bonds continued, and economic conditions in both Tulare and the surrounding country reflected the effects of a national depression (Adams 1916:28). In the early twentieth century, TID became more financially solvent and on October 17, 1903, bonds had been repaid. Thereafter, TID required only one assessment for system betterment in 1909 and all other assessments were replaced by water tolls (Adams 1916:30; Adams 1929:246).

By the early 1900s, most irrigation water was supplied by rivers, creeks, and canals, but increasingly pump irrigation through wells supplemented the water supply. Deciduous trees and vineyards required only two seasonal irrigation deliveries until they matured and thereafter needed only one. While alfalfa required two or three seasonal deliveries, and citrus required a more frequent supply. Most of Tulare County agricultural land was cultivated vineyards of table grapes and grapes used for raisins, with citrus (largely navel oranges) on the rise for crop production as irrigation increased. Peaches were a predominant deciduous fruit crop. Dry farming of wheat and small grains was also prevalent. By 1909, the population in the county had grown to 35,000, which is attributable to railroads that facilitated agricultural transport and contributed to population growth (*Visalia Times-Delta* 1909a, 1909b). Agricultural development significantly increased between 1913 and 1917. While only 100 ac. had been irrigated in 1913, four years later it had grown to more than 12,000 ac. Raisins and orchard crops produced the greatest revenue with significant production of wheat and grains. Cattle raising significantly contributed to the economy with lesser contribution from dairies (Tulare County Board of Trade 1917). By 1920, the population had almost doubled from 1909 (Tulare County Board of Trade 1939). In 1927, only 7,100 acres were irrigated directly by the TID with private pumping plants supplying an additional 15,000 acres. By 1927, 735 farming operations existed within the TID boundaries, primarily composed of 38 ac. properties with two large holdings of 2,800 ac. and 1,500 ac. (Adams 1929:246).

Every decade from 1930 to 1990, the number of dairy cows increased as the dairy industry became an important economic driver for Tulare County (Schultz 2000). While Los Angeles ranked first as the "most productive" agricultural county in the U.S. between 1910 and 1949, Tulare County ranked second in California (Los Angeles Almanac 2024). By 1939, Tulare County was the fourth ranking agricultural county in the U.S. with oranges, grapes and raisins, cotton, cattle, and dairies as the largest revenue producers (Tulare County Board of Trade 1939). Population in the San Joaquin Valley grew exponentially between 1935 and 1940 with the population increase of 38.4 percent in Tulare County, 38.5 percent in Kings County, and 63.6 percent in Kern County (Regional Water Management Group, Kaweah River Basin 2017: 5-3). By 1945, much of the agricultural acreage was dedicated to truck crops though orchard crops and grapes continued to produce the highest revenue. Dairying outpaced livestock, and poultry production increased with cotton and alfalfa the highest-producing field crops (Hemphill 1945). By 1959, cotton and alfalfa remained the highest-producing field crops, but fruit crops produced the greatest revenue with grapes and raisins maintaining the largest portion of that sector. Field crops outpaced livestock with apiary-related products a close second to field crops (Mankins 1959).

Agricultural expansion required a supplemental water supply that TID secured in a 1950 contract with the U.S. Bureau of Reclamation for an annual supply of 30,000 ac. ft. of Class 1 water, and up to 141,000 ac. ft. of Class 2 water from the Friant-Kern Canal. Subsequently, the TID proceeded with extensive improvements to the existing canal system, and the extension of the canal system to serve annexed areas. This work consisted of enlarging and/or relocating canals, construction of diversion structures, road crossings, check-gates, siphons, installing pipelines, etc. The majority of this work occurred between 1951-1964 (TID n.d.). Changes made to the MIC began after 1956 (USDA 1956). The TID and the Kaweah Delta Water Conservation District formed the Kaweah River Power Authority (KRPA) in 1982. A 17MW hydroelectric power plant was constructed and went online in 1992, delivering power to the Southern California Edison Company (TID n.d.).

2.4.2 Cameron Creek

As part of the Sierra Nevada watershed, Cameron Creek was one of eight creeks that supplied water that irrigated thousands of acres in the San Joaquin Valley (*Visalia Times-Delta* 1909a). The southern side of the Kaweah Basin is fed by the Lower Kaweah River that conveys water primarily through three main distributive natural channels: Mill Creek, Packwood Creek, and Cameron Creek. Segments of Cameron Creek supported irrigation systems for the Lakeland Irrigation District and the Corcoran Irrigation District as well as the TID. An 1885 irrigation map shows a segment of the Kaweah River, St. Johns Channel, and associated creeks and canals, including Cameron Creek (Figure 7). The alignments in Figure 5 predate the TID. When the TID acquired extant canals and utilized creeks for its irrigation system, Cameron Creek was "one of the lesser delta channels of Kaweah River. It receives a portion of the flow of Deep Creek at a point about 6 miles due east from Visalia, and has a southwesterly course to Tulare Lake. It passes just to the northward of Tulare. An artificial channel at the head of this water way [*sic*], constructed to improve its connection with Deep Creek, was closed by an order of court some years ago" (Grunsky 1898:14). At that time, Packwood Creek Canal was a primary canal that flowed in a southwesterly direction toward Tagus where the creek delivered water to a distribution system located southwest of Tagus. In the spring months, excess water flowed through Cameron Creek via the Deep Creek channels as well as Kaweah and Tulare canals, which the Cameron Creek

Company facilitated. The TID acquired the Cameron Creek Company facilities and integrated them into its system (Grunsky 1898:29).

Over time, Cameron Creek was channelized for more effective use by TID. During 1892–1925, significant improvements to the TID system included some channelization and realignment of Cameron Creek (Figure 8-10). It appears that at least some portions of Cameron Creek had a levee by 1900 (*Visalia Times* 1900). The TID Canal intersected with Cameron Creek just east of the Measurement Check APE (Thompson 1892a, 1892b; USGS 1926). By the early 1920s, TID alternated between the Tulare Canal and Cameron Creek for conveyance and in 1924 Cameron Creek did not transport any water due to lack of water available (*Visalia Times-Delta* 1925:4). During 1929–1931 and 1933–1934, the Kaweah Basin experienced drought with only some water trickling through Cameron Creek and other creeks (*Tulare Daily Times* 1931). Conversely, in 1932 a hurricane caused massive flooding on Cameron Creek (Austin 2012: 27, 247 327). It appears that TID channelized Cameron Creek and, as part of that channelization, created levees as maintenance roads on both sides of Cameron Creek within the APEs beginning at the intersection with the TID Canal in the SW¼ of Section 36, T 18S, R25E between 1926 and 1950 (Figure 11) (USGS 1950, 1952). Most likely the levees were constructed in response to the 1932 flood. The 1955 flood was the most significant flood within written record as it overtook Cameron Creek, Packwood Creek, and Mill Creek but significantly affected Cameron Creek. Severe damage directly caused closure of the sawmill adjacent to Cameron Creek. Cameron Creek Colony was significantly flooded. Another flood in 1966 flooded agricultural land adjacent to Cameron Creek as well as Deep Creek, Outside Creek, and Cross Creek (Austin 2012:291, 308, 320). It is not clear who constructed the levees, but levees constructed on St. Johns River/Channel (a major waterway for the TID system), were constructed for flood control and were largely constructed without engineering design and ad hoc (Regional Water Management Group, Kaweah River Basin 2017:8-5). Today, the historical levees within the APEs are not berms but instead flat and driveable maintenance roadways on either banks of the channelized Cameron Creek.

Sometime during 1926–1950, the agricultural Cameron Creek Colony also developed between 1926 and 1950 along the southern side of Cameron Creek outside the APE in the SE¼ of Section 36, T18S, R25E and the SW¼ of Section 36, T18S, R26E. Within the three APE segments, the TID rerouted only one segment of Cameron Creek between Road 148 and Road 152 north of Avenue 288 sometime during 1956–1969 as part of the TID's major program of improving the system[2] (Figure 12) (USDA 1956, 1969; USGS 1950, 1952). By 1957, one segment of Cameron Creek was 15 ft. wide and approximately 10 ft. deep and water was flowing through it for the TID system (*Tulare Advance-Register* 1957:1).

[2] It is important to note that TID's first program of significant improvements was 1892-1925. The second TID improvement program was completed during 1951-1964. The partially realigned segment within the Rector APE was completed within the second program of TID system improvements.

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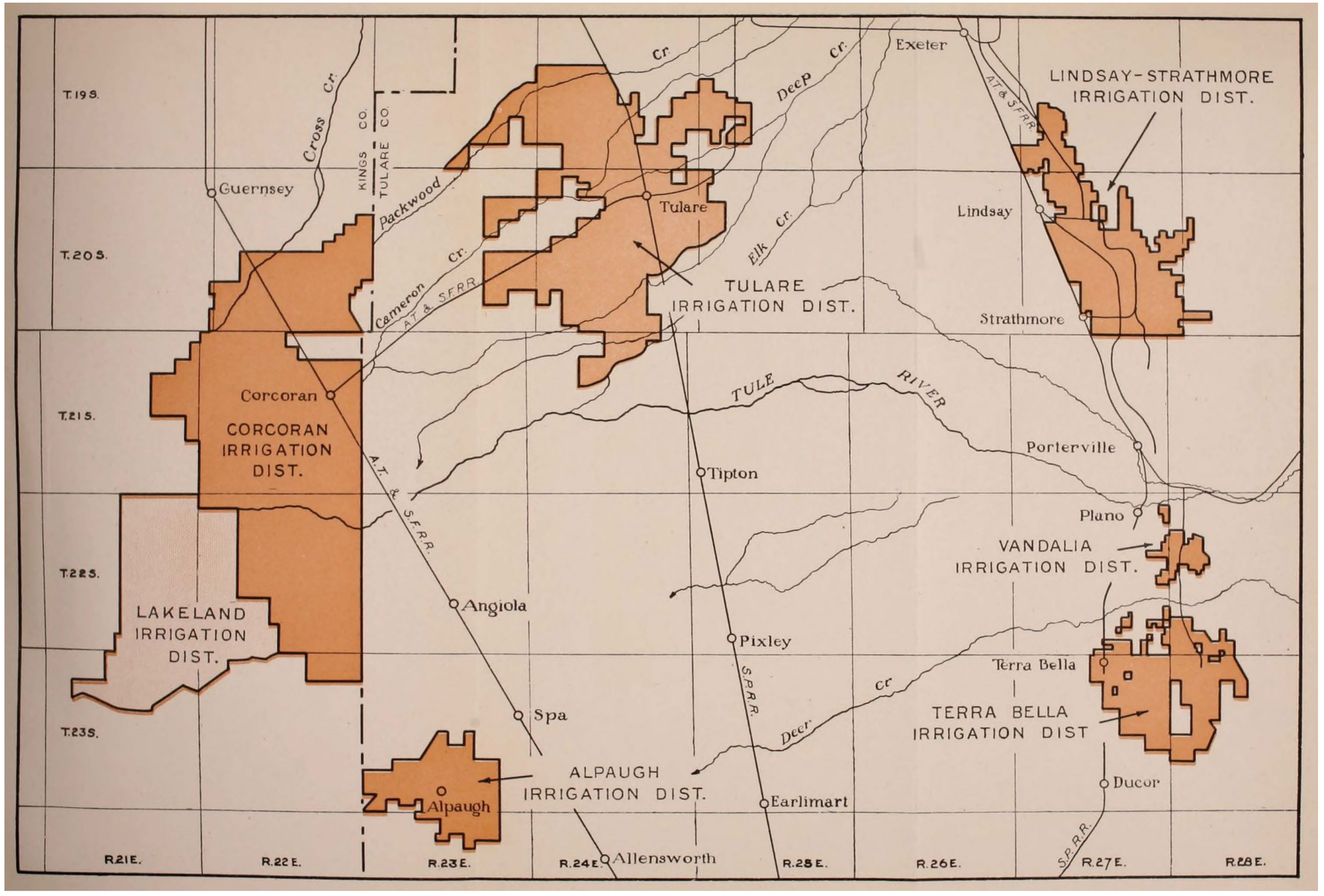


