FRESNO IRRIGATION DISTRICT

TURNOUT ON THE FRIANT-KERN CANAL AT BIG DRY CREEK PROJECT

DRAFT INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

JUNE 2024

PREPARED FOR:

Fresno Irrigation District
2907 South Maple Avenue
Fresno, CA 93725-2218

PREPARED BY:

PROVOST&PRITCHARD
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ACRONYMS AND ABBREVIATIONS

AB ..... Assembly Bill
Act ..... Fish and Wildlife Conservation Act
AF ..... acre-feet
APE ..... Area of Potential Effect
APN ..... Assessor's Parcel Number
BDC ..... Big Dry Creek
BMP ..... Best Management Practices
BPS ..... Best Performance Standards
BUOW ..... burrowing owl
CalEEMod ..... California Emissions Estimator Modeling (software)
CalFire ..... California Department of Forestry and Fire Protection
CARB ..... California Air Resources Board
CCAA ..... California Clean Air Act
CDFW ..... California Fish and Wildlife
CEQA ..... California Environmental Quality Act
CESA ..... California Endangered Species Act
CFR ..... Code of Federal Regulations
CFC ..... Chlorofluorocarbons
CFS ..... cubic feet per second
CGS ..... California Geological Survey
CH_4 ..... Methane
CHRIS ..... California Historical Resources Information System
CNDDB ..... California Natural Diversity Database
CNPS ..... California Native Plant Society
CO ..... Carbon Monoxide
CO_2 ..... Carbon dioxide
CO_2e ..... carbon dioxide-equivalents
County ..... Fresno County
CTS ..... California tiger salamander
CWA ..... Clean Water Act
District ..... Fresno Irrigation District
DOC ..... Department of Conservation

DTSC ..... Department of Toxic Substances Control
EFH ..... Essential Fish Habitat
EIR ..... Environmental Impact Report
EO ..... Executive Order
FEMA ..... Federal Emergency Management Agency
FID ..... Fresno Irrigation District
FKC ..... Friant-Kern Canal
FMMP ..... Farmland Mapping and Monitoring Program
FPPA ..... Farmland Protection and Policy Act
GAMAQI ..... Guide for Assessing and Mitigating Air Quality Impacts
GHG ..... Greenhouse Gas
GSP ..... Groundwater Sustainability Plan
GWP ..... Global Warming Potential
HFC ..... Hydrofluorocarbons
IPaC ..... U.S. Fish and Wildlife Service's Information for Planning and Consultation system
IS ..... Initial Study
IS/MND ..... Initial Study/Mitigated Negative Declaration
MBTA ..... Migratory Bird Act
MMRP ..... Mitigation Monitoring and Reporting Program
MND ..... Mitigated Negative Declaration
MOA ..... Memorandum of Agreement
MRZ ..... Mineral Resource Zones
MT CO_2e ..... Metric Tons of Carbon Dioxide Equivalent
NAHC ..... Native American Heritage Commission
ND ..... Negative Declaration
NEPA ..... National Environmental Policy Act
NKGSA ..... North Kings Groundwater Sustainability Agency
NMFS ..... National Marine Fisheries Service
N_2O ..... Nitrous oxide
NO_2 ..... Nitrogen Dioxide
NO_X ..... Nitrogen Oxides
NRHP ..... National Register of Historic Places
O_3 ..... Ozone
Pb ..... Lead

PCR .....Public Resource Code
PFC ..... Perfluorocarbons
PM_{10} ..... particulate matter 10 microns in size
$PM_{2.5}$ ..... particulate matter 2.5 microns in size
ppb .....parts per billion
ppm .....parts per million
Project .....Turnout on the Friant-Kern Canal at Big Dry Creek
ROG .....Reactive Organic Gases
ROW ..... right-of-way
RWQCB.....Regional Water Quality Control Board
SDWA .....Safe Drinking Water Act
SGMA.....Sustainable Groundwater Management Act
SHPO.....State Historic Preservation Officer
SJVAB.....San Joaquin Valley Air Basin
SJVAPCD .....San Joaquin Valley Air Pollution Control District
SKJF ..... San Joaquin kit fox
SO_2 .....Sulfur Dioxide
SO_X .....Sulfur Oxides
SSA .....Sole Source Aquifer
SSJVIC ..... Southern San Joaquin Valley Information Center
SR ..... State Route
SWPPP .....Storm Water Pollution Prevention Plan
SWRCB..... State Water Resources Control Board
USACE..... United States Army Corps of Engineers
USBR..... United States Bureau of Reclamation
USC ..... United States Code
USEPA.....United States Environmental Protection Agency
USFWS.....United States Fish and Wildlife Service
UST ..... underground storage tank
µg/m3.....micrograms per cubic meter

CHAPTER 1 INTRODUCTION

Provost & Pritchard Consulting Group (Provost & Pritchard) has prepared this Initial Study/Mitigated Negative Declaration (IS/MND) on behalf of the Fresno Irrigation District (Lead Agency) to address the environmental effects of the Turnout on the Friant-Kern Canal at Big Dry Creek Project (proposed Project). This document has been prepared in accordance with the California Environmental Quality Act (CEQA), Public Resources Code Section 21000 et seq. The District is the CEQA lead agency for this Project.

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

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

The CalEEMod Output Files, Biological Evaluation, and Class III/Phase I Survey are provided as technical appendices 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

Turnout on the Friant-Kern Canal at Big Dry Creek Project

2.1.2 Lead Agency Name and Address

Fresno Irrigation District
2907 South Maple Avenue
Fresno, CA 93725-2218

2.1.3 Contact Person and Phone Number

Lead Agency Contact

Laurence Kimura
Chief Engineer
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CEQA Consultant

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

2.1.4 Project Location

The proposed Project is located east of the City of Clovis in Fresno County, California, approximately 150 miles southeast of Sacramento and 105 miles northwest of Bakersfield. The Project site is located at mile post (MP) 14.6 on the west bank of the Friant-Kern Canal (FKC) near State Route 168E. The Project site is located within United States Bureau of Reclamation (USBR) right-of-way (ROW), which is known as Assessor's Parcel Number (APN) 150-061-20T. The rest of the Project site is located on APNs 150-061-18; 150-061-46 and 150-061-47. The centroid of the Project site is 36° 52' 12.30" N, 119° 35' 46.22" W. The Project site or Area of Potential Effect (APE) is identified as approximately 15 acres for biological and cultural surveys.

2.1.5 General Plan Designation and Zoning

Project Area	General Plan Designation	Zoning District
ONSITE	Agriculture	AE-20 (Exclusive Agricultural, 20-acre minimum) AE-40 (Exclusive Agricultural, 40-acre minimum)
ADJACENT LANDS	Agriculture	AE-20 (Exclusive Agricultural, 20-acre minimum) AE-40 (Exclusive Agricultural, 40-acre minimum)

2.1.6 Description of Project

District Background

Fresno Irrigation District (FID *or* District) was formed in 1920 under the California Irrigation Districts Act, as the successor to the privately owned Fresno Canal and Land Company. The assets of the company consisted of over 800 miles of canals and distribution works which were constructed between 1850 and 1880 and the extensive water rights on Kings River. The District, which now comprises some 245,000 acres, lies entirely within Fresno County and includes the rapidly growing Fresno-Clovis metropolitan area.

A significant improvement in the control and management of the waters of Kings River occurred with the completion of the Pine Flat Dam (Dam) project by the United States Army Corps of Engineers (USACE) in 1954. Although built primarily as a flood control project, the Dam provides significant water conservation benefits stemming from the storage and regulation of irrigation water by the 28 water right entities on Kings River including FID. The District contracted for 11.82% of the 1,000,000 acre-feet (AF) capacity of the Pine Flat Reservoir. While the District is entitled to approximately 26% of the average runoff of Kings River, much of its entitlement occurs at times when it can be used directly for irrigation of crops without the need for regulation at Pine Flat.

In a normal year, the District diverts approximately 500,000 AF of water and delivers most of it to agricultural users, although an ever-increasing share of the District's water supply is used in the urban area and for groundwater recharge.

In addition to its entitlement from the Kings River, the District has a contract from the Friant Division of the Central Valley Project for 75,000 AF of Class II Irrigation water.

Historically, excess water applied by the farmers has percolated beyond the root zone and recharged the extensive aquifer underlying the District. Between 85% and 90% of the groundwater supply can be attributed to water imported and distributed by the District.

As a public corporation, the District is governed by a board of five directors. Each director represents a separate geographical division of the District and is elected for a term of four years by the qualified voters within his division. Regular board meetings are held each month.

The budget of the District is adopted by the Board in November for the following calendar year. There are no volumetric charges for the delivery of water to the landowners, but the property is assessed by service provided on a per acre basis. The District usually delivers over two AF per acre of water in a normal year, but it may be lower or higher in extremely dry or wet years.

Day to day operations are the responsibility of the general manager acting through the following described five divisions:

1. Administration & Operations headed by the Assistant General Managers;
2. Engineering headed by the Chief Engineer;
3. Accounting headed by the Controller;
4. Water headed by the Watermaster;
5. Construction & Maintenance headed by the Superintendent of Const. & Maintenance.

Project Background and Purpose

The District is a member of the North Kings Groundwater Sustainability Agency (NKGSA) that has adopted a Groundwater Sustainability Plan (GSP) to meet the requirements of the Sustainable Groundwater

Management Act (SGMA). "The sustainability goal of the Kings Basin and the NKGSA is to ensure that by 2040 the Kings Basin is being managed to maintain a reliable water supply for current and future beneficial uses without experiencing undesirable results."[1] The District has included several projects within the NKGSA's GSP to help reach sustainability within the Kings Basin.[2]

The Project proposes to divert surface water from the Friant-Kern Canal (FKC) to reduce the NKGSA region's groundwater demands and help recharge the groundwater aquifer, thereby improving access and reliability to clean drinking water for members of the NKGSA. Additionally, the Project would improve access and reliability of irrigation water. The Project's surface water diversions may occur during average to wetter hydrological years and during wet year flood releases from Millerton Lake which would allow beneficial surface water storage that would otherwise be lost to areas outside the County. Diversion, storage, and recharge of the surface water supplies during flood releases would also provide flooding relief for communities downstream from Millerton Lake and benefit the water supplies of communities down gradient from the proposed Project. Recharging the groundwater aquifer would help to stabilize declining groundwater levels and would lead to decreased energy use from users not having to pump groundwater from deeper in the aquifer. Ultimately, the proposed Project would help carry out the goals of the NKGSA GSP by providing an additional mechanism for the Kings Basin to reach sustainability.

Project Description

The District and Fresno County are proposing to construct a new canal turnout that would divert and deliver water from the FKC into Big Dry Creek (BDC), which would provide direct recharge along the BDC channel north and east of the City of Clovis as well as other water deliveries downstream for recharge and other beneficial uses. The City of Clovis, and the unincorporated and mostly rural residential areas of the County of Fresno, would also benefit from the Project.

The proposed turnout to BDC would be located in an area without surface water supplies and would directly benefit an area with declining groundwater levels and limited suitable areas for recharge.

In addition to conveying water down the existing creek channel, the proposed Project would provide storage and the potential for reconveyance of Friant water supplies because the diversion of water is upstream of the BDC Reservoir.

The proposed turnout, pipeline, and associated appurtenances would require a land use authorization from USBR as the FKC is owned and operated by Reclamation. The proposed turnout would be owned by Reclamation. Friant Water Authority would be responsible for operation of the new turnout, and the District would be responsible for the maintenance of the turnout.

The proposed turnout would be located at mile post 14.6, on the west bank of the FKC and the site would cover approximately 15 acres (including the construction staging area). The turnout would be situated on the downstream side of the existing BDC crossing. The proposed Project would involve installation of a turnout structure and pipeline leading to an open channel structure. The site is anticipated to be upwards of a two-bay turnout with up to a 72-inch pipe, each pipeline approximately 260 feet long. The turnout proposes delivering a maximum combined total of 300 cubic feet per second (CFS) to BDC. The new facility footprint is estimated to encompass an area 80 to 100feet wide by 200-feet long within the FKC ROW. Excavation for construction would net up to 11,000 cubic yards of material. The proposed Project would

[1] (North Kings Groundwater Sustainability Agency 2022)
[2] (Fresno Irrigation District 2023)

also require electrical service from PG&E for the ancillary flowmeter, gate actuator and possibly traveling water screen.

Turnout Construction

A reinforced concrete turnout would be constructed at approximately MP 14.6 along the FKC at the BDC crossing. The turnout would require placement of reinforced concrete walls, gate valve assembly, and access platform. Excavation through the canal lining and into the canal embankment would reach approximately 120 feet horizontally at a depth of about 25 feet. A traveling water screen may be installed with a stop log.

Conveyance Pipeline/Channel Construction

The reinforced concrete turnout would connect to up to a 72-inch diameter reinforced concrete pipeline into a discharge structure/open channel to provide water to the BDC. The turnout would deliver up to 300 CFS total to the existing creek through the pipeline/channel. The total length of pipeline is projected to be approximately 260 feet for each turnout bay (520 feet total) and would be buried at a depth of up to approximately 20 feet below grade within the canal embankment and up to about 15 feet below grade for the remaining length of the pipeline. Excavation and trenching would conform to a 1.5:1 slope or as required by OSHA safety standards.

General Construction Process

Contractors would start with saw-cutting the liner in the place where the proposed turnout would be located. From there, the canal bank would be excavated to an elevation 1-2 feet below the proposed turnout structure floor. The excavated dirt would be stockpiled in the immediate vicinity to use as backfill around the structure and pipeline once constructed. No dirt is expected to leave the site and would be used to build back the canal bank behind the structure and liner.

Construction elements would consist of excavation in the FKC, compaction of the foundation, forming and pouring the structure floors, forming and pouring the structure walls, setting the pipeline, backfilling and compacting around both the structure and pipeline, then pouring the concrete liner within the canal. Excavation would utilize excavators to dig down to the target depth of approximately 25 feet to go slightly deeper than the structure in preparation of compaction below the structure floor. Contractors would slope out from a depth of approximately 25 feet at a 1.5:1 slope back to the existing ground surface or use vertical shoring. Sloping back would require a wider footprint and would, at the largest case be an approximately 80-foot horizontal impact to account for space around the structure. At the same time, the existing liner panels would be sawcut and removed, to the nearest expansion joint, over this same horizontal area.

Compaction would use compacting equipment such as rammers, rollers, and/or sheepsfoot rollers to condition and compact the soil under the structure and pipeline to the required compaction.

Pouring concrete would occur in distinct sections, with each step including formwork, setting reinforcing steel and pouring concrete. The first section would be the structure floor. The walls would be set and then poured after the floor has had some time to cure. The walls could potentially be poured in two segments, given the height of the structure. Pipeline would be started during the wall construction since the first stick of pipe is set within the wall. From there the pipeline would be laid within a trench approximately 10 feet wide and 10 feet deep from the proposed turnout to the BDC tie-in location. After setting pipeline and structure concrete, the excavated dirt would be backfilled and compacted in place to match existing conditions. All construction staging areas necessary for the proposed Project will be located within the 15-acre APE.

Construction Schedule

Construction is anticipated over approximately six months from September 2026 to February 2027 with turnout construction when the FKC is anticipated to be de-watered for maintenance (potentially mid-November 2026 – mid-January 2027). 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, and site clean-up.

Equipment

Construction equipment would likely include excavators, backhoes, graders, skid steers, loaders, saws, compactors, and hauling trucks. The site would be accessible via access roads and a vehicular gate off of Tollhouse Road (State Route (SR) 168).

Operation and Maintenance

The operation and maintenance of the proposed Project would be consistent with that of other similar federal USBR facilities. This includes consistent cleaning of debris and sediment and regular monitoring. Friant Water Authority would be responsible for operation of the new turnout. The District would be responsible for the maintenance of the turnout, and Reclamation would own the proposed turnout on the FKC.

2.1.7 Other Public Agencies Whose Approval May Be Required

- County of Fresno – Grading Permit
- State Water Resources Control Board – National Pollution Discharge Elimination System Construction General Permit
- United States Bureau of Reclamation
- United States Army Corps of Engineers

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.

The District, as the CEQA lead agency, has received written correspondence from two tribes, Dumna Wo Wah Tribal Government and Santa Rosa Rancheria Tachi Yokut Tribe, pursuant to Public Resource Code (PRC) Section 21080.3.1 requesting notification of proposed project.

The District sent a certified letter via United States Postal Service on February 21, 2024, to both tribes describing the proposed Project and provided maps of the Project site location. The District's contact information and notification that the Tribe had 30 days to request consultation pursuant to AB 52 were included. The 30-day timeline ran its course and the District received one response by the Santa Rosa Rancheria Tachi Yokut Tribe who deferred to the Table Mountain Rancheria Tribe. No comments or

concerns were raised by the Table Mountain Rancheria Tribe. All Tribal correspondence is included within Appendix C.

2.1.9 "CEQA–Plus" Assessment

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

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

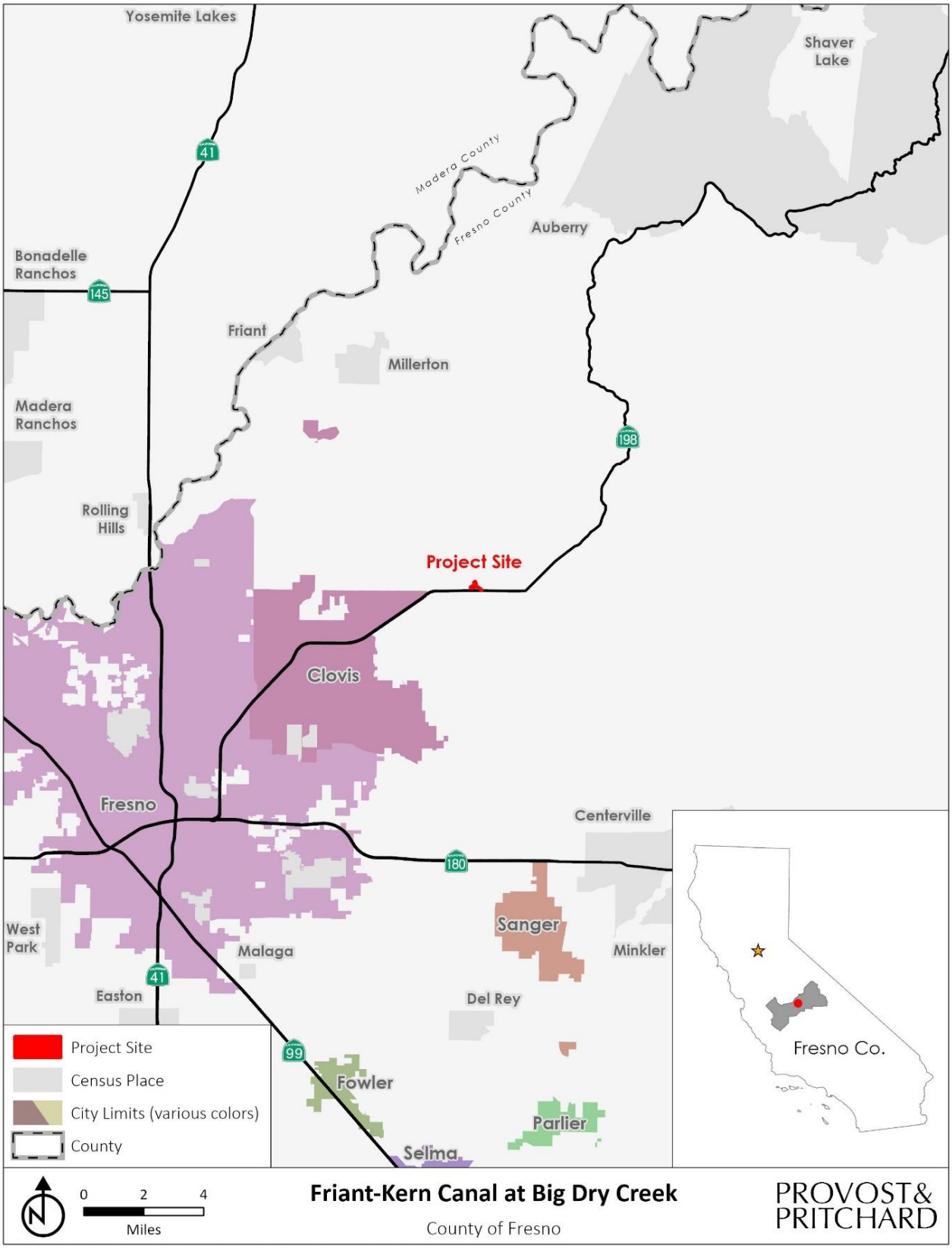

Figure 2-1: Regional Location Map

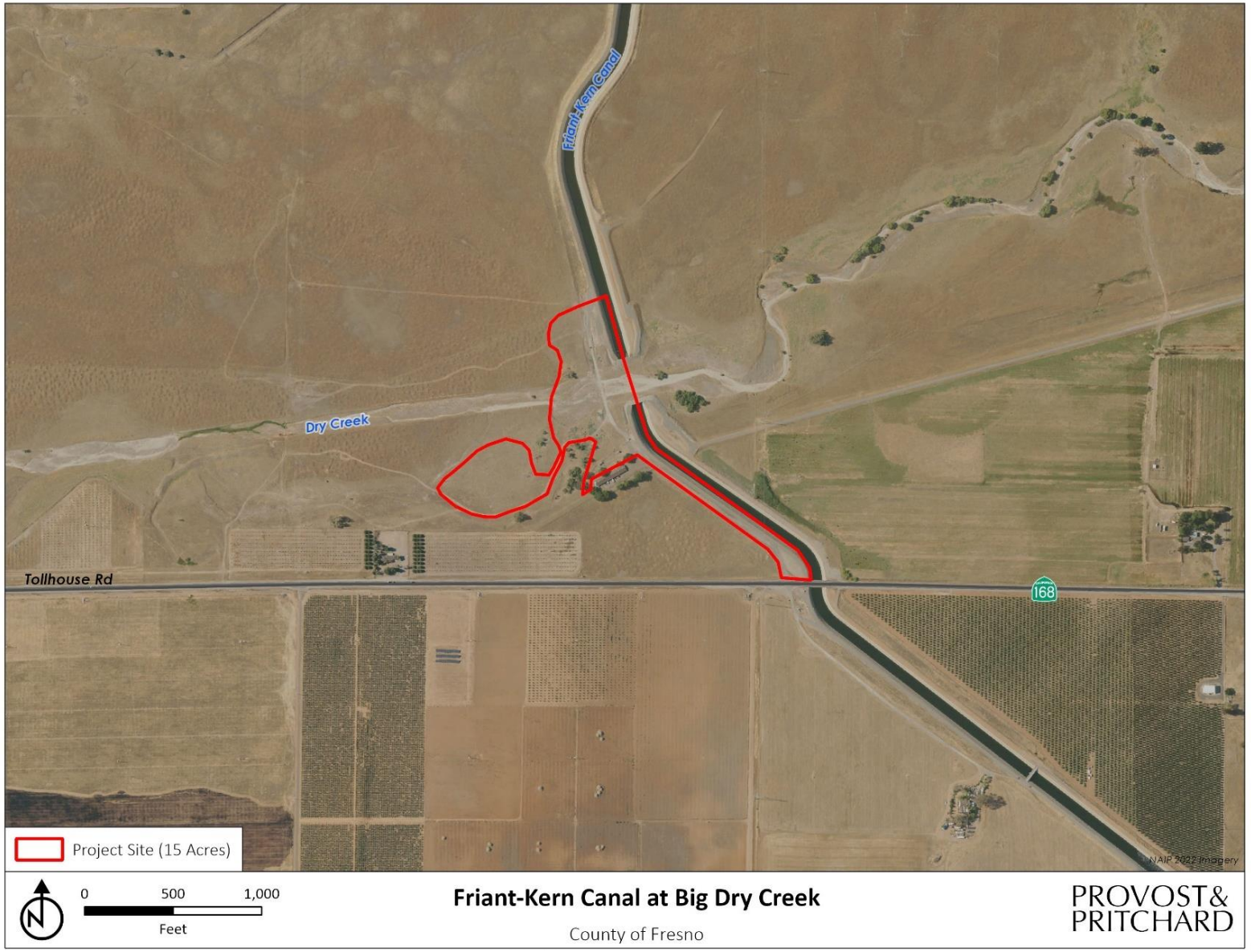

Figure 2-2: Project Site and APE Map

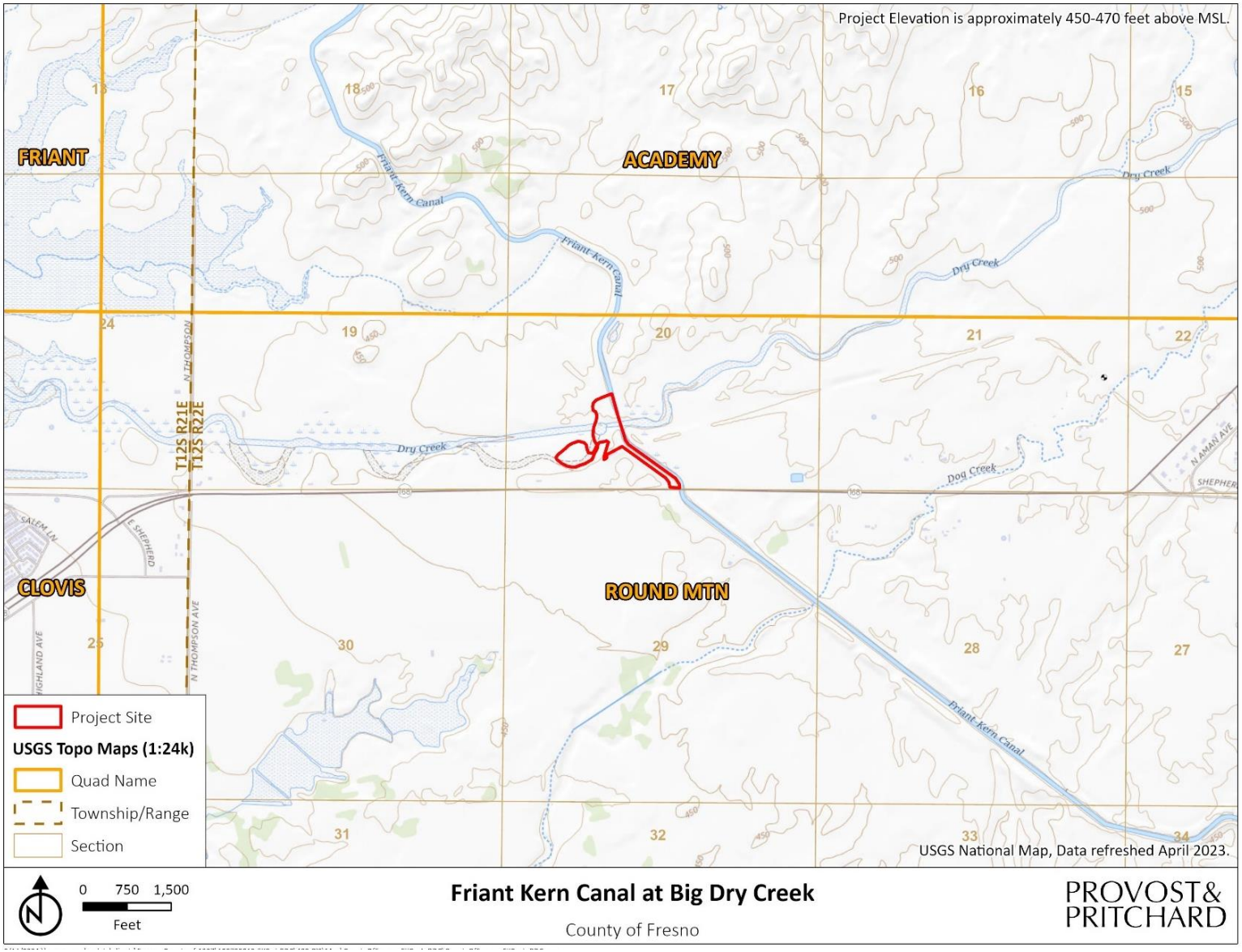

Figure 2-3: Topo Quad Map

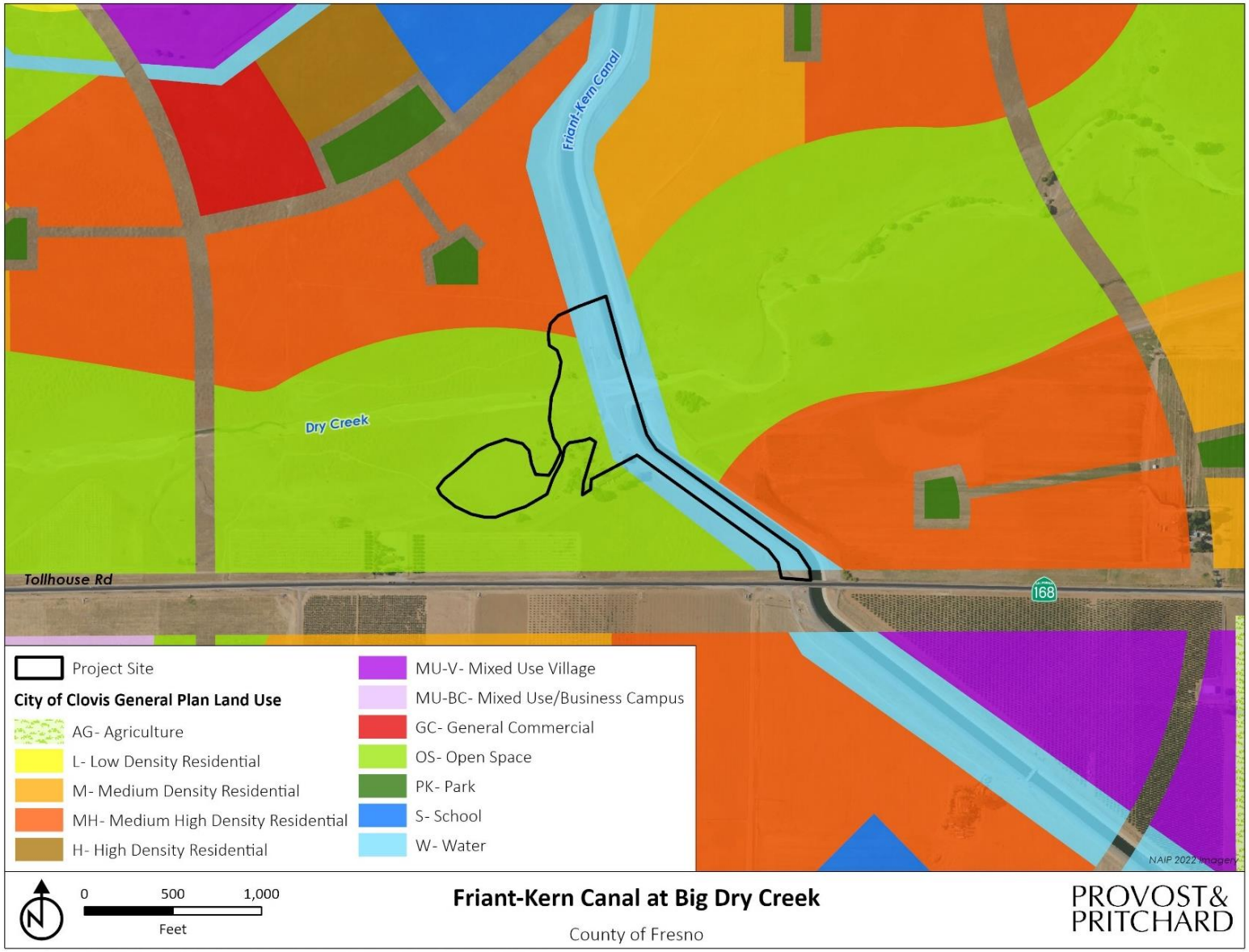

Figure 2-4: General Plan Land Use Designation Map

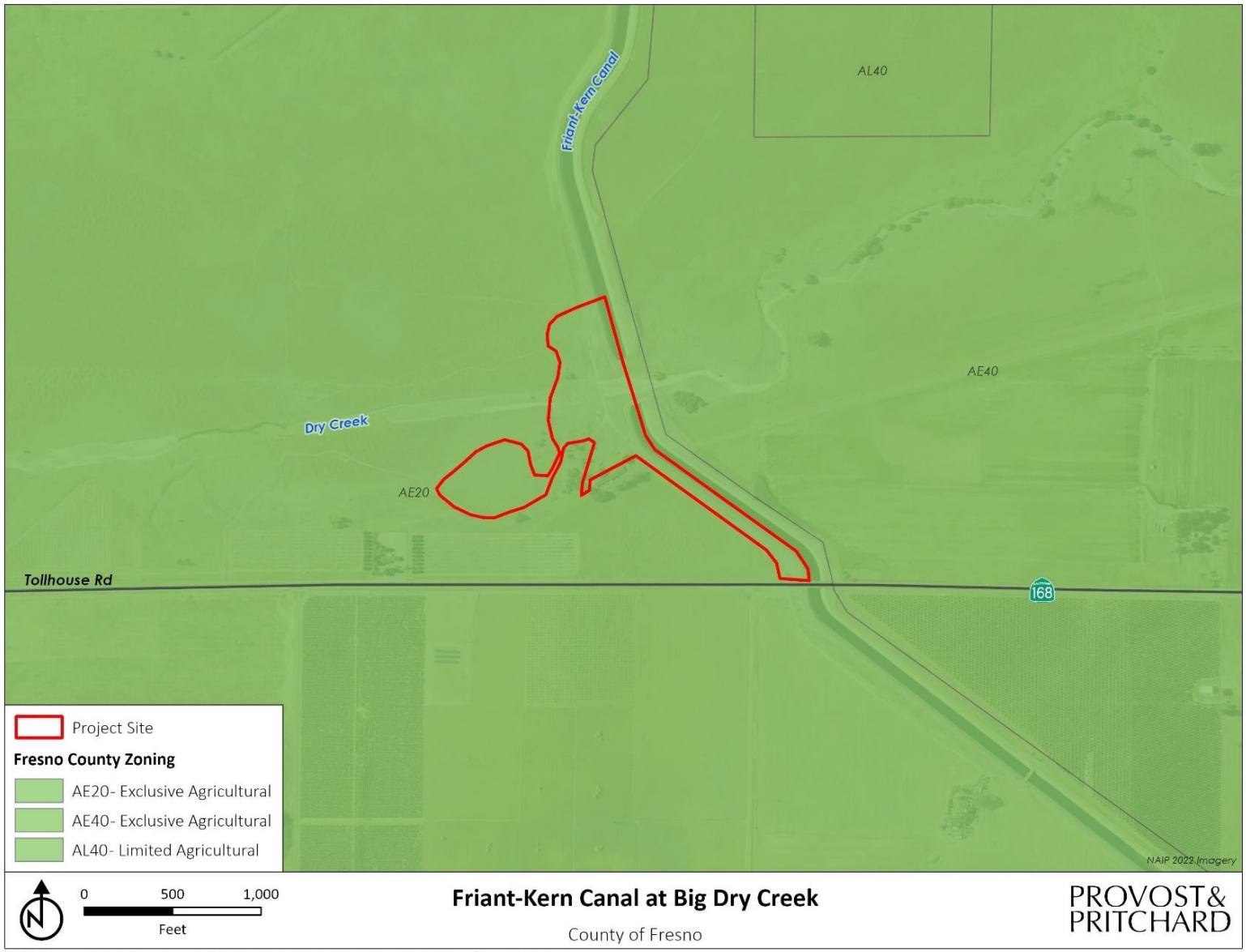

Figure 2-5: Zone District Map

CHAPTER 3 DETERMINATION

3.1 POTENTIAL ENVIRONMENTAL IMPACTS

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

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

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

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

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

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

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

3.2 DETERMINATION

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

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

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

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

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

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

Signature

June 25, 2024
Date

LAURENCE KIMURA, CHIEF ENGINEER
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 in the central unincorporated jurisdiction of Fresno County in the Central San Joaquin Valley. The proposed Project is located in a rural area with little to no development in the immediate vicinity. The nearest development of any type to the proposed Project is a single-family residence located approximately 1,500 feet southeast. The residence is surrounded by orchards and is not visible from the proposed Project site. Additionally, approximately 1.8 miles east of the city of Clovis lies an upscale single-family residential development, Harlan Ranch. This development was developed in the mid-2000s and contains over 1,500 homes.[3] Lands immediately surrounding the Project site consist of relatively flat, irrigated farmland, agricultural infrastructure such as the FKC, and the natural BDC. In Fresno County, a portion of SR 180 has been officially designated by Caltrans as a "State Scenic Highway," however that section is approximately 12.6 miles northwest of the Project site.[4] Scenic resources identified in the Fresno County General Plan include the Sierra Nevada mountain range to the east;[5] however views are often obstructed due to smog caused by the inversion layer found in the San Joaquin Valley. The foothills of the

[3] (Harlan Ranch 2024)
[4] (California Department of Transportation 2023)
[5] (General Plan Consultant Team and Fresno County Staff 2000)

Sierra Nevada mountains are much closer and are visible from the Project site. Highway 168, which acts as the nearest access road to the Project site, meanders up through the foothills and eventually further into the mountains.

4.1.2 Impact Analysis

a) Have substantial adverse effect on a scenic vista?

Less than Significant Impact. Scenic features in the Project area include the Sierra Nevada mountain range to the east and the general agricultural setting throughout the proposed Project region. The proposed Project would not obstruct the viewshed of these features during construction or operational implementation. The turnout and pipeline would be constructed at or below the same elevation as the FKC. Additionally, Project components would be consistent with the overall character of the proposed Project area and vicinity and would not stand out in a remarkable manner. Therefore, impacts 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?

No Impact. There are no identified scenic resources, trees, rock outcroppings, or historic buildings within the Project site. The proposed Project would not include any structures that would cause obstruction to the general public view of the natural features, nor would the proposed Project have an adverse effect on a scenic view. A 24-mile portion of SR 180 is the only Officially Designated State Scenic Highway in Fresno County; however, Project activities would be taking place approximately 12.6 miles northwest of the segment and therefore would not have the potential to cause any significant impacts. There would be no impact.

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

No Impact. The Project site contains agricultural lands and agricultural infrastructure. The Project site and surrounding lands are zoned for agriculture and are located in rural Fresno County. The proposed turnout and pipeline would blend in with the existing infrastructure and the agricultural surroundings and therefore would not substantially degrade the visual character of the area. There would be no impact.

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

No Impact. The Project site contains agricultural lands and agricultural infrastructure. No artificial lighting is proposed to be on-site. Additional vehicular traffic that could bring new lighting to the site after construction would likely be during the daytime on an as-needed basis for maintenance purposes. Therefore, the proposed Project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area or be inconsistent with existing conditions. There would be no impact.

4.2 AGRICULTURE AND FORESTRY RESOURCES

Table 4-2: Agriculture and Forest Impacts

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

4.2.1 Baseline Conditions

The proposed Project would be located within and adjacent to the FKC and BDC in Fresno County. The site is situated in a rural area and is substantially surrounded by agricultural lands.

The California Department of Conservation's (DOC) 2012 Farmland Mapping and Monitoring Program (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. The eight categories are summarized below:

- PRIME FARMLAND (P): Farmland with the best combination of physical and chemical features able to sustain long term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- FARMLAND OF STATEWIDE IMPORTANCE (S): Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been

used for irrigated agricultural production at some time during the four years prior to the mapping date.

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

The State of California DOC 2012 FMMP for Fresno County designates the site as Grazing Land.[6] See Figure 4-1.

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 Project site is designated as Grazing Land (see Figure 4-1). The proposed Project would entail the construction of a turnout and pipeline from the FKC to divert water into the BDC to increase recharge. The proposed Project would ultimately benefit water resources that may be used by agricultural wells in the vicinity and thereby has the potential to prevent other agricultural lands from being fallowed due to inadequate or costly recovery of declining groundwater water supply. The intention of the proposed Project would be to take delivery of water supplies that would otherwise leave the region as well as increase groundwater supplies by allowing diverted water to recharge via the BDC. Groundwater replenishment associated with the proposed Project is consistent with the goals of SGMA. Therefore, the impact would be less than significant.

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

No Impact. The Project site and its vicinity are zoned for agricultural purposes. Implementation of the proposed Project would have a beneficial effect on agriculture in the area as it would divert surface water from the FKC to help recharge the groundwater aquifer. The proposed Project would not require the

[6] (California Department of Conservation 2020)

need to take any current crops out of production. Therefore, the proposed Project would align with the agricultural zoning designated for the Project site.

In 1965, the California Legislature pass the Williamson Act. The intent of the Williamson Act is to preserve agricultural and open space lands by discouraging premature and unnecessary conversion to urban uses.[7] As the proposed Project does not propose any urban uses and encourages future agricultural activity, the proposed Project would not conflict, but would rather align with the intended goals of the Williamson Act. Therefore, there would be no impact.

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

No Impact. The Project area is not zoned for forest land, timberland, or timberland production. The Project area does not contain forestland or timberland. 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. As discussed previously in Impact Analysis "c" of this section, there are no forests or timberland within the Project vicinity. 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. The proposed Project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a non-agricultural use. As discussed throughout this section, the Project area is not located in or in the vicinity of forestland, and therefore would not convert forest land to non-forest use. Therefore, there would be no impact.

Farmland Protection Act

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

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

As previously concluded, the proposed Project is not located on land classified by the DOC as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance. These classifications recognize a land' s suitability for agricultural production by considering the physical and chemical characteristics of the soil, such as soil temperature range, depth of the groundwater table, flooding potential, rock fragment content, and rooting depth. The classifications also consider location,

[7] (California Department of Conservation 2024)

growing season, and moisture available to sustain high-yield crops. Together, Important Farmland and Grazing Land are defined by the DOC as "Agricultural Land."

The proposed Project would be on land that is classified as “Grazing Land”. However, as mentioned earlier in this section, the proposed Project would not convert any lands to a different use or a use that is conflicting with an agricultural designation. Therefore, the proposed Project would not conflict with the Farmland Protection and Policy Act or adversely affect prime or unique farmland.

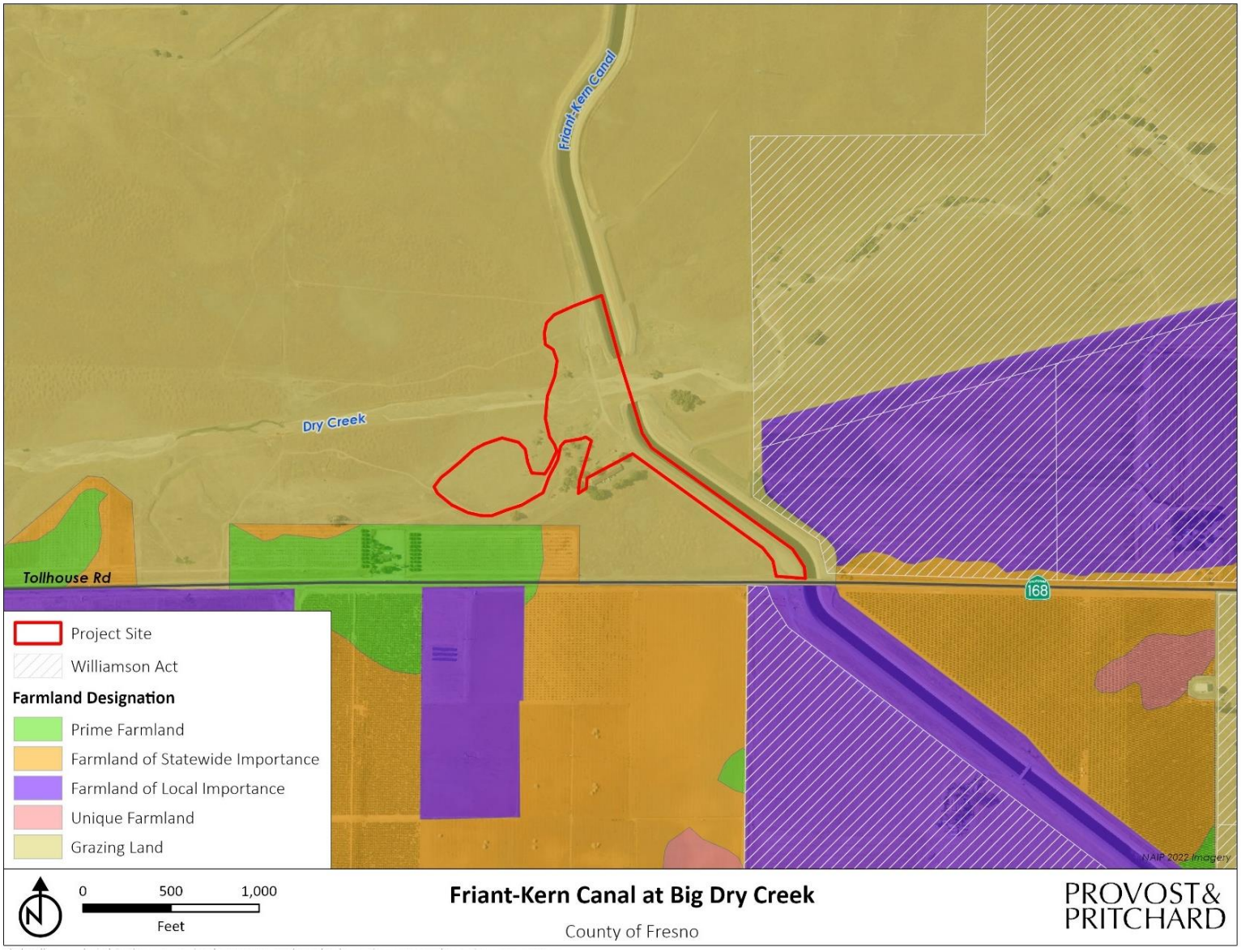

Figure 4-1. FMMP Map

4.3 AIR QUALITY

Table 4-3: Air Quality Impacts

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

4.3.1 Baseline Conditions

The Project site is 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.[8] 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 "better than national standards." For sulfur dioxide (SO_2), areas are designated as "does not meet the

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

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 March 15th, 2024.[9]

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

Pollutant	Averaging Time	California Standards*		National Standards*	
		Concentration*	Attainment Status	Primary	Attainment Status
Ozone (O_3)	1-hour	0.09 ppm	Nonattainment/ Severe	–	No Federal Standard
	8-hour	0.070 ppm	Nonattainment	0.075 ppm	Nonattainment (Extreme)**
Particulate Matter (PM_{10})	AAM	20 µg/m^3	Nonattainment	–	Attainment
	24-hour	50 µg/m^3		150 µg/m^3	
Fine Particulate Matter ($PM_{2.5}$)	AAM	12 µg/m^3	Nonattainment	12 µg/m^3	Nonattainment
	24-hour	No Standard		35 µg/m^3	
Carbon Monoxide (CO)	1-hour	20 ppm	Attainment/ Unclassified	35 ppm	Attainment/ Unclassified
	8-hour	9 ppm		9 ppm	
	8-hour (Lake Tahoe)	6 ppm		–	
Nitrogen Dioxide (NO_2)	AAM	0.030 ppm	Attainment	53 ppb	Attainment/ Unclassified
	1-hour	0.18 ppm		100 ppb	
Sulfur Dioxide (SO_2)	AAM	–	Attainment	--	Attainment/ Unclassified
	24-hour	0.04 ppm		--	
	3-hour	–		0.5 ppm	
	1-hour	0.25 ppm		75 ppb	
Lead (Pb)	30-day Average	1.5 µg/m^3	Attainment	–	No Designation/ Classification
	Calendar Quarter	–		--	
	Rolling 3-Month Average	–		0.15 µg/m^3	
Sulfates (SO_4)	24-hour	25 µg/m^3	Attainment	No Federal Standards	
Hydrogen Sulfide (H_2S)	1-hour	0.03 ppm (42 µg/m^3)	Unclassified		
Vinyl Chloride (C_2H_3Cl)	24-hour	0.01 ppm (26 µg/m^3)	Attainment		
Visibility-Reducing Particle Matter	8-hour	Extinction coefficient: 0.23/km-visibility of 10 miles or more due	Unclassified		

[9] (United States Environmental Protection Agency 2024)

Pollutant	Averaging Time	California Standards*		National Standards*	
		Concentration*	Attainment Status	Primary	Attainment Status
		to particles when the relative humidity is less than 70%.			
µg/m^3: micrograms per cubic meter ppm: parts per millioni ppb: parts per billion					

** 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 (March 15, 2024).*
****Secondary Standard*
Source: http://www.valleyair.org/aqinfo/attainment.htm. Accessed 2024.