Figure 5. A 1929 location and boundary map of irrigation districts in Tulare and lower Kings counties. Source: Adams 1929, Plate XXVI.

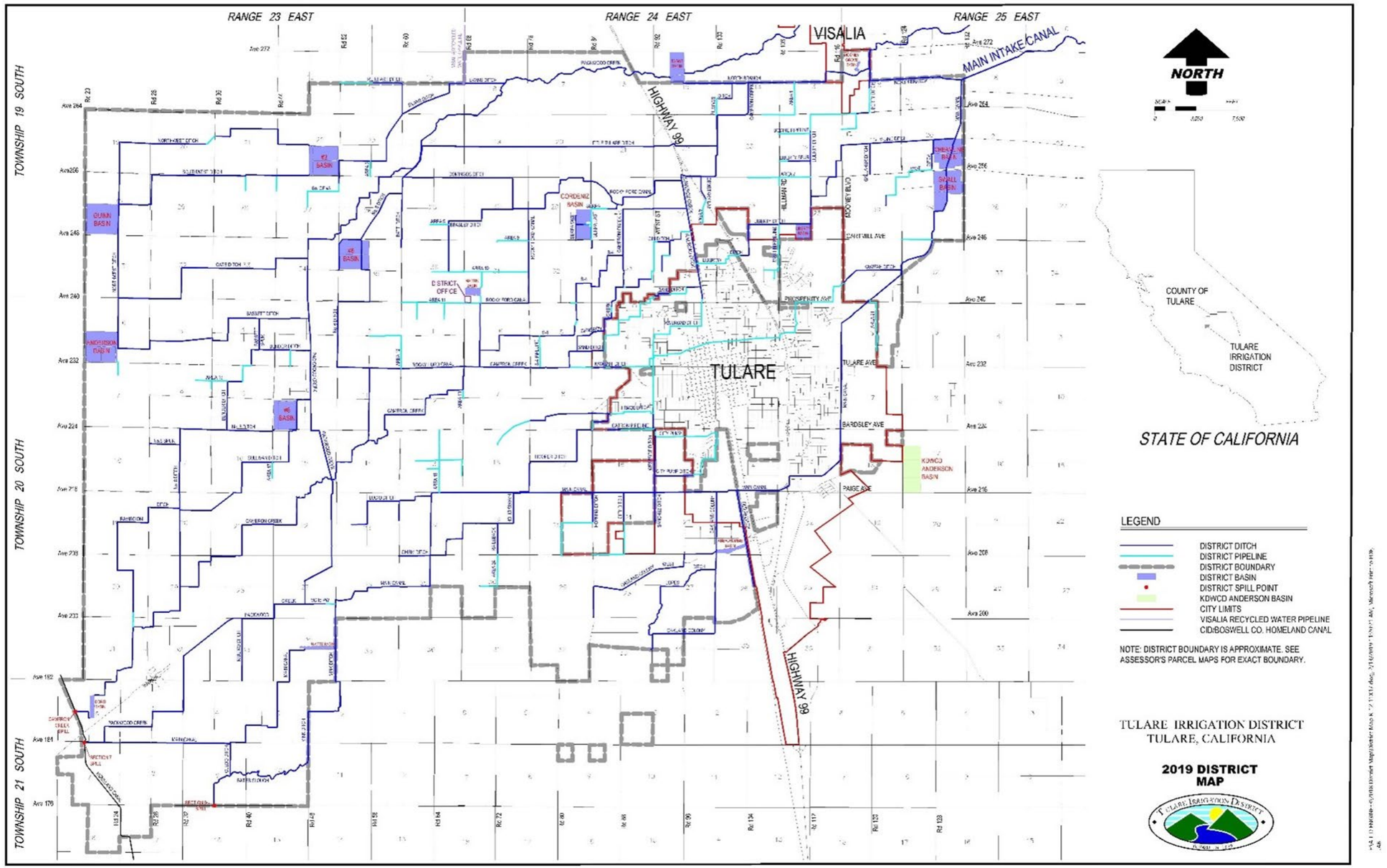


Figure 6. Tulare Irrigation District service area map, 2022.

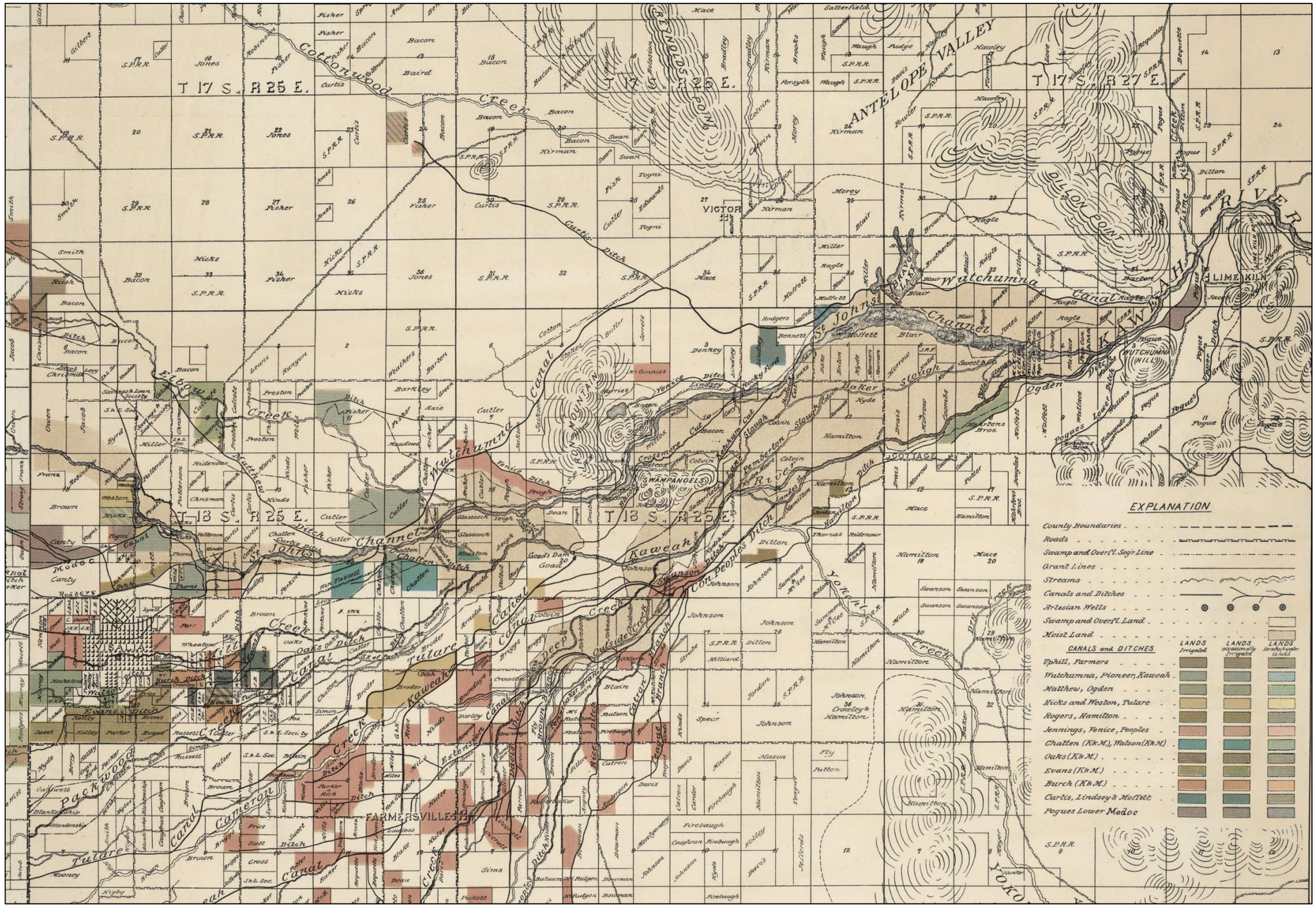


Figure 7. An 1885 irrigation map that also identifies the alignment of the Kaweah River, St. Johns Channel, associated creeks, and canals, including Cameron Creek. Source: Hammond 1885.

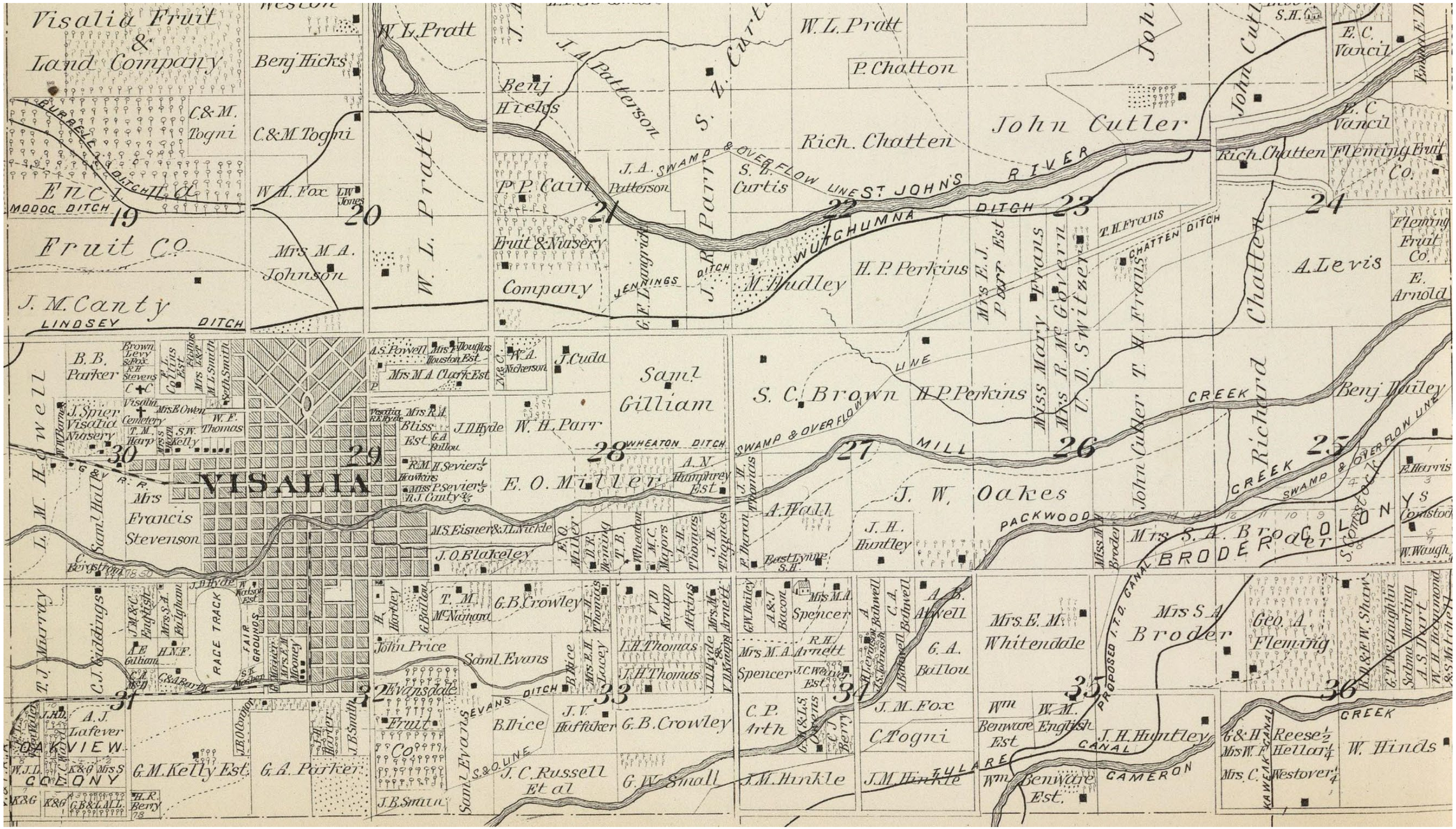


Figure 8. Excerpt from 1892 atlas map for T18S R25E that identifies the alignment of Cameron Creek. Source: Thompson 1892a.

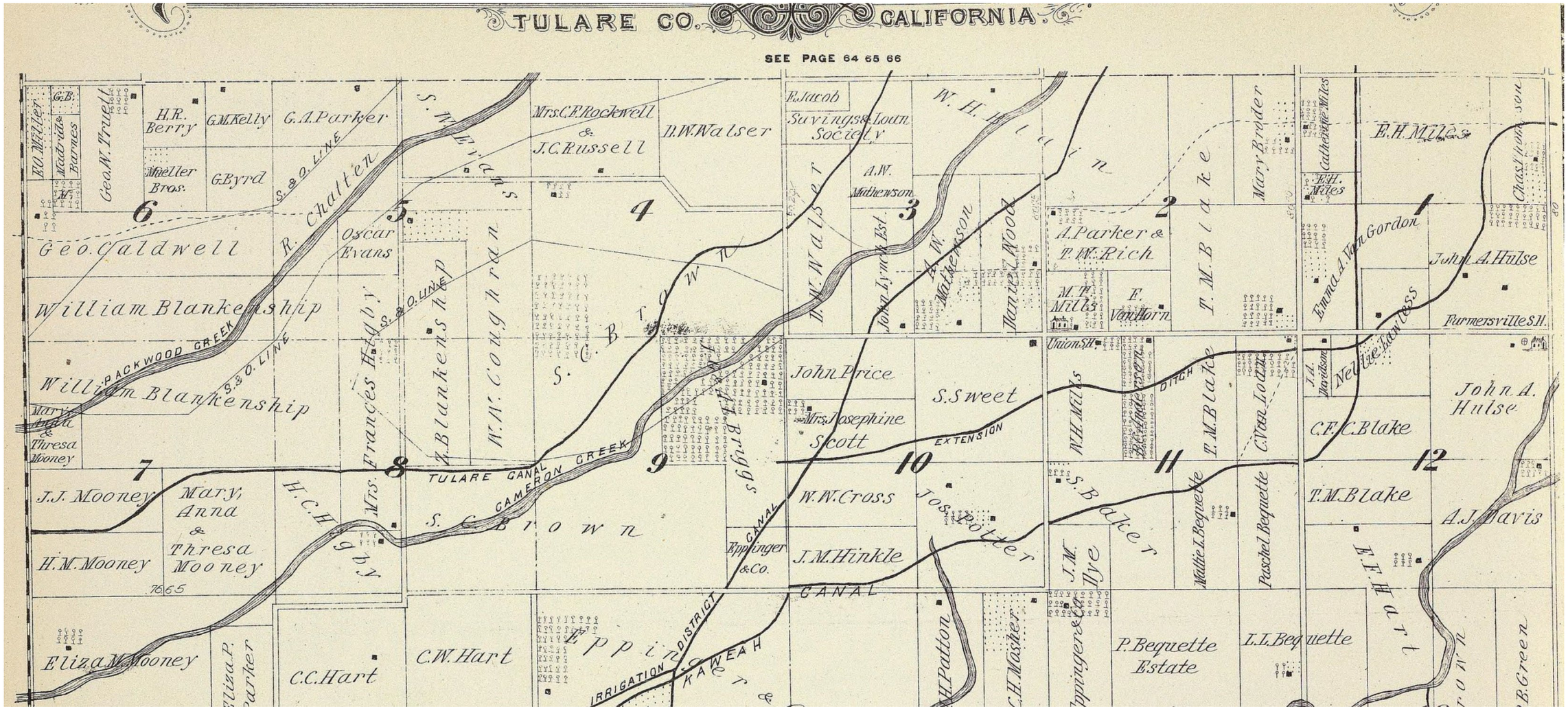


Figure 9. Excerpt from 1892 atlas map for T19S R25E that identifies the alignment of Cameron Creek and the TID Canal. Source: Thompson 1892b.

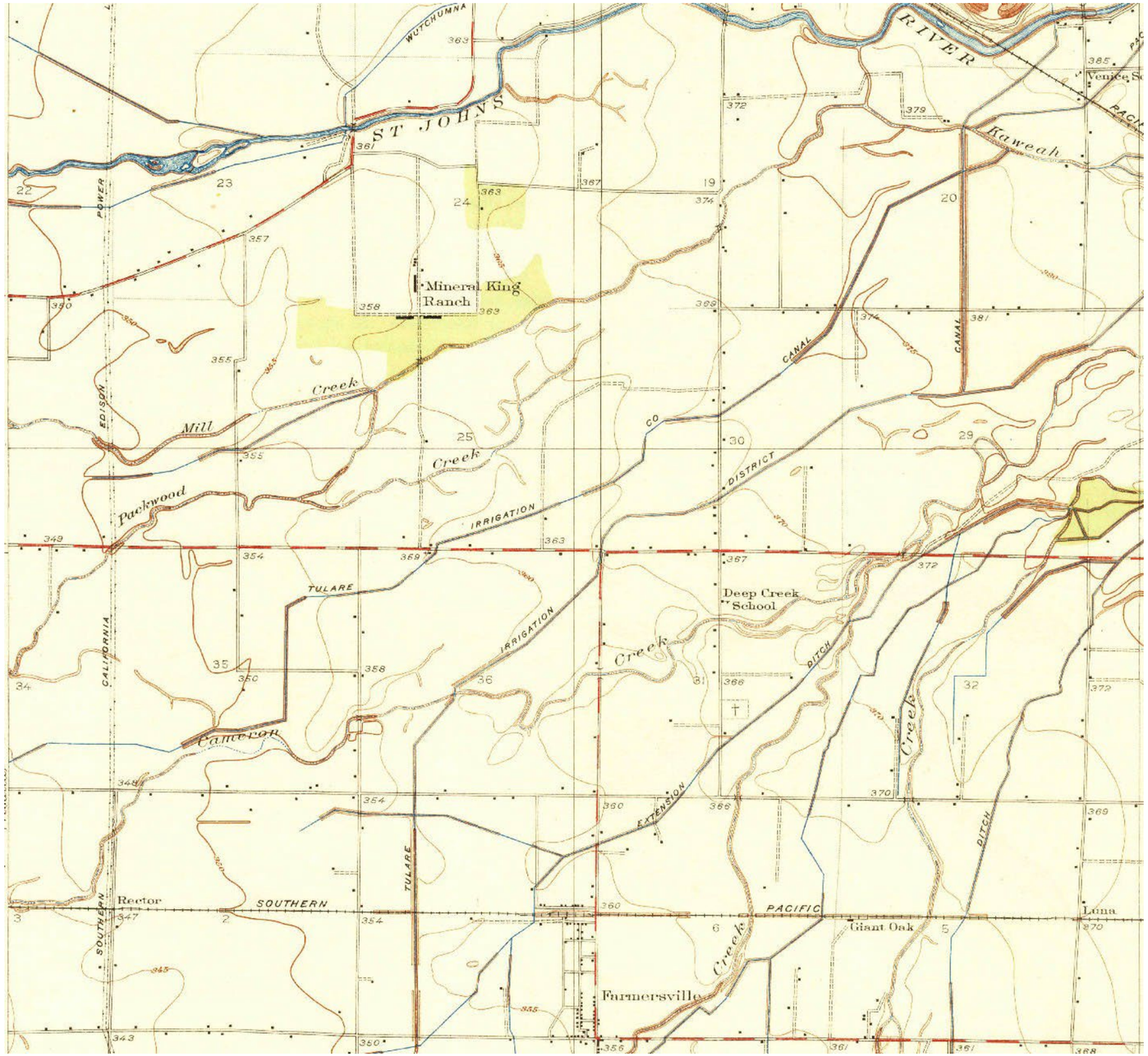


Figure 10. An excerpt from a 1926 USGS topographical map that identifies the alignment of Cameron Creek and the TID Canal. Source: USGS 1926.