Construction-Generated Emissions

Construction of the proposed Project is assumed to be completed over approximately six months. Emissions associated with the proposed Project were calculated using the California Emissions Estimator Model (CalEEMod) Air Quality Model, Version 2020.4.0. The emissions modeling includes emissions generated by off-road equipment, haul trucks, and worker commute trips. Emissions were quantified based on anticipated construction schedules and the default parameters contained in the model. Localized air quality impacts associated with the 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 March 15, 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	0.1070	0.9587	1.0068	2.6100e-003	0.3499	0.1631
SJVAPCD Threshold	*10*	*10*	*100*	*27*	*15*	*15*
Threshold Exceeded?	No	No	No	No	No	No

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

Source	Daily Emissions Maximum (in pounds)					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Construction – Summer	2.9585	27.9694	26.7680	0.0684	20.8923	11.1421
Construction – Winter	2.9525	27.9739	26.7089	0.0662	20.8923	11.1421
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 Project site is located in a rural area, east of the City of Clovis. There is one house within the vicinity of the Project, located approximately 1,500 feet from the FKC at its nearest point. Due to the distance from the canal, where the majority of improvements would occur, and the type of improvements and construction proposed, substantial pollutant concentrations would not be exposed to this residence. 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 Fresno, near the Clovis city limits, and while unlikely due to the distance from the Project site, 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 any odors would not remain after proposed Project completion. Therefore, impacts would be less than significant.

Clean Air Act (CAA)

Under the federal CAA, federal actions conducted in air basins that are not in attainment with the federal ozone standard (such as the SJVAB) must demonstrate conformity with the State Implementation Plan (SIP). Conformity to a SIP is defined in the federal CAA as meaning conformity to a SIP's purpose of eliminating or reducing the severity and number of violations of the national standards and achieving an expeditious attainment of such standards. The SJVAPCD has published Regulation IX, Rule 9110 (referred as the General Conformity Rule) that indicates how most federal agencies can make such a determination.[10]

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

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

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

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

4.4 BIOLOGICAL RESOURCES

Table 4-8: Biological Resources Impacts

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

4.4.1 Baseline Conditions

General

The Project site is located in the San Joaquin Valley, approximately 1.6 miles east of the northeast boundary of the City of Clovis, just north of SR 168 and at the intersection of the FKC and the BDC in the central portion of Fresno County, California. The topography of the Project site or APE consists of rolling hills and the channel of BDC, which is lower than the surrounding areas, and the site has elevations ranging from approximately 450 to 470 feet above mean sea level.

Like most of California, the Project area experiences a Mediterranean climate. Warm, dry summers are followed by cool, moist winters. In the summer, average high temperatures range between 90- and 99-

degrees Fahrenheit (°F), but do not often exceed 105 °F, and the humidity is generally low. Winter temperatures are often below 54°F during the day and rarely exceed 64°F. On average, the City of Clovis receives 13 inches of precipitation in the form of rain yearly, most of which occurs between October and May, and the site would be expected to receive similar amounts of precipitation.[11]

Soils

Six soil mapping units representing five soil types were identified within the site and are listed in Table 4-9 (see Appendix D of Appendix B for the Web Soil Survey Report). The soils are displayed with their core properties in the table below, according to the Major Land Resource Area of California. These soils are primarily used for irrigated field and row crops, pasture, and grazing.

Table 4-9. List of Soils Located on the APE and Their Basic Properties

Soil	Soil Map Unit	Percent of APE	Hydric Soil Category	Drainage	Permeability	Runoff
Atwater	Loamy sand, 3 to 9 percent slopes	5.3%	Nonhydric	Well drained	Moderately rapid	Low
Dello	Loamy sand	33.3%	Predominantly Hydric	Somewhat poorly drained	Rapid	Very low
Ramona	Sandy loam	0.2%	Nonhydric	Well drained	Moderately slow	Low
San Joaquin	Loam, 0 to 3 percent slopes	50.7%	Predominantly Nonhydric	Moderately well drained	Very slow	High
Tujunga	Soils, channeled, 0 to 9 percent slopes	2.2%	Predominantly Hydric	Somewhat excessively drained	Moderate	Low
Water	-	8.2%	-	-	-	-

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. Two of the major soil mapping units are predominately hydric and make up 35.5% of the site. Three of the major soil mapping units are nonhydric or predominantly nonhydric and make up 56.2% of the site. Water identified in the APE is within the FKC and makes up 8.2% of the site. During the field survey the texture of soils was checked, and they varied throughout the Project site from sand, loam, and clay to silty loam, silty clay, sandy clay, clay loam, and sandy loam.

Biotic Habitats

Four biotic habitats were observed within the site and included grassland, creek, canal, and ruderal (see Figure 4-6). These habitats and their constituent plant and animal species are described in more detail in the following sections. The surrounding area contained grassland habitat with trees with natural cavities, grazing cows, vernal pools with a species of fairy shrimp and ruderal habitat with apartments adjacent to the FKC.

Annual Grassland

In addition to the FKC, the remainder of the APE is primarily located on private property used for cattle grazing that is dominated by annual grassland habitat (see Figure 4-2). Vegetation observed within this habitat included annual grasses, mustard (*Brassica* sp.), coyote melon (*Cucurbita palmata*), milk thistle

[11] (WeatherSpark 2024)

(*Silybum marianum*), dwarf nettle (*Urtica urens*), mushrooms (*pluteaceae* sp.), willows (*Salix* spp.), white horehound (*Marrubium vulgare*), redstem filaree (*Erodium cicutarium*), yellow star-thistle (*Centaurea solstitialis*), and stinging nettle (*Urtica dioica*).

The survey of the APE resulted in the identification of numerus bird species including European starling (*Sturnus vulgaris*), red-winged blackbird (*Agelaius phoeniceus*), Lincoln's sparrow (*Melospiza lincolnii*), California quail (*Callipepla californica*), lesser goldfinch (*Spinus psaltria*), ruby-crowned kinglet (*Regulus calendula*), black phoebe (*Sayornis nigricans*), northern mockingbird (*Mimus polyglottos*), American robin (*Turdus migratorius*), rock wren (*Salpinctes obsoletus*), yellow-rumped warbler (*Setophaga coronata*), house finch (*Haemorhous mexicanus*), western meadowlark (*Sturnella neglecta*), common raven (*Corvus corax*), and killdeer (*Charadrius vociferus*). California ground squirrel (*Otospermophilus beecheyi*), Pacific tree frog (*Pseudacris regilla*), domestic dog (*Canis lupus familiaris*) tracks, and small to large mammal burrows were also observed.

The grassland habitat within the APE was moderately disturbed by cattle grazing but provides expansive high-quality habitat to a variety of wildlife, year-round. This habitat serves foraging birds, including raptors, during the day, as well as potentially bats, coyotes, foxes, and other nocturnal animals at night. Other less-common species that may be found within the grassland habitat include American badger (*Taxidea taxus*), burrowing owl (*Athene cunicularia*), northwestern pond turtle (*Actinemys marmorata*), California tiger salamander (*Ambystoma californiense*), and western spadefoot (*Spea hammondii*).

Creek

The creek habitat within the APE included an approximate 2.4-acre section of BDC which contained an existing concrete access road. The creek contained water at the time of the field survey and had minimal vegetation, including non-native grasses, rough cocklebur (*Xanthium strumarium*), and willow trees. The survey within the creek habitat resulted in the same species observed within the grassland habitat (see Figure 4-3).

The creek habitat within the APE was moderately disturbed due to the concrete access road but provides habitat to a variety of wildlife, year-round. This habitat serves foraging birds, including raptors, during the day, as well as potentially bats, coyotes, foxes, and other nocturnal animals at night. Species that may be found within the creek habitat include northwestern pond turtle, Pacific tree frog, western toad, western spadefoot, and American bullfrog (*Lithobates catesbeianus*). Various species may use the channel and banks as a wildlife movement corridor.

Canal

The canal habitat included the FKC which was concrete lined and contained no vegetation. There is an existing siphon along this portion of the FKC that goes under BDC. While the canal provides minimal habitat for native species, foraging birds and nocturnal animals may use the banks as a wildlife movement corridor (see Figure 4-4).

Ruderal

The ruderal portion of the APE contained existing paved and dirt roads. Vegetation in this habitat included non-native grasses, Russian thistle (*Salsola tragus*), mustard species, and redstem filaree. The survey of the ruderal habitat resulted in the same species observed within the grassland habitat. This habitat may be used by the same species as those that use the grassland habitat (see Figure 4-5).

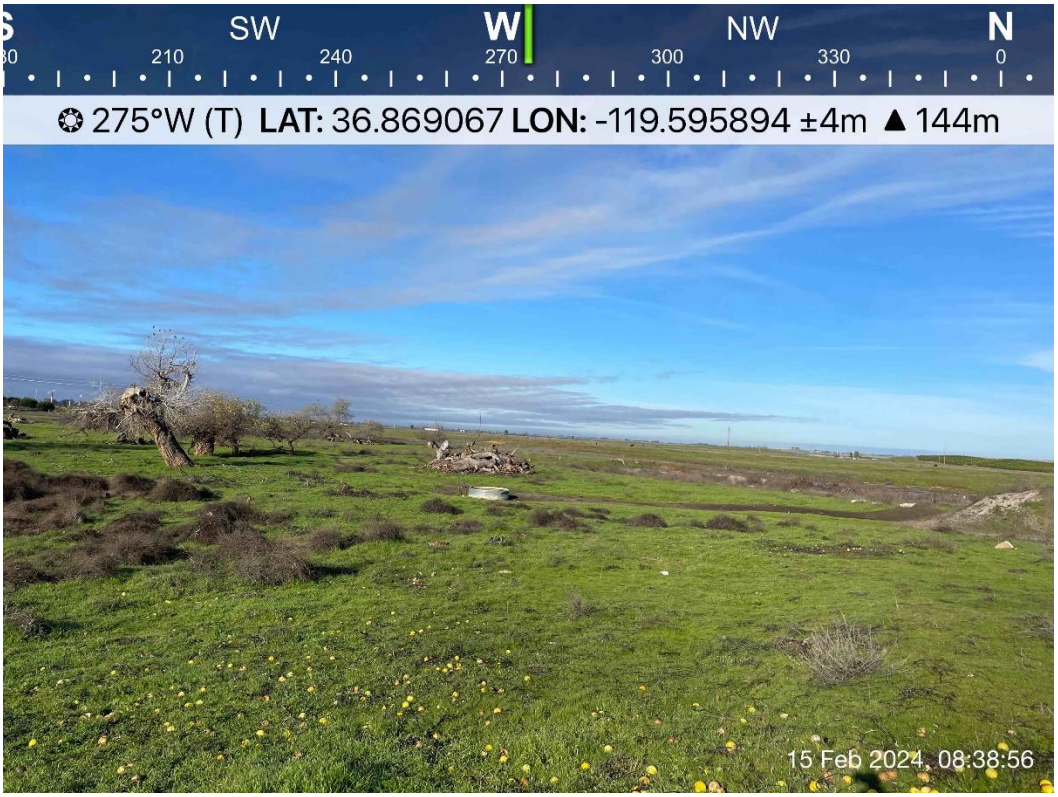

Figure 4-2: Annual Grassland Habitat

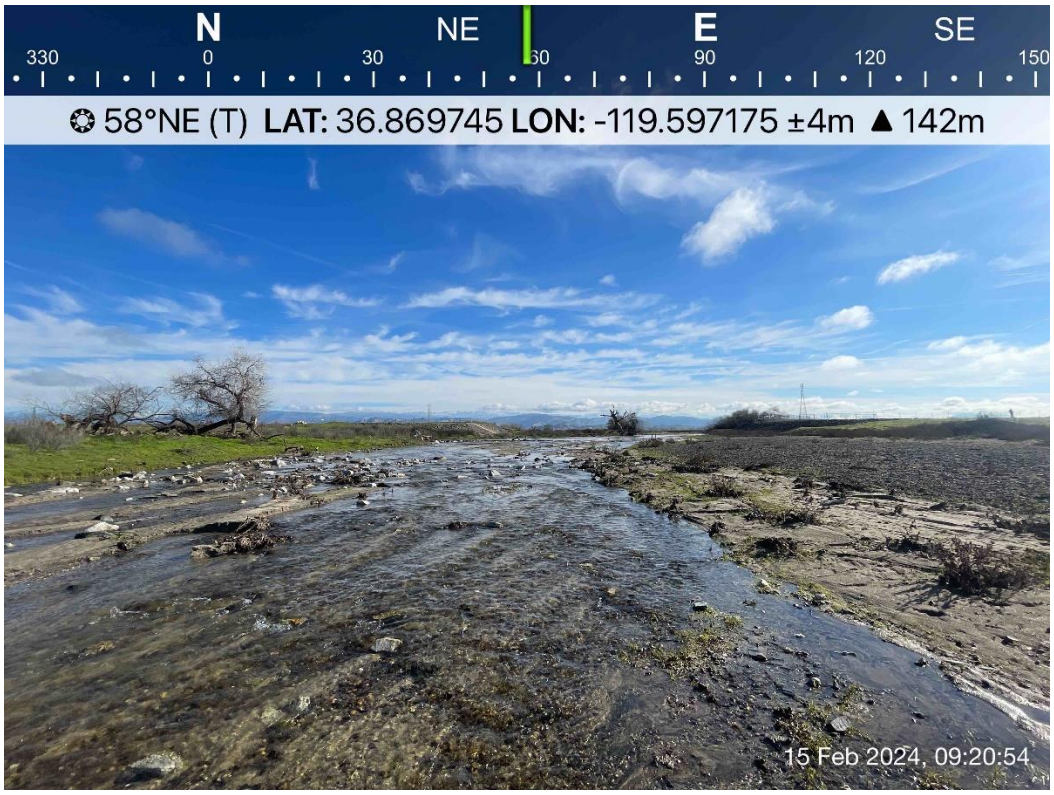

Figure 4-3: Creek Habitat

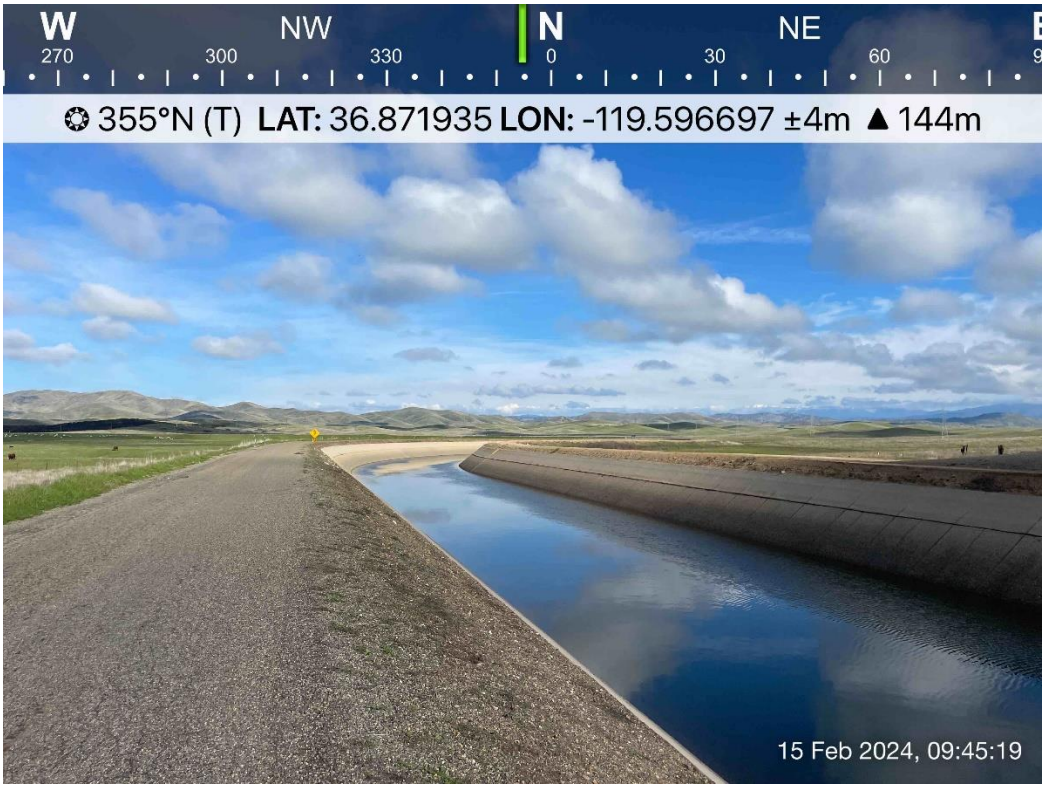

Figure 4-4: Canal Habitat

Figure 4-5: Ruderal Habitat

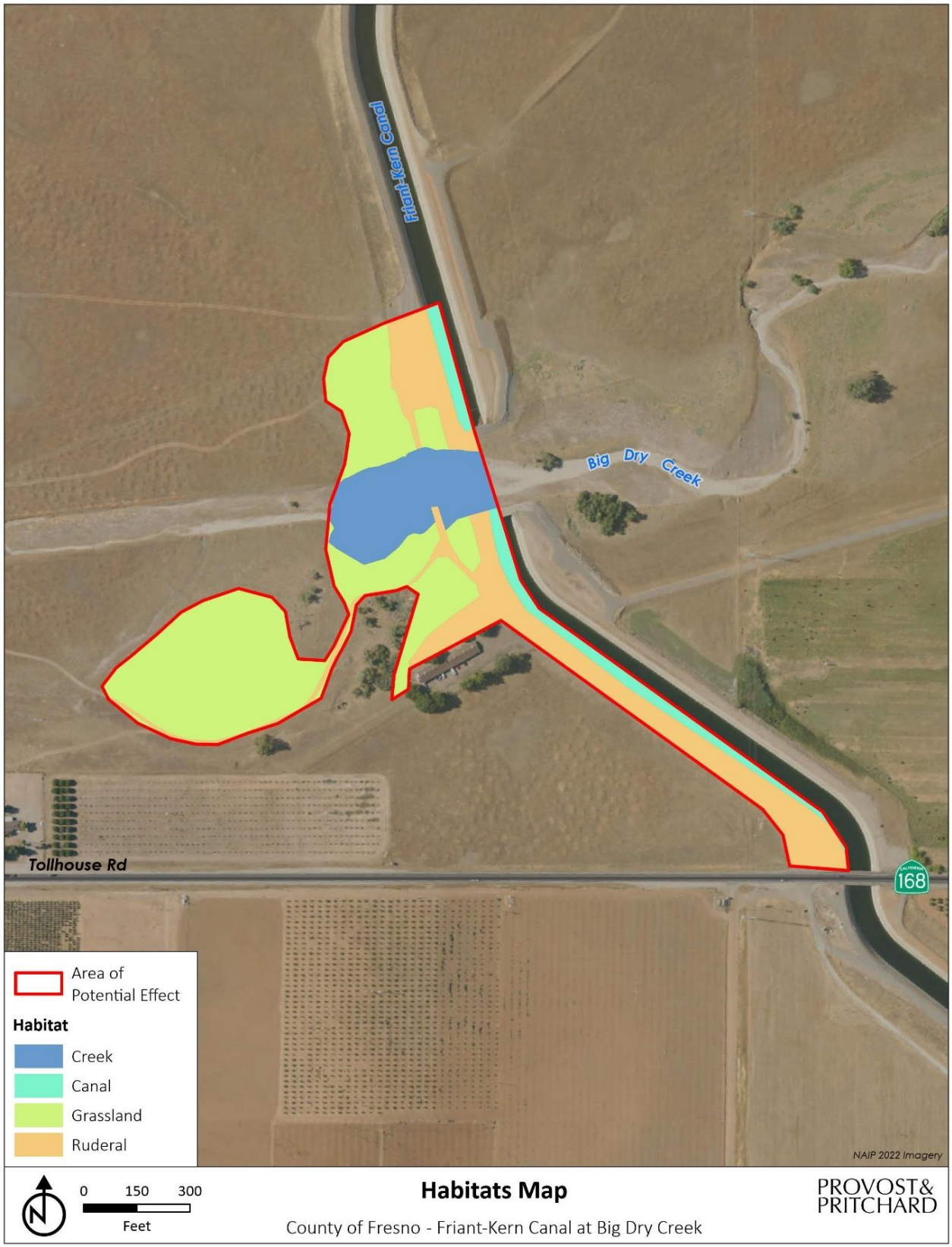

Figure 4-6. Habitats Map

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. The California Department of Fish and Wildlife (CDFW) has classified and mapped all natural communities in California. Just as the special status plant and animal species, these natural communities of special concern can be found within the California Natural Diversity Database (CNDDB). There are no recorded observations a of natural community of special concern mapped within the APE and no natural communities of special concern were observed during the field survey. In the areas surrounding the APE minimal mounds with interspersed vernal pools were observed.

Riparian habitat is composed of plant communities that occur along the banks, and sometimes over the banks, of most waterways and is an important habitat for numerous wildlife species. CDFW has jurisdiction over most riparian habitat in California. While BDC is within the APE, it did not contain riparian habitat.

Designated Critical Habitat

The United States Fish and Wildlife Service (USFWS) often designates areas of "critical habitat" when it lists species as threatened or endangered. Critical habitat is a specific geographic area that contains features essential for the conservation of a threatened or endangered species, which may require special management and protection. According to the USFWS Information for Planning and Consultation system (IPaC), the boundary of designated critical habitat for succulent owl's-clover occurs in the FKC, which is concrete lined and a very small portion of the APE. The primary constituent elements for succulent owl's-clover critical habitat include the following, which are paraphrased from the Federal Register (Vol. 71, No. 28):

(i) Topographic features characterized by isolated mound and intermound complex within a matrix of surrounding uplands that result in continuously, or intermittently, flowing surface water in the depressional features including swales connecting the pools described below, providing for dispersal, and promoting hydroperiods of adequate length in the pools; and

(ii) Depressional features including isolated vernal pools with underlying restrictive soil layers that become inundated during winter rains and that continuously hold water or whose soils are saturated for a period long enough to promote germination, flowering, and seed production of predominantly annual native wetland species and typically exclude both native and nonnative upland plant species in all but the driest years. As these features are inundated on a seasonal basis, they do not promote the development of obligate wetland vegetation habitats typical of permanently flooded emergent wetlands.

The portion of the critical habitat polygon within the APE overlaps the FKC which did not contain the primary constituent elements required for this species and would not be considered suitable habitat. Furthermore, the Federal Register states that, "existing manmade features and structures, such as buildings, roads, railroads, airports, runways, and other paved areas, lawns, and other urban landscaped areas do not contain one or more of the primary constituent elements. Federal actions limited to those areas, therefore, would not trigger a consultation under section 7 of the Act (i.e., Endangered Species Act) unless they may affect the species and/or primary constituent elements in adjacent critical habitat." The critical habitat for succulent owl's-clover extends into the surrounding area, directly east of the FKC, which likely contains the primary constituent elements required by this species and provides suitable habitat.

Wildlife Movement Corridors and Native Wildlife Nursery Sites

Wildlife movement corridors are routes that animals regularly and predictably follow during seasonal migration, dispersal from native ranges, daily travel within home ranges, and inter-population movements. Movement corridors in California are typically associated with valleys, ridgelines, and rivers and creeks supporting riparian vegetation. The habitat of the APE and surrounding areas consists of expansive open grassland where species could move through. Multiple game trails were observed during the field survey throughout the grassland habitat. The FKC and Creek habitat could be used as wildlife movement corridors.

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. Large trees with natural cavities were located adjacent to the APE and could function as native wildlife nursery sites for bats.

Special Status Plant and Animal

A query of the CNDDB for occurrences of special status plant and animal species was conducted for the *Round Mountain* USGS 7.5-minute quadrangle that contains the APE, and for the eight surrounding quadrangles: *Academy*, *Clovis*, *Friant*, *Humphreys Station*, *Malaga*, *Piedra*, *Sanger*, and *Wahtoke*. 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 4-10 and Table 4-11, 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 4-11. Species lists obtained from CNDDB and IPaC are available in Appendix B and Appendix C of Appendix B.

Table 4-10. List of Special Status Plants with Potential to Occur on the APE and/or in the Vicinity

Species	Status*	Habitat	Occurrence within the APE
Bristly sedge (*Carex comosa*)	California Native Plant Society (CNPS) 2B	Found in marshes, swamps, coastal prairies, often along lake margins and wet areas at elevations between -16 and 3,310 feet. Areas below sea level occur on a Delta Island. Blooms May – September.	**Unlikely.** The APE lacked suitable aquatic habitat for this obligate plant species. The nearest recorded observation of this species within the vicinity was approximately 12.5 miles south of the APE in 1989.
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.	**Possible.** The APE and surrounding areas contained suitable grassland habitat. The nearest recorded observation of this species within the vicinity was approximately 7 miles southwest of the APE in 1986 but is listed as extirpated.
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.	**Possible.** The APE contained streambanks and floodplains within the creek habitat where this species could occur. The nearest recorded observation of this species within the vicinity was approximately 10 miles southeast of the APE in 1970.
Dwarf downingia (*Downingia pusilla*)	CNPS 2B	Found in vernal pools in valley and foothill grassland communities at elevations below 1,600 feet. Blooms March – May.	**Unlikely.** The APE lacked vernal pools. The nearest recorded observation of this species within the vicinity was approximately 7 miles northwest of the APE in 1979.
Forked hare-leaf (*Lagophylla dichotoma*)	CNPS 1B	Found in cismontane woodland, and valley and foothill grassland communities at elevations between	**Unlikely.** The APE is below the elevational range for this species. The nearest recorded observation of this

Species	Status*	Habitat	Occurrence within the APE
		600 and 1,100 feet. Blooms April – May.	species within the vicinity was approximately 5.5 miles southeast of the APE in 2010.
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.	**Unlikely.** The APE lacked vernal pools. The nearest recorded observation of this species within the vicinity was approximately 2.5 miles southwest of the APE in 1987.
Hartweg's golden sunburst (*Pseudobahia bahiifolia*)	FE, CE, CNPS 1B	Found in valley and foothill grassland and cismontane woodland communities in clay soils that are often acidic. Occurs predominantly on northern slopes, but also along shady creeks and near vernal pools at elevations between 300 and 650 feet. Blooms March – May.	**Possible.** Mima mounds with north facing slopes were observed in the northern portion of the APE. The nearest recorded observation of this species within the vicinity was approximately 9 miles northwest of the APE in 2009.
Keck's checkerbloom (*Sidalcea keckii*)	FE, CNPS 1B	Occurs in cismontane woodland, and valley and foothill grassland communities, typically on grassy slopes in clay soils at elevations between 250 and 1,700 feet. Blooms April – May.	**Possible.** The APE contained suitable habitat and clay soils for this species. The nearest recorded observation of this species within the vicinity was approximately 7.5 miles east of the APE in 2008.
Madera leptosiphon (*Leptosiphon serrulatus*)	CNPS 1B	Found within openings of foothill woodland, often yellow-pine forest, and chaparral at elevations between 1,000 and 4,300 feet. Blooms April – May.	**Unlikely.** The APE is below the elevational range for this species. The nearest recorded observation of this species within the vicinity was approximately 9.5 miles northwest of the APE in 1967.
Orange lupine (*Lupinus citrinus* var. *citrinus*)	CNPS 1B	Found in chaparral, cismontane woodland, and lower montane coniferous forest communities in rocky, decomposed granitic outcrops on flat to rolling terrain. Typically found in open areas, at elevations between 1,200 and 5,800 feet. Blooms April – July.	**Unlikely.** The APE is below the elevational range for this species. The nearest recorded observation of this species within the vicinity was approximately 12 miles northeast of the APE in 2003.
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.	**Possible.** The APE contained suitable habitat and clay soils for this species. The nearest recorded observation of this species within the vicinity was approximately 2.5 miles southeast of the APE in 2010.
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.	**Unlikely.** The APE and surrounding areas lacked suitable aquatic habitat for this obligate plant species. The nearest recorded observation of this species within the vicinity was approximately 8 miles northwest of the APE in 1996.
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,	**Unlikely.** The APE contained an ephemeral creek which is unsuitable for this obligate plant species. The FKC is lined with concrete and lacked

Species	Status*	Habitat	Occurrence within the APE
		and ditches at elevations below 1,000 feet. Blooms May – October.	vegetation. The nearest recorded observation of this species within the vicinity was approximately 8 miles southwest of the APE in 2018.
Slender-stalked monkeyflower (*Erythranthe gracilipes*)	CNPS 1B	Found in disturbed areas, such as road shoulders and burns. Can also be found in the cracks of large granitic rocks in chaparral habitats. Grows at elevations between 1,600 and 4,300 feet. Blooms April – May.	**Absent.** The APE is well below the elevational range for this species.
Spiny-sepaled button-celery (*Eryngium spinosepalum*)	CNPS 1B	Found in the Sierra Nevada foothills and the San Joaquin Valley. Occurs usually in wetlands, vernal pools, swales, and roadside ditches but occasionally in non-wetlands. Often associated with clay soils in vernal pools within grassland communities. Occurs at elevations between 50 and 4,200 feet. Blooms April – July.	**Possible.** While the APE did not contain vernal pools, they were adjacent to the APE and suitable non-wetland grassland habitat was observed within the APE. The nearest recorded observation of this species within the vicinity was approximately 6.5 miles southeast of the APE in 1987.
Succulent owl's-clover (*Castilleja campestris* var. *succulenta*)	FT, CE, CNPS 1B	Occurs usually in wetlands and vernal pools but occasionally in non-wetlands. Often found in acidic soils at elevations below 2,500 feet. Blooms April – July.	**Possible.** While the APE did not contain vernal pools, they were adjacent to the APE and suitable non-wetland habitat was observed within the APE. The nearest recorded observation of this species within the vicinity was approximately 1 mile northwest of the APE in 2008.
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.	**Unlikely.** The APE contained low rolling hills which this species does not occur on and is below the required elevation for this species. The nearest recorded observation of this species within the vicinity was approximately 11 miles southwest of the APE in 2015.

Table 4-11. List of Special Status Animals with Potential to Occur on the APE and/or in the Vicinity

Species	Status*	Habitat	Occurrence within the APE
American badger (*Taxidea taxus*)	CSSC	Occurs most abundantly in drier open stages of shrub, forest, and herbaceous habitats with friable soils to burrow, but can be found within numerous habitats throughout California, including the margins of agricultural lands. Needs a sufficient prey base of burrowing rodents.	**Possible.** Suitable grassland habitat and burrows of appropriate size were observed within the APE. The nearest recorded observation of this species within the vicinity was approximately 7.5 miles southwest of the APE in 1987.
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.** Suitable grassland habitat and burrows of appropriate size were observed within the APE. The nearest recorded observation of this species within the vicinity was approximately 6.5 miles southeast of the APE in 2006.

Species	Status*	Habitat	Occurrence within the APE
California condor (*Gymnogyps californianus*)	FE, CE, CFP	Typically nests in cavities in canyon or cliff faces but has also been recorded nesting in giant sequoias in Tulare County. Requires vast 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 APE lacked suitable nesting habitat. This species could fly over or forage on the APE. There are no recorded observations of this species in CNDDB within the regional vicinity of the proposed Project.
California glossy snake (*Arizona elegans occidentalis*)	CSSC	Inhabits arid scrub, rocky washes, grasslands, and chaparral. Prefers open areas with loose soil for easy burrowing. This species occurs near in the Pacific Coast Ranges from the eastern part of the San Francisco Bay Area south to northwestern Baja California but is absent along the central coast.	**Unlikely.** The APE is well outside the current range for this species. The nearest recorded observation of this species within the vicinity was approximately 7 miles southwest of the APE in 1893.
California tiger salamander (*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.	**Possible.** The APE contained suitable grassland habitat with small mammal burrows where this species could aestivate. While not within the APE, the surrounding areas contained vernal pools where this species could breed. The nearest recorded observation of this species within the vicinity was approximately 0.2 miles north of the APE in 2006.
Coast horned lizard (*Phrynosoma blainvillii*)	CSSC	Found in grasslands, coniferous forests, woodlands, and chaparral, primarily in open areas with patches of loose, sandy soil and low-lying vegetation in valleys, foothills, and semi-arid mountains. Frequently found near ant hills and along dirt roads in lowlands along sandy washes with scattered shrubs.	**Unlikely.** While the APE contained suitable habitat, this species has not been seen for over 100 years within 25 miles of the proposed Project APE. The nearest recorded observation of this species within the vicinity was approximately 7 miles southwest of the APE in 1893.
Conservancy fairy shrimp (*Branchinecta conservatio*)	FE	Found in large, turbid freshwater vernal pools in the Central Valley, from Tehama County in the north to Merced County in the south, with one outlying population in Ventura County's Interior Coast Ranges.	**Unlikely.** The APE lacked vernal pools and there are no recorded observations of this species in CNDDB within the regional vicinity of the APE.
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 milkweeds, dustymaidens, lupines, medics, phacelias, sages, snapdragons, scorpionweeds, primroses, poppies, and buckwheats. Nests are often located underground in abandoned rodent nests, or above ground in tufts of grass, old bird nests, rock piles, or cavities in dead trees.	**Possible.** The annual grassland and creek habitats were suitable for foraging for this species. The annual grassland and ruderal habitats contained small mammal burrows and adjacent areas contained cavities in dead trees where this species could nest and overwinter. The nearest recorded observation of this species within the vicinity was approximately 9.5 miles northeast of the APE in 1982.

Species	Status*	Habitat	Occurrence within the APE
Foothill yellow-legged frog – south Sierra DPS (*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.	**Unlikely.** While the APE contained a creek, it lacked suitable vegetation and habitat for this species. The nearest recorded observation of this species within the vicinity was approximately 11.5 miles northeast of the APE in 1971.
Fresno kangaroo rat (*Dipodomys nitratoides exilis*)	FE, CE	An inhabitant of alkali sinks and open grassland habitats in Merced, Kings, Fresno, and Madera counties. Prefers bare, alkaline, clay-based soils subject to seasonal inundation with more friable soil mounds around shrubs and grasses. The most recent recorded observation of this species in California was in 1992 in Fresno County.	**Unlikely.** The APE lacked alkali sinks and is outside of the current range for this species. No evidence of kangaroo rats was observed during the field survey. There are no recorded observations of this species on CNDDB within the regional vicinity of the proposed Project.
Least Bell's vireo (*Vireo bellii pusillus*)	FE, CE	This migratory species breeds in southern California. Breeding habitat consists of dense, low, shrubby, riparian vegetation in the vicinity of water or dry river bottoms. By the early 1980s, this species was extirpated from most of its historic range in California, including the Central Valley.	**Absent.** This species has a documented limited range, and the APE is well outside of this range
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 (*Asclepias* sp.). Winter roost sites extend along the Pacific coast from northern Mendocino to Baja California, Mexico.	**Unlikely.** While the APE contained suitable foraging habitat, roosting habitat was absent. There are no recorded observations of this species on CNDDB within the regional vicinity of the proposed Project.
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.** While the APE contained suitable sandy soils, it lacked appropriate leaf litter, and the nearest recorded observation is approximately 140 years old.
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.	**Possible.** The APE contained suitable aquatic habitat within BDC and upland grassland habitat for this species to bask and nest. The nearest recorded observation of this species within the vicinity was approximately 4 miles southwest of the APE in 2016.
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.** While there are no known satellite populations near the APE, suitable grassland habitat and burrows of appropriate size were observed within the APE. The nearest recorded observation of this species within the vicinity was approximately 9.5 miles northwest of the APE in 1994.

Species	Status*	Habitat	Occurrence within the APE
Spotted bat (*Euderma maculatum*)	CSSC	Roosts in cliffs, rock crevices, and caves. Often forages over water and along washes. This species feeds almost exclusively on moths.	**Unlikely.** While this species could forage over the APE, suitable roosting habitat was absent. The nearest recorded observation of this species within the vicinity was approximately 10.5 miles northwest of the APE in 1970.
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.	**Possible.** Trees observed adjacent to the APE provide suitable nesting habitat. This species could also forage over the APE. The nearest recorded observation of this species within the vicinity was approximately 10.5 miles northwest of the APE in 1970.
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.	**Possible.** While not within the APE, a wetland with dense cattails where this species could nest was located approximately 120 feet east of the APE. This species could forage within the APE. The nearest recorded observation of this species within the vicinity was adjacent to the APE in 2015.
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.** The APE lacked elderberry shrubs and is not located within one of the current known populations.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	Occupies vernal and seasonal pools, with clear to tea-colored water, in grass or mud-bottomed swales, and basalt depression pools.	**Unlikely.** The APE lacked suitable habitat. The nearest recorded observation of this species was adjacent to the APE in 2004.
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.	**Unlikely.** While this species could forage over the APE, suitable roosting habitat was absent. There are no recorded observations of this species on CNDDB within the regional vicinity of the proposed Project.
Western red bat (*Lasiurus blossevillii*)	CSSC	Roosts primarily in trees, 2–40 feet above ground, from sea level up through mixed conifer forests. Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging.	**Possible.** Trees observed adjacent to the APE contained natural cavities where this species could roost. This species could also forage over the APE. There are no recorded observations of this species on CNDDB within the regional vicinity of the proposed Project.
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	**Possible.** The APE contained suitable grassland habitat with small mammal burrows where this species could aestivate. While not within the APE, the surrounding area contained vernal pools where this species could breed.

Species	Status*	Habitat	Occurrence within the APE
		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.	The nearest recorded observation of this species within the vicinity was approximately 1 mile southeast of the APE in 2008.
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.	**Unlikely.** Big Dry Creek is not a perennial creek and there was minimal nesting habitat for this species. The nearest recorded observation of this species within the vicinity was approximately 7 miles southwest of the APE in 1902 but is listed as extirpated.

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

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

STATUS CODES

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

CNPS LISTING.

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

4.4.2 Impact Analysis

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

Less than Significant Impact with Mitigation Incorporated. Of the 17 regionally occurring special status plant species, 10 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: bristly sedge, dwarf downingia, forked hare-leaf, Greene's tuctoria, Madera leptosiphon, orange lupine, San Joaquin Valley Orcutt grass, Sanford's arrowhead, slender-stalked monkeyflower, and Winter's sunflower.

Since it is unlikely that these species would occur on the APE, implementation of the proposed Project should have no impact on these 10 special status species through construction mortality, disturbance, or loss of habitat. Mitigation measures are not warranted.

Of the 24 regionally occurring special status animal species, 14 are considered absent from or unlikely to occur within the APE due to past or ongoing disturbance and/or the absence of suitable habitat, including nesting or breeding habitat. These species include: California condor, California glossy snake, coast horned lizard, conservancy fairy shrimp, foothill yellow-legged frog, Fresno kangaroo rat, Least Bell's vireo, monarch butterfly, northern California legless lizard, spotted bat, valley elderberry longhorn beetle, vernal pool fairy shrimp, western mastiff bat, and western yellow-billed cuckoo. While these bird species may forage within the APE they would be expected to fly away and not be impacted during construction.

Since it is unlikely that these species would occur on the APE, implementation of the proposed Project should have no impact on these 14 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 paragraphs. Impacts to these resources would be a violation of State and federal laws or considered a potentially significant impact under CEQA and the National Environmental Policy Act (NEPA). Implementation of mitigation measures BIO-1 and BIO-2 will help reduce potential impacts to these resources to a less than significant level under CEQA and NEPA and will help with complying with State and federal laws protecting these resources. These mitigation measures are identified in Section 4.4.4 below.

Project-Related Impacts to Special Status Plant Species

The following special status plant species were identified to potentially occur within the APE: California jewelflower, California satintail, Hartweg's golden sunburst, Keck's checkerbloom, San Joaquin adobe sunburst, spiny-sepaled button-celery, and succulent owl's-clover. Although habitat for some plant species is marginal within the APE, these species could occur on the site due to the adjacent vernal pool habitat and the fact that these species can occur in areas near vernal pools. Projects that adversely affect special status plants or result in the mortality of special status plants would be considered a significant impact.

Implementation of mitigation measures BIO-3 through BIO-5 will reduce potential impacts to special status plants to a less than significant level under CEQA and NEPA and will help the proposed Project comply with State and federal laws protecting these plant species. These mitigation measures are identified in Section 4.4.4 below.

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

The APE and adjacent areas contain suitable nesting and foraging habitat for a variety of protected bird species, such as migratory birds, raptors, and special status birds including burrowing owl, Swainson's hawk, and tricolored blackbird. It is anticipated that during the nesting bird season, protected birds could nest on the ground or in shrubs and trees within, and adjacent to, the APE and forage within the APE. Protected birds located within or adjacent to the APE during construction have the potential to be injured or killed by proposed 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 proposed Project-related activities resulting in nest abandonment. Projects that adversely affect the nesting success of protected birds or result in the mortality of these birds would be a violation of state and federal laws and considered a potentially significant impact under CEQA and NEPA.

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

Implementation of mitigation measures BIO-6 through BIO-8 will reduce potential impacts to protected nesting birds to a less than significant level under CEQA and NEPA and will help the proposed Project comply with State and federal laws protecting these bird species. Mitigation measures specific to burrowing owl are presented further below in this section.

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

The existing trees with natural cavities directly adjacent to the APE may support tree-roosting species of bats like western red bats. Roosting habitat becomes especially sensitive to bat populations during the maternity season (March 1 to September 30) when pups are maturing. It is unlikely western red bats would occur in the area during the overwintering season (December 1 through February 28) since they are known to migrate. 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-10 will reduce potential impacts to roosting maternity bats and roosting special status bats to a less than significant level under CEQA.

Project-Related Mortality and/or Disturbance to American Badger

The APE contained annual grassland habitat that could potentially be used by American badger. American badgers denning within the APE during construction have the potential to be injured or killed by proposed 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-11 through BIO-14 will reduce potential impacts to American badgers to a less than significant level under CEQA and NEPA.

Project-Related Mortality and/or Disturbance to Burrowing Owl

As discussed earlier in this section, the APE contained suitable foraging habitat for burrowing owl (BUOW), and this species also may nest or roost within burrows within, or adjacent to, the APE. 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 could remove some potential nesting/roosting and foraging habitat for BUOW, there is abundant habitat adjacent to the APE that could be used, and therefore implementation of the proposed Project would not significantly reduce potential nesting, roosting, and foraging habitat for this species. Therefore, no mitigation measures are warranted for loss of BUOW nesting/roosting and foraging habitat.

Implementation of mitigation measures BIO-15 through BIO-17 would reduce potential impacts to nesting and roosting BUOW to a less than significant level under CEQA and NEPA and help the proposed Project comply with State and federal laws protecting this avian species.

Project-Related Mortality and/or Disturbance to California Tiger Salamander

The APE contained suitable annual grassland habitat with small mammal burrows where California tiger salamander (CTS) could aestivate. Impacts to this habitat will be temporary in nature and once the

pipeline is built there would be no more impacts to annual grassland habitat from the proposed Project. While not within the APE, the surrounding areas contain vernal pools where this species could breed. Construction activities occurring within occupied grassland habitat could result in injury, mortality, displacement, disturbance, or inhibit the movement of CTS, and would be considered a significant impact under CEQA and NEPA and violate State and federal laws protecting this species.

Implementation of mitigation measures BIO-18 through BIO-23 will reduce potential impacts to CTS to a less than significant level under CEQA and NEPA will insure the proposed Project complies with State and federal laws protecting this species.

Project-Related Mortality and/or Disturbance to Crotch's Bumble Bee

Habitats within the APE and surrounding area were determined to be suitable for foraging, nesting, and overwintering Crotch's bumble bee. Queens are actively flying for only two months from March until May and reach maximum flying activity in April. Males are generally present and flying from May to September with peak flying activity occurring in July. Workers of this species are present and flying from April to August, with peak flying activity occurring between May and June. There is abundant foraging habitat adjacent to the APE 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 foraging habitat. Construction activities occurring within nesting or overwintering habitat could result in injury, mortality, displacement, disturbance, or inhibit the movement of this species, and would be considered a significant impact under CEQA and a violation of the California Endangered Species Act (CESA).

Implementation of mitigation measures BIO-24 through BIO-25 will reduce potential impacts to nesting and overwintering Crotch's bumble bee to a less than significant level under CEQA will help the proposed Project comply with State laws protecting this species.

Project-Related Mortality and/or Disturbance to Northwestern Pond Turtle

The APE contained creek habitat, in the form of BDC, which could be used by northwestern pond turtle for dispersal and basking. The annual grassland habitat of the APE could be used by northwestern pond turtle for nesting and foraging. Upland areas would be temporarily impacted through proposed Project activities and the creek habitat may be improved for this species by the proposed Project adding water into the creek. Noise, vegetation removal, movement of workers, construction, and ground disturbance as a result of proposed Project activities have the potential to significantly impact northwestern pond turtle. Potentially significant impacts associated with proposed Project activities could include inadvertent entrapment or direct mortality. Proposed Project activities that impact northwestern pond turtles would be considered a potentially significant impact under CEQA and NEPA.

Mitigation measures BIO-26 through BIO-28 will be implemented prior to the start of construction and will reduce impacts to northwestern pond turtle to a less than significant level under CEQA and NEPA.