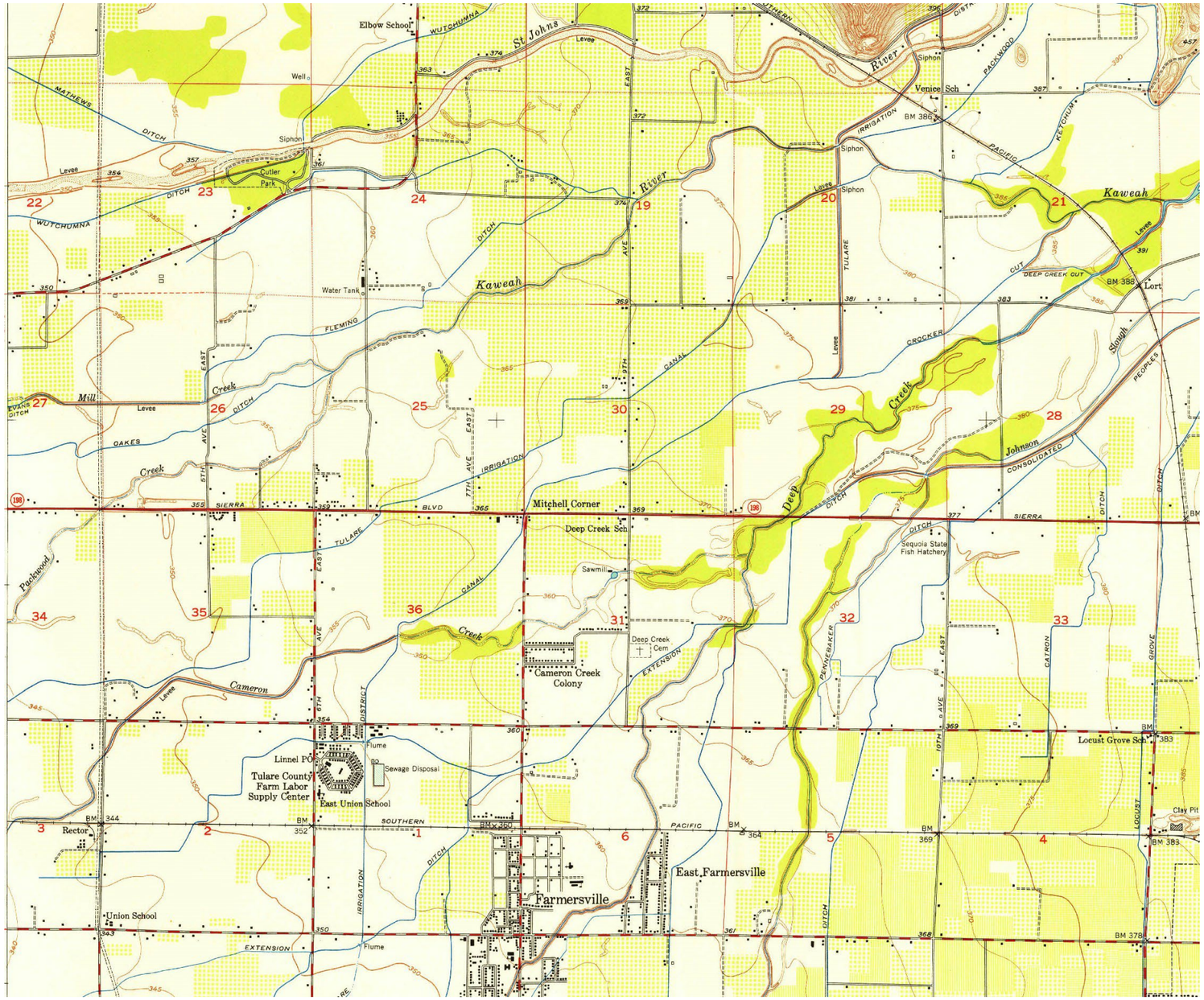


Figure 11. An excerpt from a 1950 USGS topographical map that identifies the alignment of Cameron Creek and the TID Canal. Source: USGS 1950.



Figure 12. A 1956 aerial photograph that identifies the alignment of Cameron Creek and the TID Canal. Source: USDA 1956.

2.5 ELIGIBILITY CRITERIA FOR WATER CONVEYANCE SYSTEMS

The period of significance for historic water conveyance systems begins with the initial date of construction and considers any alignment changes that have been made over time. The period of significance must also consider the construction history of the linear systems, which may have been constructed and/or reconstructed or realigned by individuals, collectives, and/or irrigation districts and water companies over time.

Main Canals, Laterals, and Ditches
Main canals, laterals, or ditches can be individually eligible for the NRHP (Criteria A-D) and CRHR (Criteria 1-4). While the following criteria was developed for the Friant-Kern Canal, it is still applicable to smaller irrigation systems:[3]

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: They are the result of the direct efforts of a prominent individual associated with the development of the local area or region and are the most prominent feature associated with that individual.

Criterion C/3: They represent the distinctive characteristics of canal design and/or methods of construction used during the period of construction, which may include solving engineering design problems due to topography, grade, length, and natural obstacles, and resulted in complex or innovative solutions; they are among the best or a rare surviving example of a distinctive type of water conveyance structure; they represent the evolving technology in the engineering, design, and construction of water conveyance structures; they were identified during the construction period as an individually significant feature; or they embody the work of a significant engineer or builder.

Criterion D/4: They have the ability to yield information important to understanding the history of the local area or region that cannot be found in historical documentation.

Integrity
The need for continual maintenance and repairs to canals requires special consideration of integrity. Irrigation systems are constantly evolving as features are upgraded, repaired, or replaced. Alterations made to canals during the period of significance, and even subsequent thereto, may not nullify eligibility if a canal retains certain key qualities. Most important are integrity of location, association, and overall design configuration of the conveyance prism (i.e. depth and width) and water control features. A canal which has retained its original form and associated appurtenant features has a high degree of integrity. It is not uncommon for canal lining to be replaced, or for previously unlined segments to be lined. Such changes may not preclude a canal's eligibility if

[3] The section has been excerpted and adapted from Heather K. Norby and Stephen R. Wee, Historic Property Survey Report: Friant Kern Canal, JRP Historical Consulting, 2019:52-53.

replacement features are in-kind, or they do not significantly damage the canal's historic association or its overall design. If—in addition to integrity of association, location, and overall design—the historical setting and feeling of a canal are maintained, then the likelihood is even higher that an altered canal could remain eligible. On the other hand, if an entire canal is piped, it would no longer convey any of its original design, workmanship, materials, or historical association and would not be contributing. Conversely, partial piping of a significant canal may not preclude eligibility if a majority of a canal is still open and intact.

Appurtenant Canal Features[4]

Although appurtenant canal features are all operationally and thematically related to canals/laterals/ditches, each feature type serves a specific purpose. These features can be divided into five categories of structures: conveyance, regulating, protective, water measurement, and bridges. The first four of these types were built to function as part of the canal, while the bridges were built to function independently of the canal.

1. Conveyance Structures

Conveyance structures are features such as inverted siphons, drops, chutes, flumes, tunnels, and pipelines that are used to safely transport water from one location to another traversing various existing natural and manmade topographic features along the way. There are two types of pipelines, those that carry water below ground and those that transport water above ground.

2. Regulating Structures

Regulating structures are used to raise, lower, or control the release and volume of the water flow. Regulating structures that are at the source of the water supply include headworks and turnouts. Headworks control the release of water into the canal, and they are often downstream from a major diversion or storage facility. Regulating structures along the course of a canal include turnouts, checks, check-drops, radial gates, reservoirs, and diversion structures. The smaller regulating structures like checks and turnouts are basic components of an irrigation system.

3. Protective Structures

Protective structures protect the canal system and adjacent property from damage which would result from uncontrolled storm runoff or drainage water, or an uncontrolled excess of flow within the canal. Several different types of structures perform this function, including overchutes, drainage inlets, siphon spillways, and wasteways.

4. Water Measurement Structures and Objects

Water measurement structures are used to gauge water flow and ensure its equitable distribution. Many different types of water measurement structures are used in irrigation systems.

5. Bridges

Bridges crossing canals range from single-lane bridges, multi-lane highway bridges, farm bridges, pedestrian bridges, and maintenance bridges.

[4] Ibid., 53-54.

Significance

Secondary to the canals in distributing water are the thousands of appurtenant features. With the exception of bridges, these appurtenant features are important to the overall operation of the main canals yet are too small in size and repetitive in design to merit individual eligibility. Even though bridges cross canals and can be physically tied to the canal prism, bridges have no connection to the operation of the TID and therefore merit separate evaluation from other appurtenant features. Bridges would rarely be individually eligible for the NRHP in association with this historic context.

Registration Requirements

Appurtenant canal features can be eligible for listing in the NRHP and the CRHR for the following reasons:

Criterion A/1: They are directly associated with important events that occurred along canals;

Criterion B/2: not applicable;

Criterion C/3: They are among the best or a rare surviving example of a distinctive type of appurtenant canal feature; they represent the evolving technology in the design of appurtenant canal features; 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;

Criterion D/4: They have the ability to yield information important to understanding the history of the system.