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

The APE contained suitable denning and foraging habitat for San Joaquin kit fox (SJKF). SJKF denning within the APE during construction have the potential to be injured or killed by proposed Project-related activities. Projects that result in the mortality of individuals would be a violation of state and federal laws and considered a potentially significant impact under CEQA and NEPA. While the proposed Project may remove some potential foraging habitat for SJKF, there is abundant foraging habitat adjacent to the APE

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-29 through BIO-31 will reduce potential impacts to SJKF to a less than significant level under CEQA and NEPA and will help the proposed Project comply with state and federal laws protecting this species.

Project-Related Mortality and/or Disturbance to Western Spadefoot

The APE contained suitable upland habitats for western spadefoot. This species may breed in the ponds in the surrounding area and aestivate within burrows or soil cracks within the grassland habitat on the APE. Western spadefoot occurring within the APE during construction have the potential to be injured or killed by proposed Project-related activities. Projects that adversely affect western spadefoot or result in the mortality of individuals would be considered a potentially significant impact under CEQA and NEPA.

This species would be expected to occur in similar habitats as CTS and implementation of mitigation measures BIO-18 through BIO-23 as well as mitigation measure BIO-32 will reduce potential impacts to western spadefoot to a less than significant level under CEQA and NEPA.

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. Mitigation is not warranted.

The boundary for designated critical habitat for succulent owl's clover located within the APE only overlaps the FKC which did not contain the primary constituent elements required for this species and would not be considered suitable habitat, therefore, it would not trigger a consultation under section 7 of the Endangered Species Act. This critical habitat for succulent owl's-clover extends into the surrounding area, directly east of the FKC which may contain the primary constituent elements and provide suitable habitat required by this species. This area and the primary constituent elements for critical habitat for succulent owl's clover would not be impacted by proposed Project activities. Therefore, there would be no impact to critical habitat, and mitigation measures are not warranted.

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

Less than Significant Impact with Mitigation Incorporated. The proposed Project involves the construction of a turnout on the FKC for water to flow into BDC. The USFWS National Wetlands Inventory Map was consulted for known wetlands in the area and freshwater emergent wetland and riverine was classified to be within the boundaries of BDC and freshwater forested/shrub wetland was classified adjacent to BDC. Project-related impacts to some or all of these waters would be considered a potentially significant impact under CEQA and NEPA. Impacts to waters of the U.S. are also subject to the permit requirements of Sections 401 and 404 of the Clean Water Act and impacts to waters of the state are subject to the permit requirements of Section 401 of the Clean Water Act and California Fish and Game Code. The placement of fill within any wetlands or other jurisdictional features will require a 401 Water

Quality Certification from the Regional Water Quality Control Board (RWQCB), 404 permit from the USACE, and a Lake or Streambed Alteration Agreement from CDFW. An ARD will be performed for the proposed Project.

There are no designated wild and scenic rivers within the APE; therefore, the proposed Project would not result in direct impacts to wild and scenic rivers.

Since construction of the proposed Project may involve ground disturbance over an area greater than one acre, the proposed Project may need to obtain a Construction General Permit under the Construction Storm Water Program administered by the RWQCB. A prerequisite for this permit is the development of a Storm Water Pollution Prevention Plan (SWPPP) to ensure construction activities do not adversely affect water quality. This plan will need to be prepared in support of the Construction General Permit application. This is a regulatory compliance requirement and is not considered a mitigation measure.

Implementation of mitigation measure BIO-32 will reduce potential impacts to waters to a less than significant level under CEQA and NEPA and will ensure compliance with state and federal laws protecting these waters.

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?

Less than Significant Impact with Mitigation Incorporated. The habitat of the APE and surrounding areas consists of expansive open grasslands. Multiple game trails were observed during the field survey throughout the grassland habitat. The FKC and BDC could also be used as a wildlife movement corridor, but impacts would be temporary and minimal, and wildlife may be able to continue using it at night while construction is occurring and would be able to continue utilizing it after construction activities are completed.

The APE has suitable features that could be used as native wildlife nursery sites. Large trees with natural cavities were located adjacent to the APE and could function as native wildlife nursery sites for bats. Project-related impacts to any native wildlife nursery sites would be considered a significant impact under CEQA.

The potential impacts to species that could use the trees as a wildlife nursery site have been addressed in mitigation measures BIO-9 through BIO-10 in addition to BIO-33. Implementation of these will reduce potential impacts to native wildlife nursery sites to a less than significant level under CEQA.

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

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

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

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

4.4.3 Federal Cross-Cutting Topic

Federal Endangered Species Act

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

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

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

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

See discussion under checklist item a.

Fish and Wildlife Conservation Act

The Fish and Wildlife Conservation Act (Act), approved September 29, 1980, declares that fish and wildlife are of ecological, educational, esthetic, cultural, recreational, economic, and scientific value to the Nation. The Act acknowledges that historically, fish and wildlife conservation programs have focused on more recreationally and commercially important species within any particular ecosystem, without provisions for the conservation and management of nongame fish and wildlife. The purposes of this Act are to encourage all federal departments and agencies to utilize their statutory and administrative authority, to the maximum extent practicable and consistent with each agency's statutory responsibilities and to conserve and to promote conservation of non-game fish and wildlife and their habitats. The Act authorizes financial and technical assistance to the States for the development, revision, and implementation of conservation plans

and programs for nongame fish and wildlife. The Act defines "nongame fish and wildlife" as wild vertebrate animals in an unconfined state, that are not ordinarily taken for sport, fur, or food, not listed as endangered or threatened species, and not marine mammals within the meaning of the Marine Mammal Protection Act. The original Act authorized $5 million for each of Fiscal Years 1982 through 1985, for grants for development and implementation of comprehensive State nongame fish and wildlife plans and for administration of the Act.

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

Migratory Bird Treaty Act

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

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

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

See discussion under checklist item a.

Bald and Golden Eagle Protection Act

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

See discussion under checklist item a).

Magnuson-Stevens Fishery Conservation and Management Act

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

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

Clean Water Act

Section 404

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

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

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

Section 402

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

Section 401

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

The proposed Project will be required to obtain permits with USACE, RWQCB, and CDFW will be obtained for work within BDC, if necessary. These permits, certifications, and agreements would ensure there are no indirect downstream effects to jurisdictional waters. This has been memorialized as mitigation measure BIO-32.

4.4.4 Mitigation

General Project-Related Impacts

BIO-1 **(*WEAP Training*):** Prior to initiating construction activities (including staging and mobilization), all personnel associated with proposed Project construction will attend a mandatory Worker Environmental Awareness Program (WEAP) training, conducted by a qualified biologist (someone familiar with species in this report), 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 proposed Project. All trainees will sign a form documenting that they have attended WEAP training and understand the information presented to them.

BIO-2 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 proposed 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 proposed 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 Impacts to Special Status Plant Species

BIO-3 (*Botanical Surveys*): A qualified botanist/biologist will conduct focused botanical surveys during the appropriate blooming seasons for California jewelflower, California satintail, Hartweg's golden sunburst, Keck's checkerbloom, San Joaquin adobe sunburst, spiny-sepaled button-celery, and succulent owl's-clover according to CDFW's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (2018) for all areas within the APE, prior to the start of construction.

BIO-4 (*Avoidance Buffers*): If special status plants are identified during a survey, an avoidance buffer and, if necessary, use of exclusion fencing, will be placed around the area to avoid disturbing the plants and their root systems.

BIO-5 (*Formal Consultation*): If rare plant individuals or populations are detected within proposed Project work areas during the focused botanical surveys, and the plants cannot be avoided, the proposed Project proponent will initiate consultation with the California Native Plant Society (CNPS) (for CNPS-ranked species), CDFW (for California proposed, threatened, or endangered species), and/or USFWS (for threatened or endangered species) to determine next steps for relocation.

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

BIO-6 (*Avoidance*): The proposed 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-7 (*Pre-construction Surveys*): If activities must occur within the nesting bird season (February 1 to September 15), a qualified biologist (someone familiar with these species and nesting birds) will conduct a single pre-construction survey for tricolored blackbird colonies on the APE and up to 300 feet outside of the APE and Swainson's hawk nests on the APE and within a 0.5-mile radius outside of the APE within five (5) calendar days prior to the start of construction. The Swainson's hawk survey must 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 100 feet outside of the APE and for nesting raptors within the APE and up to 500 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-8 (*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 of Maternity Roosting Bats and Special Status Bats

BIO-9 (*Pre-Construction Surveys*): A pre-construction survey will be performed if construction activities fall between March 1 and September 30 (bat maternity season) to identify active bat roost locations in trees within 100 feet of the APE prior to the start of construction. A qualified biologist (someone familiar with bat roosts and their sign) will conduct a daytime roost survey and an emergence survey at potential roost locations within seven days prior to construction.

BIO-10 (*Establish Buffers*): On discovery of any active maternity season bat roosts, a qualified biologist will determine appropriate construction setback distances (buffer zones) based on the biology of the species, conditions of the roost(s), and the level of Project disturbance, if appropriate. If necessary, construction 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. Lighting is not to be used near roosts where it would shine on or into the roost entrance. Combustion equipment, such as generators, pumps, and vehicles are not to be parked, operated, under or within 100 feet of the roost.

Project-Related Mortality and/or Disturbance to American Badger

BIO-11 (*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 potentially active badger dens.

BIO-12 (*Remote Cameras*): If potential American badger dens are detected during the pre-construction survey, each potential den will be monitored with a remote camera for a period of at least three consecutive nights. If there is no activity recorded at the den location, the den can be deemed “inactive” or “unoccupied” and closed or excavated the same day as determining the den inactive.

BIO-13 (*Den Avoidance*): If an American badger is denning on or within 50 feet of the APE, the Project proponent will avoid the den by a minimum 50-foot buffer.

BIO-14 (*Timed Den Excavation*): If an American badger is denning on or within 50 feet of the APE and it cannot be avoided, the den may be excavated outside of the natal season (generally March 15 – June 15) or if it is determined that there are no cubs in the den. Prior to 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. Once this time has been determined and it is confirmed the badger left the den to forage the den will be excavated by hand, with the assistance of machinery. Scopes should be used to survey sections of the den prior to excavation. Should any cubs be discovered during the excavation the work will stop and the crew will leave the APE immediately so the female can rescue her cubs and relocate them.

Project-Related Mortality and/or Disturbance to Burrowing Owl

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 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 will include the proposed work area and surrounding lands up to 500 feet. If no BUOW individuals or active burrows are observed, no further mitigation is required.

BIO-16 (*Avoidance*): If an active BUOW burrow is detected avoidance buffers will be implemented. A qualified biologist will determine appropriate avoidance buffer distances based on CDFW's 2012 *Staff Report on Burrowing Owl Mitigation*, the biology of BUOW, conditions of the burrow(s), and the level of proposed 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-17 (*Passive Relocation*): If avoidance of an active BUOW burrow is not feasible, passive relocation during the non-breeding season (September 1 through January 31) may be utilized or during the breeding season (February 1 through August 31) if a qualified biologist determines that there are no young in the burrow. Prior to completion a qualified biologist will prepare a passive relocation plan that will detail the methods to be used. It 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, scopes, and machinery, if needed). Following completion of passive relocation, a report will be prepared that documents the methods and results of these efforts.

Project-Related Mortality and/or Disturbance to California Tiger Salamander

BIO-18 (*CTS Exclusion Fence Plan and Mortality Reduction and Relocation Plan*): Prior to the start of work a qualified biologist (experience surveying and handling CTS and implementing this work) will prepare a CTS exclusion fence plan and mortality reduction and relocation plan and submit them to CDFW and USFWS for approval. The CTS exclusion fence plan will include fencing materials; fencing design, length, layout (including maps), and installation methods; number of exit ramps, spacing, and locations; the number, spacing, material, size, and locations of cover boards to be placed along both sides of the fence to provide refuge areas; access gate design and locations; and inspection, maintenance, repair, and replacement methods and intervals.

The CTS mortality reduction and relocation plan will include a map of the Project area and potential upland habitat; detailed survey, excavation, capture, handling, and relocation methods; identification of relocation areas; and identification of a wildlife rehabilitation center or veterinary facility capable of treating injured wild amphibians

BIO-19 (*Burrow Excavation*): Prior to construction, burrow excavations will be completed under the direct supervision of a qualified biologist (experience surveying and handling CTS and implementing this work) for any burrows within the APE where ground disturbance will be occurring and up to 50 feet outside of these areas. These excavations will be

completed by hand and with the assistance of small machinery. A scope may be used to survey the burrow sections prior to excavating that section. If a CTS is observed during excavations, a qualified biologist (must possess appropriate collecting/handling permits) will stop work and relocate the individual according to the CTS mortality reduction and relocation plan.

BIO-20 (*Exclusion Fencing and Cover Boards*)**:** Within 48 hours of completing burrow excavation and prior to the start of work the proposed Project will install exclusion fencing and cover boards around the APE following the CTS exclusion fence plan to ensure CTS do not enter the APE during construction.

BIO-21 (*Open Excavations*)**:** All open trenches, holes, sumps, and other excavations with sidewalls steeper than a 1:1 (45 degree) slope will have an escape ramp of earth or a non-slip material with a less than 1:1 slope or these will be covered with barrier material such that animals are unable to dig or squeeze under the barrier and become entrapped.

BIO-22 (*Pre-activity Surveys and Monitoring*)**:** A qualified biologist (experience surveying and handling CTS and implementing this work) will conduct a pre-activity clearance survey each day and remain on the APE to oversee all vegetation clearing and ground disturbing activities conducted within suitable habitat for CTS. They will also inspect open excavations, the exclusion fence and cover boards, and under equipment and all materials before it is moved, buried, or capped. If a CTS is observed within the APE, the biologist will stop work and allow the individual to leave the APE of its own volition or follow the details outlined in the CTS mortality reduction and relocation plan.

BIO-23 (*CTS BMPs*)**:** All workers will employ the following BMPs in order to avoid and minimize potential impacts to CTS:

- Rain Forecast: A qualified biologist will monitor the National Weather Service 72-hour forecast for the APE. During rainfall events and/or when a 50 percent or greater chance of rainfall is predicted within 72 hours, all work will be stopped in the APE where initial ground disturbance (vegetation removal, grading, grubbing, and excavation) has yet to occur until the rainfall ceases and a zero percent chance of rain is forecast. Work may continue during rainfall events and/or when a 50 percent or greater chance of rain is forecast within portions of the APE that have already been cleared of CTS and which are surrounded by exclusion fence that has been properly maintained and is in good repair (in accordance with the CTS mortality reduction and relocation plan).

- Soil and Materials Stockpiles. Soil stockpiles will be placed where soil will not pass into the potential CTS breeding habitat, or into any other "Waters of the State," in accordance with Fish and Game Code section 5650. Stockpiles will be appropriately protected to prevent soil erosion. All materials and equipment will be stockpiled and staged in a manner that discourages CTS use. In all locations, bundled or loose materials will not be placed directly on the ground. These materials will be elevated to discourage use by CTS. Materials will not be placed outside of exclusion fencing.

- Erosion Control Materials. The use of erosion control materials potentially harmful to CTS and other species, such as monofilament netting (erosion control matting) or similar material, will not be used in potential CTS habitat.

- Refuse Removal. Upon completion of Project activities, all temporary fill and construction refuse, including, but not limited to, broken equipment parts, wrapping material, cords, cables, wire, rope, strapping, twine, buckets, metal or plastic containers, and boxes will be removed from the APE and disposed of properly.

To protect the proposed Project from enforcement action under the CESA, it is recommended the Project secures a CDFW Incidental Take Permit for CTS.

Project-Related Mortality and/or Disturbance to Crotch's Bumble Bee

BIO-24 (*Flying Bumble Bee and Nest Surveys*)**:** A qualified biologist (someone who is familiar with and can identify bumble bees) will conduct three flying bumble bee and nest surveys during the peak flying periods (April, May to June, and July) prior to initial ground disturbing activities. The biologist will walk throughout the APE and up to 50 feet outside of the APE during the optimal time of the day to inspect for bumble bees and any nests. If an individual is observed, it will be followed until it can be determined if a nest is present within the survey boundary.

BIO-25 (*Identification and Protection Plan*)**:** Bumble bee individuals must be captured to be identified. If a bumble bee nest is observed, no Project activities will occur within 50 feet of the nest until a plan to identify the species using the nest and protect nesting and overwintering Crotch's bumble bee has been submitted to CDFW and approved in writing by CDFW.

Project-Related Mortality and/or Disturbance to Northwestern Pond Turtle

BIO-26 (*Pre-construction Survey and Avoidance Buffers*)**:** Within seven (7) days prior to the start of construction, a qualified biologist (someone who is able to identify this species) will conduct a pre-construction survey for northwestern pond turtle within the APE and surrounding areas up to 330 feet. Pre-construction surveys will be conducted in accordance with the draft *Western Pond Turtle (Emys marmorata) Visual Survey Protocol for the Southcoast Ecoregion* (United States Geological Survey 2006). If no northwestern pond turtles are observed during the pre-construction survey, then construction activities may begin. If construction is delayed or halted for more than seven (7) days, another pre-construction survey for northwestern pond turtle will be conducted. If the surveys result in the identification of a northwestern pond turtle or an individual is found on the APE during construction activities, it will be allowed to leave the APE on its own and the qualified biologist will determine appropriate buffers to be implemented to avoid impacts to the individual(s).

BIO-27 (*Monitor*)**:** If northwestern pond turtles are observed on the APE, a qualified biologist will conduct a pre-activity clearance survey each day and remain on the APE to oversee all vegetation clearing and ground disturbing activities until the individual(s) have left the APE.

BIO-28 (*Formal Consultation*): If northwestern pond turtles within the APE cannot be avoided, the Project proponent will initiate protection plans and/or relocation plans in consultation with CDFW and/or USFWS.

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

BIO-29 (*Pre-Construction Survey*): Within seven (7) days prior to the start of construction a pre-construction survey for San Joaquin kit fox potential dens will be conducted on and within 200 feet of proposed work areas. If potential SJKF dens are detected during the pre-construction survey, each potential den will be monitored with a remote camera for a period of three consecutive nights. If there is no activity recorded at the den location, the den can be deemed "inactive" or "unoccupied" and closed or excavated the same day as determining the den inactive.

BIO-30 On discovery of any active 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-31 (*Avoidance and Minimization*): The proposed 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 Western Spadefoot

BIO-32 (*Soil Crack Excavation*): In addition to burrow excavations (BIO-19), soil cracks will also be excavated under the direct supervision of a qualified biologist (experience surveying and handling western spadefoot and implementing this work) for any soil cracks within the APE where ground disturbance will be occurring. These excavations will be completed by hand and with the assistance of small machinery. A scope may be used to survey the soil cracks prior to excavating. If a western spadefoot is observed during excavations, a qualified biologist (must possess appropriate collecting/handling permits) will stop work and relocate the individual outside of the work area following guidance from the CTS mortality reduction and relocation plan.

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

BIO-33 (*Permits*): Permits with USACE, RWQCB, and CDFW will be obtained for work within BDC, if necessary. These permits, certifications, and agreements would ensure there are no indirect downstream effects to jurisdictional waters.

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

BIO-34 (*Operational Hours*): When possible, construction activities should be limited to a half hour after sunrise through a half hour before sunset to reduce potential impacts to wildlife movement corridors.

BIO-35 (*Wildlife Access*): Access should not be blocked outside of construction hours or during overnight hours or weekends. If construction must block both sides of a wildlife access route, an alternative route through the construction area should be identified by a qualified biologist and maintained throughout the construction schedule timeframe.

4.5 CULTURAL RESOURCES

Table 4-12: Cultural Resources Impacts

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

4.5.1 Baseline Conditions

The prehistory of Indigenous cultures that had occupied the Fresno County area are known to have included many native American tribes that include, but are not limited to, the Mono, Yokut, Chukchansi, Choinumi, Wachumni, and Wahtokes. Near the turn of the 20th century, the U.S. government created rancherias and local tribes have positioned themselves in and near these newly-created rancherias since. Fresno County contains three rancherias which include Big Sandy, Table Mountain, and Cold Springs.[12]

Pedestrian Survey

A Class III/Phase I Survey for the proposed Project was prepared in May 2024 (see Appendix C) At the time of the Class III Inventory/ Phase I survey, the study area consisted of flat agricultural land containing row crops, orchards, irrigation delivery systems, and other typical rural/agricultural infrastructure.

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 January 2024. The 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 (NRHP), and the California State Built Environment Resources Directory listings were reviewed for the above referenced APE and an additional ½-mile radius. The search confirmed there has been one previous cultural resource study conducted within the Project area and there have been six previous cultural resource studies conducted within the one-half mile radius. The search also identified one cultural resource within the Project APE and two within a one-half mile radius of the Project APE. Due to the sensitive nature of cultural resources, archaeological site locations are not released. (Appendix C)

4.5.2 Impact Analysis

[12] (General Plan Consultant Team and Fresno County Staff 2000)

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

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

a and b) Less than Significant Impact with Mitigation Incorporated. The CHRIS Record search confirmed there has been one previous cultural resource study conducted within the Project area and there have been six previous cultural resource studies conducted within the one-half mile radius. The search also identified one cultural resource within the Project APE and two within a one-half mile radius of the Project APE. It is unlikely that the proposed Project has the potential to result in significant impacts or adverse effects to cultural or historical resources, such as archaeological remains, artifacts, or historic properties. However, in the improbable event that cultural resources are encountered during Project construction, implementation of mitigation measure CUL-1 outlined below would reduce impacts to less than significant.

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

Less than Significant Impact with Mitigation Incorporated. There is no evidence or record that the 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 site would be less than significant.

4.5.3 Federal Cross-Cutting Topic

National Historic Preservation Act

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

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

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

Adverse effects on historic properties often are resolved through preparation of a Memorandum of Agreement (MOA), developed in consultation with Reclamation, the SHPO, Native American tribes, the

Advisory Council on Historic Preservation, and interested members of the public. The MOA stipulates procedures that treat historic properties to mitigate adverse effects (36 CFR Part 800.14[b]).

No historic properties have been identified within the APE. Therefore, the proposed project would not have an adverse effect on historic properties.

4.5.4 Mitigation

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

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

4.6 ENERGY

Table 4-13: Energy Impacts

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

4.6.1 Baseline Conditions

The proposed Project would be located within Fresno County, outside of the City of Clovis. The Project area is served by Pacific Gas and Electric for both its electric energy and 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 34,552.75 gallons of diesel fuel and 5,460.74 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 4-14: Geology and Soils Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii. Strong seismic ground shaking?	☐	☐	☒	☐
iii. Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv. Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994) creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater 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 Fresno County, in the southern section of California's Great Valley Geomorphic Province, or Central Valley. The Sacramento Valley makes up the northern third and the San Joaquin Valley makes up the southern two-thirds of the geomorphic province. Both valleys are watered by large rivers flowing west from the Sierra Nevada Range, with smaller tributaries flowing east from the Coast Ranges. Most of the surface of the Great Valley is covered by Quaternary (present day to 1.6 million years ago) alluvium. The sedimentary formations are steeply upturned along the western margin due to the

uplifted Sierra Nevada Range.[13] 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.

The soils present and their characteristics at the Project site location can be found in both Table 4-9 and Appendix B.

Faults and Seismicity

The Project site is not located within an Alquist-Priolo Earthquake Fault Zone and no known faults cut through the local soil at the site. The nearest mapped principal fault is the San Andreas Fault, located approximately 80 miles southwest of the Project site.[14] 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 closest documented fault to the Project site is the Clovis fault, located approximately 1.75 miles southwest. This fault is considered an inactive Pre-Quaternary fault, meaning it has not moved at least in the last 1.6 million years.[15]

Liquefaction

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

Soil Subsidence

Subsidence occurs when a large land area settles due to over-saturation or extensive withdrawal of ground water, oil, or natural gas. These areas are typically composed of open-textured soils that become saturated. These areas are high in silt or clay content. The Project site is dominated by loam and sandy loam soils, with a low to moderate risk of subsidence (see Table 4-9).

Dam and Levee Failure

The proposed Project is not located in an area that would be susceptible to dam and levee failure impacts. The nearest dam is the BDC, No. 1017-2 located approximately one mile west; however the Project site is not located in its inundation zone.[16]

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

[13] (Harden 1998)
[14] (California Department of Conservation 2023)
[15] (United States Geological Survey 2023)
[16] (California Department of Water Resources 2022)

substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

ii. Strong seismic ground shaking?

a-i and a-ii) Less than Significant Impact. Ground shaking intensity is largely a function of distance from the earthquake epicenter and underlying geology. The most common impact associated with strong ground shaking is damage to structures and no habitable structures are associated with the proposed Project. The proposed Project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving the 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. No known faults with evidence of historic activity cut through the valley soils in the Project site. Due to the geology of the Project area and its distance from active faults, the potential for loss of life, property damage, ground settlement, or liquefaction to occur at the Project site is considered minimal.

According to the Alquist-Priolo Earthquake Fault Zoning Map the nearest known fault of any kind is the Clovis Fault located approximately 1.75 miles southwest of the Project site. The Clovis Fault is not considered an active fault as it has not moved in at least 1.6 million years. The nearest major active fault, the San Andreas Fault – creeping section, is located approximately 80 miles southwest. The proposed Project would not include habitable structures ; therefore, the proposed Project would not expose inhabitants to potential fault rupture impacts. Operation of the proposed Project would require infrequent, as-needed, routine maintenance trips to the site. Any impacts would be less than significant.

iii. Seismic-related ground failure, including liquefaction?

Less than Significant Impact. Liquefaction occurs when loose, water-saturated sediments lose strength and fail during strong ground shaking. In general, liquefiable areas are generally confined to the Valley floors covered by Quaternary-age alluvial deposits, Holocene soil deposits, current river channels, and active wash deposits and their historic floodplains, marshes, and dry lakes. Specific liquefaction hazard areas in the county have not been identified. The proposed Project would be required to be constructed in accordance with relevant California Building Code requirements to minimize potential impacts caused by liquefaction. With the implementation of applicable design requirements to prevent liquefaction impacts, impacts would be less than significant.

iv. Landslides?

Less than Significant Impact. The Project area exhibits a flat topography which is not susceptible to landslides. The surrounding landscape is comprised of flat, agricultural land which is also not conducive to conditions which would induce landslides. The elevation change between the base of BDC, and the top of the channel is minimal. Therefore, the proposed Project would not expose people or structures to potential substantial adverse effects involving landslides. Impacts would be less than significant.

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 excavation, trenching, and infrastructure construction. These activities could expose soils to erosion processes and the extent of erosion would vary depending on slope steepness/stability, vegetation/cover, concentration of runoff, and weather conditions. Dischargers whose projects disturb

one (1) or more acres of soil or whose projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity Construction General Permit Order 2009-0009-DWQ. Construction activity subject to this permit includes clearing, grading and disturbances to the ground such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development of a SWPPP by a certified Qualified SWPPP Developer. Since the Project site has relatively flat terrain with a low potential for soil erosion and would comply with the SWRCB requirements, the 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?

Less than Significant Impact. The proposed Project is not anticipated to adversely affect soil stability or increase the potential for local or regional landslides, subsidence, liquefaction, or collapse. As discussed previously, the Project site is in an area that is not reasonably assumed to contain conditions conducive to liquefaction hazards. The Project site is predominantly flat and thus there is the potential for landslides relatively low. Therefore, the proposed Project would not exacerbate hazards related to unstable soil and would not result in on- or off-site landslides, lateral spreading, subsidence, liquefaction, or collapse. Impacts would be less than significant.

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

Less than Significant Impact. Expansive soils, soils that shrink and swell as a result of moisture changes, typically exhibit a high percentage of clay in their overall composition Six soil mapping units representing five soil types were identified within the Project site and can be found in Table 4-9. The soils are comprised of sandy loam or loamy sand which contain a minor percentage of clay. Therefore, the potential for shrinking and swelling of the Project site soils are low. Therefore, impacts would be less than significant.

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

No Impact. The proposed Project would not require installation or use of septic tanks or alternative wastewater disposal systems. Wastewater would not be generated as a result of the proposed Project. Therefore, there would be no impact.

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

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

4.8 GREENHOUSE GAS EMISSIONS

Table 4-15: Greenhouse Gas Emissions Impacts

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

4.8.1 Baseline Conditions

Commonly identified GHG emissions and sources include the following:

Carbon dioxide (CO_2) is an odorless, colorless natural 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.[17] 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 2020.4.0. The emissions modeling includes emissions generated by off-road equipment, haul trucks, and worker commute trips. Emissions were quantified based on an anticipated construction schedule of approximately six months. Remaining assumptions were based on the default parameters contained in the model. Modeling assumptions and output files are included in Appendix A. Estimated construction-generated emissions are summarized in Table 4-16. GHGs impact the environment over time

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

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 4-16: Short Term Construction Related GHG Emissions

	Emissions (MT CO2e) in Tons per Year
Maximum Annual Construction CO2e Emissions	236.4181
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 3/15/24.

Construction related generation of GHGs would be a maximum of 236.4181 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 4-16, 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 4-17: Hazards and Hazardous Materials Impacts

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

4.9.1 Baseline Conditions

Hazardous Materials

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

List data. In addition to the EnviroStor database, the SWRCB GeoTracker database provides information on regulated hazardous waste facilities in California, including underground storage tank (UST) cases and non-UST cleanup programs, including Spills-Leaks-Investigations-Cleanups sites, Department of Defense sites, and Land Disposal program. A search of the DTSC EnviroStor database and the SWRCB GeoTracker performed on February 27, 2024, determined that there are no known active hazardous waste generators or hazardous material spill sites within the Project site or immediate surrounding vicinity.[18]

Airports

The Fresno Yosemite International Airport is the nearest airport to the proposed Project, located approximately nine miles southwest.

Emergency Response Plan

The County of Fresno Public Health Emergency Preparedness (PHEP) is responsible for developing response plans to be used in the event of a large-scale threat to the health of the residents of Fresno County. PHEP coordinates with agencies such as local hospitals, clinics, the Office of Emergency Services, Emergency Medical Services, as well as other county agencies and organizations. Some examples of public health emergencies include the following:[19]

- Avian Influenza (Bird Flu)
- Biological Agents and Diseases (Bioterrorism)
- Chemical Agents
- Emerging Infectious Diseases
- Fire Disaster Information
- Natural Disasters and Severe Weather
- Radiation Emergencies
- Power Outage

Sensitive Receptors

Common sensitive receptors typically include residences, schools, day care centers, hospitals, and nursing homes. The nearest development of any type to the proposed Project is a single-family residence located approximately 1,500 feet southeast. The residence is surrounded and obstructed by orchards and is not visible from the Project site.

4.9.2 Impact Analysis

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

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

a and b) Less than Significant Impact. There would be no transport, use, or disposal of hazardous materials associated with Project construction, with the exception of diesel fuel for construction equipment. Any potential accidental hazardous materials spills during Project construction is the responsibility of the

[18] (California Department of Toxic Substances Control 2022); (California State Waterboards 2023)
[19] (Fresno County 2024)

contractor to remediate in accordance with industry BMPs and State and county regulations. Any impacts would therefore be less than significant.

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

No Impact. The proposed Project would not be located within a quarter-mile of an existing or a proposed school. 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?

Less than Significant Impact. The proposed Project would not involve land that is listed as an active hazardous materials site pursuant to Government Code Section 65962.5 and is not included on a list compiled by DTSC. Both the SWQCB's GeoTracker and DTSC's EnviroStor websites were queried on February 27, 2024, for contaminated groundwater or sites in the area with negative findings Operation of the turnout would not involve the transport, use, or disposal of hazardous materials and the parcel proposed for the basin has not been identified as active hazardous waste generators or hazardous material spill sites. Impacts would be less than significant.

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

No Impact. As mentioned, the Fresno Yosemite International Airport is the nearest airport to the proposed Project, located approximately nine miles southwest. The Project site is not located in an airport land use plan or within two miles of an airport. Therefore, there would be no impact.

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

No Impact. The proposed Project would not include any physical barriers, nor would it interfere with any roadways in such a way that would impede emergency or hazards response. The proposed Project would not interfere with implementation of an emergency response plan or evacuation plan. There would be no impact.

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

Less than Significant Impact. Activities taking place at the Project site and the surrounding lands consist of operations related to agriculture uses and irrigation water delivery. The proposed Project would not include any residential components, nor would it require any employees to be stationed permanently at the site on a daily basis. Any impact would be less than significant.

4.10 HYDROLOGY AND WATER QUALITY

Table 4-18: Hydrology and Water Quality Impacts

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

4.10.1 Baseline Conditions

The proposed Project is located in the Kings subbasin of the San Joaquin Valley Basin and is a part of the NKGSA.[20] The NKGSA is a Joint Powers Authority formed in December 2016 through adoption of a Joint Powers Agreement that includes both FID and the County of Fresno. The NKGSA is authorized under SGMA to develop, adopt, and implement a GSP for the sustainable management of groundwater in a portion of

[20] (North Kings Groundwater Sustainability Agency 2022)

the Kings Subbasin. NKGSA submitted the North Kings GSP in 2020. A revised GSP, based on the Department of Water Resources' comments, has been prepared and resubmitted.[21]

According to the Biological Evaluation prepared for the Project (Appendix B), the nearest surface water to the proposed Project is BDC and the FKC which are both within the Project area. Vernal pools are also found in the areas adjacent to the site.

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. As mentioned previously, the SWRCB requires that a SWPPP be prepared for projects that disturb one (1) or more acres of soil. A SWPPP involves site planning and scheduling, limiting disturbed soil areas, and determining BMPs to minimize the risk of pollution and sediments being discharged from construction sites. Implementation of the SWPPP would minimize the potential for the proposed Project to substantially alter the existing drainage pattern in a manner that would result in substantial erosion or siltation onsite or offsite. Additionally, there would be no discharge to any surface source. However, by design, there would be percolation discharge to groundwater via water diversion into the BDC. Use of chemicals or surfactants would not be generated through the maintenance or operation of the proposed Project and as such, there would be no discharge directly associated with proposed Project implementation that could impact water quality standards. In addition, the proposed Project would be required to comply with BMPs listed in the Fresno-Clovis Storm Water Quality Management Program.[22] By meeting its regulatory compliance requirements, the proposed Project would not violate any water quality standards and would not impact waste discharge requirements. Therefore, impacts 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?

No Impact. The proposed Project would not require the need for water supplies and therefore would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge. In fact, the intention of the proposed Project would be to take delivery of water supplies that would otherwise leave the region as well as increase groundwater supplies by allowing diverted water to recharge via the BDC. Due to the unpredictable and uncertain hydrological conditions seen in California, specifically in the San Joaquin Valley, this additional water supply would be beneficial for the BDC reservoir, District growers, and various District recharge basins downstream. Therefore, there would be no impact.

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

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

[21] (Provost & Pritchard Consulting Group 2022)
[22] (Fresno Metropolitan Flood Control District 2013)

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;

iv. impede or redirect flood flows?

c-i – c-iv) Less than Significant Impact. The proposed Project would include the construction of a turnout along the FKC. The primary function of the proposed turnout is to divert water to the permeable BDC. Therefore, the addition of proposed Project components would not result in flooding as water would be diverted to an existing flood channel. Construction activity would involve excavation and soil disturbing activities that could contribute to surface runoff. However, as described under impact analysis "a", the proposed Project would be required to implement erosion control measures and BMPs to reduce any impacts. Therefore, with the inclusion of said measures and BMPs, impacts would be less than significant.

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

Less than Significant Impact. The Project site is not located in a tsunami or seiche zone and therefore would not release pollutants caused by tsunami or seiche inundations. The proposed Project is located in a 100-year flood zone (see Figure 4-7). The flood zone is BDC. Since the proposed Project proposes to construct a turnout off the FKC into the BDC, the proposed Project would be required to incorporate applicable BMPs to reduce any impacts of potential geological or water quality impacts from the release of pollutants. 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 comply with the standards set forth in the Fresno-Clovis Storm Water Quality Management Program. In addition, the proposed Project is identified as a future project in the NKGSA GSP and therefore would not conflict with a sustainable groundwater management plan. Impacts would be less than significant.

4.10.3 Federal Cross-Cutting Topic

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

The Federal Emergency Management Agency (FEMA) designates flood hazard and frequency for cities and counties on its Flood Insurance Rate Maps. The proposed Project area is located a designated 100-year floodplain, on a floodplain map, or otherwise designated by FEMA. Since the Project proposes to construct a turnout off the FKC into the BDC, the Project would be required to incorporate applicable BMPs to reduce any impacts of potential geological or water quality impacts from the release of pollutants.

Rivers and Harbors Act

The Rivers and Harbors Act of 1899 prohibits construction of any bridge, dam, dike, or causeway over or in navigable waterways of the U.S., without Congressional approval. Under Section 10 of the Act, the building of any wharfs, piers, jetties, and other structures is prohibited without Congressional approval, and excavation or fill within navigable waters requires the approval of the Chief of Engineers. The USACE is

authorized to issue permits for the discharge of refuse matter into or affecting navigable waters under Section 13 of the act.

The proposed Project would be constructed in a location that could affect a navigable waterway, requiring permit or approval by USACE.

Safe Drinking Water Act, Sole Source Aquifer Protection

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

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

The proposed Project is located in an SSA.

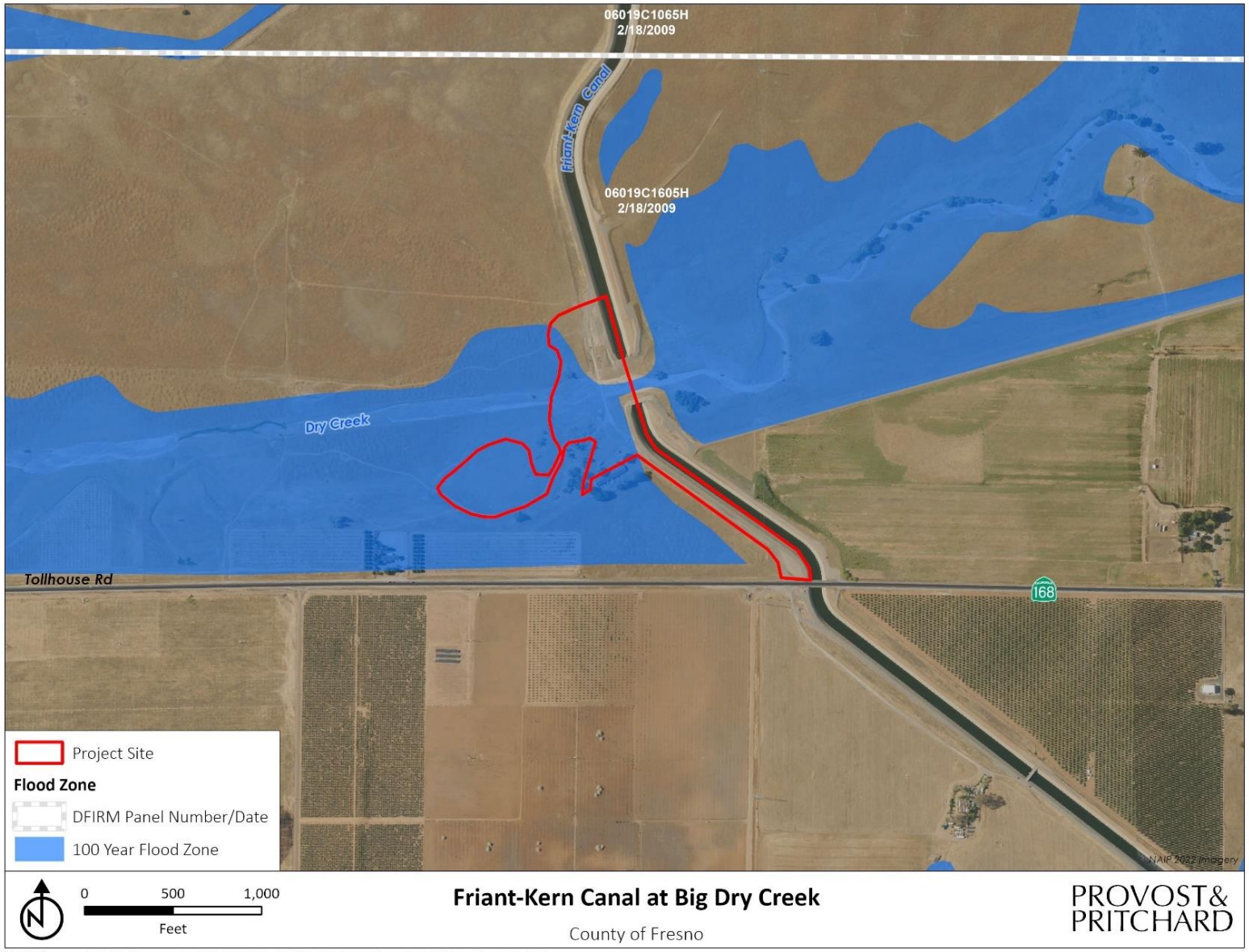

Figure 4-7. FEMA Flood Map

4.11 LAND USE AND PLANNING

Table 4-19: Land Use and Planning Impacts

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

4.11.1 Baseline Conditions

The Project site is located within an agricultural area of Fresno County. The County of Fresno is the land use authority for the Project area. The Project area and the surrounding lands are zoned and planned for agricultural uses. The nearest incorporated area to the proposed Project is the City of Clovis, located approximately 1.6 miles southwest.

4.11.2 Impact Analysis

a) Would the project physically divide an established community?

No Impact. The proposed Project is located in an agricultural region of Fresno County, with the City of Clovis being the closest city to the site. Surrounding uses are primarily agricultural. The proposed Project would not include any features that would physically divide an established community. There would be no impact.

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

No Impact. The Project area and the surrounding lands are zoned and planned for agricultural uses. Implementation of the proposed Project would not create new sources of water that would support any new housing or new permanent population growth that would exceed official regional or local population projections in the County. The proposed Project would help to combat groundwater overdraft by providing additional recharge capacity during wet years. The proposed Project is consistent with the land use within the vicinity and would not conflict with any applicable plans, policies, or regulations. Therefore, there would be no impact.

4.11.3 Federal Cross-Cutting Topic

Coastal Zone Management Act

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

4.12 MINERAL RESOURCES

Table 4-20: Mineral Resources Impacts

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

4.12.1 Baseline Conditions

According to the California DOC's Mineral Land Classification map, the Project site is not located in an area identified for aggregate material production.[23] The Fresno County General Plan Background Report identifies sand and gravel resources throughout the County. There are no mineral resource locations located at the Project site.

The California Geological Survey, previously known as California DOC Division of Mines and Geology, analyzed this region for the presence of aggregate resources in a 1988 mineral land classification report and a subsequent 1999 update. In each of these reports California Geological Survey (CGS) classified the Fresno PC region according to the presence or absence of significant aggregate deposits. The land classification is presented in the form of Mineral Resource Zones (MRZs). As seen in Figure 7-12 of the Fresno County General Plan Background Report, most of the City of Fresno, outside of the San Joaquin and Kings River Resource Areas has an MRZ-3 designation and may contain economically recoverable mineral resources. MRZ-3 represents areas containing mineral deposits the significance of which cannot be evaluated from data available to the CGS.[24] This includes the Project site.

4.12.2 Impact Analysis

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

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

a and b) No Impact. The California Geological Survey Division of Mines and Geology has not classified the Project site as a Mineral Resource Zone under the Surface Mining and Reclamation Act (SMARA). California's Division of Oil, Gas and Geothermal Resources has no records of closed or active oil or gas wells on the Project site. No known mineral resources are located within the Project site or the vicinity. Therefore, construction of the proposed Project would not result in the loss of availability of a known

[23] (California Department of Conservation 2015)
[24] (The County of Fresno 2023)

mineral resource since no known mineral resources occur in this area. Operation of the proposed Project would not result in mineral resource impacts. There would be no impact.

4.13 NOISE

Table 4-21: Noise Impacts

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

4.13.1 Baseline Conditions

The Project site is located in Fresno County, dominated primarily by agricultural lands. The proposed Project is located in a rural area with little to no development in the surrounding vicinity. The nearest development of any type to the proposed Project is a single-family residence located approximately 1,500 feet southeast. The residence is surrounded by orchards and is not visible from the Project site.

The nearest major source of transportation noise is SR 168, located approximately 1,000 feet south. The nearest airport to the proposed Project is the Fresno Yosemite International Airport, located approximately nine miles southwest.

Fresno County Noise Control Ordinance[25]: Chapter 8.40 of the Fresno County Municipal Code contains the Noise Control Ordinance, which places limits on noise levels and hours of construction. Section 8.40.060 states that noise sources associated with construction activities are exempt from the provisions of the Noise Control Ordinance, as long as construction does not take place before 6:00 a.m. or after 9:00 p.m. on any day except Saturday or Sunday, or before 7:00 a.m. or after 5:00 p.m. on Saturday or Sunday.

4.13.2 Impact Analysis

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

Less than Significant Impact. The construction phase of the proposed Project would involve temporary noise sources, predominately from off-road equipment, such as excavators, backhoe/loaders,

[25] (Fresno County California Code of Ordinances 1978)

compactors, hauling trucks, concrete trucks, and concrete pumpers. The proposed Project is adjacent to agricultural lands that are accustomed to noises associated with farm equipment. The proposed Project would comply with the Fresno County Noise Control Ordinance found in Chapter 8.40 of the Fresno Municipal Code. Operational maintenance activities would be on an as-needed basis with routine monitoring performed by existing staff and would not generate significant new noise. Any impacts would be mild and temporary and therefore, less than significant.

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

Less than Significant Impact. The construction phase of the proposed Project would primarily consist of excavation and grading. As mentioned, the Project site is located in an area dominated by agricultural production. Agricultural production commonly includes the use of off-road equipment and ground-disturbing activities regularly that generates significant noise. During construction, proposed Project-related construction activities would not vary substantially from the baseline conditions routinely experienced on neighboring properties. Therefore, implementation of the proposed Project would result in less than significant impacts.

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

No Impact. The Project site is not located within an airport land use plan of an airport. The nearest airport is the Fresno Yosemite International Airport, located approximately nine miles southwest of the Project site. The proposed Project would not include the development of habitable structures or require the presence of permanent staff onsite. Therefore, there would be no impact.

4.14 POPULATION AND HOUSING

Table 4-22: Population and Housing Impacts

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

4.14.1 Baseline Conditions

Fresno County's population as of July 2022 Census data is estimated to be 1,015,190 with a percent population change from 2020 to 2022 of 0.6 percent. As of 2022, there is an estimated 345,493 housing units with an average of 3.14 persons per household.[26]

4.14.2 Impact Analysis

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

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

a and b) No Impact. The goal of the proposed turnout Project is to improve recharge capacity of the BDC. The water diverted from the FKC would be used for irrigation purposes. The proposed Project would not encourage population growth directly or indirectly. No residential structures would be built or removed as part of the proposed Project. Therefore, there would be no impact.

4.14.3 Federal Cross-Cutting Topic

Environmental Justice Executive Order 12898

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

USEPA has developed a mapping and screening tool called EJSCREEN that uses nationally consistent data to identify minority or low-income communities. According to EJSCREEN, the Project site is not in an

[26] (United States Census Bureau - Fresno County 2023)

environmental justice community (USEPA 2015). In addition, the purpose of the proposed Project would be to supply clean, reliable water to residents of FID. Because the proposed Project would directly benefit the local community only, no disproportional health or environmental effect would be imposed on minority or low-income populations. The proposed Project would not conflict with the purpose and objectives of EO 12898.

4.15 PUBLIC SERVICES

Table 4-23: Public Services

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

4.15.1 Baseline Conditions

Fire Protection: The proposed Project would be served by the Fresno County Fire Protect District for fire protection services. The closest Fresno County fire station is Fire Station 85, located approximately 5.4 miles southwest of the Project.

Police Protection: The proposed Project would be served by the Fresno County Sheriff's Department for police protection services. The closest Fresno County Sheriff's Station is located approximately 8.2 miles southwest of the proposed Project near the Fresno-Yosemite International Airport.

Schools: Public school services are provided throughout the County by 35 school districts. Of the 35 school districts, 16 are unified districts and 19 districts consist of 16 elementary school districts and three high school districts; many of which have one or two schools[27]. The closest school to the Project site is the Bud Rank Elementary School, located approximately 2.5 miles west-southwest in the City of Clovis.

Parks: Fresno County has several regional parks, as well as State and national parks, national forest, wilderness areas and ecological reserves. The development and maintenance of regional parks and landscaped areas is held responsible by the Fresno County Parks Division. The nearest park is Harlan Ranch Park, located approximately 2.5 miles west-southwest in the community of Harlan Ranch in the City of Clovis.

Landfills: The nearest landfill to the Project site is the Granite Solid Waste located approximately 4.3-miles northeast.

[27] (Fresno County 2000)

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 include any features or facilities that would require additional or unusual fire protection resources, enhanced levels of police protection, nor does it have the potential to increase or decrease the area's population and therefore would not impact demand for schools or parks. The proposed Project would not result in adverse physical impacts associated with the provision of new or physically altered governmental facilities. No habitable structures would be constructed on the site that would require any public services. The operation and maintenance of the proposed Project would be consistent with that of other similar federal USBR facilities. This includes consistent cleaning of debris and sediment and regular monitoring. Friant Water Authority would be responsible for operation of the new turnout. The District would be responsible for the maintenance of the turnout and Reclamation would own the proposed turnout on the FKC. There would be no impact.

4.16 RECREATION

Table 4-24: 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

Fresno County has several regional parks, as well as State and national parks, national forest, wilderness areas and ecological reserves. The development and maintenance of regional parks and landscaped areas is held responsible by the Fresno County Parks Division. The unincorporated areas of Fresno County have approximately 1,165 acres of parkland to serve approximately 174,200 persons. The Parks and Recreation Element of the Fresno County General Plan does not establish a standard for the number of park acres or facilities per person for these uses. The nearest park is Harlan Ranch Park, located approximately 2.5 miles west-southwest in the community of Harlan Ranch in the City of Clovis.

4.16.2 Impact Analysis

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

No Impact. As mentioned throughout this document, the proposed Project proposes to construct a new turnout on the FKC to divert water into the BDC. Water diverted would provide water to an unlined creek that has the capacity to recharge the underlying aquifer. Implementation of the proposed Project would not increase the use or demand of any existing neighborhood, regional parks, or other recreational facilities of any kind. No population growth is anticipated or associated with the proposed Project. There would be no impact.

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

No Impact. The proposed Project would not include recreational facilities as part of the proposed Project, nor would it propose the expansion of any existing recreational facilities. Therefore, there would be no impact.

4.17 TRANSPORTATION

Table 4-25: 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

Fresno County's circulation system consists of a roadway network that is primarily rural in character, with exception of the urbanized area surrounding the cities of Fresno and Clovis and various smaller communities in the southern and western parts of the County. The most important inter-regional roadways within the County are the state highways particularly SR 99, SR 41, and Interstate 5.

The site would be accessible via access roads and a vehicular/pedestrian gate off of Tollhouse Road (SR 168) which is an east-west state highway. SR 168 is located just 1,000 feet south of the proposed Project site.

4.17.2 Impact Analysis

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

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

a and b) Less than Significant Impact. Construction traffic associated with the proposed Project would be minimal and temporary, lasting approximately six months. Operational traffic would consist of as-needed maintenance trips to the site. No road improvements are proposed as a part of the proposed Project. There would not be a significant adverse effect to existing roadways in the area.

Construction associated with the proposed Project would be restricted to the Project site and it would not intersect any roadways, pedestrian or bicycle paths. Construction-related impacts would be temporary and there would be no impacts to the surrounding transportation network. Road closures and detours are not anticipated as part of construction.

There would be no population growth associated with the proposed Project, nor would implementation of the proposed Project result in an increase of staff or drivers utilizing roadways in the area. Therefore, implementation of the proposed Project would not increase the demand for any changes to congestion

management programs or interfere with existing level of service standards during the operational phase. Construction-related roadway interferences 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. No new roadway design features are associated with the proposed Project. Therefore, there would be no impact.

d) Would the project result in inadequate emergency access?

Less than Significant Impact. As mentioned above in Impact Assessments a, b, and c, the proposed Project would not propose new roadway design features or permanent alterations to roadways at the Project site. All potential disturbances to roadways during construction would be temporary. Road closures and detours are not anticipated as part of the construction phase of the proposed Project. The operational phase of the proposed Project would have no effect on roadways or emergency access. Therefore, overall potential Project-related impacts to emergency access on local roadways would be considered less than significant.

4.18 TRIBAL CULTURAL RESOURCES

Table 4-26: Tribal Cultural Resources Impacts

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

4.18.1 Baseline Conditions

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

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

PRC 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. (Appendix C)

The District, as the CEQA lead agency, has received written correspondence from two tribes, Dumna Wo Wah Tribal Government and Santa Rosa Rancheria Tachi Yokut Tribe, pursuant to PRC Section 21080.3.1 requesting notification of proposed project.

The District sent a certified letter via United States Postal Service on February 21, 2024, to both tribes describing the proposed Project and provided maps of the Project site location. The District's contact information and notification that the Tribe had 30 days to request consultation pursuant to AB 52 were included. The 30-day timeline ran its course and the District received one response by the Santa Rosa Rancheria Tachi Yokut Tribe who deferred to the Table Mountain Rancheria Tribe. No comments or concerns were raised by the Table Mountain Rancheria Tribe. All Tribal correspondence is included within Appendix C.

Records Search

An archival records search was conducted at the California State University, Bakersfield, SSJVIC, by SSJVIC staff members January 2024, to determine: (i) if prehistoric or historical cultural resources had previously been recorded within the APE; (ii) if the APE had been systematically surveyed by archaeologists prior to the initiation of this field study; and/or (iii) whether the region of the proposed Project was known to contain archaeological sites and to thereby be archaeologically sensitive. (Appendix C)

According to the records search results, there has been one previous cultural resource study conducted within the Project area and there have been six previous cultural resource studies conducted within the one-half mile radius. The search also identified one cultural resource within the Project APE and two within a one-half mile radius of the Project APE.

Native American Outreach

The NAHC in Sacramento was also contacted in January 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 APE. The NAHC identifies, catalogs, and protects Native American cultural resources -- ancient places of special religious or social significance to Native Americans and known ancient graves and cemeteries of Native Americans on private and public lands in California. The NAHC is also charged with ensuring California Native American tribes' accessibility to ancient Native American cultural resources on public lands, overseeing the treatment and disposition of inadvertently discovered Native American human remains and burial items, and administering the California Native American Graves Protection and Repatriation Act, among many other powers and duties. NAHC provide a current list of Native American Tribal contacts to notify of the project. The results of the Sacred Lands File Search were negative for the presence of tribal cultural resources. The 16 tribal representatives identified by NAHC were contacted in

writing via United States Postal Service in a letter mailed in January 2024, informing each Tribe of the proposed Project.

1. Dumna Wo-Wah Tribal Government, Robert Ledger, Chairperson
2. North Fork Rancheria of Mono Indians, Fred Beihn, Chairperson
3. North Fork Rancheria of Mono Indians, Mary Stalter, Environmental/Heritage Manager
4. Northern Valley Yokut / Ohlone Tribe, Timothy Perez, Tribal Compliance Officer
5. Picayune Rancheria of the Chukchansi Indians, Heather Airey, Tribal Historic Preservation Officer
6. Picayune Rancheria of the Chukchansi Indians, Tracey Hopkins, Chairperson
7. Santa Rosa Rancheria Tachi Yokut Tribe, Samantha McCarty, Cultural Specialist ll
8. Santa Rosa Rancheria Tachi Yokut Tribe, Shana Powers, THPO
9. Santa Rosa Rancheria Tachi Yokut Tribe, Nichole Escalon, Cultural Specialist l
10. Table Mountain Rancheria, Bob Pennell, Cultural Resource Director
11. Table Mountain Rancheria, Michelle Heredia-Cordova, Chairperson
12. Traditional Choinumni Tribe, David Alvarez, Chairperson
13. Tule River Indian Tribe, Kerri Vera, Environmental Department
14. Tule River Indian Tribe, Joey Garfield, Tribal Archaeologist
15. Tule River Indian Tribe, Neil Peyron, Chairperson
16. Wuksachi Indian Tribe/Eshom Valley Band, Kenneth Woodrow, Chairperson

Phase 1 Pedestrian Survey

An intensive Class III Inventory/Phase I survey of the Project APE was conducted in May 2024 by ASM Affiliates staff. The APE was examined with the field crew walking parallel transects space at approximately 15-m intervals, in order to identify surface artifacts, archaeological indicators (e.g., shellfish or animal bone), and/or archaeological deposits (e.g., organically enriched midden soil); tabulation and recording of surface diagnostic artifacts; site sketch mapping; preliminary evaluation of site integrity; and site recording, following the California Office of Historic Preservation Instructions for Recording Historic Resources, using California Department of Parks and Recreation 523 forms. Special attention was paid to rodent burrow back dirt piles, in the hope of identifying sub-surface soil conditions that might be indicative of archaeological features or remains. (Appendix C).

4.18.2 Impact Assessment

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

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

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

a-i – a-ii) Less than Significant Impact with Mitigation Incorporated. A search of the NAHC Sacred Lands File was completed for the APE. No tribal cultural resources were identified. Additionally, a records search was conducted at the SSJVIC, California State University, Bakersfield. This search also determined that tribal cultural resources were not present on-site.

The District, as a public lead agency, has received formal requests for notification from the Dumna Wo Wah Tribe and the Santa Rosa Rancheria Tachi Yokut Tribe, Public Resources Code Section 21080.3.1 (AB 52). No responses from the Dumna Wo Wah were received; however, the Santa Rosa Rancheria Tachi Yokut Tribe responded and deferred to the Table Mountain Rancheria Tribe. No comments or concerns were raised by the Table Mountain Rancheria Tribe.

There is little chance the proposed Project would cause a substantial adverse change to the significance of a tribal cultural resource as defined. Mitigation Measures **CUL-1 and CUL-2,** described in Section 4.5 Cultural Resources are recommended in the event cultural materials or human remains are unearthed during excavation or construction. Implementation of mitigation measures outlined above would reduce impacts to tribal cultural resources to less than significant impacts.

4.18.3 Mitigation

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

4.19 UTILITIES AND SERVICE SYSTEMS

Table 4-27: 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

Water Supply

The proposed Project is located within the Kings Subbasin of the overarching San Joaquin Valley Groundwater Basin, as defined by the California Department of Water Resources Groundwater Bulletin 118. Declines in groundwater basin storage and groundwater overdraft are recurring problems in Fresno County. Measures for ensuring the continued availability of groundwater for municipal needs have been identified and planned in several areas of the county. The measures include groundwater conservation and recharge, and supplementing or replacing groundwater sources for irrigation with surface water.

Wastewater Collection and Treatment

The Fresno-Clovis Regional Wastewater Treatment Facility is the closest wastewater facility, located approximately 20 miles southwest.

Landfills

The closest landfill to the Project site is owned and operated by American Avenue Landfill over 33-miles southwest of the Project site.

4.19.2 Impact Analysis

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

No Impact. The proposed Project would not require construction of new or relocation or expansion of existing facilities for water, wastewater treatment, storm water drainage, electric power, natural gas, or telecommunications. 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. The proposed Project consists of construction of a canal turnout off of the FKC to divert water to the BDC. The diverted water would be used to recharge the underlying Kings subbasin to achieve groundwater sustainability. Project operation would be passive and would not reduce the area's available water supply under any scenario. Only excess water during wet years would be diverted to the BDC. Therefore, there would be no impact.

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

No Impact. The proposed Project would not require or result in the construction of new storm water drainage facilities or expansion of existing facilities. Therefore, there would be no impact.

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

Less than Significant Impact. The proposed Project would generate minor amounts of solid waste during construction; however, it would be temporary and properly disposed of during construction and upon completion. No solid waste would be generated during operation and maintenance. Any impacts with regard to solid waste 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 continue to comply with any federal, State, and local regulations related to solid waste. There would be no impact.

4.20 WILDFIRE

Table 4-28: Wildfire Impacts

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

4.20.1 Baseline Conditions

The Project site is located in the western unincorporated jurisdiction of Fresno County in the central San Joaquin Valley. The Project site is located in a rural area with little to no development in the surrounding vicinity. The surrounding physical setting includes the BDC, the FKC, orchards, and grassy open fields.

According to California Department of Forestry and Fire Protection (CalFire), the proposed Project is located within a State Responsibility Area, meaning CalFire assumes responsibility for wildfire prevention and protection.[28] Furthermore, according to CalFire, the Project area is not located within a Very High Fire Hazard Severity Zone, but a moderate fire hazard severity zone. The nearest very high fire hazard severity zone can be found approximately 15.6 miles east near Hog Mountain.[29]

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?

Less than Significant Impact. The Project site, during construction, would be accessed off of SR 168. SR 168 would not be obstructed as the work itself would be located at least 1,000 feet north of the highway.

[28] (California Department of Forestry and Fire Protection 2023)
[29] (ArcGIS 2023)

No aspect of construction would cause any roadway closures or detours that would impact emergency response or evacuation plans. Therefore, impacts would be less than significant.

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?

Less than Significant Impact. Excluding the FKC and BDC, the Project site is essentially flat. There are no significant slopes, occurrences of frequent prevailing winds, or other factors that would exacerbate wildfire risks. Moreover, the Project site is not located in an area that is designated as a high or very high fire hazard severity zone; therefore, the likelihood of a wildland fire is not severe or normally anticipated. Therefore, impacts would be less than significant.

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?

Less than Significant Impact. No aspect of the proposed Project would 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. Impacts would be less than significant.

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?

Less than Significant Impact. The proposed Project would divert water from the FKC to the BDC for groundwater recharge. The FKC is a lined canal, and its structural integrity would not be altered in a manner that would increase downstream flooding or landslides. The BDC is an existing channel and implementation of the proposed Project would not result in any drainage changes. Therefore, impacts would be less than significant.

4.21 CEQA MANDATORY FINDINGS OF SIGNIFICANCE

Table 4-29: CEQA Mandatory Findings of Significance

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

4.21.1 Statement of Findings

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

Less than Significant Impact with Mitigation Incorporated. The potential for impacts to biological resources, cultural resources, and tribal cultural resources from the construction and operation of the proposed Project would be less than significant with the incorporation of the mitigation measures discussed above and outlined in Chapter 5 Mitigation, Monitoring, and Reporting Program. Accordingly, the Project would not involve any 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 eliminate important examples of the major periods of California history or prehistory. The analysis conducted in this IS/MND results in a determination that the proposed Project, with incorporation of mitigation measures discussed above and outlined in Chapter 5 Mitigation, Monitoring, and Reporting Program, would have a less than significant effect on the environment.

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

Less than Significant Impact. CEQA Guidelines Section 15064(i) States that a Lead Agency shall consider whether the cumulative impact of a project is significant and whether the effects of the project are cumulatively considerable. The assessment of the significance of the cumulative effects of a project must, therefore, be conducted in connection with the effects of past projects, other current projects, and probable future projects. The proposed Project would include the construction of a new turnout off the FKC to divert water into the BDC.

No additional roads would be constructed as a result of the proposed Project, nor would any additional public services be required. The proposed Project is not expected to result in direct or indirect population growth. 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 future Project design.

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

Less than Significant Impact. The proposed turnout Project in and of itself would not create a significant hazard to the public or the environment. Construction-related air quality/dust exposure impacts could occur temporarily as a result of Project construction. However, implementation of basic regulatory requirements identified in this IS/MND would ensure that impacts are less than significant. Therefore, the proposed Project would not have any direct or indirect adverse impacts on humans. The impacts would be less than significant.

CHAPTER 5 MITIGATION, MONITORING, AND REPORTING PROGRAM

This Mitigation Monitoring and Reporting Program (MMRP) has been formulated based upon the findings of the Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Project in the County of Fresno. 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 proposed Project construction will attend a mandatory Worker Environmental Awareness Program (WEAP) training, conducted by a qualified biologist (someone familiar with species in this report), 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 proposed 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	FID		
BIO-2	The Project proponent will require that all workers employ the following best management practices	Prior to the start of any construction activities	During Construction	FID		

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Item	Mitigation Measure	When Monitoring is to Occur	Frequency of Monitoring	Agency Responsible for Monitoring	Method to Verify Compliance	Verification of Compliance
	(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 proposed 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 proposed 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 Impacts to Special Status Plant Species						
BIO-3	(***Botanical Surveys***): A qualified botanist/biologist will conduct focused botanical surveys during the appropriate blooming seasons for California jewelflower, California satintail, Hartweg's golden sunburst, Keck's checkerbloom, San Joaquin adobe sunburst, spiny-sepaled button-celery, and succulent owl's-clover according to CDFW's Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities (2018) for all areas within the APE, prior to the start of construction.	During appropriate blooming seasons prior to the start of construction	Once, as determined by qualified biologist during construction activities	FID		

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-4	(***Avoidance Buffers***): If special status plants are identified during a survey, an avoidance buffer and, if necessary, use of exclusion fencing, will be placed around the area to avoid disturbing the plants and their root systems.					
BIO-5	(***Formal Consultation***): If rare plant individuals or populations are detected within proposed Project work areas during the focused botanical surveys, and the plants cannot be avoided, the proposed Project proponent will initiate consultation with CNPS (for CNPS-ranked species), CDFW (for California proposed, threatened, or endangered species), and/or USFWS (for threatened or endangered species) to determine next steps for relocation.	Upon discovery of special status plant species	Once, as determined by qualified biologist during construction activities	FID		
Project-Related Mortality and/or Nest Abandonment of Migratory Birds, Raptors, and Special Status Birds						
BIO-6	(***Avoidance***): The proposed 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, as determined by qualified biologist during construction activities	FID		
BIO-7	(***Pre-construction Surveys***): If activities must occur within the nesting bird season (February 1 to September 15), a qualified biologist (someone familiar with these species and nesting birds) will conduct a single pre-construction survey for tricolored blackbird colonies on the APE and up to 300 feet outside of the APE and Swainson's hawk nests on the APE and within a 0.5-mile radius outside of the APE within five (5) calendar days prior to the start of construction. The Swainson's hawk survey must 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 100 feet outside of the APE and	Within 5 days prior to construction between June 11 to April 20	Once, Prior to ground disturbing activities and the start of construction	FID		

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
	for nesting raptors within the APE and up to 500 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-8	(***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 proposed 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.	Prior to construction activities	Once, Prior to ground disturbing activities and the start of construction	FID		
Project-Related Mortality and/or Disturbance of Maternity Roosting Bats and Special Status Bats						
BIO-9	(***Pre-Construction Surveys***): A pre-construction survey will be performed if construction activities fall between March 1 and September 30 (bat maternity season) to identify active bat roost locations in trees within 100 feet of the APE prior to the start of construction. A qualified biologist (someone familiar with bat roosts and their sign) will conduct a daytime roost survey and an emergence survey at potential roost locations within seven days prior to construction.	Prior to construction activities	Once, Prior to ground disturbing activities and the start of construction	FID		
BIO-10	(***Establish Buffers***): On discovery of any active maternity season bat roosts, a qualified biologist will determine appropriate construction setback distances (buffer zones) based on the biology of the species, conditions of the roost(s), and the level of proposed Project disturbance, if appropriate. If necessary, construction 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	Upon discovery of any active maternity season bat roosts	Once, as determined by qualified biologist during construction activities	FID		

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
	impacted by construction. Lighting is not to be used near roosts where it would shine on or into the roost entrance. Combustion equipment, such as generators, pumps, and vehicles are not to be parked, operated, under or within 100 feet of the roost.					
Project-Related Mortality and/or Disturbance to American Badger						
BIO-11	**(*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 potentially active badger dens.	7 days prior to construction	Once, as determined by qualified biologist during construction activities	FID		
BIO-12	**(*Remote Cameras*):** If potential American badger dens are detected during the pre-construction survey, each potential den will be monitored with a remote camera for a period of at least three consecutive nights. If there is no activity recorded at the den location, the den can be deemed "inactive" or "unoccupied" and closed or excavated the same day as determining the den inactive.	Upon discovery of American badger dens	Once, as determined by qualified biologist during construction activities	FID		
BIO-13	**(*Den Avoidance*):** If an American badger is denning on or within 50 feet of the APE, the Project proponent will avoid the den by a minimum 50-foot buffer.	During construction activities	During construction activities	FID		
BIO-14	**(*Timed Den Excavation*):** If an American badger is denning on or within 50 feet of the APE and it cannot be avoided, the den may be excavated outside of the natal season (generally March 15 – June 15) or if it is determined that there are no cubs in the den. Prior to 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. Once this time has been determined and it is confirmed the badger left the den to forage the den will be excavated by hand,	During construction activities	During construction activities	FID		

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Item	Mitigation Measure	When Monitoring is to Occur	Frequency of Monitoring	Agency Responsible for Monitoring	Method to Verify Compliance	Verification of Compliance
	with the assistance of machinery. Scopes should be used to survey sections of the den prior to excavation. Should any cubs be discovered during the excavation the work will stop and the crew will leave the APE immediately so the female can rescue her cubs and relocate them.					
Project-Related Mortality and/or Disturbance to Burrowing Owl						
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 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 will include the proposed work area and surrounding lands up to 500 feet. If no BUOW individuals or active burrows are observed, no further mitigation is required.	7 days prior to construction	Once, as determined by qualified biologist during construction activities	FID		
BIO-16	**(*Avoidance*):** If an active BUOW burrow is detected avoidance buffers will be implemented. A qualified biologist will determine appropriate avoidance buffer distances based on CDFW's 2012 *Staff Report on Burrowing Owl Mitigation*, the biology of BUOW, 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	FID		
BIO-17	**(*Passive Relocation*):** If avoidance of an active BUOW burrow is not feasible, passive relocation during the non-breeding season (September 1 through January 31) may be utilized or during the breeding season (February 1 through August 31) if a qualified biologist determines that there are no young in the burrow. Prior to completion a qualified biologist will prepare a passive relocation plan that will detail the	September 1 to January 31 or February 1 to August 31	Once, as determined by qualified biologist during construction activities	FID		

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
	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, scopes, and machinery, if needed). Following completion of passive relocation, a report will be prepared that documents the methods and results of these efforts.					
Project-Related Mortality and/or Disturbance to California Tiger Salamander						
BIO-18	(***CTS Exclusion Fence Plan and Mortality Reduction and Relocation Plan***): Prior to the start of work a qualified biologist (experience surveying and handling CTS and implementing this work) will prepare a CTS exclusion fence plan and mortality reduction and relocation plan and submit them to CDFW and USFWS for approval. The CTS exclusion fence plan will include fencing materials; fencing design, length, layout (including maps), and installation methods; number of exit ramps, spacing, and locations; the number, spacing, material, size, and locations of cover boards to be placed along both sides of the fence to provide refuge areas; access gate design and locations; and inspection, maintenance, repair, and replacement methods and intervals. The CTS mortality reduction and relocation plan will include a map of the Project area and potential upland habitat; detailed survey, excavation, capture, handling, and relocation methods; identification of relocation areas; and identification of a wildlife rehabilitation center or veterinary facility capable of treating injured wild amphibians.	Prior to construction	Once, as determined by qualified biologist during construction activities	FID		
BIO-19	(***Burrow Excavation***)**:** Prior to construction, burrow excavations will be completed under the direct supervision of a qualified biologist (experience surveying and handling CTS and implementing this work) for any burrows within the APE where ground	Prior to construction	Once, as determined by qualified biologist during	FID		

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
	disturbance will be occurring and up to 50 feet outside of these areas. These excavations will be completed by hand and with the assistance of small machinery. A scope may be used to survey the burrow sections prior to excavating that section. If a CTS is observed during excavations, a qualified biologist (must possess appropriate collecting/handling permits) will stop work and relocate the individual according to the CTS mortality reduction and relocation plan.		construction activities			
BIO-20	**(*Exclusion Fencing and Cover Boards*):** Within 48 hours of completing burrow excavation and prior to the start of work the Project will install exclusion fencing and cover boards around the APE following the CTS exclusion fence plan to ensure CTS do not enter the APE during construction.	Within 48 hours of completing burrow excavation and prior to the start of construction	Once, as determined by qualified biologist during construction activities	FID		
BIO-21	**(*Open Excavations*):** All open trenches, holes, sumps, and other excavations with sidewalls steeper than a 1:1 (45 degree) slope will have an escape ramp of earth or a non-slip material with a less than 1:1 slope or these will be covered with barrier material such that animals are unable to dig or squeeze under the barrier and become entrapped.	During construction activities	During construction activities	FID		
BIO-22	**(*Pre-activity Surveys and Monitoring*):** A qualified biologist (experience surveying and handling CTS and implementing this work) will conduct a pre-activity clearance survey each day and remain on the APE to oversee all vegetation clearing and ground disturbing activities conducted within suitable habitat for CTS. They will also inspect open excavations, the exclusion fence and cover boards, and under equipment and all materials before it is moved, buried, or capped. If a CTS is observed within the APE, the biologist will stop work and allow the individual to leave the APE of its own volition or follow the details outlined in the CTS mortality reduction and relocation plan.	Daily, prior to construction activities	Daily, prior to construction activities	FID		

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-23	(*CTS BMPs*): All workers will employ the following BMPs in order to avoid and minimize potential impacts to CTS: • Rain Forecast: A qualified biologist will monitor the National Weather Service 72-hour forecast for the APE. During rainfall events and/or when a 50 percent or greater chance of rainfall is predicted within 72 hours, all work will be stopped in the APE where initial ground disturbance (vegetation removal, grading, grubbing, and excavation) has yet to occur until the rainfall ceases and a zero percent chance of rain is forecast. Work may continue during rainfall events and/or when a 50 percent or greater chance of rain is forecast within portions of the APE that have already been cleared of CTS and which are surrounded by exclusion fence that has been properly maintained and is in good repair (in accordance with the CTS mortality reduction and relocation plan). • Soil and Materials Stockpiles. Soil stockpiles will be placed where soil will not pass into the potential CTS breeding habitat, or into any other "Waters of the State," in accordance with Fish and Game Code section 5650. Stockpiles will be appropriately protected to prevent soil erosion. All materials and equipment will be stockpiled and staged in a manner that discourages CTS use. In all locations, bundled or loose materials will not be placed directly on the ground. These materials will be elevated to discourage use by CTS. Materials will not be placed outside of exclusion fencing.	During construction activities	During construction activities	FID		

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
	• Erosion Control Materials. The use of erosion control materials potentially harmful to CTS and other species, such as monofilament netting (erosion control matting) or similar material, will not be used in potential CTS habitat. • Refuse Removal. Upon completion of proposed Project activities, all temporary fill and construction refuse, including, but not limited to, broken equipment parts, wrapping material, cords, cables, wire, rope, strapping, twine, buckets, metal or plastic containers, and boxes will be removed from the APE and disposed of properly. To protect the proposed Project from enforcement action under the CESA, it is recommended the proposed Project secures a CDFW Incidental Take Permit for CTS.					
Project-Related Mortality and/or Disturbance to Crotch's Bumble Bee						
BIO-24	**(*Flying Bumble Bee and Nest Surveys*):** A qualified biologist (someone who is familiar with and can identify bumble bees) will conduct three flying bumble bee and nest surveys during the peak flying periods (April, May to June, and July) prior to initial ground disturbing activities. The biologist will walk throughout the APE and up to 50 feet outside of the APE during the optimal time of the day to inspect for bumble bees and any nests. If an individual is observed, it will be followed until it can be determined if a nest is present within the survey boundary.	Prior to construction activities between April and July.	Three times prior to construction activities between April and July	FID		
BIO-25	**(*Identification and Protection Plan*):** Bumble bee individuals must be captured to be identified. If a bumble bee nest is observed, no Project activities will occur within 50 feet of the nest until a plan to	Upon discovery of CBB nest	Once, as determined by qualified biologist during	FID		

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Item	Mitigation Measure	When Monitoring is to Occur	Frequency of Monitoring	Agency Responsible for Monitoring	Method to Verify Compliance	Verification of Compliance
	identify the species using the nest and protect nesting and overwintering Crotch's bumble bee has been submitted to CDFW and approved in writing by CDFW.		construction activities			
Project-Related Mortality and/or Disturbance to Northwestern Pond Turtle						
BIO-26	**(*Pre-construction Survey and Avoidance Buffers*):** Within seven (7) days prior to the start of construction, a qualified biologist (someone who is able to identify this species) will conduct a pre-construction survey for northwestern pond turtle within the APE and surrounding areas up to 330 feet. Pre-construction surveys will be conducted in accordance with the draft *Western Pond Turtle (Emys marmorata) Visual Survey Protocol for the Southcoast Ecoregion* (United States Geological Survey 2006). If no northwestern pond turtles are observed during the pre-construction survey, then construction activities may begin. If construction is delayed or halted for more than seven (7) days, another pre-construction survey for northwestern pond turtle will be conducted. If the surveys result in the identification of a northwestern pond turtle or an individual is found on the APE during construction activities, it will be allowed to leave the APE on its own and the qualified biologist will determine appropriate buffers to be implemented to avoid impacts to the individual(s).	7 days prior to construction	Once, as determined by qualified biologist during construction activities	FID		
BIO-27	**(*Monitor*):** If northwestern pond turtles are observed on the APE, a qualified biologist will conduct a pre-activity clearance survey each day and remain on the APE to oversee all vegetation clearing and ground disturbing activities until the individual(s) have left the APE.	Upon discovery of northwestern pond turtle	Once, as determined by qualified biologist during construction activities	FID		
BIO-28	**(*Formal Consultation*):** If northwestern pond turtles within the APE cannot be avoided, the Project proponent will initiate protection plans and/or	During construction activities	During construction activities	FID		

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Item	Mitigation Measure	When Monitoring is to Occur	Frequency of Monitoring	Agency Responsible for Monitoring	Method to Verify Compliance	Verification of Compliance
	relocation plans in consultation with CDFW and/or USFWS.					
Project-Related Mortality and/or Disturbance to San Joaquin Kit Fox						
BIO-29	**(*Pre-Construction Survey*):** Within seven (7) days prior to the start of construction a pre-construction survey for San Joaquin kit fox potential dens will be conducted on and within 200 feet of proposed work areas. If potential SJKF dens are detected during the pre-construction survey, each potential den will be monitored with a remote camera for a period of three consecutive nights. If there is no activity recorded at the den location, the den can be deemed "inactive" or "unoccupied" and closed or excavated the same day as determining the den inactive.	7 days prior to construction	Once, as determined by qualified biologist during construction activities	FID		
BIO-30	On discovery of any active 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. 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 SJKF den(s)	Once, as determined by qualified biologist during construction activities	FID		
BIO-31	**(*Avoidance and Minimization*):** The proposed 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*	During construction activities	During construction activities	FID		

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Item	Mitigation Measure	When Monitoring is to Occur	Frequency of Monitoring	Agency Responsible for Monitoring	Method to Verify Compliance	Verification of Compliance
	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 Western Spadefoot						
BIO-32	(***Soil Crack Excavation***)**:** In addition to burrow excavations (**BIO-19**), soil cracks will also be excavated under the direct supervision of a qualified biologist (experience surveying and handling western spadefoot and implementing this work) for any soil cracks within the APE where ground disturbance will be occurring. These excavations will be completed by hand and with the assistance of small machinery. A scope may be used to survey the soil cracks prior to excavating. If a western spadefoot is observed during excavations, a qualified biologist (must possess appropriate collecting/handling permits) will stop work and relocate the individual outside of the work area following guidance from the CTS mortality reduction and relocation plan.	During construction activities	During construction activities	FID		
Project-Related Impacts to Regulated Waters, Wetlands, and Water Quality						
BIO-33	(***Permits***)**:** Permits with USACE, RWQCB, and CDFW will be obtained for work within BDC, if necessary. These permits, certifications, and agreements would ensure there are no indirect downstream effects to jurisdictional waters.	Prior to construction activities	Once, as determined by qualified biologist during construction activities	FID		
Project-Related Impacts to Wildlife Movement Corridors and Native Wildlife Nursery Sites						
BIO-34	***(Operational Hours):*** When possible, construction activities should be limited to a half hour after	During construction activities	Daily during construction activities	FID		

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
	sunrise through a half hour before sunset to reduce potential impacts to wildlife movement corridors.					
BIO-35	***(Wildlife Access):*** Access should not be blocked outside of construction hours or during overnight hours or weekends. If construction must block both sides of a wildlife access route, an alternative route through the construction area should be identified by a qualified biologist and maintained throughout the construction schedule timeframe.	During construction activities	Daily during construction activities	FID		
Cultural Resources						
CUL-1	**(*Archaeological Remains*)** In the event that archaeological remains are encountered at any time during development or ground-moving activities within the entire Project area, all work in the vicinity of the find shall halt until a qualified archaeologist can assess the discovery. The District shall implement all recommendations of the archaeologist necessary to avoid or reduce to a less than significant level potential impacts to cultural resource. Appropriate actions could include a Data Recovery Plan or preservation in place.	During construction	Daily during construction activities	FID		
CUL-2	**(*Human Remains*)** In the event human remains are uncovered, or in any other case when human remains are discovered during construction, the Fresno County Coroner is to be notified to arrange their proper treatment and disposition. If the remains are identified—on the basis of archaeological context, age, cultural associations, or biological traits—as those of a Native American, California Health and Safety Code 7050.5 and Public Resource Code 5097.98 require that the coroner notify the NAHC within 24 hours of discovery. The NAHC will then identify the Most Likely Descendent who will determine the manner in which the remains are treated.	During construction	Daily during construction activities	FID		
Tribal Cultural Resources						
See **CUL-1** and **CUL-2** above.						

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Appendix A: CalEEMod Output Files

Turnout on FKC at BDC - Fresno County, Annual

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

Turnout on FKC at BDC

Fresno County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	16.00	Acre	16.00	696,960.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2026
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Updated Construction Schedule

Grading - Total Acres Graded

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	300.00	40.00
tblConstructionPhase	NumDays	30.00	80.00
tblConstructionPhase	PhaseEndDate	3/17/2028	4/30/2026
tblConstructionPhase	PhaseEndDate	1/22/2027	3/5/2027
tblConstructionPhase	PhaseEndDate	12/11/2026	11/13/2026

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

tblConstructionPhase	PhaseStartDate	1/23/2027	3/6/2026
tblConstructionPhase	PhaseStartDate	12/12/2026	11/14/2026
tblConstructionPhase	PhaseStartDate	11/28/2026	11/2/2026
tblGrading	AcresOfGrading	240.00	90.00

2.0 Emissions Summary

Turnout on FKC at BDC - Fresno County, Annual

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

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2026	0.1070	0.9587	1.0068	2.6100e-003	0.3138	0.0361	0.3499	0.1297	0.0334	0.1631	0.0000	233.0991	233.0991	0.0474	7.1600e-003	236.4181
2027	0.0678	0.6433	0.6139	1.4600e-003	0.1899	0.0260	0.2159	0.0823	0.0239	0.1062	0.0000	127.9108	127.9108	0.0406	6.0000e-005	128.9450
Maximum	**0.1070**	**0.9587**	**1.0068**	**2.6100e-003**	**0.3138**	**0.0361**	**0.3499**	**0.1297**	**0.0334**	**0.1631**	**0.0000**	**233.0991**	**233.0991**	**0.0474**	**7.1600e-003**	**236.4181**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2026	0.1070	0.9587	1.0068	2.6100e-003	0.1623	0.0361	0.1983	0.0614	0.0334	0.0948	0.0000	233.0989	233.0989	0.0474	7.1600e-003	236.4179
2027	0.0678	0.6433	0.6139	1.4600e-003	0.0763	0.0260	0.1023	0.0327	0.0239	0.0566	0.0000	127.9106	127.9106	0.0406	6.0000e-005	128.9449
Maximum	**0.1070**	**0.9587**	**1.0068**	**2.6100e-003**	**0.1623**	**0.0361**	**0.1983**	**0.0614**	**0.0334**	**0.0948**	**0.0000**	**233.0989**	**233.0989**	**0.0474**	**7.1600e-003**	**236.4179**

Turnout on FKC at BDC - Fresno County, Annual

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**52.63**	**0.02**	**46.86**	**55.61**	**0.00**	**43.77**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**11-2-2026**	**2-1-2027**	1.0026	1.0026
2	**2-2-2027**	**5-1-2027**	0.3534	0.3534
		Highest	1.0026	1.0026

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0596	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.9000e-004	2.9000e-004	0.0000	0.0000	3.0000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0596**	**0.0000**	**1.5000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.9000e-004**	**2.9000e-004**	**0.0000**	**0.0000**	**3.0000e-004**

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

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0596	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.9000e-004	2.9000e-004	0.0000	0.0000	3.0000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0596**	**0.0000**	**1.5000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.9000e-004**	**2.9000e-004**	**0.0000**	**0.0000**	**3.0000e-004**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/2/2026	11/13/2026	5	10	
2	Grading	Grading	11/14/2026	3/5/2027	5	80	
3	Building Construction	Building Construction	3/6/2026	4/30/2026	5	40	Turnouts Construction

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

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 90

Acres of Paving: 16

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	1	7.00	231	0.29
Grading	Excavators	2	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	293.00	114.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Turnout on FKC at BDC - Fresno County, Annual

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

Water Exposed Area

3.2 Site Preparation - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0124	0.1262	0.0896	1.9000e-004		5.4300e-003	5.4300e-003		5.0000e-003	5.0000e-003	0.0000	16.7335	16.7335	5.4100e-003	0.0000	16.8688
Total	**0.0124**	**0.1262**	**0.0896**	**1.9000e-004**	**0.0983**	**5.4300e-003**	**0.1037**	**0.0505**	**5.0000e-003**	**0.0555**	**0.0000**	**16.7335**	**16.7335**	**5.4100e-003**	**0.0000**	**16.8688**

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

3.2 Site Preparation - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-004	1.3000e-004	1.7100e-003	1.0000e-005	7.2000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5134	0.5134	1.0000e-005	1.0000e-005	0.5177
Total	**2.2000e-004**	**1.3000e-004**	**1.7100e-003**	**1.0000e-005**	**7.2000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.5134**	**0.5134**	**1.0000e-005**	**1.0000e-005**	**0.5177**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0383	0.0000	0.0383	0.0197	0.0000	0.0197	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0124	0.1262	0.0896	1.9000e-004		5.4300e-003	5.4300e-003		5.0000e-003	5.0000e-003	0.0000	16.7335	16.7335	5.4100e-003	0.0000	16.8688
Total	**0.0124**	**0.1262**	**0.0896**	**1.9000e-004**	**0.0383**	**5.4300e-003**	**0.0438**	**0.0197**	**5.0000e-003**	**0.0247**	**0.0000**	**16.7335**	**16.7335**	**5.4100e-003**	**0.0000**	**16.8688**

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

3.2 Site Preparation - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-004	1.3000e-004	1.7100e-003	1.0000e-005	7.2000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5134	0.5134	1.0000e-005	1.0000e-005	0.5177
Total	**2.2000e-004**	**1.3000e-004**	**1.7100e-003**	**1.0000e-005**	**7.2000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.5134**	**0.5134**	**1.0000e-005**	**1.0000e-005**	**0.5177**

3.3 Grading - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1501	0.0000	0.1501	0.0614	0.0000	0.0614	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0493	0.4750	0.4476	1.0600e-003		0.0192	0.0192		0.0177	0.0177	0.0000	92.6606	92.6606	0.0300	0.0000	93.4098
Total	**0.0493**	**0.4750**	**0.4476**	**1.0600e-003**	**0.1501**	**0.0192**	**0.1693**	**0.0614**	**0.0177**	**0.0791**	**0.0000**	**92.6606**	**92.6606**	**0.0300**	**0.0000**	**93.4098**

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

3.3 Grading - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.5000e-004	4.8000e-004	6.4700e-003	2.0000e-005	2.7200e-003	1.0000e-005	2.7300e-003	7.2000e-004	1.0000e-005	7.3000e-004	0.0000	1.9395	1.9395	5.0000e-005	5.0000e-005	1.9556
Total	**8.5000e-004**	**4.8000e-004**	**6.4700e-003**	**2.0000e-005**	**2.7200e-003**	**1.0000e-005**	**2.7300e-003**	**7.2000e-004**	**1.0000e-005**	**7.3000e-004**	**0.0000**	**1.9395**	**1.9395**	**5.0000e-005**	**5.0000e-005**	**1.9556**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0585	0.0000	0.0585	0.0240	0.0000	0.0240	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0493	0.4750	0.4476	1.0600e-003		0.0192	0.0192		0.0177	0.0177	0.0000	92.6605	92.6605	0.0300	0.0000	93.4097
Total	**0.0493**	**0.4750**	**0.4476**	**1.0600e-003**	**0.0585**	**0.0192**	**0.0778**	**0.0240**	**0.0177**	**0.0417**	**0.0000**	**92.6605**	**92.6605**	**0.0300**	**0.0000**	**93.4097**

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

3.3 Grading - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.5000e-004	4.8000e-004	6.4700e-003	2.0000e-005	2.7200e-003	1.0000e-005	2.7300e-003	7.2000e-004	1.0000e-005	7.3000e-004	0.0000	1.9395	1.9395	5.0000e-005	5.0000e-005	1.9556
Total	**8.5000e-004**	**4.8000e-004**	**6.4700e-003**	**2.0000e-005**	**2.7200e-003**	**1.0000e-005**	**2.7300e-003**	**7.2000e-004**	**1.0000e-005**	**7.3000e-004**	**0.0000**	**1.9395**	**1.9395**	**5.0000e-005**	**5.0000e-005**	**1.9556**

3.3 Grading - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1862	0.0000	0.1862	0.0813	0.0000	0.0813	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0667	0.6427	0.6056	1.4300e-003		0.0260	0.0260		0.0239	0.0239	0.0000	125.3643	125.3643	0.0406	0.0000	126.3779
Total	**0.0667**	**0.6427**	**0.6056**	**1.4300e-003**	**0.1862**	**0.0260**	**0.2122**	**0.0813**	**0.0239**	**0.1052**	**0.0000**	**125.3643**	**125.3643**	**0.0406**	**0.0000**	**126.3779**

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

3.3 Grading - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0700e-003	5.9000e-004	8.2400e-003	3.0000e-005	3.6800e-003	1.0000e-005	3.6900e-003	9.8000e-004	1.0000e-005	9.9000e-004	0.0000	2.5465	2.5465	6.0000e-005	6.0000e-005	2.5671
Total	**1.0700e-003**	**5.9000e-004**	**8.2400e-003**	**3.0000e-005**	**3.6800e-003**	**1.0000e-005**	**3.6900e-003**	**9.8000e-004**	**1.0000e-005**	**9.9000e-004**	**0.0000**	**2.5465**	**2.5465**	**6.0000e-005**	**6.0000e-005**	**2.5671**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0726	0.0000	0.0726	0.0317	0.0000	0.0317	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0667	0.6427	0.6056	1.4300e-003		0.0260	0.0260		0.0239	0.0239	0.0000	125.3641	125.3641	0.0406	0.0000	126.3778
Total	**0.0667**	**0.6427**	**0.6056**	**1.4300e-003**	**0.0726**	**0.0260**	**0.0986**	**0.0317**	**0.0239**	**0.0556**	**0.0000**	**125.3641**	**125.3641**	**0.0406**	**0.0000**	**126.3778**

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

3.3 Grading - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0700e-003	5.9000e-004	8.2400e-003	3.0000e-005	3.6800e-003	1.0000e-005	3.6900e-003	9.8000e-004	1.0000e-005	9.9000e-004	0.0000	2.5465	2.5465	6.0000e-005	6.0000e-005	2.5671
Total	**1.0700e-003**	**5.9000e-004**	**8.2400e-003**	**3.0000e-005**	**3.6800e-003**	**1.0000e-005**	**3.6900e-003**	**9.8000e-004**	**1.0000e-005**	**9.9000e-004**	**0.0000**	**2.5465**	**2.5465**	**6.0000e-005**	**6.0000e-005**	**2.5671**

3.4 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0274	0.2494	0.3217	5.4000e-004		0.0106	0.0106		9.9300e-003	9.9300e-003	0.0000	46.3839	46.3839	0.0109	0.0000	46.6565
Total	**0.0274**	**0.2494**	**0.3217**	**5.4000e-004**		**0.0106**	**0.0106**		**9.9300e-003**	**9.9300e-003**	**0.0000**	**46.3839**	**46.3839**	**0.0109**	**0.0000**	**46.6565**

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

3.4 Building Construction - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.2700e-003	0.0992	0.0282	4.3000e-004	0.0151	6.4000e-004	0.0158	4.3700e-003	6.2000e-004	4.9800e-003	0.0000	41.4408	41.4408	2.0000e-004	6.2400e-003	43.3039
Worker	0.0146	8.2900e-003	0.1115	3.6000e-004	0.0469	2.0000e-004	0.0470	0.0125	1.8000e-004	0.0126	0.0000	33.4275	33.4275	8.3000e-004	8.6000e-004	33.7059
Total	**0.0169**	**0.1075**	**0.1397**	**7.9000e-004**	**0.0620**	**8.4000e-004**	**0.0628**	**0.0168**	**8.0000e-004**	**0.0176**	**0.0000**	**74.8683**	**74.8683**	**1.0300e-003**	**7.1000e-003**	**77.0098**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0274	0.2494	0.3217	5.4000e-004		0.0106	0.0106		9.9300e-003	9.9300e-003	0.0000	46.3838	46.3838	0.0109	0.0000	46.6564
Total	**0.0274**	**0.2494**	**0.3217**	**5.4000e-004**		**0.0106**	**0.0106**		**9.9300e-003**	**9.9300e-003**	**0.0000**	**46.3838**	**46.3838**	**0.0109**	**0.0000**	**46.6564**