Integrity

As with canals, many appurtenant features are upgraded, altered, or even replaced over time due to ongoing maintenance needs. The integrity of a structure's historic materials, workmanship and design is essential for NRHP eligibility under any criterion. Location is of primary importance under Criterion A and C — a structure will rarely qualify under this criterion if it does not remain on its historic site along its associated canal.

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. Conveyance systems are typically eligible for listing in the NRHP under Criteria A and/or C.

The CRHR Criteria and registration requirements for conveyance systems mirror the NRHP Criteria and registration requirements. Conveyance systems are typically eligible for listing in the CRHR under Criteria 1 and/or 3.

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3. ARCHIVAL RECORDS AND SACRED LANDS FILE SEARCHES

3.1 ARCHIVAL RECORDS SEARCH

To determine whether the Project APE had been previously surveyed for cultural resources, and/or whether any such resources were known to exist within or near to it, staff of the Southern San Joaquin Valley Information Center (SSJVIC) conducted an archival records search on June 10, 2024. The records search was completed to determine: (i) if pre-contact or historic-era cultural resources had previously been recorded within the Project APE; (ii) if the Project APE had been systematically surveyed by archaeologists prior to the initiation of this fieldwork; and/or (iii) whether the area surrounding the proposed Project was known to contain archaeological sites or built environment resources and to thereby be culturally sensitive. Records examined included archaeological site files and maps, the NRHP, Historic Property Data File, California Inventory of Historic Resources, and the California Points of Historic Interest. The records search included the Project APE and a 0.5- mi. buffer.

According to the SSJVIC, three previous studies (TU-01383, TU-01690, TU-1966) have been conducted within the Project APE (Table 1). Approximately five percent of the Project APE has been previously studied. An additional 12 previous studies were identified within the 0.5-mi. buffer.

The SSJVIC data identified three previously recorded cultural resources (P-54-003229, P-54-004832, and P-54-004877) within the APE (Table 2). An additional 13 previously recorded cultural resources were identified within 0.5 mi. of the Project APE. The closest of these resources is less than 0.1 mi. from the Project APE. The results of the SSJVIC records search are available in Confidential Appendix A.

Table 1. Previous Reports

Report #	Year	Author	Title	APE Relationship
TU-00134	1998	Parr, Robert E. and Sutton, Mark Q./ Center for Archaeological Research, California State University, Bakersfield	Archaeological Assessment of the Tulare Irrigation District Main Canal Lining Project, Tulare County, California	Outside
TU-00449	1994	Roop, William/ Archaeological Resource Service	A Cultural Resources Evaluation of an Approximately 40 Acre Parcel South of East Tulare Avenue and East of McAuliff Street, Visalia, California	Outside
TU-01144	2002	Cherry, Nikki/ ARCADIS Geraghty & Miller	FCC011219G (Second Submittal) Section 106 Review for One Telecommunication Site	Outside
TU-01167	2002	Villacorta, Estella/ GeoTek, Inc.	Section 106 Review, GeoTek Project #0032SA2-017B Caldwell Avenue, Visalia, California 93292	Outside

Report #	Year	Author	Title	APE Relationship
TU-01171	2003	Wren, Donald G./ Individual Consultant	A Cultural Resource Study: Park Creek Village Apartments, APN #128-210-001, Farmersville, California	Outside
TU-01383	2010	Parr, Robert E./ Cal Heritage	Cultural Resource Assessment for the Southern California Edison Company Rector Substation Waterline Improvement Project near the City of Visalia, Tulare County, California (WO 800249915)	**Within**
TU-01659	2009	Haley, Kathryn/ ICF Jones & Stokes	Historic Property Survey Report for Avenue 280 Road Widening Project, Tulare County, California	Outside
TU-01659A	2009	Haley, Kathryn/ ICF Jones & Stokes (for Cal Trans)	Avenue 280 Road Widening Project Historic Resources Evaluation Report	Outside
TU-01659B	2009	O'Brien, Traci/ ICF Jones & Stokes (for Cal Trans)	Avenue 280 Road Widening Project Archaeological Survey Report	Outside
TU-01690	2014	Travers, Aniela/ EBI Consulting	Cultural Resources Survey Farmersville West/CVU3073 28685 Road 148, Visalia, Tulare County, California	**Within**
TU-01764	2017	Foglia, Shannon E, Cooley, Theodore G., and Miller, Chandra/ AECOM	Cultural Resources Survey Report for the Proposed Southern California Edison North of Magunden Transmission Line Rating Remediation Project, Kern and Tulare Counties, California	Outside
TU-01770	2017	Chandler, Evelyn/ Paleo Solutions, Inc.	Archaeological Survey Report for the Southern California Edison Company Transmission Line Rating Remediation (TLRR) Project for the Rector Material Yard, Tulare County, California	Outside
TU-01936	2022	Sauls, Consuelo Y./ Taylored Archaeology	Phase I Cultural Resources Assessment for the Higgin's Ranch Annexation and Tentative Subdivision Map Project, City of Visalia, Tulare County, California	Outside
TU-1966	2022	Carey, Peter A., Whitley, David S., and Azpitarte, Robert/ASM Affiliates, Inc.	Phase I Survey, Pearl Woods Subdivision Project, Tulare County, California	**Within**
TU-01977	2021	Andrews, Sheri and Whitley, David S./ ASM Affiliates, Inc.	Class III Inventory/Phase I Survey, Tract 92 Water System Consolidation and Upgrade Project, Tulare County, California.	Outside

Table 2. Previously Recorded Resources

Primary #	Type	Description	Eligibility Status	APE Relationship
P-54-000016	Prehistoric-era site	GWH 132. J-90 Old Broder	Unknown	Outside
P-54-000107	Prehistoric-era site	Lithic scatter	Unknown	Outside
P-54-004626	Historic-era structure	Southern Pacific Railroad; San Joaquin Valley Railroad	Determined not eligible	Outside
P-54-003229	Historic-era structure	Wylie Hinds Ranch	Unevaluated	**Within**
P-54-004832	Historic-era structure/ District element	Big Creek East & West Transmission Line	Determined eligible	**Within**

Primary #	Type	Description	Eligibility Status	APE Relationship
P-54-004877	Historic-era structure	Cameron Creek Channel and Levees	Unevaluated	**Within**
P-54-004878	Historic-era structure	PL-31	Unevaluated	Outside
P-54-004881	Historic-era structure	PL-38	Unevaluated	Outside
P-54-004883	Historic-era structure	PL-41	Unevaluated	Outside
P-54-005066	Historic-era structure	3415 E. Caldwell Ave	Recommended not eligible	Outside
P-54-005067	Historic-era structure	3800 E. Caldwell Ave	Recommended not eligible	Outside
P-54-005221	Historic-era structure/ District element	Rector Substation	Determined Eligible	Outside
P-54-005289	Historic-era structure	Bliss Ditch/ CWA20-231-1	Recommended not eligible	Outside
P-54-005296	Historic-era structure	Tulare Irrigation District Canal	Unevaluated	Adjacent
P-54-005667	Historic-era structure	Extension Ditch	Unevaluated	Outside
CHL 471	Historic-era road/route	Butterfield Stage Route	California Historic Landmark	Outside

3.2 PREVIOUSLY RECORDED RESOURCE WITHIN THE APES

Cameron Creek (P-54-004877)

A short segment of Cameron Creek and its associated levee was recorded but not evaluated in 2007 (Armstrong and MacDonald 2007).

SCE Big Creek Hydroelectric System, East & West 220kV Transmission Line (P-54-004832)

According to Urbana Preservation & Planning, LLC,

> The Big Creek East & West 220kV Transmission Line is a contributing element to the NRHP / CRHR listed Big Creek Hydroelectric System Historic District.
>
> The Big Creek Hydroelectric System Historic District has been determined eligible for NRHP listing by the California State Historic Preservation Officer (SHPO) by consensus. The BCHSHD includes the Big Creek Hydroelectic [*sic*] System East & West Transmission Line and its modern-day segments identified as Big Creek #1-Rector, Rector-Vestal #1, Magunden-Vestal #1, Magunden-Pastoria #1, Pardee-Pastoria East, Pardee-Sylmar #1, Eagle Rock-Sylmar East, Big Creek #1-Powerhouse #2, Powerhouse #2-Powerhouse #3, Big Creek #3-Rector, Rector-Vestal #2, Magunden-Vestal #2, Magunden-Pastoria #2, Pardee-Pastoria West, Pardee-Sylmar #2, and Eagle Rock-Sylmar West 220kV Transmission Lines.
>
> For its direct association with the Big Creek Hydroelectric System, as the first high-voltage transmission line constructed from Big Creek to coney electricity [*sic*] to and support industrialization of the Los Angeles region, and for its embodiment of innovative electrical engineering technicques [*sic*] at an electric power conveyance system between 1912-1929, the 241-mile Big Creek Hydroelectric System Historic East & West 220kV Transmission Line is eligible for inclusion on the National

Register of Historic Places Criterion A, B, and C and the California Register of Historic Places under Criteria 1, 2, and 3 as a contributing element to the BCHSHD within the established 1911-1929 period of significance (Urbana Preservation & Planning 2020).

Wylie Hinds Ranch (P-54-003229)

The ranch was recorded in 1980 with the intention of recordation of a site that no longer exists and has no known built environment associated features (Ramsey 1980). This resource is not considered further in this report.

3.3 SACRED LANDS FILE

As part of the CEQA process, the Native American Heritage Commission (NAHC) was contacted to request a list of Tribes traditionally and culturally affiliated with the Project APE, as well as a Sacred Lands File (SLF). On June 10, 2024, the NAHC responded with negative SLF results and 21 Tribal contacts from 11 Tribes. Outreach letters were mailed and emailed to all listed Tribes on July 29, 2024. No responses were received. NAHC request, NAHC results, Tribal outreach letters, and Tribal responses can be found in Confidential Appendix B.