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

3.4 Building Construction - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.2700e-003	0.0992	0.0282	4.3000e-004	0.0151	6.4000e-004	0.0158	4.3700e-003	6.2000e-004	4.9800e-003	0.0000	41.4408	41.4408	2.0000e-004	6.2400e-003	43.3039
Worker	0.0146	8.2900e-003	0.1115	3.6000e-004	0.0469	2.0000e-004	0.0470	0.0125	1.8000e-004	0.0126	0.0000	33.4275	33.4275	8.3000e-004	8.6000e-004	33.7059
Total	**0.0169**	**0.1075**	**0.1397**	**7.9000e-004**	**0.0620**	**8.4000e-004**	**0.0628**	**0.0168**	**8.0000e-004**	**0.0176**	**0.0000**	**74.8683**	**74.8683**	**1.0300e-003**	**7.1000e-003**	**77.0098**

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

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

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.526576	0.053500	0.175633	0.147803	0.024189	0.006487	0.014618	0.022827	0.000697	0.000286	0.023187	0.001433	0.002764

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

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

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

Mitigated

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

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

5.3 Energy by Land Use - Electricity

Unmitigated

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

Mitigated

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

6.0 Area Detail

6.1 Mitigation Measures Area

Turnout on FKC at BDC - Fresno County, Annual

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0596	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.9000e-004	2.9000e-004	0.0000	0.0000	3.0000e-004
Unmitigated	0.0596	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.9000e-004	2.9000e-004	0.0000	0.0000	3.0000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0145					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0451					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.9000e-004	2.9000e-004	0.0000	0.0000	3.0000e-004
Total	**0.0596**	**0.0000**	**1.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.9000e-004**	**2.9000e-004**	**0.0000**	**0.0000**	**3.0000e-004**

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

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0145					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0451					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.9000e-004	2.9000e-004	0.0000	0.0000	3.0000e-004
Total	**0.0596**	**0.0000**	**1.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.9000e-004**	**2.9000e-004**	**0.0000**	**0.0000**	**3.0000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

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

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

7.2 Water by Land Use

Unmitigated

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

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

7.2 Water by Land Use

Mitigated

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

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

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

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

8.2 Waste by Land Use

Unmitigated

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

Mitigated

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

9.0 Operational Offroad

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

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

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

Turnout on FKC at BDC

Fresno County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	16.00	Acre	16.00	696,960.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2026
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Updated Construction Schedule

Grading - Total Acres Graded

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	300.00	40.00
tblConstructionPhase	NumDays	30.00	80.00
tblConstructionPhase	PhaseEndDate	3/17/2028	4/30/2026
tblConstructionPhase	PhaseEndDate	1/22/2027	3/5/2027
tblConstructionPhase	PhaseEndDate	12/11/2026	11/13/2026

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

tblConstructionPhase	PhaseStartDate	1/23/2027	3/6/2026
tblConstructionPhase	PhaseStartDate	12/12/2026	11/14/2026
tblConstructionPhase	PhaseStartDate	11/28/2026	11/2/2026
tblGrading	AcresOfGrading	240.00	90.00

2.0 Emissions Summary

Turnout on FKC at BDC - Fresno County, Summer

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

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2026	2.9585	27.9694	26.7680	0.0684	19.8049	1.1316	20.8923	10.1417	1.0410	11.1421	0.0000	6,840.7749	6,840.7749	1.9462	0.3889	6,973.0488
2027	2.9548	27.9669	26.7420	0.0634	7.3795	1.1315	8.5110	3.4826	1.0410	4.5236	0.0000	6,140.8894	6,140.8894	1.9459	2.9500e-003	6,190.4147
Maximum	**2.9585**	**27.9694**	**26.7680**	**0.0684**	**19.8049**	**1.1316**	**20.8923**	**10.1417**	**1.0410**	**11.1421**	**0.0000**	**6,840.7749**	**6,840.7749**	**1.9462**	**0.3889**	**6,973.0488**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2026	2.9585	27.9694	26.7680	0.0684	7.8141	1.1316	8.9015	3.9792	1.0410	4.9796	0.0000	6,840.7749	6,840.7749	1.9462	0.3889	6,973.0488
2027	2.9548	27.9669	26.7420	0.0634	2.9782	1.1315	4.1097	1.3848	1.0410	2.4258	0.0000	6,140.8894	6,140.8894	1.9459	2.9500e-003	6,190.4147
Maximum	**2.9585**	**27.9694**	**26.7680**	**0.0684**	**7.8141**	**1.1316**	**8.9015**	**3.9792**	**1.0410**	**4.9796**	**0.0000**	**6,840.7749**	**6,840.7749**	**1.9462**	**0.3889**	**6,973.0488**

Turnout on FKC at BDC - Fresno County, Summer

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	60.30	0.00	55.75	60.63	0.00	52.73	0.00	0.00	0.00	0.00	0.00	0.00

Turnout on FKC at BDC - Fresno County, Summer

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.3267	1.0000e-005	1.6300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.5000e-003	3.5000e-003	1.0000e-005		3.7300e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.3267**	**1.0000e-005**	**1.6300e-003**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**1.0000e-005**		**3.5000e-003**	**3.5000e-003**	**1.0000e-005**	**0.0000**	**3.7300e-003**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.3267	1.0000e-005	1.6300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.5000e-003	3.5000e-003	1.0000e-005		3.7300e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.3267**	**1.0000e-005**	**1.6300e-003**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**1.0000e-005**		**3.5000e-003**	**3.5000e-003**	**1.0000e-005**	**0.0000**	**3.7300e-003**

Turnout on FKC at BDC - Fresno County, Summer

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

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/2/2026	11/13/2026	5	10	
2	Grading	Grading	11/14/2026	3/5/2027	5	80	
3	Building Construction	Building Construction	3/6/2026	4/30/2026	5	40	Turnouts Construction

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 90

Acres of Paving: 16

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	1	7.00	231	0.29
Grading	Excavators	2	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48

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

Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	293.00	114.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999		3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**19.6570**	**1.0868**	**20.7438**	**10.1025**	**0.9999**	**11.1023**		**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

Turnout on FKC at BDC - Fresno County, Summer

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

3.2 Site Preparation - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0515	0.0238	0.3932	1.2200e-003	0.1479	6.0000e-004	0.1485	0.0392	5.5000e-004	0.0398		122.9981	122.9981	2.6700e-003	2.8000e-003	123.9000
Total	**0.0515**	**0.0238**	**0.3932**	**1.2200e-003**	**0.1479**	**6.0000e-004**	**0.1485**	**0.0392**	**5.5000e-004**	**0.0398**		**122.9981**	**122.9981**	**2.6700e-003**	**2.8000e-003**	**123.9000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.6662	0.0000	7.6662	3.9400	0.0000	3.9400			0.0000			0.0000
Off-Road	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999	0.0000	3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**7.6662**	**1.0868**	**8.7530**	**3.9400**	**0.9999**	**4.9398**	**0.0000**	**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

Turnout on FKC at BDC - Fresno County, Summer

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

3.2 Site Preparation - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0515	0.0238	0.3932	1.2200e-003	0.1479	6.0000e-004	0.1485	0.0392	5.5000e-004	0.0398		122.9981	122.9981	2.6700e-003	2.8000e-003	123.9000
Total	**0.0515**	**0.0238**	**0.3932**	**1.2200e-003**	**0.1479**	**6.0000e-004**	**0.1485**	**0.0392**	**5.5000e-004**	**0.0398**		**122.9981**	**122.9981**	**2.6700e-003**	**2.8000e-003**	**123.9000**

3.3 Grading - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.2152	0.0000	7.2152	3.4391	0.0000	3.4391			0.0000			0.0000
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404		6,008.2814	6,008.2814	1.9432		6,056.8614
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**7.2152**	**1.1309**	**8.3460**	**3.4391**	**1.0404**	**4.4795**		**6,008.2814**	**6,008.2814**	**1.9432**		**6,056.8614**

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

3.3 Grading - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0572	0.0265	0.4369	1.3500e-003	0.1643	6.7000e-004	0.1650	0.0436	6.1000e-004	0.0442		136.6646	136.6646	2.9600e-003	3.1100e-003	137.6666
Total	**0.0572**	**0.0265**	**0.4369**	**1.3500e-003**	**0.1643**	**6.7000e-004**	**0.1650**	**0.0436**	**6.1000e-004**	**0.0442**		**136.6646**	**136.6646**	**2.9600e-003**	**3.1100e-003**	**137.6666**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8139	0.0000	2.8139	1.3412	0.0000	1.3412			0.0000			0.0000
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404	0.0000	6,008.2814	6,008.2814	1.9432		6,056.8614
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**2.8139**	**1.1309**	**3.9448**	**1.3412**	**1.0404**	**2.3817**	**0.0000**	**6,008.2814**	**6,008.2814**	**1.9432**		**6,056.8614**

Turnout on FKC at BDC - Fresno County, Summer

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

3.3 Grading - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0572	0.0265	0.4369	1.3500e-003	0.1643	6.7000e-004	0.1650	0.0436	6.1000e-004	0.0442		136.6646	136.6646	2.9600e-003	3.1100e-003	137.6666
Total	**0.0572**	**0.0265**	**0.4369**	**1.3500e-003**	**0.1643**	**6.7000e-004**	**0.1650**	**0.0436**	**6.1000e-004**	**0.0442**		**136.6646**	**136.6646**	**2.9600e-003**	**3.1100e-003**	**137.6666**

3.3 Grading - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.2152	0.0000	7.2152	3.4391	0.0000	3.4391			0.0000			0.0000
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404		6,008.2814	6,008.2814	1.9432		6,056.8614
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**7.2152**	**1.1309**	**8.3460**	**3.4391**	**1.0404**	**4.4795**		**6,008.2814**	**6,008.2814**	**1.9432**		**6,056.8614**

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

3.3 Grading - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0536	0.0240	0.4109	1.3100e-003	0.1643	6.3000e-004	0.1649	0.0436	5.8000e-004	0.0442		132.6079	132.6079	2.7000e-003	2.9500e-003	133.5532
Total	**0.0536**	**0.0240**	**0.4109**	**1.3100e-003**	**0.1643**	**6.3000e-004**	**0.1649**	**0.0436**	**5.8000e-004**	**0.0442**		**132.6079**	**132.6079**	**2.7000e-003**	**2.9500e-003**	**133.5532**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8139	0.0000	2.8139	1.3412	0.0000	1.3412			0.0000			0.0000
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404	0.0000	6,008.2814	6,008.2814	1.9432		6,056.8614
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**2.8139**	**1.1309**	**3.9448**	**1.3412**	**1.0404**	**2.3817**	**0.0000**	**6,008.2814**	**6,008.2814**	**1.9432**		**6,056.8614**

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

3.3 Grading - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0536	0.0240	0.4109	1.3100e-003	0.1643	6.3000e-004	0.1649	0.0436	5.8000e-004	0.0442		132.6079	132.6079	2.7000e-003	2.9500e-003	133.5532
Total	**0.0536**	**0.0240**	**0.4109**	**1.3100e-003**	**0.1643**	**6.3000e-004**	**0.1649**	**0.0436**	**5.8000e-004**	**0.0442**		**132.6079**	**132.6079**	**2.7000e-003**	**2.9500e-003**	**133.5532**

3.4 Building Construction - 2026

Unmitigated Construction On-Site

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

Turnout on FKC at BDC - Fresno County, Summer

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

3.4 Building Construction - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1176	4.7455	1.3899	0.0216	0.7728	0.0321	0.8049	0.2225	0.0307	0.2533		2,282.1647	2,282.1647	0.0113	0.3432	2,384.7345
Worker	0.8385	0.3879	6.4000	0.0198	2.4069	9.7900e-003	2.4167	0.6384	9.0100e-003	0.6474		2,002.1358	2,002.1358	0.0434	0.0456	2,016.8163
Total	**0.9562**	**5.1334**	**7.7899**	**0.0414**	**3.1797**	**0.0419**	**3.2216**	**0.8610**	**0.0397**	**0.9007**		**4,284.3005**	**4,284.3005**	**0.0547**	**0.3889**	**4,401.5508**

Mitigated Construction On-Site

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

Turnout on FKC at BDC - Fresno County, Summer

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

3.4 Building Construction - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1176	4.7455	1.3899	0.0216	0.7728	0.0321	0.8049	0.2225	0.0307	0.2533		2,282.1647	2,282.1647	0.0113	0.3432	2,384.7345
Worker	0.8385	0.3879	6.4000	0.0198	2.4069	9.7900e-003	2.4167	0.6384	9.0100e-003	0.6474		2,002.1358	2,002.1358	0.0434	0.0456	2,016.8163
Total	**0.9562**	**5.1334**	**7.7899**	**0.0414**	**3.1797**	**0.0419**	**3.2216**	**0.8610**	**0.0397**	**0.9007**		**4,284.3005**	**4,284.3005**	**0.0547**	**0.3889**	**4,401.5508**

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

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

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.526576	0.053500	0.175633	0.147803	0.024189	0.006487	0.014618	0.022827	0.000697	0.000286	0.023187	0.001433	0.002764

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

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

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

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

5.2 Energy by Land Use - NaturalGas

Mitigated

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

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.3267	1.0000e-005	1.6300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.5000e-003	3.5000e-003	1.0000e-005		3.7300e-003
Unmitigated	0.3267	1.0000e-005	1.6300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.5000e-003	3.5000e-003	1.0000e-005		3.7300e-003

Turnout on FKC at BDC - Fresno County, Summer

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

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0797					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2469					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.5000e-004	1.0000e-005	1.6300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.5000e-003	3.5000e-003	1.0000e-005		3.7300e-003
Total	**0.3267**	**1.0000e-005**	**1.6300e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**3.5000e-003**	**3.5000e-003**	**1.0000e-005**		**3.7300e-003**

Turnout on FKC at BDC - Fresno County, Summer

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

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0797					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2469					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.5000e-004	1.0000e-005	1.6300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.5000e-003	3.5000e-003	1.0000e-005		3.7300e-003
Total	**0.3267**	**1.0000e-005**	**1.6300e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**3.5000e-003**	**3.5000e-003**	**1.0000e-005**		**3.7300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

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

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Turnout on FKC at BDC - Fresno County, Winter

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

Turnout on FKC at BDC

Fresno County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	16.00	Acre	16.00	696,960.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2026
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Updated Construction Schedule

Grading - Total Acres Graded

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	300.00	40.00
tblConstructionPhase	NumDays	30.00	80.00
tblConstructionPhase	PhaseEndDate	3/17/2028	4/30/2026
tblConstructionPhase	PhaseEndDate	1/22/2027	3/5/2027
tblConstructionPhase	PhaseEndDate	12/11/2026	11/13/2026

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

tblConstructionPhase	PhaseStartDate	1/23/2027	3/6/2026
tblConstructionPhase	PhaseStartDate	12/12/2026	11/14/2026
tblConstructionPhase	PhaseStartDate	11/28/2026	11/2/2026
tblGrading	AcresOfGrading	240.00	90.00

2.0 Emissions Summary

Turnout on FKC at BDC - Fresno County, Winter

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

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2026	2.9525	27.9739	26.7089	0.0662	19.8049	1.1316	20.8923	10.1417	1.0410	11.1421	0.0000	6,621.8078	6,621.8078	1.9466	0.3948	6,755.9974
2027	2.9493	27.9710	26.6873	0.0632	7.3795	1.1315	8.5110	3.4826	1.0410	4.5236	0.0000	6,126.1149	6,126.1149	1.9463	3.2700e-003	6,175.7466
Maximum	**2.9525**	**27.9739**	**26.7089**	**0.0662**	**19.8049**	**1.1316**	**20.8923**	**10.1417**	**1.0410**	**11.1421**	**0.0000**	**6,621.8078**	**6,621.8078**	**1.9466**	**0.3948**	**6,755.9974**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2026	2.9525	27.9739	26.7089	0.0662	7.8141	1.1316	8.9015	3.9792	1.0410	4.9796	0.0000	6,621.8078	6,621.8078	1.9466	0.3948	6,755.9974
2027	2.9493	27.9710	26.6873	0.0632	2.9782	1.1315	4.1097	1.3848	1.0410	2.4258	0.0000	6,126.1149	6,126.1149	1.9463	3.2700e-003	6,175.7466
Maximum	**2.9525**	**27.9739**	**26.7089**	**0.0662**	**7.8141**	**1.1316**	**8.9015**	**3.9792**	**1.0410**	**4.9796**	**0.0000**	**6,621.8078**	**6,621.8078**	**1.9466**	**0.3948**	**6,755.9974**

Turnout on FKC at BDC - Fresno County, Winter

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	60.30	0.00	55.75	60.63	0.00	52.73	0.00	0.00	0.00	0.00	0.00	0.00

Turnout on FKC at BDC - Fresno County, Winter

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.3267	1.0000e-005	1.6300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.5000e-003	3.5000e-003	1.0000e-005		3.7300e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.3267**	**1.0000e-005**	**1.6300e-003**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**1.0000e-005**		**3.5000e-003**	**3.5000e-003**	**1.0000e-005**	**0.0000**	**3.7300e-003**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.3267	1.0000e-005	1.6300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.5000e-003	3.5000e-003	1.0000e-005		3.7300e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.3267**	**1.0000e-005**	**1.6300e-003**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**1.0000e-005**		**3.5000e-003**	**3.5000e-003**	**1.0000e-005**	**0.0000**	**3.7300e-003**

Turnout on FKC at BDC - Fresno County, Winter

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

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/2/2026	11/13/2026	5	10	
2	Grading	Grading	11/14/2026	3/5/2027	5	80	
3	Building Construction	Building Construction	3/6/2026	4/30/2026	5	40	Turnouts Construction

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 90

Acres of Paving: 16

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	1	7.00	231	0.29
Grading	Excavators	2	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48

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

Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	293.00	114.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999		3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**19.6570**	**1.0868**	**20.7438**	**10.1025**	**0.9999**	**11.1023**		**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

Turnout on FKC at BDC - Fresno County, Winter

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

3.2 Site Preparation - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0461	0.0279	0.3400	1.0800e-003	0.1479	6.0000e-004	0.1485	0.0392	5.5000e-004	0.0398		109.2728	109.2728	3.0400e-003	3.1100e-003	110.2763
Total	**0.0461**	**0.0279**	**0.3400**	**1.0800e-003**	**0.1479**	**6.0000e-004**	**0.1485**	**0.0392**	**5.5000e-004**	**0.0398**		**109.2728**	**109.2728**	**3.0400e-003**	**3.1100e-003**	**110.2763**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.6662	0.0000	7.6662	3.9400	0.0000	3.9400			0.0000			0.0000
Off-Road	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999	0.0000	3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**7.6662**	**1.0868**	**8.7530**	**3.9400**	**0.9999**	**4.9398**	**0.0000**	**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

Turnout on FKC at BDC - Fresno County, Winter

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

3.2 Site Preparation - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0461	0.0279	0.3400	1.0800e-003	0.1479	6.0000e-004	0.1485	0.0392	5.5000e-004	0.0398		109.2728	109.2728	3.0400e-003	3.1100e-003	110.2763
Total	**0.0461**	**0.0279**	**0.3400**	**1.0800e-003**	**0.1479**	**6.0000e-004**	**0.1485**	**0.0392**	**5.5000e-004**	**0.0398**		**109.2728**	**109.2728**	**3.0400e-003**	**3.1100e-003**	**110.2763**

3.3 Grading - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.2152	0.0000	7.2152	3.4391	0.0000	3.4391			0.0000			0.0000
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404		6,008.2814	6,008.2814	1.9432		6,056.8614
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**7.2152**	**1.1309**	**8.3460**	**3.4391**	**1.0404**	**4.4795**		**6,008.2814**	**6,008.2814**	**1.9432**		**6,056.8614**

Turnout on FKC at BDC - Fresno County, Winter

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

3.3 Grading - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0513	0.0310	0.3778	1.2000e-003	0.1643	6.7000e-004	0.1650	0.0436	6.1000e-004	0.0442		121.4142	121.4142	3.3800e-003	3.4600e-003	122.5292
Total	**0.0513**	**0.0310**	**0.3778**	**1.2000e-003**	**0.1643**	**6.7000e-004**	**0.1650**	**0.0436**	**6.1000e-004**	**0.0442**		**121.4142**	**121.4142**	**3.3800e-003**	**3.4600e-003**	**122.5292**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8139	0.0000	2.8139	1.3412	0.0000	1.3412			0.0000			0.0000
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404	0.0000	6,008.2814	6,008.2814	1.9432		6,056.8614
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**2.8139**	**1.1309**	**3.9448**	**1.3412**	**1.0404**	**2.3817**	**0.0000**	**6,008.2814**	**6,008.2814**	**1.9432**		**6,056.8614**

Turnout on FKC at BDC - Fresno County, Winter

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

3.3 Grading - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0513	0.0310	0.3778	1.2000e-003	0.1643	6.7000e-004	0.1650	0.0436	6.1000e-004	0.0442		121.4142	121.4142	3.3800e-003	3.4600e-003	122.5292
Total	**0.0513**	**0.0310**	**0.3778**	**1.2000e-003**	**0.1643**	**6.7000e-004**	**0.1650**	**0.0436**	**6.1000e-004**	**0.0442**		**121.4142**	**121.4142**	**3.3800e-003**	**3.4600e-003**	**122.5292**

3.3 Grading - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.2152	0.0000	7.2152	3.4391	0.0000	3.4391			0.0000			0.0000
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404		6,008.2814	6,008.2814	1.9432		6,056.8614
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**7.2152**	**1.1309**	**8.3460**	**3.4391**	**1.0404**	**4.4795**		**6,008.2814**	**6,008.2814**	**1.9432**		**6,056.8614**

Turnout on FKC at BDC - Fresno County, Winter

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

3.3 Grading - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0481	0.0281	0.3562	1.1700e-003	0.1643	6.3000e-004	0.1649	0.0436	5.8000e-004	0.0442		117.8335	117.8335	3.0900e-003	3.2700e-003	118.8851
Total	**0.0481**	**0.0281**	**0.3562**	**1.1700e-003**	**0.1643**	**6.3000e-004**	**0.1649**	**0.0436**	**5.8000e-004**	**0.0442**		**117.8335**	**117.8335**	**3.0900e-003**	**3.2700e-003**	**118.8851**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8139	0.0000	2.8139	1.3412	0.0000	1.3412			0.0000			0.0000
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404	0.0000	6,008.2814	6,008.2814	1.9432		6,056.8614
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**2.8139**	**1.1309**	**3.9448**	**1.3412**	**1.0404**	**2.3817**	**0.0000**	**6,008.2814**	**6,008.2814**	**1.9432**		**6,056.8614**

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

3.3 Grading - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0481	0.0281	0.3562	1.1700e-003	0.1643	6.3000e-004	0.1649	0.0436	5.8000e-004	0.0442		117.8335	117.8335	3.0900e-003	3.2700e-003	118.8851
Total	**0.0481**	**0.0281**	**0.3562**	**1.1700e-003**	**0.1643**	**6.3000e-004**	**0.1649**	**0.0436**	**5.8000e-004**	**0.0442**		**117.8335**	**117.8335**	**3.0900e-003**	**3.2700e-003**	**118.8851**

3.4 Building Construction - 2026

Unmitigated Construction On-Site

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

Turnout on FKC at BDC - Fresno County, Winter

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

3.4 Building Construction - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1099	5.0762	1.4381	0.0216	0.7728	0.0322	0.8050	0.2225	0.0308	0.2533		2,286.6154	2,286.6154	0.0110	0.3442	2,389.4464
Worker	0.7508	0.4543	5.5342	0.0176	2.4069	9.7900e-003	2.4167	0.6384	9.0100e-003	0.6474		1,778.7180	1,778.7180	0.0495	0.0507	1,795.0529
Total	**0.8607**	**5.5305**	**6.9723**	**0.0392**	**3.1797**	**0.0420**	**3.2217**	**0.8610**	**0.0398**	**0.9008**		**4,065.3335**	**4,065.3335**	**0.0605**	**0.3948**	**4,184.4993**

Mitigated Construction On-Site

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

Turnout on FKC at BDC - Fresno County, Winter

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

3.4 Building Construction - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1099	5.0762	1.4381	0.0216	0.7728	0.0322	0.8050	0.2225	0.0308	0.2533		2,286.6154	2,286.6154	0.0110	0.3442	2,389.4464
Worker	0.7508	0.4543	5.5342	0.0176	2.4069	9.7900e-003	2.4167	0.6384	9.0100e-003	0.6474		1,778.7180	1,778.7180	0.0495	0.0507	1,795.0529
Total	**0.8607**	**5.5305**	**6.9723**	**0.0392**	**3.1797**	**0.0420**	**3.2217**	**0.8610**	**0.0398**	**0.9008**		**4,065.3335**	**4,065.3335**	**0.0605**	**0.3948**	**4,184.4993**

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

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

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.526576	0.053500	0.175633	0.147803	0.024189	0.006487	0.014618	0.022827	0.000697	0.000286	0.023187	0.001433	0.002764

Turnout on FKC at BDC - Fresno County, Winter

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

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

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

Turnout on FKC at BDC - Fresno County, Winter

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

5.2 Energy by Land Use - NaturalGas

Mitigated

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

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.3267	1.0000e-005	1.6300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.5000e-003	3.5000e-003	1.0000e-005		3.7300e-003
Unmitigated	0.3267	1.0000e-005	1.6300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.5000e-003	3.5000e-003	1.0000e-005		3.7300e-003

Turnout on FKC at BDC - Fresno County, Winter

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

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0797					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2469					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.5000e-004	1.0000e-005	1.6300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.5000e-003	3.5000e-003	1.0000e-005		3.7300e-003
Total	**0.3267**	**1.0000e-005**	**1.6300e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**3.5000e-003**	**3.5000e-003**	**1.0000e-005**		**3.7300e-003**

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

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0797					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2469					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.5000e-004	1.0000e-005	1.6300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.5000e-003	3.5000e-003	1.0000e-005		3.7300e-003
Total	**0.3267**	**1.0000e-005**	**1.6300e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**3.5000e-003**	**3.5000e-003**	**1.0000e-005**		**3.7300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

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

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix B: Biological Evaluation

COUNTY OF FRESNO AND FRESNO IRRIGATION DISTRICT

TURNOUT ON THE FRIANT KERN CANAL AT BIG DRY CREEK PROJECT BIOLOGICAL EVALUATION

FRESNO COUNTY
MAY 2024

PREPARED FOR:
County of Fresno and Fresno Irrigation District

PREPARED BY:
PROVOST & PRITCHARD CONSULTING GROUP

Report Prepared for:

Fresno Irrigation District
2907 South Maple Avenue
Fresno, CA 93725-2218

Contact:

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Report Prepared by:

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Preparer: Shaylea Stark, Biologist
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ACRONYMS AND ABBREVIATIONS

APE ..... Area of Potential Effect
BMP ..... Best Management Practices
BDC.... ..... Big Dry Creek
BUOW.... ..... Burrowing Owl
CDFW..... California Department of Fish and Wildlife
CDP... ..... Census-designated place
CEQA ..... California Environmental Quality Act cubic feet per second
CESA ..... California Endangered Species Act
CFR ..... Code of Federal Regulations
CNDDB..... California Natural Diversity Database
CNPS..... California Native Plant Society
CTS ..... California Tiger Salamander
County ..... Fresno County
CWA ..... Clean Water Act
ECOS..... U.S. Fish and Wildlife Services' Environmental Conservation Online System
EFH ..... Essential Fish Habitat
EPA ..... Environmental Protection Agency
ESA ..... Endangered Species Act
FKC.... ..... Friant Kern Canal
HCP ..... Habitat Conservation Plan
IPaC ..... U.S. Fish and Wildlife Service's Information for Planning and Consultation system
MBTA..... Migratory Bird Treaty Act
NCCP..... Natural Community Conservation Plan
NEPA..... National Environmental Policy Act
NMFS..... National Marine Fisheries
NRCS..... Natural Resources Conservation Service
Project ..... Turnout on the Friant Kern Canal at Big Dry Creek
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

USEPA ..... United States Environmental Protection Agency

USFWS ..... United States Fish and Wildlife Service

USGS ..... United States Geological Survey

WOTUS ..... waters of the United States

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 County of Fresno and Fresno Irrigation District's proposed Turnout on the Friant Kern Canal at Big Dry Creek Project (project), 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 approximately 16-acre Area of Potential Effect (APE) is located in the San Joaquin Valley, approximately 1.6 miles east of the northeast boundary of the City of Clovis, just north of California State Route 168 and at the intersection of Friant Kern Canal (FKC) and Big Dry Creek (BDC) in the central portion of Fresno County, California (see Figure 1 and Figure 2). The APE includes the work area where the project will occur as well as areas that may be temporarily impacted such as access roads and staging areas in the west portion of the APE. The project involves constructing up to two new canal turnouts that would divert and deliver water in wetter years from the FKC into BDC, which would provide direct recharge along the BDC channel and Dry Creek Reservoir north of the City of Clovis. The water would also provide recharge in systems downstream as well as provide surface water in-lieu of groundwater to growers downstream. Up to two reinforced concrete turnouts would be constructed at approximately milepost 14.6 along the FKC at the BDC crossing on the southwest side. The turnouts would require placement of reinforced concrete walls, gate valve assembly, and access platform. Each reinforced concrete turnout would connect to a reinforced concrete pipeline, up to 72-inches in diameter, to provide water to BDC. The turnouts would each deliver up to 150 cubic feet per second, for a total of up to 300cfs,to the existing creek through the proposed pipelines. The pipelines would contain provisions to prevent animals from entering, and the outflow will be surrounded by a concrete structure and riprap. The total length of each pipeline is projected to be approximately 250 feet each and would be buried at a depth of up to approximately 20 feet below grade within the canal embankment and up to about 15 feet below grade for the remaining length of the pipelines. An aquatic resources delineation will be prepared in support of the project.

1.2 REPORT OBJECTIVES

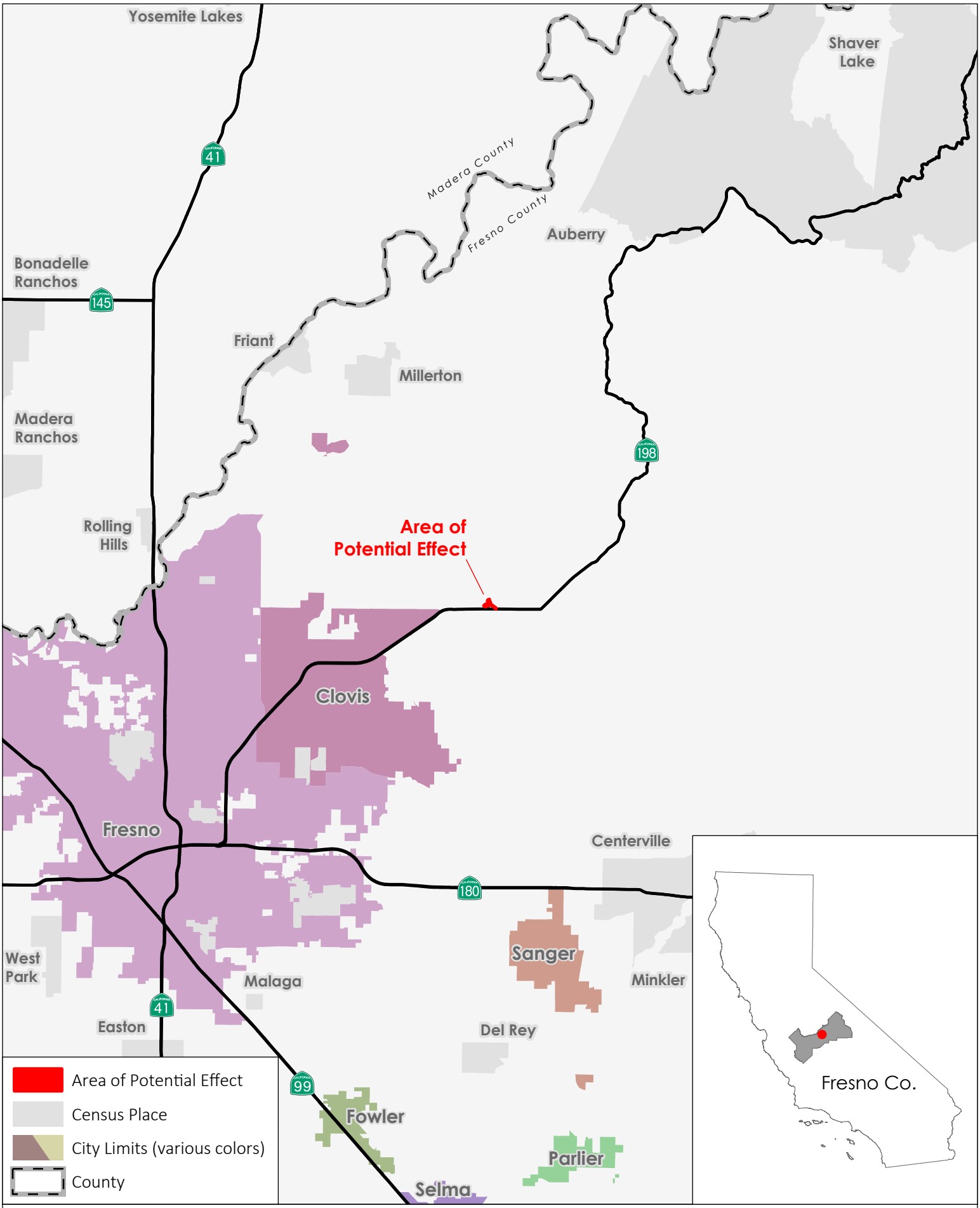
Construction activities such as those proposed by the project could potentially modify biological resources or habitats that are critical for sensitive plant and wildlife species. In cases such as these, development may be regulated by state or federal agencies, and/or addressed by local regulatory agencies.

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.



Regional Location Map

County of Fresno - Friant-Kern Canal at Big Dry Creek

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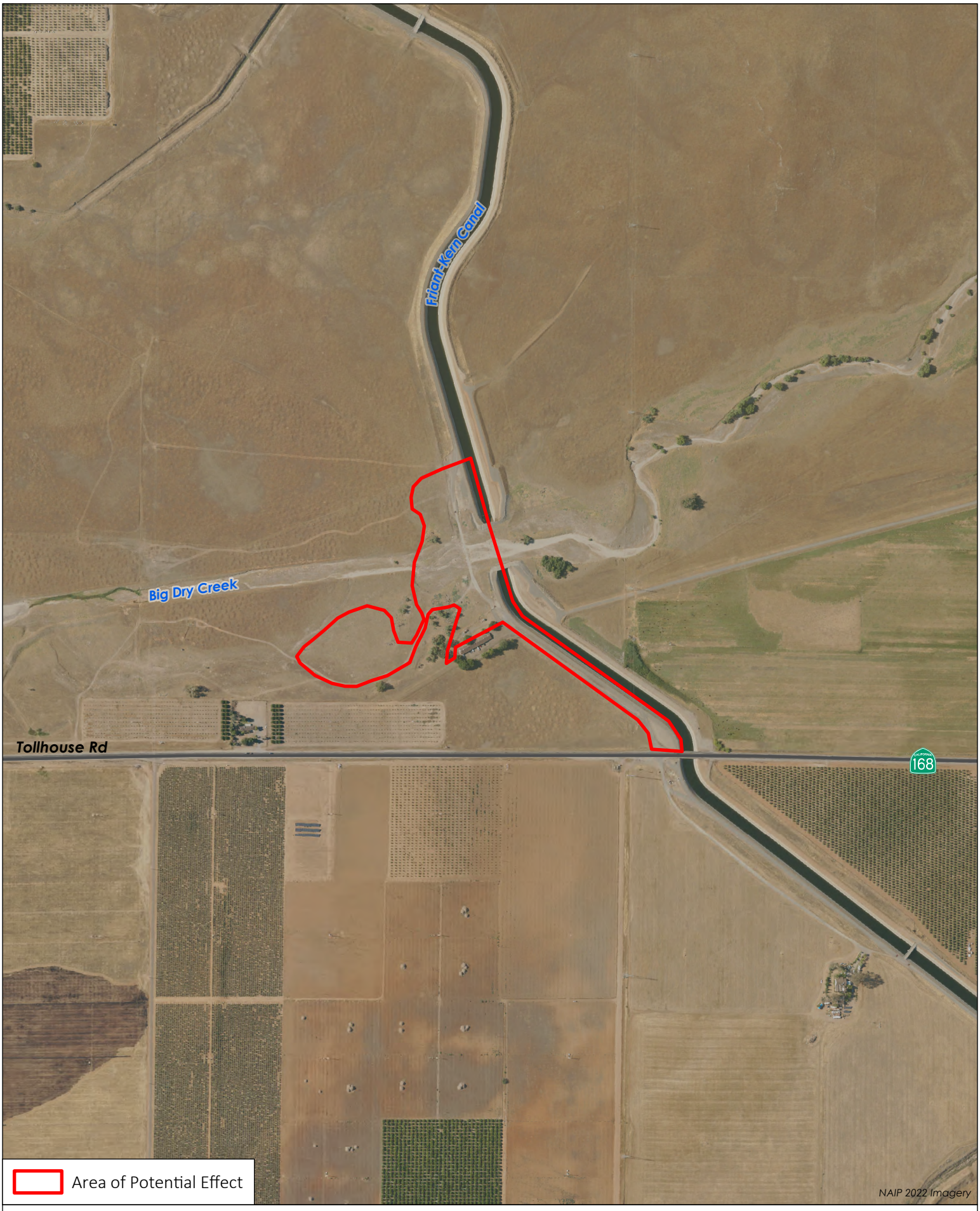
Fig. 1 Page 1-2



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Feet

Aerial Map

County of Fresno - Friant-Kern Canal at Big Dry Creek

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Fig. 2 Page 1-3

- Identify and discuss project impacts and effects to biological resources likely to occur on the APE within the context of CEQA, NEPA, and/or state or federal laws.
- Identify and prescribe a set of avoidance and mitigation measures that would reduce impacts to a less-than-significant level (as identified by CEQA) or avoid and minimize effects (as identified by NEPA) and are generally consistent with recommendations of the resource agencies for affected biological resources.

1.3 STUDY METHODOLOGY

A reconnaissance-level field survey of the APE was conducted on February 15, 2024, by Provost & Pritchard biologist, Shaylea Stark. The survey consisted of walking and driving throughout the APE while identifying and noting land uses, biological habitats and communities, and plant and animal species encountered. Habitats were also assessed for potential suitability for various rare or protected plant and animal species. Representative photographs of the APE were taken and are presented in Appendix A.

Ms. Stark then utilized the results of the field survey to analyze 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: the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB; see Appendix B for the species list) and California Wildlife Habitat Relationships database; California Native Plant Society's (CNPS) Online Inventory of Rare and Endangered Vascular Plants of California; CalFlora's online database of California native plants; Jepson Herbarium's online database (i.e., Jepson eFlora); United States Fish and Wildlife Service's (USFWS) Environmental Conservation Online System (ECOS), Information for Planning and Consultation (IPaC; see Appendix C for the species list) system, and National Wetlands Inventory (NWI); iNaturalist; NatureServe Explorer's online database; United States Department of Agriculture (USDA) Natural Resources Conservation Service's (NRCS) Web Soil Survey (see Appendix D for the Web Soil Survey Report); California Herps website; and various manuals, reports, and references related to plants and animals of the San Joaquin Valley region.

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

2 EXISTING CONDITIONS

2.1 REGIONAL SETTINGS

2.1.1 TOPOGRAPHY

The APE is located within the southwest portion of Section 20, Township 12 South, Range 22 East and within the U.S. Geological Survey (USGS) *Round Mountain* 7.5-minute quadrangle (see Figure 3). The topography of the APE consists of rolling hills and the channel of BDC, which is lower than the surrounding areas, and the APE has elevations ranging from approximately 450 to 470 feet above mean sea level.

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 90- and 99-degrees Fahrenheit (°F), but do not often exceed 105 °F, and the humidity is generally low. Winter temperatures are often below 54°F during the day and rarely exceed 64°F. On average, the City of Clovis receives 13 inches of precipitation in the form of rain yearly, most of which occurs between October and May (WeatherSpark 2024), and the APE would be expected to receive similar amounts of precipitation.

2.1.3 HYDROLOGY

The nearest surface water to the project is BDC and the FKC which are within the APE. While not within the APE, vernal pools were found in the adjacent areas.

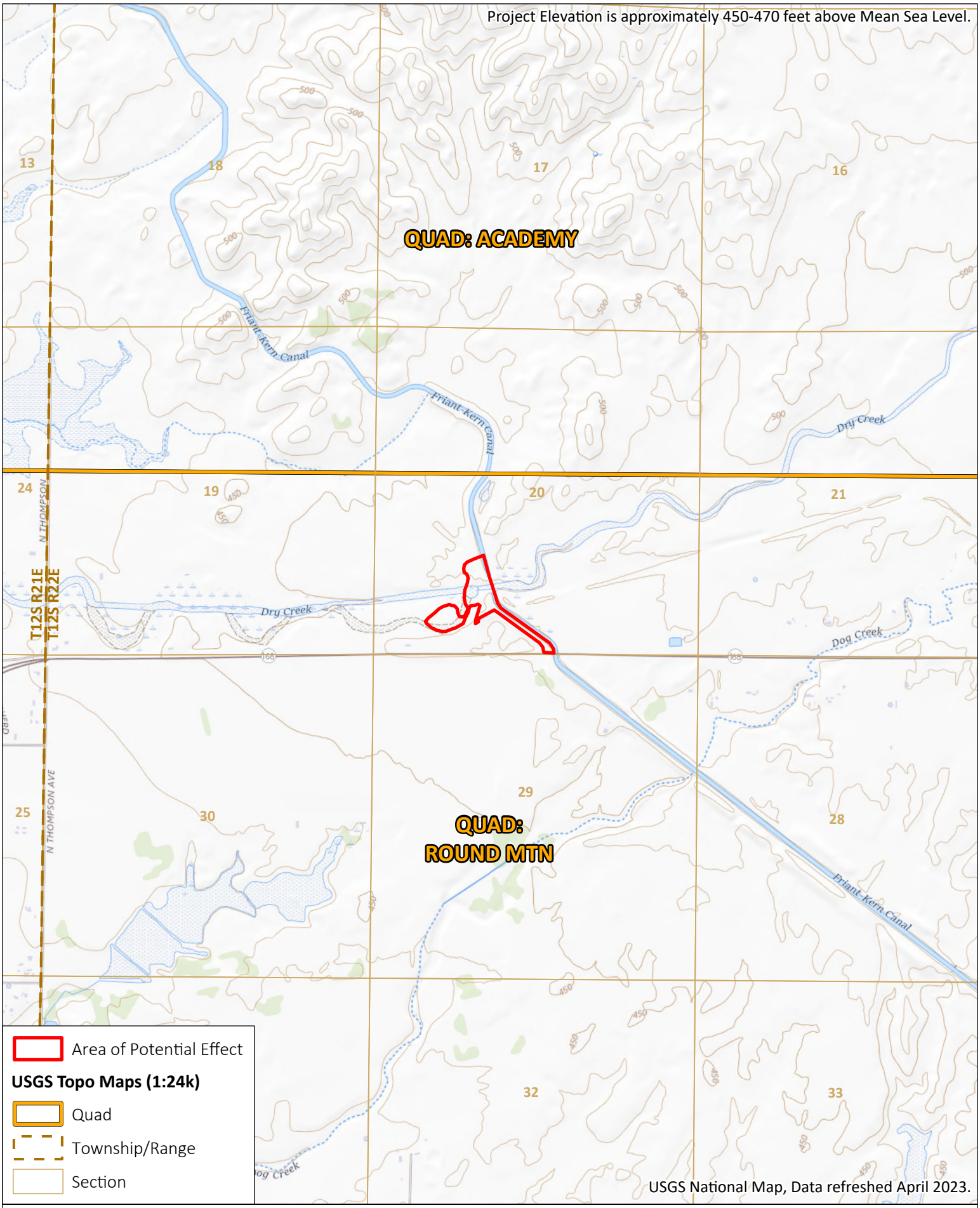
2.1.4 SOILS

Six soil mapping units representing five soil types were identified within the APE and are listed in Table 1 (see Appendix D for the Web Soil Survey Report). The soils are displayed with their core properties in the table below, according to the Major Land Resource Area of California. These soils are primarily used for irrigated field and row crops, pasture, and grazing.

Table 1: List of Soils Located on the APE and Their Basic Properties

Soil	Soil Map Unit	Percent of APE	Hydric Soil Category	Drainage	Permeability	Runoff
Atwater	Loamy sand, 3 to 9 percent slopes	5.3%	Nonhydric	Well drained	Moderately rapid	Low
Dello	Loamy sand	33.3%	Predominantly Hydric	Somewhat poorly drained	Rapid	Very low
Ramona	Sandy loam	0.2%	Nonhydric	Well drained	Moderately slow	Low
San Joaquin	Loam, 0 to 3 percent slopes	50.7%	Predominantly Nonhydric	Moderately well drained	Very slow	High
Tujunga	Soils, channeled, 0 to 9 percent slopes	2.2%	Predominantly Hydric	Somewhat excessively drained	Moderate	Low
Water	-	8.2%	-	-	-	-

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. Two of the major soil mapping units are predominately hydric and make up 35.5% of the APE. Three of the major soil mapping units are nonhydric or predominantly nonhydric and make up 56.2% of the APE. Water identified on the APE is within the FKC and makes up 8.2% of the APE. During the field survey the texture of soils was checked, and they varied throughout the APE from sand, loam, and clay to silty loam, silty clay, sandy clay, clay loam, and sandy loam.



Topographic Map

County of Fresno - Friant-Kern Canal at Big Dry Creek

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Fig. 3 Page 2-2

2.2 BIOTIC HABITATS

Four biotic habitats were observed within the APE and included grassland, creek, canal, and ruderal (see Figure 4). These habitats and their constituent plant and animal species are described in more detail in the following sections. The surrounding area contained grassland habitat with trees with natural cavities, grazing cows, vernal pools with a species of fairy shrimp and ruderal habitat with apartments adjacent to the Friant Kern Canal.