4. METHODS AND RESULTS

4.1 FIELD METHODS

An intensive Class III inventory/Phase I survey of the Project APE was conducted by ASM Assistant Archaeologist Daniel Ware, B.A., on July 30, 2024. The Class III inventory/Phase I survey included a review of the Project APE for the presence of built environment features. The field methods employed also included intensive pedestrian examination of the ground surface for evidence of archaeological sites in the form of artifacts, surface features (such as bedrock mortars, historical mining equipment), and archaeological indicators (e.g., organically enriched midden soil, burnt animal bone); the identification and location of any discovered sites, should they be present; tabulation and recording of surface diagnostic artifacts; site sketch mapping; preliminary evaluation of site integrity; and site recording, following the California Office of Historic Preservation (OHP) Instructions for Recording Historic Resources using California Department of Parks and Recreation (DPR) series 523 forms. Parallel survey transects spaced at maximum intervals of 15 meters (m) apart were employed for pedestrian survey of the 16.1 ac. Project APE.

4.2 SURVEY RESULTS

4.2.1 Built Environment Results

Background research, field survey, and contemporary aerial photographic surveys revealed several built environment resources associated with the three previously identified built environment resources, consisting of the historic-era Cameron Creek Channel and Levees (P-54-004877), Wylie Hinds Ranch (P-54-003229), and Big Creek Hydroelectric System (P-54-004832). Within the three APEs (Measurement Check, Rector Check, and Lovers Check), there are segments of Cameron Creek referenced that function as part of TID and other irrigation districts.

Rector Check Segment (P-54-004877)

A fallen utility post (14 in. in diameter) was noted in the Rector Check APE. It was lying across the canal, likely used as a footbridge by locals.

Cameron Creek (P-54-004877)

This section of Cameron Creek was present within the APE. Within the Lovers Check APE, riprap was present throughout (Figure 13). The creek prism is trapezoidal in shape and of earthen material. This section is primarily dry with incremental standing water. The entire section of the creek is 40 ft. across. The base is 15 ft. across. The walls of the creek bed are both 6 ft. high and approximately 5 ft. wide. Along the north bank, the dirt road functions as a levee without a berm and is 15 ft. across. Along the south bank, the dirt road functions as a levee without a berm and is also 15 ft. across. Both roads function as levees without berms and are the same height as the surrounding land. Orchards are present to the south. Empty fields exist to the north. Modern trash was found along the length of the entire segment. Wall erosion was noted along the east side of the south bank.



Figure 13. Lovers Check APE segment of Cameron Creek, facing west.

Within the Rector Check APE, the creek is completely dry (Figure 14). Dirt roads that function as levees are present on both sides and are the same height as the surrounding land. The north levee road is 17 ft. wide. The south levee road is 11 ft. wide. The walls of the creek bed are approximately 8 ft. wide. The north wall is approximately 8 ft. high. The south bank wall is approximately 13 ft. high. These heights stay consistent throughout the length of the segment. The base of the creek bed is 20 ft. across. The creek is approximately 36 ft. wide. Riprap and modern refuse are present throughout the entire segment. Fallow fields and orchards are interspersed on both sides of the segment. A private property with an associated farm bridge across the canal is present along the southeast bank.



Figure 14. Rector Check APE segment of Cameron Creek, facing southwest.

Within the Measurement Check APE, the segment of Cameron Creek is completely dry (Figure 15). Roads that function as levees are present on both sides of the creek segment. The southern levee road is 13 ft. wide. The northern levee road is 13 ft. wide. The levee roads are 3 ft. higher than surrounding orchard ground. The base of the creek bed is 20 ft. wide. The creek bed walls are 15 ft. high and 10 ft. wide. The creek segment is 40 ft. wide. A basin is adjacent to Road 156 and immediately south of the creek, but outside the APE. A second basin just east of the canal is also outside the APE. Orchards surround the Measurement Check APE, with the exception of the two basins to the south and east. Riprap and modern trash are present throughout this segment of the creek.



Figure 15. Measurement Check APE segment of Cameron Creek, facing north, northeast.

Culvert

Within the Measurement Check APE, a single culvert was present along Sixth Avenue East. The culvert measures 11 ft. from opening to base of the canal. It is made of cast concrete, 2 ft. thick. A steel guardrail protects the culvert. Three concrete supports are present underneath the culvert and measure 1 ft. wide each

Farm Bridge

Within the Rector APE is a one-lane, farm bridge that facilitates access to both sides of Cameron Creek for agricultural purposes. The bridge measures 12.5 ft. wide, 1.5 ft. deep, approximately 5 ft. tall. The topside deck is formed concrete with the girder composed of wood beams that measure 5 in. thick. The foundations on either side are cast concrete.

County Bridge at Road 148

The bridge in the Rector Check APE is on Road 148, approximately 1,750 ft. south of Avenue 288 (Figure 16). The bridge is made of cast concrete which measures 20 ft. in length and 1 ft. wide. Metal guardrailing is present along the length of the top of the bridge. According to the National Bridge Inventory the bridge was constructed in 1951 and was determined not eligible for listing in the NRHP (U.S. Federal Highway Administration 2022). Underneath the road, a box culvert was observed. The culvert is approximately 1,070 ft. east of Avenue 288. The culvert opening is 6 ft. from the base of the creek and is cast concrete. It is 8 in. wide by 32 in. tall by approximately 70 ft. long. Metal road barriers are present on either side, each approximately 25 ft. long. A metal stamp on the western concrete abutment reads: "Tulare County BM 149-288". The identified "1981" was visible but could not be photographed due to heavy traffic.



Figure 16. County Bridge at Road 148, facing northeast.

Transmission Corridor (P-54-004832)

The Big Creek Hydroelectric System Historic District intersects the APE; however, the transmission lines run above the APE (Figure 17), and no portions of the built resources are within the APE. P-54-004832 has already been determined eligible for NRHP listing by the California State Historic Preservation Officer (SHPO) by consensus. Urbana Preservation & Planning, LLC 2020).



Figure 17. Transmission Corridor (P-54-004832), facing south, southeast.

Turnout

A turnout from the TID into the Cameron Creek was present on the eastern terminus of the Measurement Check APE (Figure 18). Based on historical aerials, the TID added an individual farm turnout on Cameron Creek in 2009, and it is considered a modern resource (Figure 18). Since the Cameron Creek turnout is under 50 years in age, it does not meet the age threshold for consideration in the NRHP.



Figure 18. TID Turnout, facing north, northwest.

4.2.2 Archaeological Results

The proposed Project APE consists of water conveyance features surrounded by agricultural fields, paved roads, and unpaved roads (see Figures 13 through Figure 15). Much of the Project APE appears to have been disturbed to create the extant water conveyance features and roads (see Figure 15 through Figure 17). Due to the previous disturbances, ground surface visibility within the APE was excellent (greater than 95 percent) except for the portions of the water conveyance features that were filled with water for the Class III inventory/Phase I survey. Soils consisted of tan to brown sandy loam throughout the Project APE. Non-native vegetation inhibited visibility. Modern refuse including plastic buckets, milled lumber, plastic sheeting, concrete fragments, and a mattress were observed.

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

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5. SUMMARY, EVALUATION, ASSESSMENT OF EFFECTS, AND RECOMMENDATIONS

An intensive Class III inventory/Phase I survey was conducted for the Cameron Creek Check Structure Linear Recharge Project, Tulare County, California. A records search was conducted at the Southern San Joaquin Valley Information Center, California State University, Bakersfield. This search indicated that much of the Project APE had not been previously surveyed, and that three built environment resources were recorded within the Project APE. An NAHC SLF search was conducted for the Project APE and the NAHC responded with negative SLF results.

A Class III inventory/Phase I survey fieldwork of the Project APE was conducted in July 2024 with parallel transects at 15 m. intervals. Three resources, consisting of the Wylie Hinds Ranch (P-54-003229), Big Creek Hydroelectric System (P-54-004832), and a section of Cameron Creek (P-54-004877) were recorded as intersecting with the APE. An evaluation of these resources is provided below.

ASM identified a turnout within the Measurement Check APE. ASM considered whether it was potentially a contributing resource to TID's Cameron Creek. Based on historical aerials, the TID added an individual farm turnout on Cameron Creek between 2005 and 2009, and is a modern resource. Since the Cameron Creek turnout is under 50 years in age, it does not meet the age threshold for consideration in the NRHP. ASM considered if the Cameron Creek turnout could be eligible under Criteria Consideration G. The National Register excludes properties that have achieved significance within the last 50 years, but allows some exceptions under Criteria Consideration G for properties of "exceptional importance" (NPS 1997: 41).To exhibit exceptional importance, a property must first be eligible under one of the four standard criteria and must be either associated with an event of extraordinary importance or be considered part of an entire category of resources so fragile that survivors of any age are unusual. Since the Cameron Creek turnout in the APE is neither associated with an event of extraordinary importance nor could be considered fragile, this resource does not qualify for Criteria Consideration G and is not considered a contributing historic property under Section 106 or a contributing historical resource under CEQA.

No additional built environment resources and no archaeological resources were identified within the APE.

5.1 EVALUATION

Cameron Creek Segments within APEs (P-54-004877)

The proposed Project includes three linear segments of Cameron Creek referenced as Measurement Check APE, Rector APE, and Lovers APE, and Cameron Creek functions as part of TID and other irrigation districts. The entire TID system has not been recorded and evaluated as a potential historic district. While the period of significance for a potential TID historic district may be 1889 (when the TID system was organized and absorbed existing waterways) through 1964 (the end of the mid-twentieth century era of redevelopment within the TID), it is outside the purview

of this Project to record and evaluate the entire TID system. As part of this project, ASM has evaluated segments of Cameron Creek as a potential contributor to a TID historic district.

TID's first program of significant improvements was 1892–1925. The second TID improvement program was completed during 1951–1964. As previously mentioned, there was a drought during 1929–1931 and 1933–1934 when little to no water flowed in Cameron Creek, but a flood in 1932 overtook Cameron Creek and caused massive damage. Therefore, the potential period of significance for Cameron Creek as a feature of the TID system is 1892–1925 (when Cameron Creek was utilized as a conveyance channel and was improved during the first program of TID system improvements), and 1935 (when the drought ended) to 1964 (the end of second improvement program).

ASM considered the potential eligibility of the segments of Cameron Creek within the Project APEs as a potential contributor to a historic district eligible for listing in the NRHP/CRHR under Criteria A/1, B/2, C/3, and D/4. Given that Cameron Creek is a natural creek that has been partially channelized and is not a built resource, ASM did not consider the possibility that Cameron Creek is potentially individually eligible for listing in the NRHP/CRHR under Criteria A/1, B/2, C/3, and D/4. The segments of Cameron Creek recorded within the APE are potentially eligible under NRHP/CRHR Criterion A/1 as part of the TID system. Cameron Creek is a primary waterway of the TID system as it carries water for the TID system and other irrigation districts. The TID system laid the foundation that facilitated agricultural growth and provided a consistent water supply that increased and sustained settlement and development in the broader areas of Tulare and Visalia, California. The TID system transformed the type of agricultural crops that could be farmed within the boundaries of the TID particularly high-revenue producing citrus that required more water deliveries than other crops. Therefore, the recorded segments of Cameron Creek meet NRHP/CRHR under Criteria A/1 and an assessment of integrity is warranted.

ASM assessed the integrity (location, design, setting, materials, workmanship, feeling, and association) of the three segments of Cameron Creek within the Project APEs with periods of significance of 1892–1925 and 1935–1964. ASM was not able to locate U.S. Army Corps of Engineers records that confirmed Cameron Creek channelization efforts or levee/road construction within the APEs, but other sources of historical information provided dates of likely improvements. Based on available historical documents, ASM identified only one alignment alteration of Cameron Creek segments within the APEs, which is within the Rector APE and had been altered between 1926 and 1950. Channelization and levee/road construction did not change the alignment of the other two segments, although some other segments of Cameron Creek were realigned outside the APE. It is expected that a creek course, which is a natural body of water, would naturally change over time due to upstream water users and flooding events. Although the segment of Cameron Creek within the Rector APE was modified, it was within the second period of significance. Some segments outside the APEs had some realignments, which is expected of a natural waterway given the impacts of flood events and efforts to reduce erosion, but the recorded segments of Cameron Creek within the APEs retain high integrity of *location* and *setting*. The width of Cameron Creek varies within the three segments from 9 ft. (Measurement APE) to 18 ft. (Rector APE) to 20 ft. (Lovers APE). As a natural waterway, it is not a designed course and the width changed over time with upstream water users and flood events prompting modifications through channelization. The creek remains unlined and roughly retains the same form. Therefore,

it retains high integrity of *design* and *materials*. The recorded segments of Cameron Creek properly convey its history as an integral waterway for the TID system. As such, the recorded segments of Cameron Creek retain high integrity of *feeling*. Finally, Cameron Creek is a significant resource in agricultural development and the history of the surrounding area and continues to play a significant role in the present day. As such, the recorded segments of Cameron Creek retain high integrity of *association* to the themes of irrigated agriculture. Given that the entire TID system and the entire Cameron Creek has not been evaluated, ASM's assessment is based on available information for the segments within the APEs. Based on that information, ASM assumes that the segments of Cameron Creek within the APEs are eligible for listing in the NRHP/CRHR under Criteria A/1 as a contributor to the TID system for the periods of significance of 1935–1964, which is when they may have been significantly improved last.

ASM considered whether the recorded segments of Cameron Creek are eligible under NRHP/CRHR Criteria C/3. It is expected that a creek course, which is a natural body of water, would naturally change over time due to upstream water users and flooding events. However, other than channelization and levee/road construction, there are no built resources associated with the TID within the APEs that represent a distinctive characteristic of type, period, or method of construction.

ASM then considered whether the recorded segments of Cameron Creek within the APEs are eligible under NRHP/CRHR Criteria D/4. Criterion D is not applicable as the segments of Cameron Creek do not have the potential to provide information about history or prehistory that is not available through historic research. As such, ASM recommends the recorded sections of Cameron Creek as not eligible under NRHP/CRHR Criteria D/4.

In summary, the recorded segments of Cameron Creek are recommended assumed eligible under NRHP and CRHR under Criteria A/1 as a contributor to TID system historic district with periods of significance of periods of significance of 1935–1964.

Culverts

Given that the culverts within the three APEs are associated with road construction and not Cameron Creek modifications, and because they will not be directly impacted by the proposed Project, ASM did not evaluate the culverts within the APE.

Farm Bridge

Within the Rector APE is a one-lane, farm bridge that facilitates access to both sides of Cameron Creek for agricultural purposes. The topside deck is formed concrete with the girder composed of wood beams. The foundations on either side are formed concrete. The bridge is not potentially eligible for listing to the NRHP as a contributor to a historic district. The precedent has already been set with the Friant-Kern Canal (FKC) evaluation and SHPO concurrence that categorically identified farm bridges as non-contributing resources for the larger and more expansive FKC (Norby and Wee 2019; Polanco 2019) (Appendix D). Therefore, a farm bridge associated with a

creek within the TID system would similarly not embody characteristics to support the context and eligibility under Criteria A/1 or C/3.

County Bridge at Road 148

In 2022, a National Bridge Inventory conducted by the U.S. Federal Highway Administration identified the Road 148 bridge constructed in 1951 as not eligible for listing in the NRHP (U.S. Federal Highway Administration 2022).

Transmission Corridor (P-54-004832)

The Big Creek Hydroelectric System Historic District has already been determined eligible for NRHP listing by the California State Historic Preservation Officer (SHPO) by consensus (Urbana Preservation & Planning, LLC 2020).

5.2 ASSESSMENT OF EFFECTS

The proposed Project will result in construction of three measurement checks. The proposed Project will only directly effect Cameron Creek and its associated levee/road. While the measurement check gates will be new structures on Cameron Creek, the project will not require widening Cameron Creek. The measurement check structure footprints will permanently impact both banks of Cameron Creek. As such, the Project will result in some physical effects to Cameron Creek (P-54-004877). The Secretary of the Interior's *Standards for the Treatment of Historic Properties for Rehabilitation (Standards for Rehabilitation*) allow for reasonable change to a historic property, including related new construction and changes to setting, provided that change does not destroy character-defining features unnecessarily or impair a historic property's ability to convey its significance. Thus, following is an analysis of the proposed Project for compliance with the *Standards for Rehabilitation*.

Per the *Standards for Rehabilitation*, Cameron Creek would continue to fulfill its function and support TID in irrigating agricultural lands through water management as it has historically. The addition of measurement check gates will be an important addition to the TID system for waterflow regulation. The historic character of Cameron Creek would be preserved because the majority of extant materials, features, and spatial relationships that characterize the linear resource would be retained. Only a small amount of the historic materials will be impacted (i.e. soil removed for construction will be replaced post construction) and will result in an almost immeasurable percent change to the entire Cameron Creek. The spatial relationship between Cameron Creek and its setting would remain unchanged. The new measurement checks would be differentiated from the historic features of Cameron Creek, but still visually compatible in terms of materials, features, size, scale, and proportion. Additionally, views of the setting from the APE, including Cameron Creek, will remain the same. After completion of the project, Cameron Creek will remain in the same status of assumed eligibility for listing in the NRHP and CRHR as a contributing feature of the TID system. Therefore, ASM recommends that the Project will not result in an adverse effect to historic properties under Section 106 of the NHPA and a less-than-significant impact to a historical resource pursuant to CEQA.

5.3 RECOMMENDATIONS

Based on the above analyses and findings, ASM recommends a finding of ***no adverse effect*** under NHPA and a ***less-than-significant impact*** under CEQA. The proposed Project will add three measurement check gates. However, the proposed Project follows the *Standards for Rehabilitation;* after the Project is completed, the overall historic character of Cameron Creek and the TID system will remain, and it will remain assumed eligible for the NRHP and CRHR.

It is further recommended that, in the unlikely event that previously unrecorded cultural resources are identified during Project construction, work be halted within a 100 ft. radius of the find and a qualified archaeologist be contacted to evaluate the newly discovered resource.

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REFERENCES

Adams, Frank
1929 *Irrigation Districts in California*. Sacramento: California State Printing Office.

Advisory Council on Historic Preservation
n.d. National Register Evaluation Criteria. Electronic document, http://www.achp.gov/nrcriteria.html. Accessed June 18, 2018.

Armstrong, Matthew and Laura MacDonald
2007 Cultural Resources Inventory of the Southern California Edison Company Cross Valley Transmission Project, Tulare County, California. Submitted to Southern California Edison Company, Rosemead, CA.

Austin, John T.
2012 *Floods and Droughts in the Tulare Lake Basin*. Available at http://www.tularebasinwatershedpartnership.org/uploads/2/1/4/7/21473344/floods_and_droughts_in_tulare_lake__basin_secondedition_2.pdf. Accessed August 29, 2024.

Boyd, W.H.
1997 *Lower Kern River Country 1850-1950: Wilderness to Empire*. Kings River Press, Lemoore.

Cook, S. F.
1978 Historical Demography. In *Handbook of North American Indians, Volume 8, California*, R. F. Heizer, editor, pp. 91-98. Washington, D.C., Smithsonian Institute.

Culleton, Brendan J.
2006 Implications of a Freshwater Radiocarbon Reservoir Correction for the Timing of the Late Holocene Settlement of the Elk Hills, Kern County, California. *Journal of Science* 33:1331-1339.

Driver, H.E.
1937 Cultural Element Distributions: VI, Southern Sierra Nevada. *University of California Anthropological Records* 1(2):53-154. Berkeley

Elsasser, A.
1962 *Indians of Sequoia and Kings Canyon National Parks*. Three Rivers: Sequoia Natural History Association.

Fenenga, F.
1952 The Archaeology of the Slick Rock Village, Tulare County, California. *American Antiquity* 17:339-347.

Fenenga, G.
1993 Test Excavations at the Witt Site (CA-KIN-32). In W.J. Wallace and F.A. Riddell, editors, pp. 25-38, *Finding the Evidence: The Quest for Tulare Lake's Archaeological Past*. Contributions to Tulare Lake Archaeology II. Redondo Beach, Tulare Lake Archaeological Research Group.

Fredrickson, D.A., and J. Grossman
1977 A San Dieguito component at Buena Vista Lake, California. *Journal of California and Great Basin Anthropology* 4:173-190.

Gayton, A.H.
1930 Yokuts-Mono Chiefs and Shamans. *University of California Publications in American Archaeology and Ethnology* 24. Berkeley, 361-420.
1948 Yokuts and Western Mono Ethnography. *University of California Anthropological Records* 10:1–290. Berkeley.

Gifford, E.W., and W.E. Schenck
1926 Archaeology of the Southern San Joaquin Valley. *University of California Publications in American Archaeology and Ethnology* 23(1):1-122.