2.2.1 ANNUAL GRASSLAND

The APE is primarily located on private property used for cattle grazing that is dominated by annual grassland habitat. Vegetation observed within this habitat included annual grasses, mustard (*Brassica* sp.), coyote melon (*Cucurbita palmata*), milk thistle (*Silybum marianum*), dwarf nettle (*Urtica urens*), mushrooms (*pluteaceae* sp.), willows (*Salix* spp.), white horehound (*Marrubium vulgare*), redstem filaree (*Erodium cicutarium*), yellow star-thistle (*Centaurea solstitialis*), and stinging nettle (*Urtica dioica*).

The survey of the APE resulted in the identification of numerus bird species including European starling (*Sturnus vulgaris*), red-winged blackbird (*Agelaius phoeniceus*), Lincoln's sparrow (*Melospiza lincolnii*), California quail (*Callipepla californica*), lesser goldfinch (*Spinus psaltria*), ruby-crowned kinglet (*Regulus calendula*), black phoebe (*Sayornis nigricans*), northern mockingbird (*Mimus polyglottos*), American robin (*Turdus migratorius*), rock wren (*Salpinctes obsoletus*), yellow-rumped warbler (*Setophaga coronata*), house finch (*Haemorhous mexicanus*), western meadowlark (*Sturnella neglecta*), common raven (*Corvus corax*), and killdeer (*Charadrius vociferus*). California ground squirrel (*Otospermophilus beecheyi*), Pacific tree frog (*Pseudacris regilla*), domestic dog (*Canis lupus familiaris*) tracks, and small to large mammal burrows were also observed.

The grassland habitat within the APE was moderately disturbed by cattle grazing but provides expansive high-quality habitat to a variety of wildlife, year-round. This habitat serves foraging birds, including raptors, during the day, as well as potentially bats, coyotes, foxes, and other nocturnal animals at night. Other less-common species that may be found within the grassland habitat include American badger (*Taxidea taxus*), burrowing owl (*Athene cunicularia*), northwestern pond turtle (*Actinemys marmorata*), California tiger salamander (*Ambystoma californiense*), and western spadefoot (*Spea hammondii*).

2.2.2 CREEK

The creek habitat within the APE included an approximate 2.4-acre section of BDC which contained a concrete access road. The creek contained water at the time of the field survey and had minimal vegetation, including non-native grasses, mustard, rough cocklebur (*Xanthium strumarium*), and willow trees. The survey within the creek habitat resulted in the same species observed within the grassland habitat.

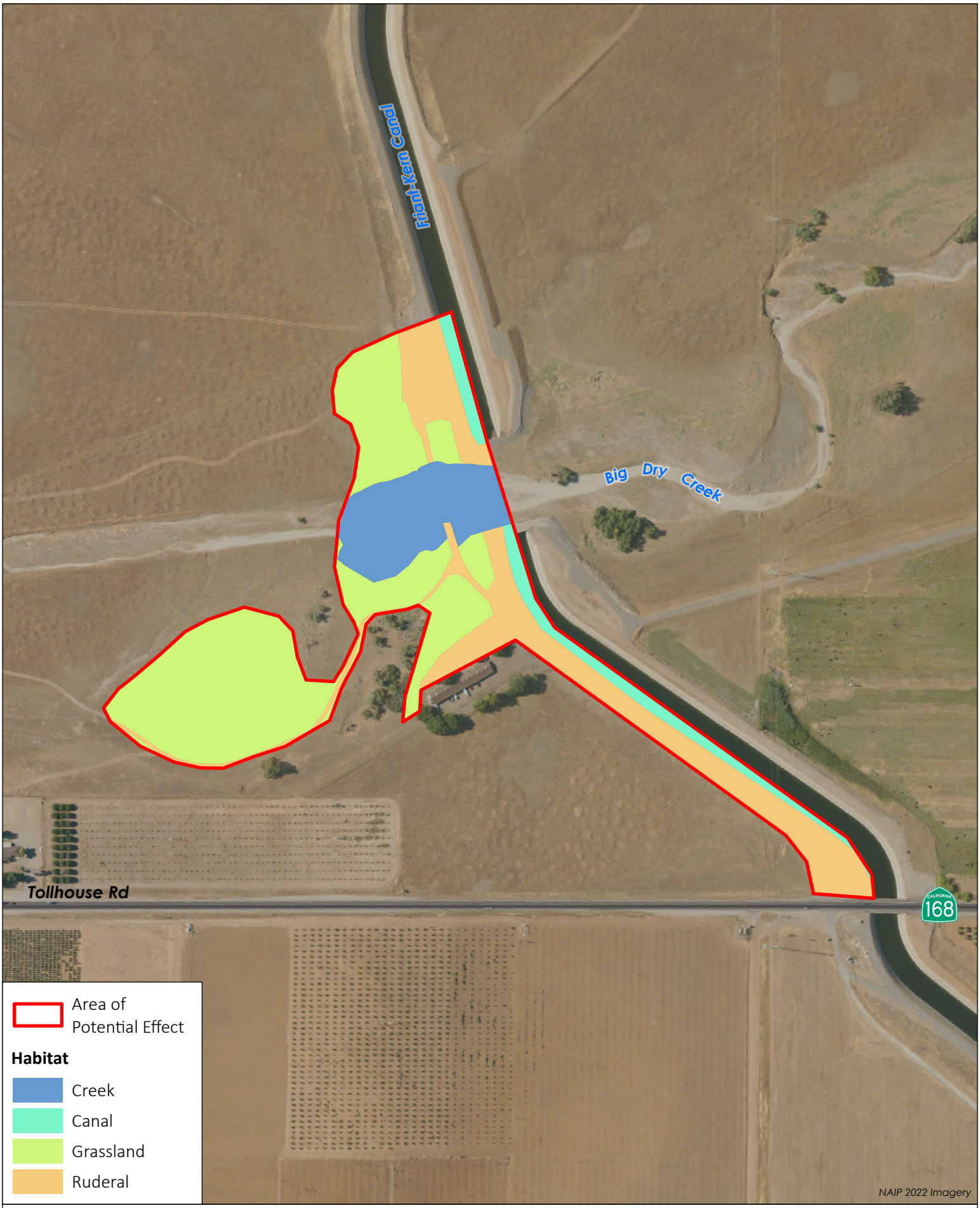
The creek habitat within the APE was moderately disturbed due to the concrete access road but provides habitat to a variety of wildlife, year-round. This habitat serves foraging birds, including raptors, during the day, as well as potentially bats, coyotes, foxes, and other nocturnal animals at night. Species that may be found within the creek habitat include northwestern pond turtle, Pacific tree frog, western toad, western spadefoot, and American bullfrog (*Lithobates catesbeianus*). Various species may use the channel and banks as a wildlife movement corridor.

2.2.3 CANAL

The canal habitat included the FKC which was concrete lined and contained no vegetation. There is an existing siphon along this portion of the FKC that goes under BDC. While the canal provides minimal habitat for native species, foraging birds and nocturnal animals may use the banks as a wildlife movement corridor.

2.2.4 RUDERAL

The ruderal portion of the APE contained paved and dirt roads. Vegetation in this habitat included non-native grasses, Russian thistle (*Salsola tragus*), mustard species, and redstem filaree. The survey of the ruderal habitat resulted in the same species observed within the grassland habitat. This habitat may be used by the same species as those that use the grassland habitat.



Habitats Map

County of Fresno - Friant-Kern Canal at Big Dry Creek

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Fig. 4 Page 2-5

2.3 NATURAL COMMUNITIES OF SPECIAL CONCERN AND RIPARIAN HABITAT

Natural communities of special concern are those that are of limited distribution, distinguished by significant biological diversity, or home to special status species. CDFW has classified and mapped all natural communities in California. Just as the special status plant and animal species, these natural communities of special concern can be found within the CNDDB. There are no recorded observations a of natural community of special concern mapped within the APE and no natural communities of special concern were observed during the field survey. In the areas surrounding the APE mima mounds with interspersed vernal pools were observed.

Riparian habitat is composed of plant communities that occur along the banks, and sometimes over the banks, of most waterways and is an important habitat for numerous wildlife species. CDFW has jurisdiction over most riparian habitat in California. While Big Dry Creek is within the APE, it did not contain riparian habitat.

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, the boundary of designated critical habitat for succulent owl's-clover occurs in the FKC, which is concrete lined and a very small portion of the APE. The primary constituent elements for succulent owl's-clover critical habitat include the following, which are paraphrased from the Federal Register (Vol. 71, No. 28):

(i) Topographic features characterized by isolated mound and intermound complex within a matrix of surrounding uplands that result in continuously, or intermittently, flowing surface water in the depressional features including swales connecting the pools described below, providing for dispersal, and promoting hydroperiods of adequate length in the pools; and

(ii) Depressional features including isolated vernal pools with underlying restrictive soil layers that become inundated during winter rains and that continuously hold water or whose soils are saturated for a period long enough to promote germination, flowering, and seed production of predominantly annual native wetland species and typically exclude both native and nonnative upland plant species in all but the driest years. As these features are inundated on a seasonal basis, they do not promote the development of obligate wetland vegetation habitats typical of permanently flooded emergent wetlands.

The portion of the critical habitat polygon within the APE only overlaps the FKC which did not contain the primary constituent elements required for this species and would not be considered suitable habitat. Furthermore, the Federal Register states that, "existing manmade features and structures, such as buildings, roads, railroads, airports, runways, and other paved areas, lawns, and other urban landscaped areas do not contain one or more of the primary constituent elements. Federal actions limited to those areas, therefore, would not trigger a consultation under section 7 of the Act (i.e., Endangered Species Act) unless they may affect the species and/or primary constituent elements in adjacent critical habitat." The critical habitat for succulent owl's-clover extends into the surrounding area, directly east of the FKC, which likely contains the primary constituent elements required by this species and provides suitable habitat.

2.5 WILDLIFE MOVEMENT CORRIDORS AND NATIVE WILDLIFE NURSERY SITES

Wildlife movement corridors are routes that animals regularly and predictably follow during seasonal migration, dispersal from native ranges, daily travel within home ranges, and inter-population movements.

Movement corridors in California are typically associated with valleys, ridgelines, and rivers and creeks supporting riparian vegetation. The habitat of the APE and surrounding areas consists of expansive open grassland where species could move through. Multiple game trails were observed during the field survey throughout the grassland habitat. The FKC and Creek habitat could be used as wildlife movement corridors.

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. Large trees with natural cavities were located adjacent to the APE and could function as native wildlife nursery sites for bats.

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 high-quality habitat 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 a mechanism for conserving and protecting the diversity of plant and animal species native to California. Numerous native plants and animals have been formally designated as "threatened" or "endangered" under state and federal endangered species legislation. Other formal designations include "candidate" for listing or "species of special concern" by CDFW. The CNPS has its list of native plants considered rare, threatened, or endangered. Collectively these animals and plants are referred to as "special status species."

A query of the CNDDB for occurrences of special status plant and animal species was conducted for the *Round Mountain* USGS 7.5-minute quadrangle that contains the APE, and for the eight surrounding quadrangles: *Academy*, *Clovis*, *Friant*, *Humphreys Station*, *Malaga*, *Piedra*, *Sanger*, and *Wahtoke*. 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 2 and Table 3, 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 2: List of Special Status Plants with Potential to Occur on the APE and/or in the Vicinity

Species	Status*	Habitat	Occurrence within the APE
Bristly sedge (*Carex comosa*)	CNPS 2B	Found in marshes, swamps, coastal prairies, often along lake margins and wet areas at elevations between -16 and 3,310 feet. Areas below sea level occur on a Delta Island. Blooms May – September.	**Unlikely.** The APE lacked suitable aquatic habitat for this obligate plant species. The nearest recorded observation of this species within the vicinity was approximately 12.5 miles south of the APE in 1989.
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.	**Possible.** The APE and surrounding areas contained suitable grassland habitat. The nearest recorded observation of this species within the vicinity was approximately 7 miles southwest of the APE in 1986 but is listed as extirpated.

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.	**Possible.** The APE contained streambanks and floodplains within the creek habitat where this species could occur. The nearest recorded observation of this species within the vicinity was approximately 10 miles southeast of the APE in 1970.
Dwarf downingia (*Downingia pusilla*)	CNPS 2B	Found in vernal pools in valley and foothill grassland communities at elevations below 1,600 feet. Blooms March – May.	**Unlikely.** The APE lacked vernal pools. The nearest recorded observation of this species within the vicinity was approximately 7 miles northwest of the APE in 1979.
Forked hare-leaf (*Lagophylla dichotoma*)	CNPS 1B	Found in cismontane woodland, and valley and foothill grassland communities at elevations between 600 and 1,100 feet. Blooms April – May.	**Unlikely.** The APE is below the elevational range for this species. The nearest recorded observation of this species within the vicinity was approximately 5.5 miles southeast of the APE in 2010.
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.	**Unlikely.** The APE lacked vernal pools. The nearest recorded observation of this species within the vicinity was approximately 2.5 miles southwest of the APE in 1987.
Hartweg's golden sunburst (*Pseudobahia bahiifolia*)	FE, CE, CNPS 1B	Found in valley and foothill grassland and cismontane woodland communities in clay soils that are often acidic. Occurs predominantly on northern slopes, but also along shady creeks and near vernal pools at elevations between 300 and 650 feet. Blooms March – May.	**Possible.** Mima mounds with north facing slopes were observed in the northern portion of the APE. The nearest recorded observation of this species within the vicinity was approximately 9 miles northwest of the APE in 2009.
Keck's checkerbloom (*Sidalcea keckii*)	FE, CNPS 1B	Occurs in cismontane woodland, and valley and foothill grassland communities, typically on grassy slopes in clay soils at elevations between 250 and 1,700 feet. Blooms April – May.	**Possible.** The APE contained suitable habitat and clay soils for this species. The nearest recorded observation of this species within the vicinity was approximately 7.5 miles east of the APE in 2008.
Madera leptosiphon (*Leptosiphon serrulatus*)	CNPS 1B	Found within openings of foothill woodland, often yellow-pine forest, and chaparral at elevations between 1,000 and 4,300 feet. Blooms April – May.	**Unlikely.** The APE is below the elevational range for this species. The nearest recorded observation of this species within the vicinity was approximately 9.5 miles northwest of the APE in 1967.

Species	Status*	Habitat	Occurrence within the APE
Orange lupine (*Lupinus citrinus* var. *citrinus*)	CNPS 1B	Found in chaparral, cismontane woodland, and lower montane coniferous forest communities in rocky, decomposed granitic outcrops on flat to rolling terrain. Typically found in open areas, at elevations between 1,200 and 5,800 feet. Blooms April – July.	**Unlikely.** The APE is below the elevational range for this species. The nearest recorded observation of this species within the vicinity was approximately 12 miles northeast of the APE in 2003.
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.	**Possible.** The APE contained suitable habitat and clay soils for this species. The nearest recorded observation of this species within the vicinity was approximately 2.5 miles southeast of the APE in 2010.
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.	**Unlikely.** The APE and surrounding areas lacked suitable aquatic habitat for this obligate plant species. The nearest recorded observation of this species within the vicinity was approximately 8 miles northwest of the APE in 1996.
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.** The APE contained an ephemeral creek which is unsuitable for this obligate plant species. The FKC is lined with concrete and lacked vegetation. The nearest recorded observation of this species within the vicinity was approximately 8 miles southwest of the APE in 2018.
Slender-stalked monkeyflower (*Erythranthe gracilipes*)	CNPS 1B	Found in disturbed areas, such as road shoulders and burns. Can also be found in the cracks of large granitic rocks in chaparral habitats. Grows at elevations between 1,600 and 4,300 feet. Blooms April – May.	**Absent.** The APE is well below the elevational range for this species.
Spiny-sepaled button-celery (*Eryngium spinosepalum*)	CNPS 1B	Found in the Sierra Nevada foothills and the San Joaquin Valley. Occurs usually in wetlands, vernal pools, swales, and roadside ditches but occasionally in non-wetlands. Often associated with clay soils in vernal pools within grassland communities. Occurs at elevations between 50 and 4,200 feet. Blooms April – July.	**Possible.** While the APE did not contain vernal pools, they were adjacent to the APE and suitable non-wetland grassland habitat was observed within the APE. The nearest recorded observation of this species within the vicinity was approximately 6.5 miles southeast of the APE in 1987.

Species	Status*	Habitat	Occurrence within the APE
Succulent owl's-clover (*Castilleja campestris* var. *succulenta*)	FT, CE, CNPS 1B	Occurs usually in wetlands and vernal pools but occasionally in non-wetlands. Often found in acidic soils at elevations below 2,500 feet. Blooms April – July.	**Possible.** While the APE did not contain vernal pools, they were adjacent to the APE and suitable non-wetland habitat was observed within the APE. The nearest recorded observation of this species within the vicinity was approximately 1 mile northwest of the APE in 2008.
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.	**Unlikely.** The APE contained low rolling hills which this species does not occur on and is below the required elevation for this species. The nearest recorded observation of this species within the vicinity was approximately 11 miles southwest of the APE in 2015.

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

Species	Status*	Habitat	Occurrence within the APE
American badger (*Taxidea taxus*)	CSSC	Occurs most abundantly in drier open stages of shrub, forest, and herbaceous habitats with friable soils to burrow, but can be found within numerous habitats throughout California, including the margins of agricultural lands. Needs a sufficient prey base of burrowing rodents.	**Possible.** Suitable grassland habitat and burrows of appropriate size were observed within the APE. The nearest recorded observation of this species within the vicinity was approximately 7.5 miles southwest of the APE in 1987.
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.** Suitable grassland habitat and burrows of appropriate size were observed within the APE. The nearest recorded observation of this species within the vicinity was approximately 6.5 miles southeast of the APE in 2006.
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 APE lacked suitable nesting habitat. This species could fly over or forage on the APE. There are no recorded observations of this species in CNDDB within the regional vicinity of the project.
California glossy snake (*Arizona elegans occidentalis*)	CSSC	Inhabits arid scrub, rocky washes, grasslands, and chaparral. Prefers open areas with loose soil for easy burrowing. This species occurs near in the Pacific Coast Ranges	**Unlikely.** The APE is well outside the current range for this species. The nearest recorded observation of this species within the vicinity was approximately 7 miles southwest of the APE in 1893.

Species	Status*	Habitat	Occurrence within the APE
		from the eastern part of the San Francisco Bay Area south to northwestern Baja California but is absent along the central coast.	
California tiger salamander (*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.	**Possible.** The APE contained suitable grassland habitat with small mammal burrows where this species could aestivate. While not within the APE, the surrounding areas contained vernal pools where this species could breed. The nearest recorded observation of this species within the vicinity was approximately 0.2 miles north of the APE in 2006.
Coast horned lizard (*Phrynosoma blainvillii*)	CSSC	Found in grasslands, coniferous forests, woodlands, and chaparral, primarily in open areas with patches of loose, sandy soil and low-lying vegetation in valleys, foothills, and semi-arid mountains. Frequently found near ant hills and along dirt roads in lowlands along sandy washes with scattered shrubs.	**Unlikely.** While the APE contained suitable habitat, this species has not been seen for over 100 years within 25 miles of the project APE. The nearest recorded observation of this species within the vicinity was approximately 7 miles southwest of the APE in 1893.
Conservancy fairy shrimp (*Branchinecta conservatio*)	FE	Found in large, turbid freshwater vernal pools in the Central Valley, from Tehama County in the north to Merced County in the south, with one outlying population in Ventura County's Interior Coast Ranges.	**Unlikely.** The APE lacked vernal pools and there are no recorded observations of this species in CNDDB within the regional vicinity of the APE.
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 milkweeds, dustymaidens, lupines, medics, phacelias, sages, snapdragons, scorpionweeds, primroses, poppies, and buckwheats. Nests are often located underground in abandoned rodent nests, or above ground in tufts of grass, old bird nests, rock piles, or cavities in dead trees.	**Possible.** The annual grassland and creek habitats were suitable for foraging for this species. The annual grassland and ruderal habitats contained small mammal burrows and adjacent areas contained cavities in dead trees where this species could nest and overwinter. The nearest recorded observation of this species within the vicinity was approximately 9.5 miles northeast of the APE in 1982.
Foothill yellow-legged frog – south Sierra DPS (*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,	**Unlikely.** While the APE contained a creek, it lacked suitable vegetation and habitat for this species. The nearest recorded observation of this species within the vicinity was

Species	Status*	Habitat	Occurrence within the APE
		and deep, shaded, spring-fed pools.	approximately 11.5 miles northeast of the APE in 1971.
Fresno kangaroo rat (*Dipodomys nitratoides exilis*)	FE, CE	An inhabitant of alkali sinks and open grassland habitats in Merced, Kings, Fresno, and Madera counties. Prefers bare, alkaline, clay-based soils subject to seasonal inundation with more friable soil mounds around shrubs and grasses. The most recent recorded observation of this species in California was in 1992 in Fresno County.	**Unlikely.** The APE lacked alkali sinks and is outside of the current range for this species. No evidence of kangaroo rats was observed during the field survey. There are no recorded observations of this species on CNDDB within the regional vicinity of the project.
Least Bell's vireo (*Vireo bellii pusillus*)	FE, CE	This migratory species breeds in southern California. Breeding habitat consists of dense, low, shrubby, riparian vegetation in the vicinity of water or dry river bottoms. By the early 1980s, this species was extirpated from most of its historic range in California, including the Central Valley.	**Absent.** This species has a documented limited range, and the APE is well outside of this range
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 (*Asclepias* sp.). Winter roost sites extend along the Pacific coast from northern Mendocino to Baja California, Mexico.	**Unlikely.** While the APE contained suitable foraging habitat, roosting habitat was absent. There are no recorded observations of this species on CNDDB within the regional vicinity of the project.
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.** While the APE contained suitable sandy soils, it lacked appropriate leaf litter, and the nearest recorded observation is approximately 140 years old.
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.	**Possible.** The APE contained suitable aquatic habitat within BDC and upland grassland habitat for this species to bask and nest. The nearest recorded observation of this species within the vicinity was approximately 4 miles southwest of the APE in 2016.
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	**Possible.** While there are no known satellite populations near the APE, suitable grassland habitat and burrows of appropriate size were observed within the APE. The nearest recorded observation of this species within the vicinity was

Species	Status*	Habitat	Occurrence within the APE
		structures in cities, rangeland, and agricultural areas.	approximately 9.5 miles northwest of the APE in 1994.
Spotted bat (*Euderma maculatum*)	CSSC	Roosts in cliffs, rock crevices, and caves. Often forages over water and along washes. This species feeds almost exclusively on moths.	**Unlikely.** While this species could forage over the APE, suitable roosting habitat was absent. The nearest recorded observation of this species within the vicinity was approximately 10.5 miles northwest of the APE in 1970.
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.	**Possible.** Trees observed adjacent to the APE provide suitable nesting habitat. This species could also forage over the APE. The nearest recorded observation of this species within the vicinity was approximately 10.5 miles northwest of the APE in 1970.
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.	**Possible.** While not within the APE, a wetland with dense cattails where this species could nest was located approximately 120 feet east of the APE. This species could forage within the APE. The nearest recorded observation of this species within the vicinity was adjacent to the APE in 2015.
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.** The APE lacked elderberry shrubs and is not located within one of the current known populations.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	Occupies vernal and seasonal pools, with clear to tea-colored water, in grass or mud-bottomed swales, and basalt depression pools.	**Unlikely.** The APE lacked suitable habitat. The nearest recorded observation of this species was adjacent to the APE in 2004.
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.	**Unlikely.** While this species could forage over the APE, suitable roosting habitat was absent. There are no recorded observations of this species on CNDDB within the regional vicinity of the project.
Western red bat (*Lasiurus blossevillii*)	CSSC	Roosts primarily in trees, 2–40 feet above ground, from sea level up through mixed conifer forests. Prefers habitat edges	**Possible.** Trees observed adjacent to the APE contained natural cavities where this species could roost. This species could also forage over the

Species	Status*	Habitat	Occurrence within the APE
		and mosaics with trees that are protected from above and open below with open areas for foraging.	APE. There are no recorded observations of this species on CNDDB within the regional vicinity of the project.
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.	**Possible.** The APE contained suitable grassland habitat with small mammal burrows where this species could aestivate. While not within the APE, the surrounding area contained vernal pools where this species could breed. The nearest recorded observation of this species within the vicinity was approximately 1 mile southeast of the APE in 2008.
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.	**Unlikely.** Big Dry Creek is not a perennial creek and there was minimal nesting habitat for this species. The nearest recorded observation of this species within the vicinity was approximately 7 miles southwest of the APE in 1902 but is listed as extirpated.

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

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

STATUS CODES

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

CNPS LISTING.

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

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 GOALS, POLICIES, AND LAWS

3.2.1 FRESNO COUNTY GENERAL PLAN

The Fresno County General Plan contains the following goals and policies related to the project:

3.2.1.1.1 WATER SUPPLY AND DELIVERY

Goal PF-C: To ensure the availability of an adequate and safe water supply for domestic and agricultural consumption.

PF-C.1: The County shall actively engage in efforts and support the efforts of others to retain existing water supplies within Fresno County.

Policy PF-C.2: The County shall actively engage in efforts and support the efforts of others to import flood, surplus, and other available waters for use in Fresno County.

Policy PF-C.3: To reduce demand on the county's groundwater resources, the County shall encourage the use of surface water to the maximum extent feasible.

Policy PF-C.4: The County shall support efforts to expand groundwater and/or surface water storage that benefits Fresno County.

3.2.1.1.2 WATER RESOURCES

Goal OS-A: To protect and enhance the water quality and quantity in Fresno County's streams, creeks, and groundwater basins.

Policy OS-A.6: The County shall support efforts to create additional water storage that benefits Fresno County, and is economically, environmentally, and technically feasible.

3.2.1.1.3 WETLAND AND RIPARIAN AREAS

Goal OS-D: To conserve the function and values of wetland communities and related riparian areas throughout Fresno County while allowing compatible uses where appropriate. Protection of these resource functions will positively affect aesthetics, water quality, floodplain management, ecological function, and recreation/tourism.

Policy OS-D.1: The County shall support the "no-net-loss" wetlands policies of the US Army Corps of Engineers, the US Fish and Wildlife Service, and the California Department of Fish and Game. Coordination with these agencies at all levels of project review shall continue to ensure that appropriate mitigation measures and the concerns of these agencies are adequately addressed.

Policy OS-D.2: The County shall require new development to fully mitigate wetland loss for function and value in regulated wetlands to achieve "no-net-loss" through any combination of avoidance, minimization, or compensation. The County shall support mitigation banking programs that provide the opportunity to mitigate impacts to rare, threatened, and endangered species and/or the habitat which supports these species in wetland and riparian areas.

Policy OS-D.4: The County shall require riparian protection zones around natural watercourses and shall recognize that these areas provide highly valuable wildlife habitat. Riparian protection zones shall include the bed and bank of both low- and high-flow channels and associated riparian vegetation, the band of riparian vegetation outside the high-flow channel, and buffers of 100 feet in width as measured from the top of the bank of unvegetated channels and 50 feet in width as measured from the outer edge of the dripline of riparian vegetation.

Policy OS-D.5: The County shall strive to identify and conserve remaining upland habitat areas adjacent to wetland and riparian areas that are critical to the feeding, hibernation, or nesting of wildlife species associated with these wetland and riparian areas.

Policy OS-D.6: The County shall require new private or public developments to preserve and enhance existing native riparian habitat unless public safety concerns require removal of habitat for flood control or other purposes. In cases where new private or public development results in modification or destruction of riparian habitat for purposes of flood control, the developers shall be responsible for creating new riparian habitats within or near the project area. Adjacency to the project area shall be defined as being within the same

watershed subbasin as the project site. Compensation shall be at a ratio of three (3) acres of new habitat for everyone (1) acre destroyed.

Policy OS-D.7: The County shall support the management of wetland and riparian plant communities for passive recreation, groundwater recharge, nutrient storage, and wildlife habitats.

Policy OS-D.8: The County should consider the acquisition of wetland, meadows, and riparian habitat areas for parks limited to passive recreational activities as a method of wildlife conservation.

3.2.1.1.4 FISH AND WILDLIFE HABITAT

Goal OS-E: To help protect, restore, and enhance habitats in Fresno County that support fish and wildlife species so that populations are maintained at viable levels.

Policy OS-E.1: The County shall support efforts to avoid the "net" loss of important wildlife habitat where practicable. In cases where habitat loss cannot be avoided, the County shall impose adequate mitigation for the loss of wildlife habitat that is critical to supporting special-status species and/or other valuable or unique wildlife resources. Mitigation shall be at sufficient ratios to replace the function, and value of the habitat that was removed or degraded. Mitigation may be achieved through any combination of creation, restoration, conservation easements, and/or mitigation banking. Conservation easements should include provisions for maintenance and management in perpetuity. The County shall recommend coordination with the US Fish and Wildlife Service and the California Department of Fish and Game to ensure that appropriate mitigation measures and the concerns of these agencies are adequately addressed. Important habitat and habitat components include nesting, breeding, and foraging areas, important spawning grounds, migratory routes, migratory stopover areas, oak woodlands, vernal pools, wildlife movement corridors, and other unique wildlife habitats (e.g., alkali scrub) critical to protecting and sustaining wildlife populations.

Policy OS-E.2: The County shall require adequate buffer zones between construction activities and significant wildlife resources, including both onsite habitats that are purposely avoided and significant habitats that are adjacent to the project site, in order to avoid the degradation and disruption of critical life cycle activities such as breeding and feeding. The width of the buffer zone should vary depending on the location, species, etc. A final determination shall be made based on informal consultation with the US Fish and Wildlife Service and/or the California Department of Fish and Game.

Policy OS-E.3: The County shall require development in areas known to have particular value for wildlife to be carefully planned and, where possible, located so that the value of the habitat for wildlife is maintained.

Policy OS-E.5: The County shall support preservation of habitats of rare, threatened, endangered, and/or other special-status species including fisheries. The County shall consider developing a formal Habitat Conservation Plan in consultation with Federal and State agencies, as well as other resource conservation organizations. Such a plan should provide a mechanism for the acquisition and management of lands that support special-status species.

Policy OS-E.6: The County shall ensure the conservation of large, continuous expanses of native vegetation to provide suitable habitat for maintaining abundant and diverse wildlife

populations, as long as this preservation does not threaten the economic well-being of the county.

Policy OS-E.9: Prior to approval of discretionary development permits, the County shall require, as part of any required environmental review process, a biological resources evaluation of the project site by a qualified biologist. The evaluation shall be based upon field reconnaissance performed at the appropriate time of year to determine the presence or absence of significant resources and/or special-status plants or animals. Such evaluation will consider the potential for significant impact on these resources and will either identify feasible mitigation measures or indicate why mitigation is not feasible.

Policy OS-E.13: The County should protect to the maximum extent practicable wetlands, riparian habitat, and meadows since they are recognized as essential habitats for birds and wildlife.

Policy OS-E.16: Areas that have unusually high value for fish and wildlife propagation should be preserved in a natural state to the maximum possible extent.

Policy OS-E.17: The County should preserve, to the maximum possible extent, areas defined as habitats for rare or endangered animal and plant species in a natural state consistent with State and Federal endangered species laws.

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 United States Code (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* (USEPA). 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 waters 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 involved 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 Environmental Protection Agency (USEPA)* 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: California jewelflower, California satintail, Hartweg's golden sunburst, Keck's checkerbloom, San Joaquin adobe sunburst, spiny-sepaled button-celery, succulent owl's-clover, American badger, burrowing owl, California tiger salamander, Crotch's bumble bee, northwestern pond turtle, San Joaquin kit fox, Swainson's hawk, tricolored blackbird, western red bat, and western spadefoot. Other sensitive resources that have the potential to be impacted by the project include jurisdictional waters, wildlife movement corridors, and native wildlife nursery sites. 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 familiar with species in this report), 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*): All workers will 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 IMPACTS TO SPECIAL STATUS PLANT SPECIES

The following special status plant species were identified to potentially occur within the APE: California jewelflower, California satintail, Hartweg's golden sunburst, Keck's checkerbloom, San Joaquin adobe sunburst, spiny-sepaled button-celery, and succulent owl's-clover. Although habitat for some plant species is marginal within the APE, these species could occur on the site due to the adjacent vernal pool habitat and the fact that these species can occur in areas near vernal pools. Projects that adversely affect special status plants or result in the mortality of special status plants would be considered a significant impact under CEQA and NEPA and may be a violation of state and/or federal laws.

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

Mitigation Measure BIO-2a (*Botanical Surveys*): A qualified botanist/biologist will conduct focused botanical surveys during the appropriate blooming seasons for California jewelflower, California satintail, Hartweg's golden sunburst, Keck's checkerbloom, San Joaquin adobe sunburst, spiny-sepaled button-celery, and succulent owl's-clover according to CDFW's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (2018) for all areas within the APE, prior to the start of construction.

Mitigation Measure BIO-2b (*Avoidance Buffers*): If special status plants are identified during a survey, an avoidance buffer and, if necessary, use of exclusion fencing, will be placed around the area to avoid disturbing the plants and their root systems.

Mitigation Measure BIO-2c (*Formal Consultation*): If rare plant individuals or populations are detected within project work areas during the focused botanical surveys, and the plants cannot be avoided, the project proponent will initiate consultation with CNPS (for CNPS-ranked species), CDFW (for California proposed, threatened, or endangered species), and/or USFWS (for threatened or endangered species) to determine next steps for relocation.

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

The APE and adjacent areas contain suitable nesting and foraging habitat for a variety of protected bird species, such as migratory birds, raptors, and special status birds including burrowing owl, Swainson's hawk, and tricolored blackbird. It is anticipated that during the nesting bird season, protected birds could nest on the ground or in shrubs and trees within, and adjacent to, the APE and forage within the APE. 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 potentially significant impact under CEQA and NEPA.

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

Implementation of the following measures will reduce potential impacts to protected nesting birds to a less than significant level under CEQA and NEPA and will help the project comply with state and federal laws protecting these bird species. Mitigation measures specific to burrowing owl are presented in Section 3.3.6 (i.e., BIO-6a, BIO-6b, and BIO-6c).

> Mitigation Measure BIO-3a (*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-3b (*Pre-construction Surveys*): If activities must occur within the nesting bird season (February 1 to September 15), a qualified biologist (someone familiar with these species and nesting birds) will conduct a single pre-construction survey for tricolored blackbird colonies on the APE and up to 300 feet outside of the APE and Swainson's hawk nests on the APE and within a 0.5-mile radius outside of the APE within five (5) calendar days prior to the start of construction. The Swainson's hawk survey must 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 100 feet outside of the APE and for nesting raptors within the APE and up to 500 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-3c (*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.

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

The trees with natural cavities directly adjacent to the APE may support tree-roosting species of bats like western red bats. Roosting habitat becomes especially sensitive to bat populations during the maternity season (March 1 to September 30) when pups are maturing. It is unlikely western red bats would occur in

the area during the overwintering season (December 1 through February 28) since they are known to migrate. 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 roosting maternity bats and roosting special status bats to a less than significant level under CEQA.

> Mitigation Measure BIO-4a (*Pre-Construction Surveys*): A pre-construction survey will be performed if construction activities fall between March 1 and September 30 (bat maternity season) to identify active bat roost locations in trees within 100 feet of the APE prior to the start of construction. A qualified biologist (someone familiar with bat roosts and their sign) will conduct a daytime roost survey and an emergence survey at potential roost locations within seven days prior to construction.

> Mitigation Measure BIO-4b (*Establish Buffers*): On discovery of any active maternity season bat roosts, a qualified biologist will determine appropriate construction setback distances (buffer zones) based on the biology of the species, conditions of the roost(s), and the level of project disturbance, if appropriate. If necessary, construction 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. Lighting is not to be used near roosts where it would shine on or into the roost entrance. Combustion equipment, such as generators, pumps, and vehicles are not to be parked, operated, under or within 100 feet of the roost.

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

The APE contained annual grassland habitat that could potentially be used by American badger. American badgers denning within the APE 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 potentially active badger dens.

> Mitigation Measure BIO-5b (*Remote Cameras*): If potential American badger dens are detected during the pre-construction survey, each potential den will be monitored with a remote camera for a period of at least three consecutive nights. If there is no activity recorded at the den location, the den can be deemed “inactive” or “unoccupied” and closed or excavated the same day as determining the den inactive.

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

> Mitigation Measure BIO-5d (*Timed Den Excavation*): If an American badger is denning on or within 50 feet of the APE and it cannot be avoided, the den may be excavated outside of the natal season (generally March 15 – June 15) or if it is determined that there are no cubs in the den. Prior to 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. Once this time has been determined and it is confirmed the badger left the den to forage the den will be excavated by hand, with the assistance of machinery. Scopes should be used to survey sections of the den prior to excavation. Should any cubs be discovered during the excavation the work will stop and the crew will leave the APE immediately so the female can rescue her cubs and relocate them.

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

As discussed in Section 3.3.3, the APE contained suitable foraging habitat for burrowing owl (BUOW), and this species also may nest or roost within burrows within, or adjacent to, the APE. 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 APE may remove some potential nesting/roosting and foraging habitat for BUOW, there is abundant habitat adjacent to the APE that could be used, and implementation of the project would not significantly reduce potential nesting, roosting, and foraging habitat for this species. Therefore, no mitigation measures are warranted for loss of BUOW nesting/roosting and foraging habitat.

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

Mitigation Measure BIO-6a (*Pre-construction Take Avoidance Survey*): A qualified biologist (someone familiar with the identification and sign of this species) 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 will include the proposed work area and surrounding lands up to 500 feet. If no BUOW individuals or active burrows are observed, no further mitigation is required.

Mitigation Measure BIO-6b (*Avoidance*): If an active BUOW burrow is detected avoidance buffers will be implemented. A qualified biologist will determine appropriate avoidance buffer distances based on CDFW's 2012 *Staff Report on Burrowing Owl Mitigation*, the biology of BUOW, 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-6c (*Passive Relocation*): If avoidance of an active BUOW burrow is not feasible, passive relocation during the non-breeding season (September 1 through January 31) may be utilized or during the breeding season (February 1 through August 31) if a qualified biologist determines that there are no young in the burrow. Prior to completion a qualified biologist will prepare a passive relocation plan that will detail the methods to be used. It 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, scopes, and machinery, if needed). Following completion of passive relocation, a report will be prepared that documents the methods and results of these efforts.

3.3.7 PROJECT-RELATED MORTALITY AND/OR DISTURBANCE TO CALIFORNIA TIGER SALAMANDER

The APE contained suitable annual grassland habitat with small mammal burrows where California tiger salamander (CTS) could aestivate. Impacts to this habitat will be temporary in nature and once the pipeline is built there would be no more impacts to annual grassland habitat from the project. While not within the APE, the surrounding areas contain vernal pools where this species could breed. Construction activities

occurring within occupied grassland habitat could result in injury, mortality, displacement, disturbance, or inhibit the movement of CTS, and would be considered a significant impact under CEQA and NEPA and violate state and federal laws protecting this species.

Implementation of the following measures will reduce potential impacts to CTS to a less than significant level under CEQA and NEPA will help the project comply with state and federal laws protecting this species.

Mitigation Measure BIO-7a (*CTS Exclusion Fence Plan and Mortality Reduction and Relocation Plan*): Prior to the start of work a qualified biologist (experience surveying and handling CTS and implementing this work) will prepare a CTS exclusion fence plan and mortality reduction and relocation plan and submit them to CDFW and USFWS for approval. The CTS exclusion fence plan will include fencing materials; fencing design, length, layout (including maps), and installation methods; number of exit ramps, spacing, and locations; the number, spacing, material, size, and locations of cover boards to be placed along both sides of the fence to provide refuge areas; access gate design and locations; and inspection, maintenance, repair, and replacement methods and intervals.

The CTS mortality reduction and relocation plan will include a map of the project area and potential upland habitat; detailed survey, excavation, capture, handling, and relocation methods; identification of relocation areas; and identification of a wildlife rehabilitation center or veterinary facility capable of treating injured wild amphibians.

Mitigation Measure BIO-7b (*Burrow Excavation*): Prior to construction, burrow excavations will be completed under the direct supervision of a qualified biologist (experience surveying and handling CTS and implementing this work) for any burrows within the APE where ground disturbance will be occurring and up to 50 feet outside of these areas. These excavations will be completed by hand and with the assistance of small machinery. A scope may be used to survey the burrow sections prior to excavating that section. If a CTS is observed during excavations, a qualified biologist (must possess appropriate collecting/handling permits) will stop work and relocate the individual according to the CTS mortality reduction and relocation plan.

Mitigation Measure BIO-7c (*Exclusion Fencing and Cover Boards*): Within 48 hours of completing burrow excavation and prior to the start of work the project will install exclusion fencing and cover boards around the APE following the CTS exclusion fence plan to ensure CTS do not enter the APE during construction.

Mitigation Measure BIO-7d (*Open Excavations*): All open trenches, holes, sumps, and other excavations with sidewalls steeper than a 1:1 (45 degree) slope will have an escape ramp of earth or a non-slip material with a less than 1:1 slope or these will be covered with barrier material such that animals are unable to dig or squeeze under the barrier and become entrapped.

Mitigation Measure BIO-7e (*Pre-activity Surveys and Monitoring*): A qualified biologist (experience surveying and handling CTS and implementing this work) will conduct a pre-activity clearance survey each day and remain on the APE to oversee all vegetation clearing and ground disturbing activities conducted within suitable habitat for CTS. They will also inspect open excavations, the exclusion fence and cover boards, and under equipment and all materials before it is moved, buried, or capped. If a CTS is observed within the APE, the biologist will stop work and allow the individual to leave the APE of its own volition or follow the details outlined in the CTS mortality reduction and relocation plan.

Mitigation Measure BIO-7f (*CTS BMPs*): All workers will employ the following BMPs in order to avoid and minimize potential impacts to CTS:

- *Rain Forecast:* A qualified biologist will monitor the National Weather Service 72-hour forecast for the APE. During rainfall events and/or when a 50 percent or greater chance of rainfall is predicted within 72 hours, all work will be stopped in the APE where initial ground disturbance (vegetation removal, grading, grubbing, and excavation) has yet to occur until the rainfall ceases and a zero percent chance of rain is forecast. Work may continue during rainfall events and/or when a 50 percent or greater chance of rain is forecast within portions of the APE that have already been cleared of CTS and which are surrounded by exclusion fence that has been properly maintained and is in good repair (in accordance with the CTS mortality reduction and relocation plan).
- *Soil and Materials Stockpiles.* Soil stockpiles will be placed where soil will not pass into the potential CTS breeding habitat, or into any other "Waters of the State," in accordance with Fish and Game Code section 5650. Stockpiles will be appropriately protected to prevent soil erosion. All materials and equipment will be stockpiled and staged in a manner that discourages CTS use. In all locations, bundled or loose materials will not be placed directly on the ground. These materials will be elevated to discourage use by CTS. Materials will not be placed outside of exclusion fencing.
- *Erosion Control Materials.* The use of erosion control materials potentially harmful to CTS and other species, such as monofilament netting (erosion control matting) or similar material, will not be used in potential CTS habitat.
- *Refuse Removal.* Upon completion of project activities, all temporary fill and construction refuse, including, but not limited to, broken equipment parts, wrapping material, cords, cables, wire, rope, strapping, twine, buckets, metal or plastic containers, and boxes will be removed from the APE and disposed of properly.

To protect the project from enforcement action under the CESA, it is recommended the project secures a CDFW Incidental Take Permit for CTS.

3.3.8 PROJECT-RELATED MORTALITY AND/OR DISTURBANCE TO CROTCH'S BUMBLE BEE

Habitats within the APE and surrounding area were determined to be suitable for foraging, nesting, and overwintering Crotch's bumble bee. Queens are actively flying for only two months from March until May and reach maximum flying activity in April. Males are generally present and flying from May to September with peak flying activity occurring in July. Workers of this species are present and flying from April to August, with peak flying activity occurring between May and June. There is abundant foraging habitat adjacent to the APE 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 foraging habitat. Construction activities occurring within nesting or overwintering habitat could result in injury, mortality, displacement, disturbance, or inhibit the movement of this species, and would be considered a significant impact under CEQA and a violation of CESA.

Implementation of the following measures will reduce potential impacts to nesting and overwintering Crotch's bumble bee to a less than significant level under CEQA will help the project comply with state laws protecting this species.

Mitigation Measure BIO-8a (*Flying Bumble Bee and Nest Surveys*): A qualified biologist (someone who is familiar with and can identify bumble bees) will conduct three flying bumble bee and nest surveys during the peak flying periods (April, May to June, and July) prior to initial ground disturbing

activities. The biologist will walk throughout the APE and up to 50 feet outside of the APE during the optimal time of the day to inspect for bumble bees and any nests. If an individual is observed, it will be followed until it can be determined if a nest is present within the survey boundary.

Mitigation Measure BIO-8b (*Identification and Protection Plan*): Bumble bee individuals need to be captured to be identified. If a bumble bee nest is observed, no project activities will occur within 50 feet of the nest until a plan to identify the species using the nest and protect nesting and overwintering Crotch's bumble bee has been submitted to CDFW and approved in writing by CDFW.

3.3.9 PROJECT-RELATED MORTALITY AND/OR DISTURBANCE TO NORTHWESTERN POND TURTLE

The APE contained creek habitat, in the form of BDC, which could be used by northwestern pond turtle for dispersal and basking. The annual grassland habitat of the APE could be used by northwestern pond turtle for nesting and foraging. Upland areas would be temporarily impacted through project activities and the creek habitat may be improved for this species by the project adding water into the creek. Noise, vegetation removal, movement of workers, construction, and ground disturbance as a result of project activities have the potential to significantly impact northwestern pond turtle. Potentially significant impacts associated with project activities could include inadvertent entrapment or direct mortality. Project activities that impact northwestern pond turtles would be considered a potentially significant impact under CEQA and NEPA.

The following measures will be implemented prior to the start of construction and will reduce impacts to northwestern pond turtle to a less than significant level under CEQA and NEPA:

Mitigation Measure BIO-9a (*Pre-construction Survey and Avoidance Buffers*): Within seven (7) days prior to the start of construction, a qualified biologist (someone who is able to identify this species) will conduct a pre-construction survey for northwestern pond turtle within the APE and surrounding areas up to 330 feet. Pre-construction surveys will be conducted in accordance with the draft *Western Pond Turtle (Emys marmorata) Visual Survey Protocol for the Southcoast Ecoregion* (United States Geological Survey 2006). If no northwestern pond turtles are observed during the pre-construction survey, then construction activities may begin. If construction is delayed or halted for more than seven (7) days, another pre-construction survey for northwestern pond turtle will be conducted. If the surveys result in the identification of a northwestern pond turtle or an individual is found on the APE during construction activities, it will be allowed to leave the APE on its own and the qualified biologist will determine appropriate buffers to be implemented to avoid impacts to the individual(s).

Mitigation Measure BIO-9b (*Monitor*): If northwestern pond turtles are observed on the APE, a qualified biologist will conduct a pre-activity clearance survey each day and remain on the APE to oversee all vegetation clearing and ground disturbing activities until the individual(s) have left the APE.