Glennan, W.S.
1987a Concave-Based Lanceolate Fluted Projectile Points from California. *Prehistory of the Antelope Valley, California: An Overview*, R.W. Robinson, ed., Antelope Valley Archaeological Society, Occasional Papers No.1: 21-24.
1987b Evidence for Paleoeastern Culture Type in the Southwestern Great Basin. P*rehistory of the Antelope Valley, California: An Overview*, R.W. Robinson, ed., Antelope Valley Archaeological Society, Occasional Papers No.1:11-20.

Grunsky, C.E.
1898 Irrigation Near Fresno. *Water-Supply and Irrigation Papers of the United States Geological Survey, No. 18*. Washington, Government Printing Office.

Harrington, John Peabody
n.d. Yokuts ethnographic notes. National Anthropological Archives.

Hewes, G.
1941 Archaeological reconnaissance of the central San Joaquin Valley. *American Antiquity* 7:123-133.

Hemphill, Oscar
1945 *Agricultural Crop Report*. Tulare County Department of Agriculture. Available at https://agcomm.co.tulare.ca.us/pest-exclusion-standardization/crop-reports1/crop-reports-1940-1959/1945-crop-report/. Accessed September 4, 2024.

Horne, S.P.
1981 *The Inland Chumash: Ethnography, Ethnohistory and Archaeology*. Ph.D. dissertation, UCSB. University Microfilms, Ann Arbor.

Jones. T.L., G.M. Brown, L.M. Raab, J.L. McVickar, W.G. Spaulding. D.J. Kennett, A. York, and P.L. Walker
1999 Demographic Crisis in Western North America during the Medieval Climatic Anomaly. *Current Anthropology* 40:137-170.

JRP Historical Consulting Services
2009 North Kern Water Storage District, Lateral Canal 8-1: Inventory and Evaluations, Kern County, California. Prepared for North Kern Water Storage District.
2019 *Historic Property Survey Report: Friant Kern Canal*.

King, C., C. Smith, and T. King
n.d. *Archaeological Report Related to the Interpretation of Archaeological Resources Present at the Vasquez Rocks County Park*. Report on file, SCCIC.

Kroeber, A.L.
1925 Handbook of the Indians of California. *Bureau of American Ethnology, Bulletin 78*. Washington, D.C.

Levine, Yasha
2011 California Class War History: Meet the Oligarch Family That's Been Scamming Taxpayers for 150 Years, and Counting! Available online at http://exiledonline.com/california-class-war-history-meet-the-oligarch-family-thats-been-scamming-taxpayers-for-150-years-and-counting/; accessed November 8, 2023.

Los Angeles Almanac
2024 "Once America's Most Productive Agricultural County." Available at https://www.laalmanac.com/agriculture/ag721.php. Accessed September 4, 2024.

Mankins, Elvin O.
1959 County of Tulare California: 1959 Annual Report. Available at https://agcomm.co.tulare.ca.us/pest-exclusion-standardization/crop-reports1/crop-reports-1940-1959/1959-crop-report/. Accessed September 4, 2024.

Menafee, Eugene L. and Fred A. Dodge
1913 *History of Tulare and Kings Counties, California*. Historic Record Company, Los Angeles.

Meyer, J., D. Craig Young, and Jeffrey S. Rosenthal
2010 *Volume I: A Geoarchaeological Overview and Assessment of Caltrans Districts 6 and 9.* Submitted to California Department of Transportation.

Moratto, M.
1984 *California Archaeology*. New York: Academic Press.

Morgan, W.A.
1914 *History of Kern County, California with Biographical Sketches*. Los Angeles: Historic Record Company.

Pacific Legacy, Inc.
2006 *Southern San Joaquin Valley Oil Fields Comprehensive Study*. Manuscript on file, BLM Bakersfield office.

Powers, Stephen
1971 The Yokuts Dance for the Dead. In *The California Indians: A Source Book* (second edition), edited by R.F. Heizer and M.A. Whipple, pp. 513-519. Berkeley, University of California Press (original 1877).
1976 *Tribes of California*. Berkeley, University of California Press (original 1877).

Preston, William L.
1981 *Vanishing Landscapes: Land and Life in the Tulare Lake Basin*. Berkeley, University of California Press.

Ramsey, Eleanor
1980 Historic Resources Inventory. Record on file at the Southern San Joaquin Information Center

Regional Water Management Group, Kaweah River Basin
2017 *Integrated Regional Water Management Plan: A Collaborative Effort of Stakeholders within the Kaweah River Basin.*

Robinson, W.W.
1948 *Land in California: The Story of Mission Lands, Ranchos, Squatters, Mining Claims, Railroad Grants, Land Scrip, Homesteads*. Oakland: University of California Press.

Rosenthal, J. S., White, G. G., & Sutton, M. Q.
2007 The Central Valley: A View from the Catbird's Seat. California Prehistory: Colonization, Culture, and Complexity(50):147-164.

Schiffman, R.A., and A.P. Garfinkel
1981 Prehistory of Kern County: An Overview. *Bakersfield College Publications in Archaeology, Number 1*.

Shultz, Tom
2000 *The Dairy Industry in Tulare County*. University of California Cooperative Extension.

Siefkin, Nelson
1999 Archaeology of the Redfeldt Mound (CA-KIN-66), Tulare Basin, California. M.A. Thesis, Department of Sociology and Anthropology, California State University, Bakersfield.

Sutton, M.Q.
1988a An Introduction to the Archaeology of the Western Mojave Desert, California. *Archives of California Prehistory, No. 14*. Salinas: Coyote Press.
1988b On the Late Prehistory of the Western Mojave Desert. *Pacific Coast Archaeological Society Quarterly* 24(1):22-29.
2009 People and Language: Defining the Takic Expansion into the Southern California. *Pacific Coast Archaeological Society Quarterly* 40(2, 3): 31-73.

Thompson, H.
1892 California State Engineering Department. Fresno Sheet. Electronic document online at https://ia802207.us.archive.org/6/items/dr_california-state-engineering-department-detail-irrigation-map-fresno-shee-5832002/5832002.jpg. Accessed December 2023.

TID (Tulare Irrigation District)
n.d. Tulare Irrigation District History. Available online at http://tulareid.org/district-profile; accessed November 8, 2021.

Tulare Advance-Register
1957 "Most Irrigation Ditches are Full." 30 December. Page 1.

Tulare County Board of Trade
1917 Bulletin. Available at agcomm.co.tulare.ca.us/pest-exclusion-standardization/crop-reports1/crop-reports-1917-1939/1917-crop-report/. Accessed September 4, 2024.
1939 Bulletin. Available at https://agcomm.co.tulare.ca.us/pest-exclusion-standardization/crop-reports1/crop-reports-1917-1939/1939-crop-report/. Accessed September 4, 2024.

Tulare Daily Times
1931 "Ditch-Tender Found Dead in TID Canal." 15 June. Page 1.

Urbana Preservation & Planning, LLC
2020 *Historic-Era Built Environment Survey Report, Transmission Line Rating Remediation Program | Kern River to Los Angeles Project, Kern and Los Angeles Counties, CA*. January.

U.S. Department of Agriculture (USDA)
1956 Aerial. Available at Nationwide Environmental Title Research, LLC.

U.S. Federal Highway Administration
2022 "National Bridge Inspection." Available at https://data.freep.com/bridge/California/tulare/rd-148-over-cameron-creek/06-46C0391/. Accessed August 30, 2024.

United States Geological Survey (USGS)
1926 "California (Tulare County) Exeter Quadrangle." Topography by E. S. Rickard. Surveyed 1924-1925.
1950 "Exeter Quadrangle, California-Tulare County." Topography by Kelsh plotter 1950, Culture and Drainage by Multiplex Methods from Aeiral Photographs 1946.

Visalia Times
1900 "About the City." Volume 16, Number 129. 22 January.

Visalia Times-Delta
1909a "Irrigation From Rivers and Wells Compared." 18 December. Page 20.
1909b "Tulare County, California." 18 December. Page 20.
1925 "Water May Be Scare Again in Some Canals: Tulare Irrigation District Doubting Summer." 14 March. Page 4.

W&S Consultants
1994 Phase II Test Excavations and Determinations of Significance at CA-LAN-2133, -2233, -2234, -2235, -2236, -2240, -2241 and -2242, Los Angeles County, California. Manuscript on file, CSUF AIC.
1999 Class III Inventory/Limited Archaeological Testing Program for the Manuscript on file, CSUB AIC.
2004 Class II Inventory of the Carrizo Plain National Monument, San Luis Obispo County, California. Report on file, BLM Bakersfield office.
2006 *Phase II Test Excavations and Determinations of Significance for the Tejon Mountain Village Project, Kern County, California*. Report on file, Tejon Ranch Company.

Wedel, W.
1941 Archaeological Investigations at Buena Vista Lake, Kern County, California. *Bureau of American Ethnology Bulletin* 130.

Whitley, D.S.
1992 Shamanism and Rock Art in Far Western North America. *Cambridge Archaeological Journal* 2(1):89-113.
2000 *The Art of the Shaman: Rock Art of California*. Salt Lake City: University of Utah Press.

Whitley, D.S., and M.P. Beaudry
1991 Chiefs on the Coast: The Development of Complex Society in the Tiquisate Region in Ethnographic Perspective. In *The Development of Complex Civilizations in Southeastern Mesoamerica*, edited by W. Fowler, pp. 101-120. Orlando: CRC Press.

Whitley, D.S., G. Gumerman IV, J. Simon, and E. Rose
1988 The Late Prehistoric Period in the Coso Range and Environs. *Pacific Coast Archaeological Society Quarterly* 24(1):2-10.

Whitley, D.S., J. Simon, and J.H.N. Loubser
2007 The Carrizo Collapse: Art and Politics in the Past. In *A Festschrift Honoring the Contributions of California Archaeologist Jay von Werlhof*, edited by R.L. Kaldenberg, pp. 199-208. Ridgecrest: Maturango Museum Publication 20.

Zimmerman, K.L., C.L. Pruett, and M.Q. Sutton
1989 A Clovis-Like Projectile Point from the Southern Sierra Nevada. *Journal of California and Great Basin Anthropology* 11:89-91.

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