Mitigation Measure BIO-9c (*Formal Consultation*): If northwestern pond turtles within the APE cannot be avoided, the project proponent will initiate protection plans and/or relocation plans in consultation with CDFW and/or USFWS.

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

The APE contained suitable denning and foraging habitat for San Joaquin kit fox (SJKF). SJKF denning within the APE during construction have the potential to be injured or killed by project-related activities. Projects

that result in the mortality of individuals would be a violation of state and federal laws and considered a potentially significant impact under CEQA and NEPA. While the project may remove some potential foraging habitat for SJKF, there is abundant foraging habitat adjacent to the APE 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 help the project comply with state and federal laws protecting this species.

> Mitigation Measure BIO-10a (*Pre-Construction Survey*): Within seven (7) days prior to the start of construction a pre-construction survey for San Joaquin kit fox potential dens will be conducted on and within 200 feet of proposed work areas. If potential SJKF dens are detected during the pre-construction survey, each potential den will be monitored with a remote camera for a period of three consecutive nights. If there is no activity recorded at the den location, the den can be deemed "inactive" or "unoccupied" and closed or excavated the same day as determining the den inactive.
>
> Mitigation Measure BIO-10b (*Establish Buffers*): On discovery of any active 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-10c (*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).

3.3.11 PROJECT-RELATED MORTALITY AND/OR DISTURBANCE TO WESTERN SPADEFOOT

The APE contained suitable upland habitats for western spadefoot. This species may breed in the ponds in the surrounding area and aestivate within burrows or soil cracks within the grassland habitat on the APE. Western spadefoot occurring within the APE during construction have the potential to be injured or killed by project-related activities. Projects that adversely affect western spadefoot or result in the mortality of individuals would be considered a potentially significant impact under CEQA and NEPA.

This species would be expected to occur in similar habitats as CTS and implementation of BIO-7a through BIO-7f as well as the following mitigation will reduce potential impacts to western spadefoot to a less than significant level under CEQA and NEPA.

> Mitigation Measure BIO-11a (*Soil Crack Excavation*): In addition to burrow excavations (BIO-7b), soil cracks will also be excavated under the direct supervision of a qualified biologist (experience

surveying and handling western spadefoot and implementing this work) for any soil cracks within the APE where ground disturbance will be occurring. These excavations will be completed by hand and with the assistance of small machinery. A scope may be used to survey the soil cracks prior to excavating. If a western spadefoot is observed during excavations, a qualified biologist (must possess appropriate collecting/handling permits) will stop work and relocate the individual outside of the work area following guidance from the CTS mortality reduction and relocation plan.

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

The project involves the construction of a turnout on the FKC that will flow into BDC. The USFWS National Wetlands Inventory Map was consulted for known wetlands in the area and freshwater emergent wetland and riverine was classified to be within the boundaries of BDC and freshwater forested/shrub wetland was classified adjacent to BDC. Project-related impacts to some or all of these waters would be considered a potentially significant impact under CEQA and NEPA. Impacts to waters of the U.S. are also subject to the permit requirements of Sections 401 and 404 of the Clean Water Act and impacts to waters of the state are subject to the permit requirements of Section 401 of the Clean Water Act and California Fish and Game Code. The placement of fill within any wetlands or other jurisdictional features will require a 401 Water Quality Certification from the RWQCB, 404 permit from the USACE, and a Lake or Streambed Alteration Agreement from CDFW. An ARD will be performed for the project.

There are no designated wild and scenic rivers within the APE; therefore, the project would not result in direct impacts to wild and scenic rivers.

If construction involves ground disturbance over an area greater than one acre, the project would need to obtain a Construction General Permit under the Construction Storm Water Program administered by the RWQCB. A prerequisite for this permit is the development of a Storm Water Pollution Prevention Plan to ensure construction activities do not adversely affect water quality. This plan will need to be prepared in support of the Construction General Permit application.

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

Mitigation Measure BIO-12a (*Permits*): Permits with USACE, RWQCB, and CDFW will be obtained for work within BDC, if necessary. These permits, certifications, and agreements would ensure there are no indirect downstream effects to jurisdictional waters.

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

The habitat of the APE and surrounding areas consists of expansive open grasslands. Multiple game trails were observed during the field survey throughout the grassland habitat. The FKC and BDC could also be used as a wildlife movement corridor, but impacts would be temporary and minimal, and wildlife may be able to continue using it at night while construction is occurring and would be able to continue utilizing it after construction activities are completed.

The APE has suitable features that could be used as native wildlife nursery sites. Large trees with natural cavities were located adjacent to the APE and could function as native wildlife nursery sites for bats. Project-related impacts to any native wildlife nursery sites would be considered a significant impact under CEQA.

The potential impacts to species that could use the trees as a wildlife nursery site have been addressed in Mitigation Measures BIO-4a, and BIO-4b. Implementation of these will reduce potential impacts to native wildlife nursery sites to a less than significant level under CEQA.

> **Mitigation Measure BIO-13a (*Operational Hours*):** When possible, construction activities should be limited to a half hour after sunrise through a half hour before sunset to reduce potential impacts to wildlife movement corridors.

> **Mitigation Measure BIO-13b (*Wildlife Access*):** Access should not be blocked outside of construction hours or during overnight hours or weekends. If construction must block both sides of a wildlife access route, an alternative route through the construction area should be identified by a qualified biologist and maintained throughout the construction schedule timeframe.

3.4 SECTION 7 DETERMINATIONS

In addition to the effects analysis performed in Table 2 and Table 3 of this document, Table 4 summarizes project effect determinations for federally-listed species and federal candidate species found on the CNDDB list generated on March 8, 2024, and the USFWS IPaC list generated on March 14, 2024 (see Appendix B and Appendix C, respectively), in accordance with Section 7 of the Endangered Species Act.

Table 4: Section 7 Determinations

Species	Determination	Rationale for Determination
California condor *(Gymnogyps californianus)*	No effect	**Habitat absent.** The APE lacked suitable nesting habitat. While this species could fly over or forage on the APE, this species would be expected to fly away during construction.
California jewelflower (*Caulanthus californicus*)	May affect, but not likely to adversely affect	**Habitat present.** The APE and surrounding areas contained suitable grassland habitat. Implementation of mitigation measure BIO-2 would reduce affects to not likely to adversely affect.
California tiger salamander *(Ambystoma californiense)*	May affect, but not likely to adversely affect	**Habitat present.** The APE contained suitable grassland habitat with small mammal burrows where this species could aestivate. While not within the APE, the surrounding areas contain vernal pools where this species could breed. Implementation of mitigation measure BIO-7 would reduce affects to not likely to adversely affect.
Conservancy fairy shrimp *(Branchinecta conservatio)*	No effect	**Habitat absent.** The APE lacked vernal pool habitat.
Foothill yellow-legged frog – south Sierra DPS (*Rana boylii*)	No effect	**Habitat absent.** While the APE contained a creek, it lacked suitable vegetation and habitat for this species.
Fresno kangaroo rat (*Dipodomys nitratoides exilis*)	No effect	**Habitat absent.** The APE lacked alkali sinks and is outside of the current range for this species. No evidence of kangaroo rats was observed during the field survey.

Species	Determination	Rationale for Determination
Greene's tuctoria *(Tuctoria greenei)*	No effect	**Habitat absent**. The APE and surrounding areas lacked suitable vernal pool habitat for this obligate species.
Hartweg's golden sunburst (*Pseudobahia bahifolia*)	May affect, but not likely to adversely affect	**Habitat present**. The APE contained suitable habitat and soils for this species. Implementation of mitigation measure **BIO-2** would reduce affects to not likely to adversely affect.
Keck's checkerbloom (*Sidalcea keckii*)	May affect, but not likely to adversely affect	**Habitat present**. The APE contained suitable habitat and clay soils for this species. Implementation of mitigation measure **BIO-2** would reduce affects to not likely to adversely affect.
Least Bell's vireo (*Vireo bellii pusillus*)	No effect	**Habitat absent**. The APE lacked suitable nesting habitat. While this species could fly over or forage on the APE, this species would be expected to fly away during construction.
Monarch butterfly (*Danaus plexippus*)	No effect	**Habitat absent**. While the APE contained suitable foraging habitat, roosting habitat is absent. This species would be expected to fly away during construction.
Northwestern pond turtle (*Actinemys marmorata*)	May affect, but not likely to adversely affect	**Habitat present**. The APE contained suitable aquatic and upland habitat for this species. Implementation of mitigation measure **BIO-9** would reduce affects to not likely to adversely affect.
San Joaquin adobe sunburst *(Pseudobahia peirsonii)*	May affect, but not likely to adversely affect	**Habitat present.** The APE contained suitable habitat and clay soils for this species. Implementation of mitigation measure **BIO-2** would reduce affects to not likely to adversely affect.
San Joaquin kit fox (*Vulpes macrotis mutica*)	May affect, but not likely to adversely affect	**Habitat present.** The APE contained suitable grassland habitat for this species. Burrows of appropriate size were observed within the APE. Implementation of mitigation measure **BIO-10** would reduce affects to not likely to adversely affect.
San Joaquin Valley Orcutt grass *(Orcuttia inaequalis)*	No effect	**Habitat absent.** The APE and surrounding areas lacked suitable vernal pool habitat for this species.
Succulent owl's-clover (*Castilleja campestris* var. *succulenta*)	May affect, but not likely to adversely affect	**Habitat present.** While the APE did not contain vernal pools the surrounding areas did, and this species could be found within the APE. Implementation of mitigation measure **BIO-2** would reduce affects to not likely to adversely affect.

Species	Determination	Rationale for Determination
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	No effect	**Habitat absent.** The APE lacked elderberry shrubs and is not located within one of the current known populations.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	No effect	**Habitat absent.** The APE lacked vernal pool habitat.
Western spadefoot (*Spea hammondii*)	May affect, but not likely to adversely affect	**Habitat present.** The APE contained suitable grassland habitat with small mammal burrows where this species could aestivate. While not within the APE, the surrounding areas contained vernal pools where this species could breed. Implementation of mitigation measure **BIO-11** would reduce affects to not likely to adversely affect.
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	No effect	**Habitat absent.** Big Dry Creek is not a perennial creek and there was minimal nesting habitat for this species.

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 17 regionally occurring special status plant species, 10 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: bristly sedge, dwarf downingia, forked hare-leaf, Greene's tuctoria, Madera leptosiphon, orange lupine, San Joaquin Valley Orcutt grass, Sanford's arrowhead, slender-stalked monkeyflower, and Winter's sunflower.

Since it is unlikely that these species would occur on the APE, implementation of the project should have no impact on these 10 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 24 regionally occurring special status animal species, 14 are considered absent from or unlikely to occur within the APE due to past or ongoing disturbance and/or the absence of suitable habitat, including nesting or breeding habitat. These species include: California condor, California glossy snake, coast horned lizard, conservancy fairy shrimp, foothill yellow-legged frog, Fresno kangaroo rat, Least Bell's vireo, monarch butterfly, northern California legless lizard, spotted bat, valley elderberry longhorn beetle, vernal pool fairy shrimp, western mastiff bat, and western yellow-billed cuckoo. While these bird species may forage within the APE they would be expected to fly away and not be impacted during construction.

Since it is unlikely that these species would occur on the APE, implementation of the project should have no impact on these 14 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. Mitigation is not warranted.

3.5.4 PROJECT-RELATED IMPACTS TO CRITICAL HABITAT

The boundary for designated critical habitat for succulent owl's clover located within the APE only overlaps the FKC which did not contain the primary constituent elements required for this species and would not be considered suitable habitat, therefore, it would not trigger a consultation under section 7 of the Endangered Species Act. This critical habitat for succulent owl's-clover extends into the surrounding area, directly east of the Friant Kern Canal which may contain the primary constituent elements and provide suitable habitat required by this species. This area and the primary constituent elements for critical habitat for succulent owl's clover would not be impacted by project activities. Therefore, there would be no impact to critical habitat, and mitigation measures are not warranted.

3.5.5 LOCAL POLICIES OR HABITAT CONSERVATION PLANS

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

3.5.6 COASTAL ZONE AND COASTAL BARRIERS RESOURCES ACT

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

3.5.7 PROJECT-RELATED IMPACT TO ESSENTIAL FISH HABITAT

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

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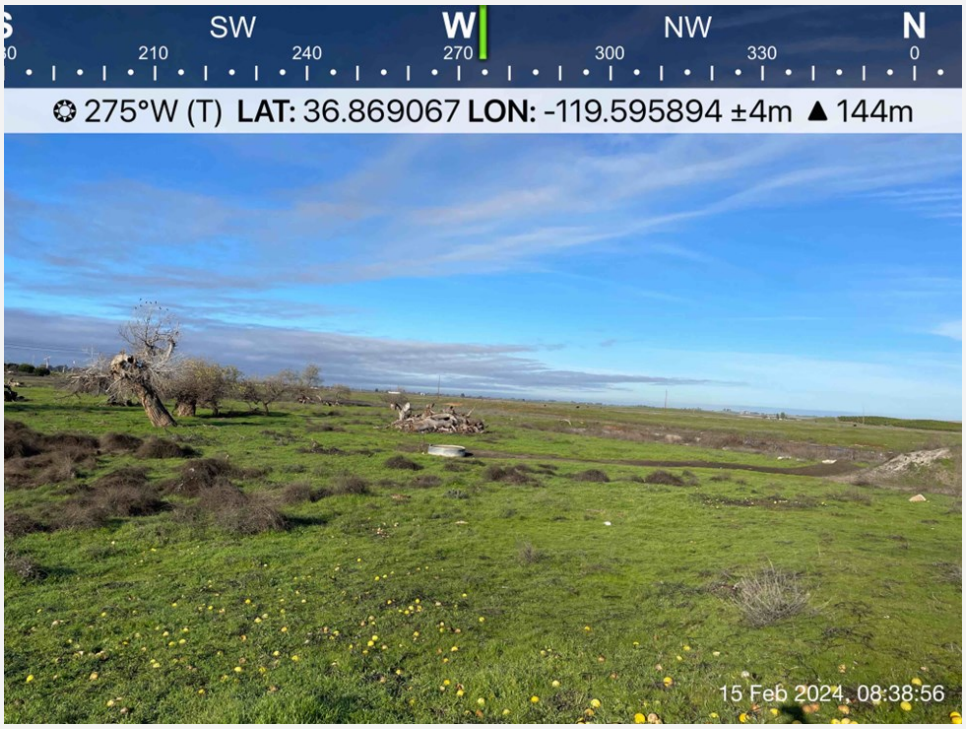
APPENDIX A: REPRESENTATIVE PHOTOS OF THE APE

Photograph 1

Overview of ruderal habitat along the Friant Kern Canal where the turnout would be installed.



Photograph 2

Overview of the location within grassland habitat where the pipeline/canal would be installed to allow water to flow into Big Dry Creek.

Photograph 3

Overview of grassland habitat within the staging area on the south side of the APE.

Photograph 4

Another overview of grassland habitat within the staging area on the south side of the APE.

Photograph 5

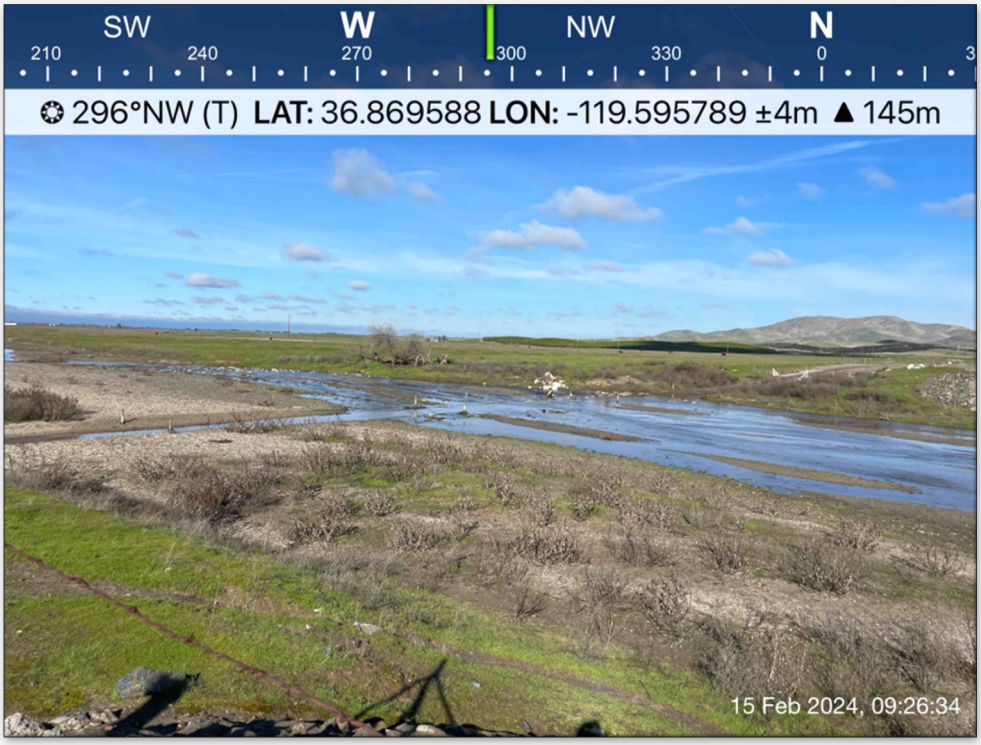
Example of a burrow found within the grassland habitat in the staging area.

Photograph 6

Overview of Big Dry Creek within the APE.

Photograph 7

Another overview of Big Dry Creek within the APE.

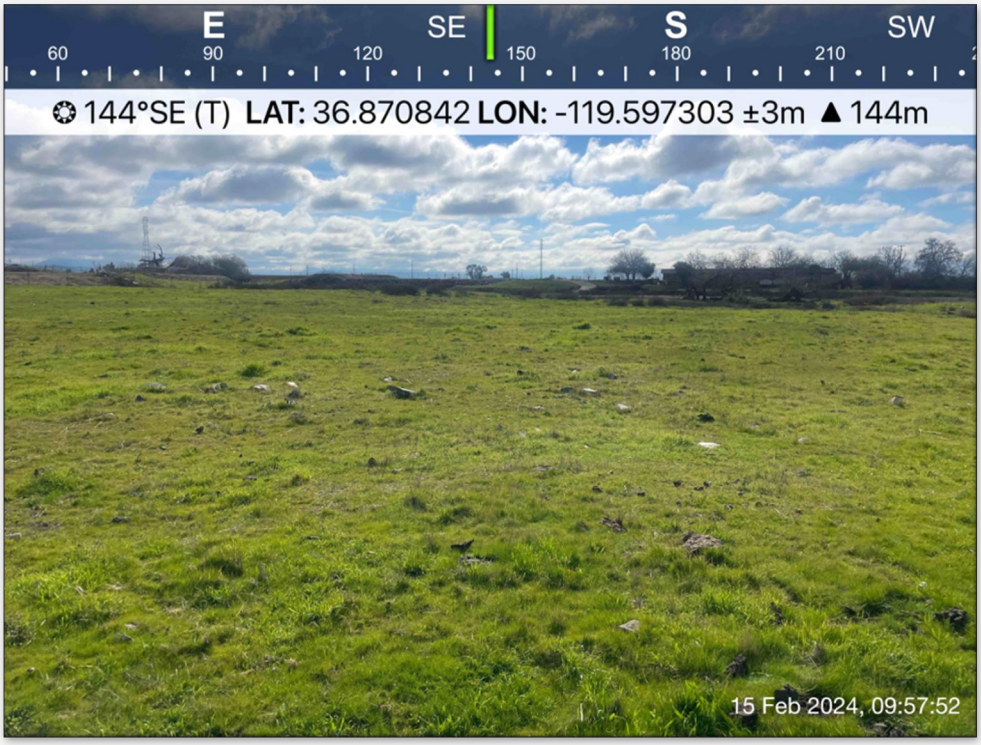


Photograph 8

Overview of the existing concrete road through Big Dry Creek which is located within the APE.

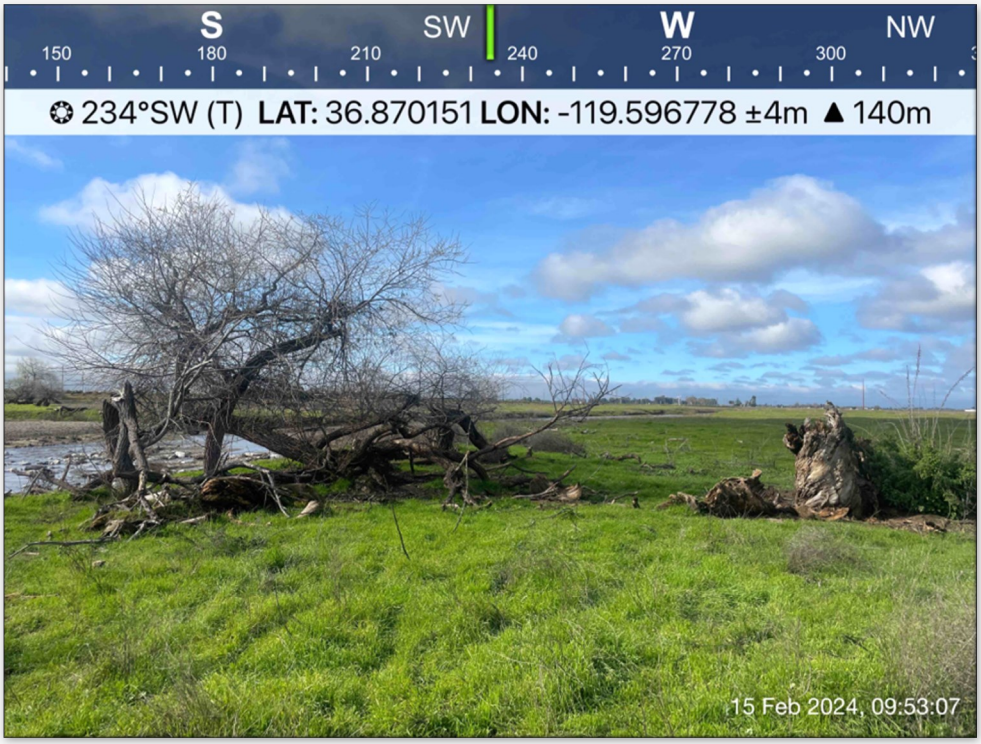
Photograph 9

Overview of ruderal habitat on the north side of the APE.



Photograph 10

Overview of the grassland habitat on the north side of the APE.

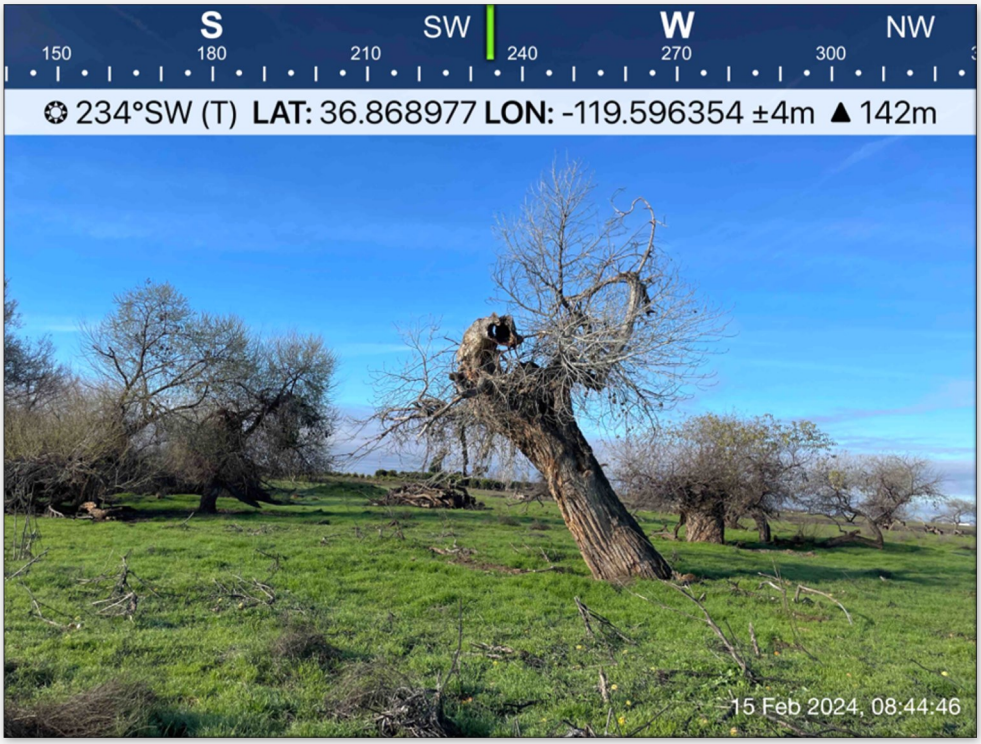


Photograph 11

Overview of trees with natural cavities within the grassland habitat on the north side of the APE.

Photograph 12

Surrounding land contained apartments adjacent to the Friant Kern Canal.



Photograph 13

Surrounding land adjacent to the staging area contained willow trees with natural cavities.

Photograph 14

Surrounding land to the north of the APE contained grassland habitat with grazing cows. This area contained vernal pools with a species of fairy shrimp.

APPENDIX B: CNDDB 9-QUAD SPECIES LIST

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Friant (3611986) OR Academy (3611985) OR Humphreys Station (3611984) OR Clovis (3611976) OR Round Mountain (3611975) OR Piedra (3611974) OR Wahtoke (3611964) OR Sanger (3611965) OR Malaga (3611966))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
American badger *Taxidea taxus*	AMAJF04010	None	None	G5	S3	SSC
American bumble bee *Bombus pensylvanicus*	IIHYM24260	None	None	G3G4	S2	
Antioch efferian robberfly *Efferia antiochi*	IIDIP07010	None	None	G1G2	S1S2	
bristly sedge *Carex comosa*	PMCYP032Y0	None	None	G5	S2	2B.1
burrowing owl *Athene cunicularia*	ABNSB10010	None	None	G4	S2	SSC
California glossy snake *Arizona elegans occidentalis*	ARADB01017	None	None	G5T2	S2	SSC
California jewelflower *Caulanthus californicus*	PDBRA31010	Endangered	Endangered	G1	S1	1B.1
California linderiella *Linderiella occidentalis*	ICBRA06010	None	None	G2G3	S2S3	
California satintail *Imperata brevifolia*	PMPOA3D020	None	None	G3	S3	2B.1
California tiger salamander - central California DPS *Ambystoma californiense pop. 1*	AAAAA01181	Threatened	Threatened	G2G3T3	S3	WL
coast horned lizard *Phrynosoma blainvillii*	ARACF12100	None	None	G4	S4	SSC
Crotch's bumble bee *Bombus crotchii*	IIHYM24480	None	Candidate Endangered	G2	S2	
double-crested cormorant *Nannopterum auritum*	ABNFD01020	None	None	G5	S4	WL
Dry Creek cliff strider bug *Oravelia pege*	IIHEM14010	None	None	G1	S1	
dwarf downingia *Downingia pusilla*	PDCAM060C0	None	None	GU	S2	2B.2
foothill yellow-legged frog - south Sierra DPS *Rana boylii pop. 5*	AAABH01055	Endangered	Endangered	G3T2	S2	
forked hare-leaf *Lagophylla dichotoma*	PDAST5J070	None	None	G2	S2	1B.1
Great Valley Mixed Riparian Forest *Great Valley Mixed Riparian Forest*	CTT61420CA	None	None	G2	S2.2	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Greene's tuctoria *Tuctoria greenei*	PMPOA6N010	Endangered	Rare	G1	S1	1B.1
Hartweg's golden sunburst *Pseudobahia bahiifolia*	PDAST7P010	Endangered	Endangered	G1	S1	1B.1
Hurd's metapogon robberfly *Metapogon hurdi*	IIDIP08010	None	None	G1G2	S1S2	
Keck's checkerbloom *Sidalcea keckii*	PDMAL110D0	Endangered	None	G2	S2	1B.1
least Bell's vireo *Vireo bellii pusillus*	ABPBW01114	Endangered	Endangered	G5T2	S3	
Madera leptosiphon *Leptosiphon serrulatus*	PDPLM09130	None	None	G3	S3	1B.2
marbled harvestman *Calicina macula*	ILARAU8060	None	None	G1	S1	
midvalley fairy shrimp *Branchinecta mesovallensis*	ICBRA03150	None	None	G2	S2S3	
moestan blister beetle *Lytta moesta*	IICOL4C020	None	None	G2	S2	
molestan blister beetle *Lytta molesta*	IICOL4C030	None	None	G2	S2	
Northern California legless lizard *Anniella pulchra*	ARACC01020	None	None	G3	S2S3	SSC
Northern Hardpan Vernal Pool *Northern Hardpan Vernal Pool*	CTT44110CA	None	None	G3	S3.1	
orange lupine *Lupinus citrinus var. citrinus*	PDFAB2B103	None	None	G2T2	S2	1B.2
Piedra harvestman *Calicina piedra*	ILARAU8080	None	None	G1	S1	
San Joaquin adobe sunburst *Pseudobahia peirsonii*	PDAST7P030	Threatened	Endangered	G1	S1	1B.1
San Joaquin kit fox *Vulpes macrotis mutica*	AMAJA03041	Endangered	Threatened	G4T2	S3	
San Joaquin Valley Orcutt grass *Orcuttia inaequalis*	PMPOA4G060	Threatened	Endangered	G1	S1	1B.1
Sanford's arrowhead *Sagittaria sanfordii*	PMALI040Q0	None	None	G3	S3	1B.2
slender-stalked monkeyflower *Erythranthe gracilipes*	PDSCR1B1C0	None	None	G2	S2	1B.2
spiny-sepaled button-celery *Eryngium spinosepalum*	PDAPI0Z0Y0	None	None	G2	S2	1B.2
spotted bat *Euderma maculatum*	AMACC07010	None	None	G4	S3	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
succulent owl's-clover *Castilleja campestris var. succulenta*	PDSCR0D3Z1	Threatened	Endangered	G4?T2T3	S2S3	1B.2
Swainson's hawk *Buteo swainsoni*	ABNKC19070	None	Threatened	G5	S4	
Sycamore Alluvial Woodland *Sycamore Alluvial Woodland*	CTT62100CA	None	None	G1	S1.1	
tricolored blackbird *Agelaius tricolor*	ABPBXB0020	None	Threatened	G1G2	S2	SSC
valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	IICOL48011	Threatened	None	G3T3	S3	
vernal pool fairy shrimp *Branchinecta lynchi*	ICBRA03030	Threatened	None	G3	S3	
western pond turtle *Emys marmorata*	ARAAD02030	Proposed Threatened	None	G3G4	S3	SSC
western ridged mussel *Gonidea angulata*	IMBIV19010	None	None	G3	S2	
western spadefoot *Spea hammondii*	AAABF02020	Proposed Threatened	None	G2G3	S3S4	SSC
western yellow-billed cuckoo *Coccyzus americanus occidentalis*	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
Winter's sunflower *Helianthus winteri*	PDAST4N260	None	None	G2?	S2?	1B.2

Record Count: 50

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: 03/14/2024 19:55:09 UTC
Project Code: 2024-0060237
Project Name: Friant Kern Canal at Big Dry Creek Reservoir Project

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

To Whom It May Concern:

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

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

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: 2024-0060237
Project Name: Friant Kern Canal at Big Dry Creek Reservoir Project
Project Type: Water Supply Facility - Withdrawal - Surface
Project Description: The project involves constructing a new canal turnout that would divert and deliver water from the Friant Kern Canal into Big Dry Creek, which would provide direct recharge along the BDC channel north and east of the City of Clovis. The new turnout would divert water in wetter years and recharge in the existing BDC channel and reservoirs downstream. The Project would involve installation of a large turn-in structure and pipeline/ open channel structure.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@36.869077649999994,-119.59630803418852,14z

Counties: Fresno County, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 13 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
Fresno Kangaroo Rat *Dipodomys nitratoides exilis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5150	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

BIRDS

NAME	STATUS
California Condor *Gymnogyps californianus* Population: U.S.A. only, except where listed as an experimental population There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8193	Endangered
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. 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/3911	Threatened

REPTILES

NAME	STATUS
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
Conservancy Fairy Shrimp *Branchinecta conservatio* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8246	Endangered
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
Fleshy Owl's-clover *Castilleja campestris ssp. succulenta* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8095	Threatened
Greene's Tuctoria *Tuctoria greenei* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1573	Endangered
San Joaquin Adobe Sunburst *Pseudobahia peirsonii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2931	Threatened

CRITICAL HABITATS

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Fleshy Owl's-clover *Castilleja campestris ssp. succulenta* https://ecos.fws.gov/ecp/species/8095#crithab	Final

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Shaylea Stark
Address: 455 W Fir Ave
City: Clovis
State: CA
Zip: 93612
Email sstark@ppeng.com
Phone: 5594492700

APPENDIX D: NRCS WEB SOIL SURVEY REPORT

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 Eastern Fresno Area, California

Turnout on the Friant Kern Canal at Big Dry Creek Project

March 14, 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.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

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

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Eastern Fresno Area, California
Survey Area Data: Version 16, 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
AoB	Atwater loamy sand, 3 to 9 percent slopes	0.8	5.3%
Dm	Dello loamy sand	5.1	33.3%
Ra	Ramona sandy loam	0.0	0.2%
SeA	San Joaquin loam, 0 to 3 percent slopes	7.8	50.7%
TzeB	Tujunga soils, channeled, 0 to 9 percent slopes	0.3	2.2%
W	Water	1.3	8.2%
Totals for Area of Interest		**15.4**	**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.

Eastern Fresno Area, California

AoB—Atwater loamy sand, 3 to 9 percent slopes

Map Unit Setting

National map unit symbol: hl0v
Elevation: 250 to 450 feet
Mean annual precipitation: 9 to 14 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 250 to 275 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

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

Description of Atwater

Setting

Landform: Dunes on fan remnants
Landform position (two-dimensional): Shoulder, footslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian deposits derived from alluvium derived from granite

Typical profile

A - 0 to 24 inches: loamy sand
Bt - 24 to 43 inches: sandy loam
C - 43 to 60 inches: loamy sand

Properties and qualities

Slope: 3 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Ecological site: R017XY905CA - Dry Alluvial Fans and Terraces
Hydric soil rating: No

Minor Components

Unnamed, hardpan substratum

Percent of map unit: 5 percent
Landform: Dunes on fan remnants

Hydric soil rating: No

Unnamed, steeper slopes

Percent of map unit: 5 percent
Landform: Dunes on fan remnants
Hydric soil rating: No

Delhi

Percent of map unit: 5 percent
Landform: Dunes on fan remnants
Hydric soil rating: No

Dm—Dello loamy sand

Map Unit Setting

National map unit symbol: hl3k
Elevation: 160 to 400 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 225 to 250 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of Dello

Setting

Landform: Depressions on alluvial fans, depressions on flood plains
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope, rise
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Parent material: Alluvium derived from granite

Typical profile

Ap - 0 to 8 inches: loamy sand
Cg1 - 8 to 36 inches: loamy sand
Cg2 - 36 to 60 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 36 to 60 inches
Frequency of flooding: Rare

Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: Yes

Minor Components

Unnamed

Percent of map unit: 13 percent
Landform: Depressions on flood plains
Hydric soil rating: Yes

Unnamed, hummock

Percent of map unit: 2 percent
Landform: Levees on flood plains, hummocks on alluvial fans
Hydric soil rating: No

Ra—Ramona sandy loam

Map Unit Setting

National map unit symbol: hl8k
Elevation: 250 to 500 feet
Mean annual precipitation: 9 to 15 inches
Mean annual air temperature: 60 to 62 degrees F
Frost-free period: 225 to 275 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

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

Description of Ramona

Setting

Landform: Stream terraces, alluvial fans
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

A - 0 to 12 inches: sandy loam
BAt - 12 to 24 inches: sandy loam

Bt - 24 to 38 inches: sandy clay loam
C - 38 to 60 inches: coarse sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 4c
Hydrologic Soil Group: C
Ecological site: R017XY905CA - Dry Alluvial Fans and Terraces
Hydric soil rating: No

Minor Components

Unnamed, coarse sandy loam

Percent of map unit: 10 percent
Landform: Alluvial fans, stream terraces
Hydric soil rating: No

Unnamed, fine sandy loam

Percent of map unit: 5 percent
Landform: Alluvial fans, stream terraces
Hydric soil rating: No

SeA—San Joaquin loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: hl93
Elevation: 250 to 500 feet
Mean annual precipitation: 9 to 15 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 250 to 275 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of San Joaquin

Setting

Landform: Fan remnants
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

A - 0 to 16 inches: loam
Bt1 - 16 to 28 inches: sandy clay loam
2Bt2 - 28 to 29 inches: clay
2Bqm - 29 to 36 inches: cemented
2C - 36 to 60 inches: coarse sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 24 to 48 inches to duripan
Drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: C
Ecological site: R017XE113CA - TERRACE 12-14"
Hydric soil rating: No

Minor Components

Unnamed, fine sandy loam

Percent of map unit: 6 percent
Landform: Fan remnants
Hydric soil rating: No

Unnamed, moderately sloping

Percent of map unit: 6 percent
Landform: Fan remnants
Hydric soil rating: No

Unnamed, ponded

Percent of map unit: 3 percent
Landform: Depressions on fan remnants
Hydric soil rating: Yes

TzeB—Tujunga soils, channeled, 0 to 9 percent slopes

Map Unit Setting

National map unit symbol: hlc5
Elevation: 180 to 400 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 62 to 64 degrees F
Frost-free period: 225 to 275 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Tujunga

Setting

Landform: Alluvial fans, flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

A - 0 to 4 inches: gravelly sand
C - 4 to 60 inches: stratified extremely gravelly sand to loamy sand

Properties and qualities

Slope: 0 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Ecological site: R017XE114CA - RIVERWASH
Hydric soil rating: Yes

Minor Components

Riverwash

Percent of map unit: 10 percent

Landform: Channels on flood plains
Ecological site: R017XY903CA - Stream Channels and Floodplains
Hydric soil rating: Yes

Unnamed
Percent of map unit: 5 percent
Landform: Flood plains, alluvial fans
Hydric soil rating: No

W—Water

Map Unit Composition
Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

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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

Query Results

Degrees, Minutes, Seconds: Latitude = 36º 52' 12" N, Longitude = 120º 24' 15" W
Decimal Degrees: Latitude = 36.870, Longitude = -119.596

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

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,

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 -->**
Pelagic Thresher Shark - North Pacific, Swordfish - North Pacific

Appendix C: Class III/Phase I Survey

CLASS III INVENTORY/PHASE I SURVEY, FRIANT-KERN CANAL TURNOUT AT BIG DRY CREEK RESERVOIR PROJECT, FRESNO COUNTY, CALIFORNIA (24-SCAO-118)

Prepared for:

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June 2024
PN 36510.57

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MANAGEMENT SUMMARY

ASM Affiliates (ASM) was retained by Provost and Pritchard Consulting Group to conduct an intensive Class III Inventory/Phase I cultural resources inventory for the Friant-Kern Canal (FKC) Turnout at Big Dry Creek (BDC) Reservoir Project (Project). The Project consists of a new canal turnout to divert surface water to help recharge the groundwater aquifer. The proposed Project is northeast of the City of Clovis at MP 14.6 on the west bank of the Friant-Kern Canal near SR 168E in Fresno County, California. This places the Project on the open flats of the San Joaquin Valley. Specifically, the Project is in Section 20, Township 12 South, Range 22 East (T12S/R22E), Mount Diablo Base and Meridian (MDBM), as depicted on the Round Mountain USGS 7.5-minute topographical map. The purpose of this investigation was to assist with compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (54 USC § 300101 et seq.; 36 CFR § 800), and the California Environmental Quality Act (CEQA). Fieldwork for this investigation was conducted under Bureau of Reclamation (Reclamation) fieldwork authorization CGB-153, 2.1.1.04.

The horizontal Area of Potential Effects (APE) is approximately 16 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 pipeline, is approximately 25 ft.

To determine whether the Project APE had been previously surveyed for cultural resources, and/or whether any such resources were known to exist within or near to it, an archival records search was conducted by the staff of the Southern San Joaquin Valley Information Center (SSJVIC) on February 4, 2024. According to the SSJVIC, a single previous study (FR-00548) had been conducted within the Project APE, and six previous studies were identified within a half mile radius. The SSJVIC results identified a single built environment resource within the APE, consisting of the FKC(P-54-004614). Two additional built environment resources were identified within a half mile radius of the Project APE, with the nearest located approximately 0.1 mi. away.

As part of the CEQA process, a search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed on February 7, 2024. Based on the NAHC records, the APE is negative for sacred sites or traditional cultural places. Outreach letters and emails were sent on February 9, 2024 to tribal organizations on the NAHC contact list. The Santa Rosa Rancheria Tachi Yokut Tribe responded that the tribe will be deferring to Table Mountain Rancheria. No other responses were received as a result of this outreach.

The Class III inventory/Phase I survey fieldwork was conducted on May 2, 2024 with parallel transects spaced at approximately 15-meter (m.) intervals walked across the APE. Ground surface visibility within the APE varied from good (approximately 70 percent) in the northern half of the APE to poor (less than 10 percent) in the southern half of the APE for the Class III inventory/Phase I survey. Hardscaped roads and non-native vegetation inhibited visibility. Soil consisted of light brown to tan sandy loam throughout the Project APE. No archaeological resources of any kind were identified within the Project APE.

Reclamation determined (with SHPO concurrence) that the FKC (P-54-004614) is eligible for the National Register of Historic Places (NRHP) under Criterion A for a state-level of significance with a period of significance (POS) of 1945-1958 and under Criterion C with a POS of 1945-1951. The FKC has also been recommended as California Register of Historical Resources (CRHR) eligible under Criteria 1 and 3.

Analysis of potential impacts to this resource for this Project indicates that there will be no adverse effects to the qualities and characteristics that contribute to this historic property's eligibility and there will be no significant impacts to the qualities and characteristics that contribute to this historical resource's eligibility. Based on these findings, the proposed FKC Turnout Project will not result in an adverse effect to a historic property under Section 106 and will not result in a significant impact to a historical resource under CEQA. It is 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.

1. INTRODUCTION AND REGULATORY CONTEXT

ASM Affiliates (ASM) was retained by Provost and Pritchard Consulting Group to conduct an intensive Class III Inventory/Phase I cultural resources inventory for the Friant-Kern Canal (FKC) Turnout at Big Dry Creek (BDC) Reservoir Project (Project). The Project consists of a new canal turnout to divert surface water to help recharge the groundwater aquifer. The purpose of this investigation was to assist with compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (54 USC § 300101 et seq.; 36 CFR § 800), and the California Environmental Quality Act (CEQA). The investigation was undertaken, specifically, to ensure that no adverse effects or significant impacts to historic properties or historical resources occur as a result of the construction of this project. Fieldwork for this investigation was conducted under Bureau of Reclamation (Reclamation) fieldwork authorization CGB-153, 2.1.1.04.

This current study included:

- A background records search and literature review to determine if any known archaeological sites were present in the APE and/or whether the APE had been previously and systematically studied by archaeologists;
- A search of the Native American Heritage Commission (NAHC) *Sacred Lands File* to determine if any traditional cultural places or cultural landscapes have been identified within the APE, with outreach letters sent and follow-up calls made to the NAHC tribal contact list;
- An on-foot, intensive inventory of the APE to identify and record previously undiscovered cultural resources and to examine known sites; and
- A assessment of any such resources found within the subject property.

This study was conducted by ASM of Bakersfield, California, with Director Peter A. Carey, M.A., RPA, serving as principal investigator. Senior Archaeologist Dustin Merrick, M.A., RPA, was a contributing author. Madeline Gonzalez, M.A., and Sarah Stringer-Bowsher, M.A., RPH, provided the historical built environment assessment. Fieldwork was conducted by ASM Assistant Archaeologist Maria Silva, B.A., who was directly supervised by the ASM principal investigator.

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

1.1 PROJECT LOCATION, DESCRIPTION, AND APE

The proposed Project is northeast of the City of Clovis at MP 14.6 on the west bank of the Friant-Kern Canal near SR 168E in Fresno County, California. (Figure 1 and Figure 2). Specifically, the Project is in Section 20, Township 12 South, Range 22 East (T12S/R22E), Mount Diablo Base and Meridian (MDBM), as depicted on the Round Mountain USGS 7.5-minute topographical map.).

Detailed descriptions of all project elements included in the APE and proposed work to be conducted within the APE are provided below:

Project Background and Purpose

The Fresno Irrigation District (District) is a member of the North Kings Groundwater Sustainability Agency (NKGSA) that has adopted a Groundwater Sustainability Plan (GSP) to meet the requirements of the Sustainable Groundwater Management Act (SGMA). According to the NKGSA, "The sustainability goal of the Kings Basin and the NKGSA is to ensure that by 2040 the Kings Basin is being managed to maintain a reliable water supply for current and future beneficial uses without experiencing undesirable results." The District has included several projects within the NKGSA's GSP to help reach sustainability within the Kings Basin.

The Project proposes to divert surface water from the FKC to help recharge the groundwater aquifer, thereby improving access and reliability to clean drinking water for members of the NKGSA. Surface water diversions may occur during wet-year flood releases from Millerton Lake which would allow beneficial surface water storage that would otherwise be lost to areas outside the County. Diversion, storage, and recharge of the surface water supplies during flood releases would also provide flooding relief for communities downstream from Millerton Lake and benefit the water supplies of communities down gradient from the Project. Recharging the groundwater aquifer would help to stabilize declining groundwater levels and would lead to decreased energy use from users not having to pump groundwater from deeper in the aquifer. Ultimately, the Project would help carry out the goals of the NKGSA GSP by providing an additional mechanism for the Kings Basin to reach sustainability.

Project Description

The District and Fresno County are proposing to construct a new canal turnout that would divert and deliver water from the FKC into Big Dry Creek (BDC), which would provide direct recharge along the BDC channel north and east of the City of Clovis as well as other water deliveries downstream for recharge and other beneficial uses. The City of Clovis, and the unincorporated and mostly rural residential areas of the County of Fresno, would also benefit from the Project. The proposed turnout to BDC would be located in an area without surface water supplies and would directly benefit an area with declining groundwater levels and limited suitable areas for recharge.

In addition to conveying water down the existing creek channel, the proposed Project would provide storage and the potential for reconveyance of Friant water supplies because the diversion of water is upstream of the BDC Reservoir. The proposed turnout, pipeline, and associated appurtenances would require a land use authorization from the United States Bureau of Reclamation (Reclamation) as the FKC is owned and operated by Reclamation. The proposed turnout would be owned by Reclamation. Friant Water Authority would be responsible for operation of the new turnout, and the District would be responsible for the maintenance of the turnout.

The proposed turnout would be located at mile post 14.6, on the west bank of the FKC and the site would cover approximately 15 acres (including the construction staging area). The turnout would

be situated on the downstream side of the existing BDC crossing. The proposed Project would involve installation of a turnout structure and pipeline leading to an open channel structure. The site is anticipated to be upwards of a two-bay turnout with up to a 72-inch pipe, each pipeline approximately 260 feet long. The turnout proposes delivering a maximum combined total of 300 cubic feet per second (CFS) to BDC. The new facility footprint is estimated to encompass an area 80-feet wide by 200-feet long within the FKC ROW. Excavation for construction would net approximately 9,000 cubic yards of material. The proposed Project would also require electrical service from PG&E for the ancillary flowmeter, gate actuator and possibly traveling water screen.

Construction Details

Turnout Construction: A reinforced concrete turnout would be constructed at approximately MP 14.6 along the FKC at the BDC crossing. The turnout would require placement of reinforced concrete walls, gate valve assembly, and access platform. Excavation through the canal lining and into the canal embankment would reach approximately 80 feet horizontally at a depth of about 25 feet. A traveling water screen may be installed with a stop log.

Conveyance Pipeline/Channel Construction:
The reinforced concrete turnout would connect to up to a 72-inch diameter reinforced concrete pipeline into a discharge structure/open channel to provide water to the BDC. The turnout would deliver up to 300 CFS total to the existing creek through the pipeline/channel. The total length of pipeline is projected to be approximately 260 feet for each turnout bay (520 feet total) and would be buried at a depth of up to approximately 20 feet below grade within the canal embankment and up to about 15 feet below grade for the remaining length of the pipeline. Excavation and trenching would conform to a 1.5:1 slope or as required by OSHA safety standards.

General Construction Process

Contractors would start with saw-cutting the liner in the place where the proposed turnout would be located. From there, the canal bank would be excavated to an elevation 1-2 feet below the proposed turnout structure floor. The excavated dirt would be stockpiled in the immediate vicinity to use as backfill around the structure and pipeline once constructed. No dirt is expected to leave the site and would be used to build back the canal bank behind the structure and liner. Construction elements would consist of excavation in the FKC, compaction of the foundation, forming and pouring the structure floors, forming and pouring the structure walls, setting the pipeline, backfilling and compacting around both the structure and pipeline, then pouring the concrete liner within the canal. Excavation would utilize excavators to dig down to the target depth of approximately 25 feet to go slightly deeper than the structure in preparation of compaction below the structure floor. Contractors would slope out from a depth of approximately 25 feet at a 1.5:1 slope back to the existing ground surface or use vertical shoring. Sloping back would require a wider footprint and would, at the largest case be an approximately 80-foot horizontal impact to account for space around the structure. At the same time, the existing liner panels would be sawcut and removed, to the nearest expansion joint, over this same horizontal area. Compaction would use compacting equipment such as rammers, rollers, and/or sheepsfoot rollers to condition and compact the soil under the structure and pipeline to the required compaction. Pouring concrete would occur in distinct sections, with each step including formwork, setting reinforcing steel and

pouring concrete. The first section would be the structure floor. The walls would be set and then poured after the floor has had some time to cure. The walls could potentially be poured in two segments, given the height of the structure. Pipeline would be started during the wall construction since the first stick of pipe is set within the wall. From there the pipeline would be laid within a trench approximately 10 feet wide and 10 feet deep from the proposed turnout to the BDC tie-in location. After setting pipeline and structure concrete, the excavated dirt would be backfilled and compacted in place to match existing conditions. All construction staging areas necessary for the proposed Project will be located within the 15-acre APE.

Area of Potential Effects

The horizontal Area of Potential Effects (APE) is approximately 16 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 pipeline, is approximately 25 ft.

1.2 REGULATORY CONTEXT

1.2.1 National Historic Preservation Act

The NHPA of 1966, as amended (54 United States Code § 300101 *et seq*.), is the primary federal legislation that outlines the federal government's responsibility to consider the effects of its actions on historic properties and affords the Advisory Council on Historic Preservation a reasonable opportunity to comment. Section 106 of the NHPA and its implementing regulations at 36 CFR Part 800 describes the process that the federal agency shall take to identify cultural resources and assess the level of effect that the proposed undertaking will have on historic properties. An undertaking is defined as a "…project, activity or program funded in whole or in part, under the direct or indirect jurisdiction of a federal agency." This includes projects that are carried out by, or on behalf of, the agency; those carried out with federal assistance; those requiring a federal permit, license, or approval; and those subject to state or local regulation administered pursuant to a delegation, or approval by, a federal agency.

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

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

to apply the criteria of adverse effect to the historic properties identified within the APE. The criteria of adverse effect, defined at 36 CFR Part 800.5(a)(1), states that:

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

36 CFR § 800.5(a)(2) provides examples of adverse effects, including: destruction or damage of all or part of historic property, alteration not consistent with *The Secretary of the Interior's Standards for the Treatment of Historic Properties (SOI Standards)*, relocation, altered setting, environmental changes that impact the character-defining features, neglect, and the transfer of a property outside federal ownership and management. The 36 CFR Part 800 regulations include consultation with the State Historic Preservation Office (SHPO) to provide an opportunity to comment on, and concur with, a federal agency's determinations. If the undertaking would result in adverse effects to historic properties, these adverse effects must be resolved in consultation with the SHPO and other parties identified during the Section 106 process before the undertaking can proceed to implementation.

1.2.2 National Register Criteria for Evaluation

The criteria for evaluation of NRHP eligibility are outlined at 36 CFR Part 60.4. A district, site, building, structure, or object must generally be at least 50 years old to be eligible for consideration as a historic property. That district, site, building, structure, or object must retain integrity of location, design, setting, materials, workmanship, feelings, and association as well as meet one of the following criteria to demonstrate its significance in American history, architecture, archeology, engineering, and culture. A district, site, building, structure, or object must:

> (A) be associated with events that have made a significant contribution to the broad patterns of history; or,
>
> (B) be associated with the lives of people significant in our past; or,
>
> (C) embody the distinct characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction; or,
>
> (D) have yielded, or may be likely to yield, information important in prehistory or history.

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

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

1.2.3 California Environmental Quality Act

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

Significant cultural resources are those archaeological resources and historical properties that:

(A) Are associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

(B) Are associated with the lives of persons important in our past;

(C) Embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of an important creative individual, or possess high artistic values; or

(D) Have yielded, or may be likely to yield, information important in prehistory or history.

Unique resources under CEQA, in slight contrast, are those that represent:

> an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:
>
> (1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
>
> (2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.
>
> (3) Is directly associated with a scientifically recognized important prehistoric or historic event or person (PRC § 21083.2(g)).

Preservation in place is the preferred approach under CEQA to mitigating adverse impacts to significant or unique cultural resources.

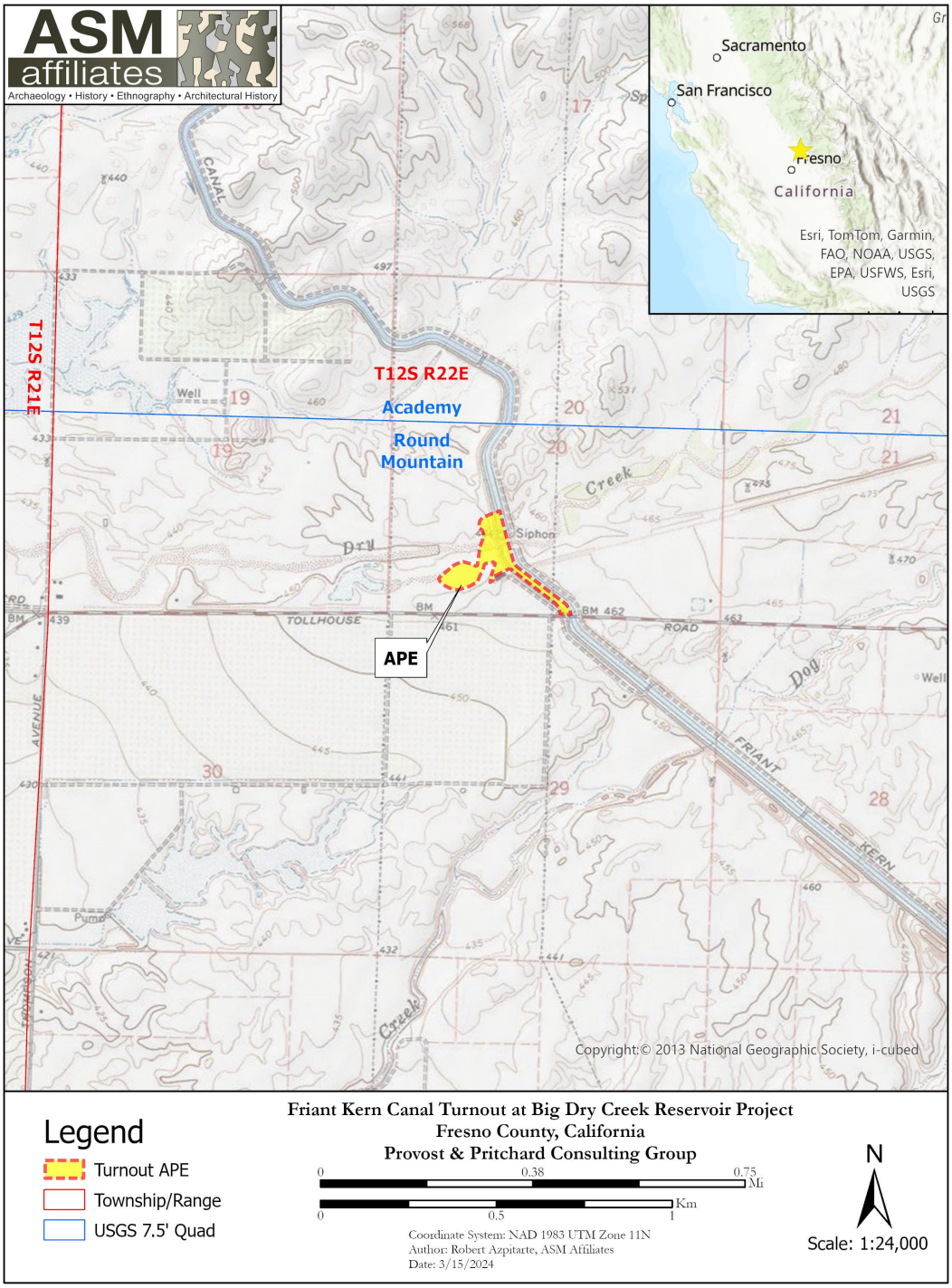

Figure 1. Location of the FKC Turnout at Big Dry Creek Reservoir Project, Fresno County, California.

Figure 2. Detail map of the FKC Turnout APE, Fresno County, California.

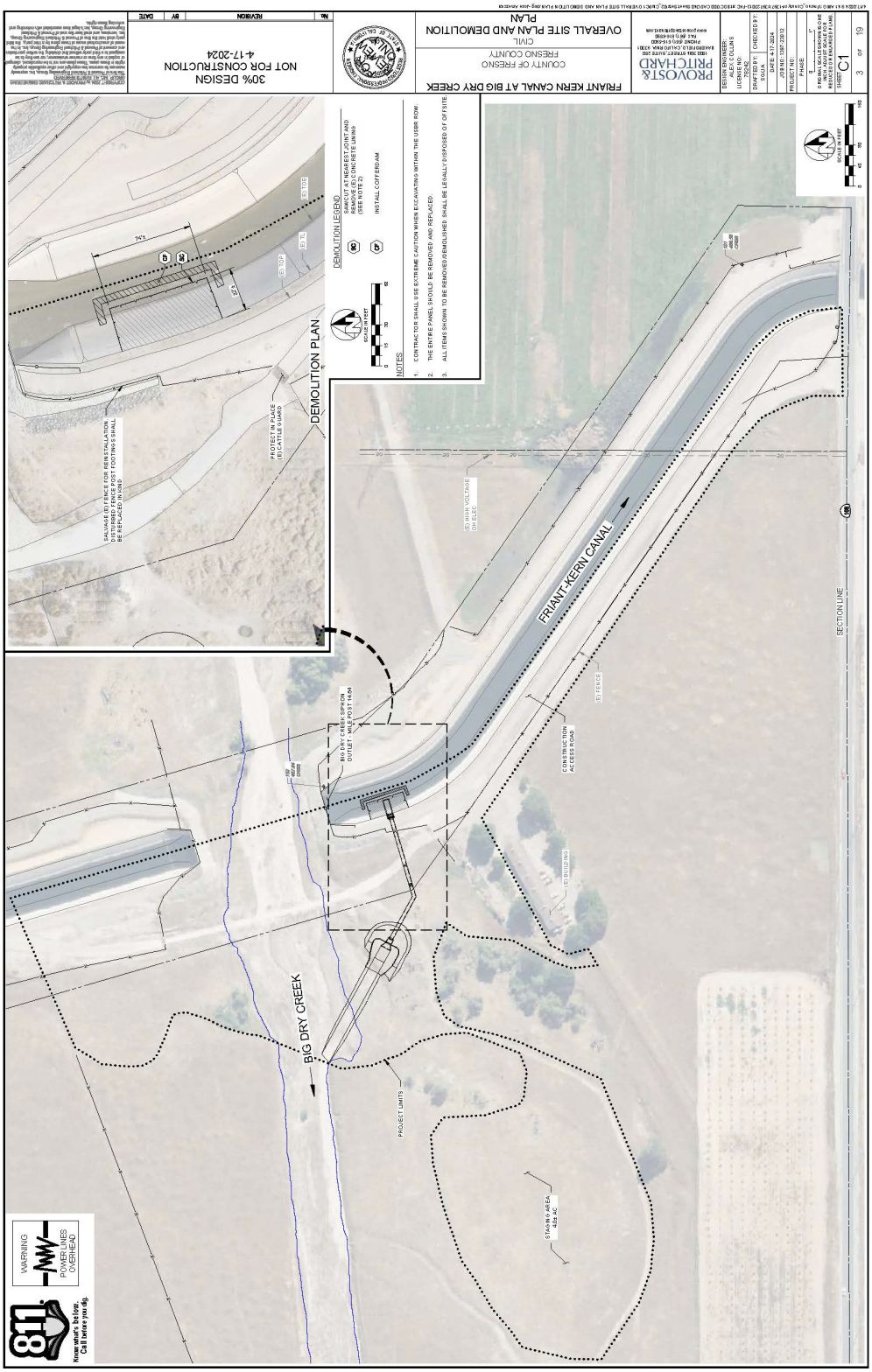

Figure 3. Drawing of proposed new turnout and discharge structure. 1 of 4. Source: Provost & Pritchard.

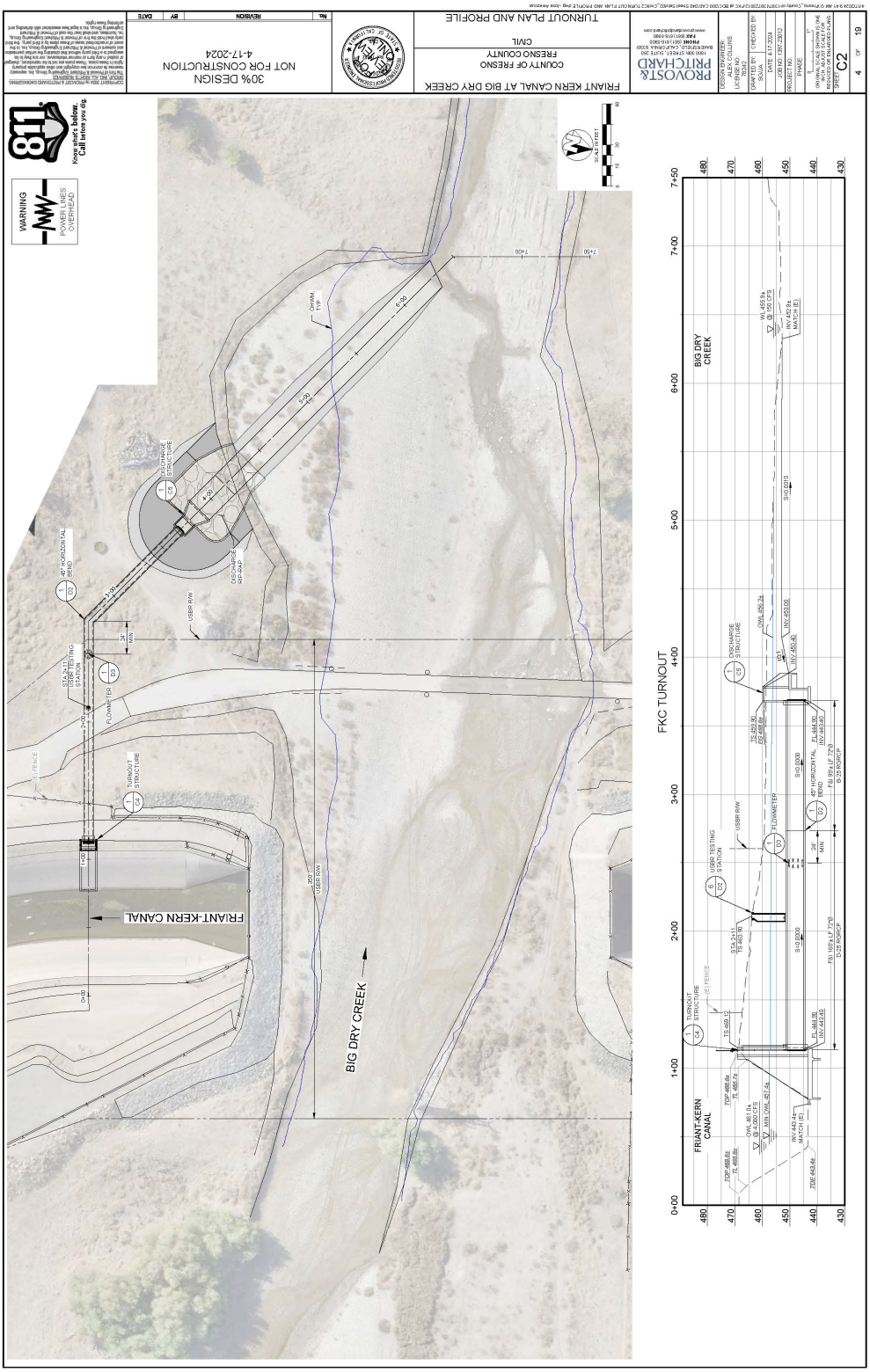

Figure 4. Drawing of proposed new turnout and discharge structure. 2 of 4. Source: Provost & Pritchard.

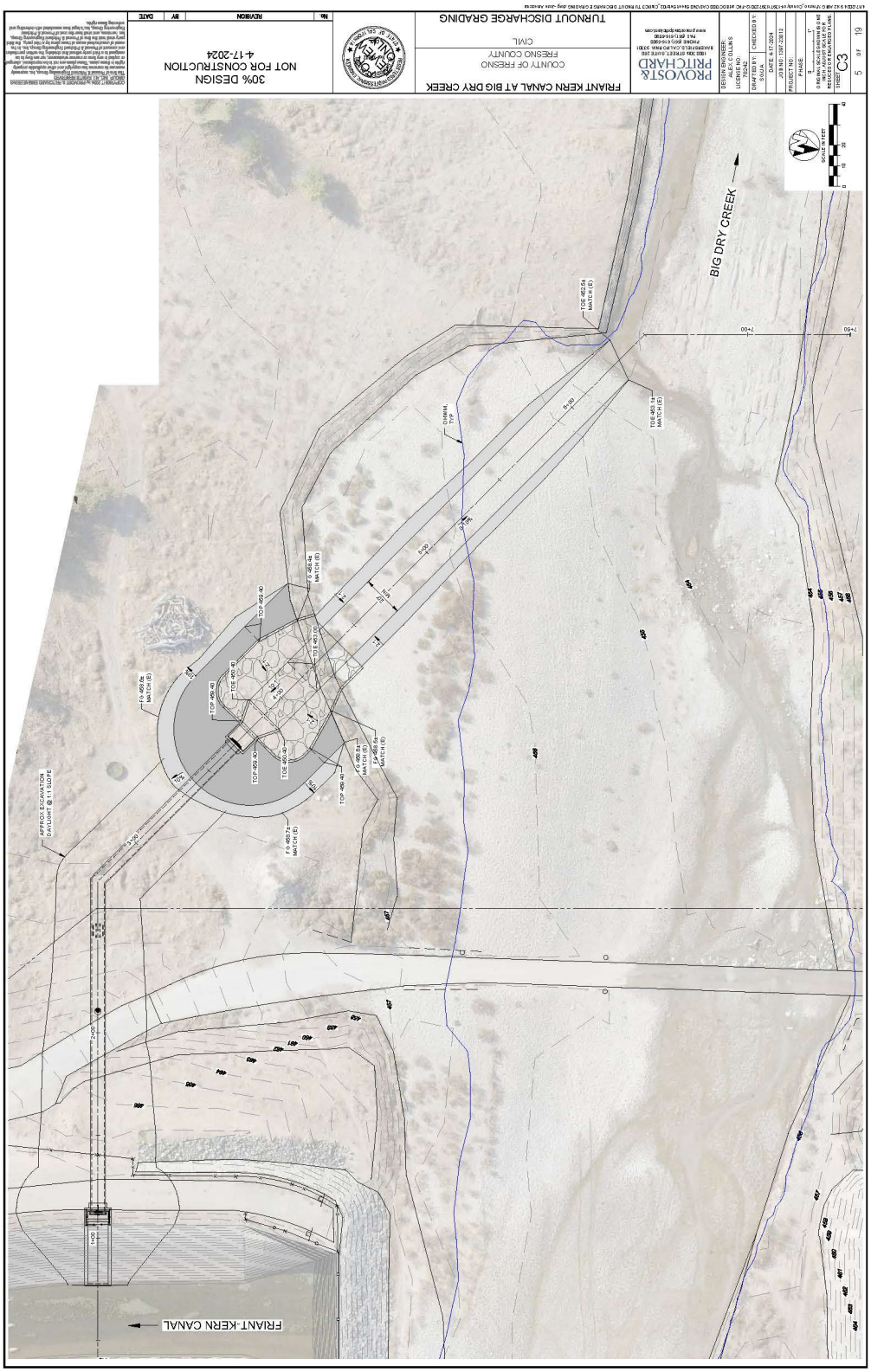

Figure 5. Drawing of proposed new turnout and discharge structure. 3 of 4. Source: Provost & Pritchard.

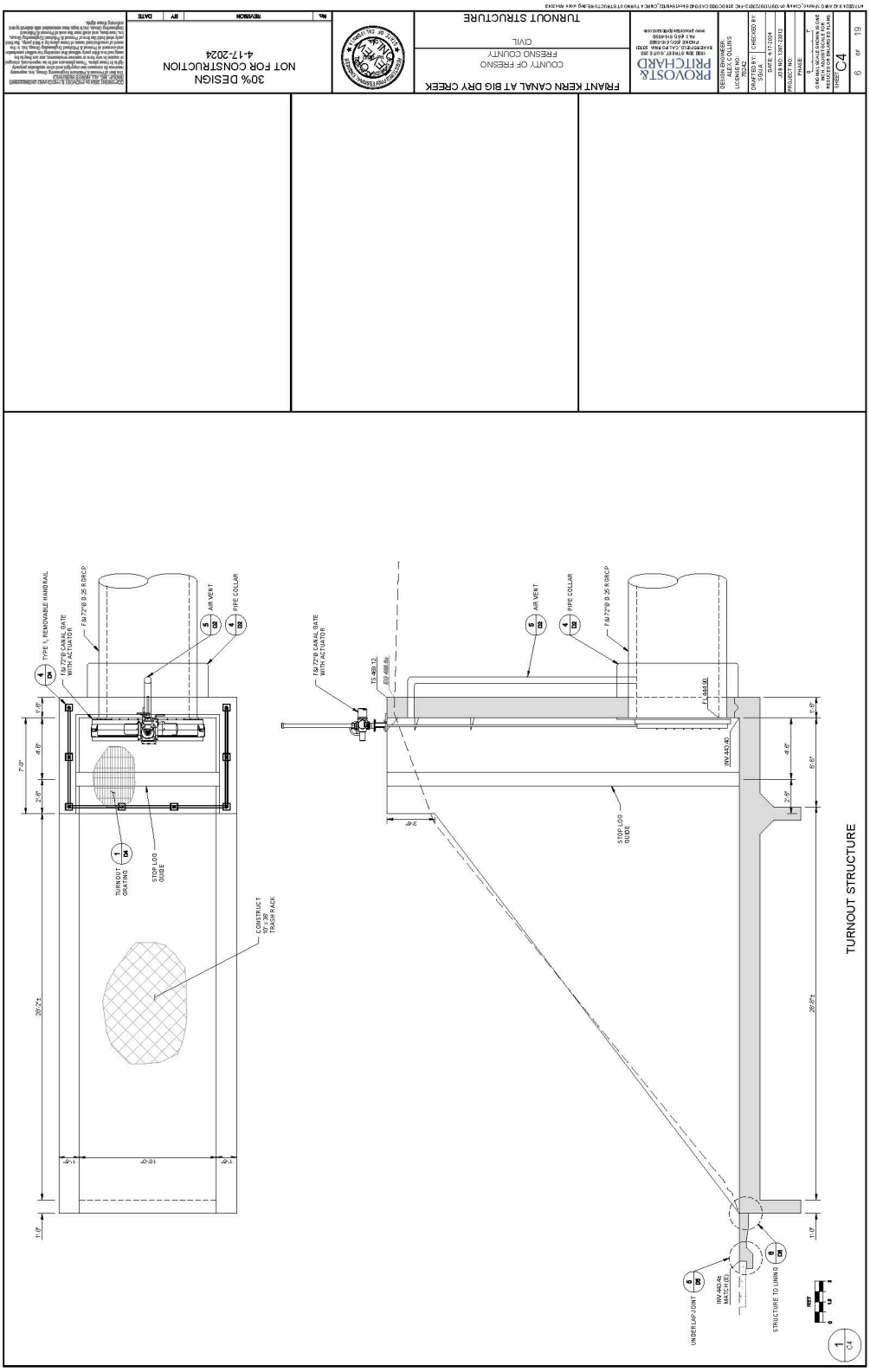

Figure 6. Drawing of proposed new turnout and discharge structure. 4 of 4. Source: Provost & Pritchard.

2. ENVIRONMENTAL AND CULTURAL BACKGROUND

2.1 ENVIRONMENTAL BACKGROUND AND GEOARCHAEOLOGICAL CONTEXT

The APE is located along the FKC and encompassing portions of the BDC. Elevation for the APE, which is mostly flat, ranges from 455 to 465 ft. above mean sea level (amsl). According to Menefee and Dodge (1913:81), Euro-American settlement of the APE and immediate environs occurred slightly later than other parts of Fresno County because of the lack of significant surface water, and hence its relatively limited agricultural potential prior to the development of irrigation systems. Before the appearance of agriculture, this location would have been prairie grasslands, grading into tree savannas in the foothills to the east (Preston 1981). The APE and immediate surroundings have been farmed and grazed for many years and no native vegetation is present, with the APE now consisting largely of access roads and undeveloped lands. Perennial bunchgrasses such as purple needlegrass and nodding needlegrass most likely would have been the dominant plant cover in the region prior to cultivation.

A Caltrans geoarchaeological study (Meyer et al. 2010) that included the APE was consulted to identify the potential for buried archaeological sites in the vicinity of the Project area. This study involved first determining the location and ages of late Pleistocene (>25,000 years old) landforms in the southern San Joaquin Valley. These were identified by combining a synthesis of 2,400 published paleontological, soils and archaeological chronometric dates with geoarchaeological field testing. The ages of surface landforms were then mapped to provide an assessment for the potential for buried archaeological deposits. These ages were derived primarily from the Soil Survey Geographic Database (SSURGO) and the State Soils Geographic (STATSGO) database. A series of maps were created from this information that ranked locations in seven ordinal classes for sensitivity for buried soils, from Very Low to Very High.

According to the geoarchaeological model developed by Meyer et al. (2010), the general vicinity of the Project APE has a low to very low potential for buried archaeological deposits. Additionally, the Project APE is mostly within the existing FKC and has been heavily disturbed from the construction of the FKC. Buried sites and cultural resources are therefore considered unlikely within the Project APE.

2.2 ETHNOGRAPHIC CONTEXT

Penutian-speaking Yokuts tribal groups occupied the southern San Joaquin Valley region and much of the nearby Sierra Nevada. Ethnographic information about the Yokuts was collected primarily by Powers (1971, 1976 [originally 1877]), Kroeber (1925), Gayton (1930, 1948), Driver (1937), Latta (1977), and Harrington (n.d.). For a variety of historical reasons, existing research information emphasizes the central Yokuts tribes which occupied both the valley and particularly the foothills of the Sierra. The northernmost tribes suffered from the influx of Euro-Americans during the Gold Rush and their populations were in substantial decline by the time ethnographic

studies began in the early twentieth century. In contrast, the southernmost tribes were partially removed by the Spanish to missions and eventually absorbed into multi-tribal communities on the Sebastian Indian Reservation (on Tejon Ranch), and later the Tule River Reservation and Santa Rosa Rancheria to the north, as well as other reservations in the foothills and Sierras. The result is a scarcity of ethnographic detail on 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 APEs most likely lie in Gashowu territory. The village for this group nearest the APEs was *Pohonid* on the bank of the BDC, northeast of the APE.

Most Yokuts groups, regardless of specific tribal affiliation, were organized as a recognized and distinct tribelet; a circumstance that almost certainly pertained to the tribal groups noted above. Tribelets were land-owning groups organized around a central village and linked by shared territory and descent from a common ancestor. The population of most tribelets ranged from about 150 to 500 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 most Native American tribes. It involves a direct and personal relationship between the individual and the supernatural world enacted by entering a trance or hallucinatory state (usually based on the ingestion of psychotropic plants, such as jimsonweed or more typically native tobacco). Shamans were considered individuals with an unusual degree of supernatural power, serving as healers or curers, diviners, and controllers of natural phenomena (such as rain or thunder). Shamans also produced the rock art of this region, depicting the visions they experienced in vision quests believed to represent their spirit helpers and events in the supernatural realm (Whitley 1992, 2000).

The centrality of shamanism to the religious and spiritual life of the Yokuts was demonstrated by the role of shamans in the yearly ceremonial round. The ritual round, performed the same 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 Yokut descendants continue to live in Fresno County, either on tribal reservations or in local towns and communities.

2.3 PRE-CONTACT ARCHAEOLOGICAL BACKGROUND

The San Joaquin Valley region has received minimal archaeological attention compared to other areas of the state. In part, this is because the majority of California archaeological work has 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 (years before present). Evidence of early use of the region is indicated by characteristic fluted and stemmed points found around the margin of Tulare Lake, in the foothills of the Sierra, and in the Mojave Desert proper. (In each case, these are locations many miles distant from the Project APE.)

Both fluted and stemmed points are particularly common around the Tulare Lake margins, suggesting a terminal Pleistocene/early Holocene lakeshore adaptation similar to that found throughout the far west at the same time; little else is known about these earliest peoples. More than 250 fluted points have been recovered from the Witt Site (CA-KIN-32), located along the western shoreline of ancient Tulare Lake southwest of the Project APEs, demonstrating the importance of this early occupation in the San Joaquin Valley specifically (see Fenenga 1993). Additional finds consist of a Clovis-like projectile point discovered in a flash-flood cut-bank near White Oak Lodge in 1953 on Tejon Ranch (Glennan 1971). More recently, a similar fluted point was found near Bakersfield (Zimmerman et al. 1989), and a number are known from the Edwards Air Force Base and Boron area of the western Mojave Desert. Although human occupation of the state is well-established during the Late Pleistocene, relatively little can be inferred about the nature and distribution of this occupation with a few exceptions. First, little evidence exists to support the idea that people at that time were big-game hunters, similar to those found on the Great Plains. Second, the western Mojave Desert evidence suggests small, very mobile populations that left a minimal archaeological signature. The evidence from the ancient Tulare Lake shore, in contrast, suggests a much more substantial population and settlements which, instead of relying on big game hunting, were tied to the lacustrine lake edge. Variability in subsistence and settlement patterns is thus apparent in California, in contrast to the Great Plains.

Substantial evidence for human occupation of California first occurs during the middle Holocene, roughly 7,500 to 4,000 YBP. This period is known as the *Early Horizon*, or alternatively as the Early Millingstone along the Santa Barbara Channel. In the south, populations concentrated along the coast with minimal visible use of inland areas. Adaptation emphasized hard seeds and nuts with tool-kits dominated by mullers and grindstones (manos and metates). Additionally, little evidence for Early Horizon occupation exists in most inland portions of the state, partly due to a severe cold and dry paleoclimatic period occurring at the time. Regardless of specifics, Early Horizon population density was low with a subsistence adaptation more likely tied to plant food gathering than hunting.

Environmental conditions improved dramatically after about 4,000 YBP during the *Middle Horizon* (or Intermediate Period). This period, known climatically as the Holocene Maximum (circa 3,800 YBP), was characterized by significantly warmer and wetter conditions than previously experienced. Archaeologically, it was marked by large population increase and radiation into new environments along coastal and interior south-central California and the Mojave Desert (Whitley 2000). In the Delta region to the north, this same period of favorable environmental conditions was characterized by the appearance of the Windmiller culture which exhibited a high degree of ritual elaboration (especially in burial practices) and perhaps even rudimentary mound-building tradition (Meighan, personal communication, 1985). Along with ritual elaboration, Middle Horizon times experienced increasing subsistence specialization, perhaps correlating with the appearance of acorn processing technology. Penutian speaking peoples (including the Yokuts) are also posited to have entered the state roughly at the beginning of this period and, perhaps, to have brought this technology with them (cf. Moratto 1984). Likewise, it appears the so-called "Shoshonean Wedge" in southern California or the Takic speaking groups that include the Gabrielino/Fernandeño, Tataviam and Kitanemuk, may have moved into the region at this time, rather than at about 1,500 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 3,500 YBP (Horne 1981). The Carrizo Plain, the valley immediately west of the San Joaquin, experienced a major population expansion during the Middle Horizon (W & S Consultants 2004; Whitley et al. 2007), and recently collected data indicates the Tehachapi Mountains region was first significantly occupied during the Middle Horizon (W & S Consultants 2006). A parallel can be drawn to the inland Ventura County region where a similar pattern has been identified (Whitley and Beaudry 1991), as well as the western Mojave Desert (Sutton 1988a, 1988b), the southern Sierra Nevada (W & S Consultants 1999), and the Coso Range region (Whitley et al. 1988). In all these areas a major expansion in settlement, the establishment of large site complexes, and an increase in the range of environments exploited appear to have occurred sometime roughly around 4,000 years ago. Although most efforts to explain this expansion have focused on local circumstances and events, it is increasingly

apparent this was a major southern California-wide occurrence, and any explanation must be sought at a larger level of analysis (Whitley 2000). Additionally, evidence from the Carrizo Plain suggests the origins of the tribelet level of political organization developed during this period (W & S Consultants 2004; Whitley et al. 2007). Whether this same demographic process holds for the southern San Joaquin Valley, including the Project APE, is yet to be determined.

The beginning of the *Late Horizon* is set variously at 1,500 and 800 YBP, with a consensus for the shorter chronology. Increasing evidence suggests the importance of the Middle-Late Horizons transition (1150 to 750 YBP) in the understanding of south-central California. This corresponds to the so-called Medieval Climatic Anomaly, a period of climatic instability that included major droughts and resulted in demographic disturbances across much of the west (Jones et al. 1999). It is also believed to have resulted in major population decline and abandonments across south-central California, involving as much as 90 percent of the interior populations in some regions including the Carrizo Plain (Whitley et al. 2007). It is not clear whether site abandonment was accompanied by a true reduction in population or an agglomeration of the same numbers of peoples into fewer but larger villages. What is clear is that Middle Period villages and settlements were widely dispersed across the landscape; many at locations that lack contemporary evidence of fresh water sources. Late Horizon sites, in contrast, are typically located where fresh water was available during the historical period, if not currently.

One extensively studied site that shows evidence of intensive occupation during the Middle-Late Horizons transition (~1,500 – 500 YBP) is the Redtfeldt Mound (CA-KIN-66/H), located near the Santa Rosa Rancheria, northwest of the Project APE. There, Siefkin (1999) reported on human burials and a host of artifacts and ecofacts excavated from a modest-sized mound. He found that both Middle Horizon and Middle-Late Horizons transition occupations were more intensive than Late Horizon occupations, which were sporadic and less intensive (Siefkin 1999:110-111).

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

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

2.4 HISTORIC CONTEXT

2.4.1 Fresno Plains

The following historic context is excerpted from the Fresno Irrigation District[1]:

> Long before there were canals or irrigation districts crisscrossing what is now Fresno County, there was the land but little more. It seemed to be a stark, endless prairie, populated only by antelope, wild horses, occasional tule elk and other creatures. The region's original human inhabitants spurned the empty plains. These Native Americans – the Yokuts – resided along the wooded banks of what became known as the Kings and San Joaquin rivers, or in the foothills and more distant Sierra ranges. The valley floor between the rivers offered little more than hunting opportunities or pathways for travel to visit other tribes. The prairie's flora was hardly enticing. "So desolate was the plain, that one could journey 20 mi. in any direction without so much as finding a bush large enough to cut a horse switch," a pioneer wrote in later years about this land as travelers found it in 1870 and earlier. The area now included within the Fresno Irrigation District would become known as the Fresno Plains, and plain it was. It was, for the most part, flat with exception of an occasional "hog wallow" of 1 - 5 ft. in depth. Soil was sandy loam with some hardpan. Fresno took its name from the Spanish for ash tree. It was derisively, but inaccurately, referred to as a desert. The surface was graced by types of native grasses that thrived on winter and spring rains, only to wilt and often vanish into bare earth under summer's intense sunshine. Strong winds regularly stirred large and blinding clouds of dust. Only where a few small foothill spawned seasonal streams came together at lower points within what would become FID (particularly in and near the future downtown Fresno), was there ever any significant wet relief. After larger storms, runoff would pool in what later became known as "Sinks of the Dry Creek." Like the grassland, these shallow and short-lived ponds were no match for summer's dry heat. It was a place that, at best, harshly greeted newcomers with irreducibly minimal prospects of any future potential.
>
> Prior to 1835, the Fresno Plains had been known only to Native Americans and a handful of explorers, fur trappers and other traders. Little changed after the American flag was raised over Monterey in 1847 and California statehood was achieved in 1850. California's Gold Rush, however, would eventually be the catalyst for initial American settlement in the Fresno area. Modest San Joaquin River gold discoveries led to establishment of Rootville in 1851. This riverside village would soon be renamed Millerton, to become county seat when Fresno County was organized in 1856. Gold fever only modestly touched the Kings River region but a small amount of settlement related to agriculture and transportation (such as ferryboat crossings) began downstream from the foothills in the early 1850s. Early settlers to the Fresno area encountered the empty valley dominated by fields filled with cattle. Within what became known as the Centerville Bottoms occurred the first small Kings River diversions for irrigation, starting with Byrd Slough in 1858.

[1] Fresno Irrigation District. Available at https://www.fresnoirrigation.com/_files/ugd/932427_1a9b4c0698374fbd8109fd25fca65f68.pdf?index=true#:~:text=Two%20early%20settlers%2C%20A.Y.,FID%20as%20it%20exists%20today. Accessed November 20, 2023.

Further downstream and stretching 26 mi. along the river's north bank was an 1846 Mexican land grant, Rancho Laguna de Tache. This rancho some four decades later would play a complicated but crucial role in shaping the Fresno Plains' water rights. The Fresno Plains remained unsettled well into the 1860s. That was soon to forever change as courses of water were created to moisten the thirsty soil.

Throughout the 1850s and 60s, the Fresno Plains lacked commerce and showed no sign of community life. Gradually, however, the barren land began to be noticed. Its potential was not easily imagined. Those who arrived after the Gold Rush peaked were from far flung places but shared a desire to make a new life in California. A few went to work attempting to tame the Fresno Plains. A cattle industry was born and grew. Sheep were herded. Hogs were produced. Substantial but undeveloped land holdings were established. There were several small farming experiments, particularly near the rivers. The first significant Fresno Plains agricultural undertaking was made possible by the 1868 purchase of 5,000 ac. east of what was soon to become the new town of Fresno by Captain A.Y. Easterby.

2.4.2 San Joaquin Valley

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 region. It was not until the American annexation of California in 1848 that the exploitation of the San Joaquin Valley truly began (Pacific Legacy 2006). The near simultaneous discovery of gold in northern California in 1849 resulted in a dramatic increase of population, and some new immigrants began ranching in the San Joaquin Valley to supply the miners and mining towns (JRP Historical Consulting 2009). Mining would remain the most important economic use of water in California for three decades, even though during this time there were already thoughts of the potential of the Central Valley region as an agrarian landscape. (Kelley 1979). As a result, during the Gold Rush decade, grazing sheep and cattle remained the principle land use on the pasture lands of the Great Central Valley (JRP Historical Consulting 2019).

Following the passage of state-wide "No Fence" laws in 1874, ranching practices began to decline while farming expanded in the San Joaquin Valley in both large land holdings and smaller subdivided properties. As the farming population grew, so did the demand for irrigation. Settlers began reclaiming swampland in 1866, building small dams across rivers to divert water into the fields (Pacific Legacy 2006).

Three competing partnerships developed during this period which had a great impact on control of water, land reclamation, and ultimately, agricultural development in the San Joaquin Valley: Livermore and Chester; Haggin and Carr; and Miller and Lux (Morgan 1914). Miller and Lux ultimately became one of the biggest private property holders in the country, controlling the right to over 22,000 square miles, and their impacts were widespread. They recognized early on that control of water would have important economic implications, used generous federal and state land laws to monopolize land ownership in the Central Valley, and played a major role in the water development of the state as a result. They controlled, for example, over 100 miles of the San Joaquin River with the San Joaquin and Kings River Canal and Irrigation System including some of the lands surrounding the APE (Morgan 1914).

In the mid-to-late 1860s, the rise of wheat farming emerged as an increasingly prominent use of land in the Central Valley and contributed to the decline and eventual demise of the open range cattle industry in the area during its three-decade reign (JRP Historical Consulting 2019). For a number of reasons, wheat crop in the Central Valley was ultimately not sustainable, and farmers increasingly turned to irrigated crops. As this transition took place, irrigation grew steadily. In 1860, 60,000 acres were irrigated and grew to 400,000 acres in 1880. By the early years of the twentieth century, irrigated landscapes became the dominant feature of the Central Valley and California at large with 2,644,000 acres under irrigation.

However, in the Central Valley, problems were made apparent as the demand for water grew over time. Namely, the Central Valley's great acreage allowed for regional differences in water supply, and the Mediterranean-type climate of prolonged dry summers necessitated irrigation of summer crops, differing from other climates where rainfall during summer months is more common (JRP Historical Consulting 2019).

To combat this, irrigation systems were initially developed by individuals under private initiative and financing, using the natural flow of local streams. These early projects were concerned with local issues and irrigated relatively small tracts of land. These early irrigation projects were more common in the southern portion of the San Joaquin Valley, where growing crops without the aid of irrigation systems were much more difficult (JRP Historical Consulting 2019). In 1880, State Engineer William Hammond Hall conducted California's first state-wide irrigation survey and found that the San Joaquin Valley was the most heavily irrigated region of the state with 188,000 irrigated acres, which was 47 percent of irrigated acreage state-wide.

Irrigation of the San Joaquin Valley continued using surface water supplies flowing in creeks and rivers, artesian waters, and groundwater. During the late nineteenth century, large areas of land were amassed within Mexican land grants, swamp and overflow land, railroad grant land, and others under public land laws, and some private companies began to deliver water to farmers, creating land and water monopolies. (JRP Historical Consulting 2019). These companies enjoyed only limited success, and the largest projects undertaken ultimately failed. The high rate of failure for a much-needed system popularized a proposal for a unified, coordinated, and centralized canal system constructed and operated by the state (JRP Historical Consulting 2019).

In 1873, the Central Valley's irrigation system problem caught the attention of the United States Congress, and the "Alexander Commission" was led by Lieutenant Barton Stone Alexander, a U.S. Army engineer, who organized and conducted the first federally funded irrigation survey and plan for coordinated irrigation development of the Central Valley. The State Engineers Office, the first state water agency, worked from 1878 to 1888 to implement many of the basic recommendations suggested by the Alexander Commission.

The Commission predicted 8.5 million acres could be irrigated in the Great Central Valley, with the potential of 12 million acres should the foothills surrounding the valley be included, and proposed a complex network of canals (JRP Historical Consulting 2019). A network was ultimately preferred over a single large canal, as the many streams flowing in different directions and areas from the Sierra Nevada would necessitate siphons or aqueducts at high expense. Because

of California's limited population and tax base at the end of the nineteenth century, it was predicted at the time that the project would proceed at a slow pace and could potentially take as long as 50 years to complete.

In 1878, after the California Legislature passed an act providing for an investigation of the subject of irrigation, William Hammond Hall was appointed as the first State Engineer. During his term from 1878 to 1889, he published a report on the subject of irrigation and proposed regional and statewide water planning for development of water resources, and prepared a detailed map of the San Joaquin Valley which revealed the extent of actual irrigation (JRP Historical Consulting 2019). After Hall's 1889 resignation, he went on to serve under the United States Geological Survey (USGS), which continued stream gaging and topographic mapping in the Central Valley area.

By the early twentieth century, the southern section of the San Joaquin River exhibited a complicated situation as streams had been developed early by multiple diverters, leading to an adjustment of water rights and financing of storage facilities. Between 1919 and 1929 in the southeastern San Joaquin Valley, as land irrigated by underground water sources increased, groundwater was increasingly relied upon as the capacity of pumped wells nearly tripled. From the Kaweah River south and in the area from Mendota to Kettleman City, there were few available local surface water supplies (JRP Historical Consulting 2019).

As California entered the first decades of the twentieth century, the state's population increase brought an increase in tax revenue. After a long drought from 1917 to 1920, the California state government began to exhibit an interest in comprehensive water planning, as the state considered that it finally had the support it needed to complete such an expansive project. In 1921, the governor directed the State Engineer to produce a statewide water management proposal addressing conservation, flood control, storage, distribution, and uses for California water and an estimated cost for implementation of the plan and approved $200,000 to investigate a development and management plan (JRP Historical Consulting 2019). The state plan was officially presented in 1923, and was revised in 1925, 1927 and 1929. These investigations led the state to consider plans for a coordinated water management and development program in 1931, which began construction in the San Joaquin Valley after the adoption of the Central Valley Plan (CVP).

The concept of the CVP was originally devised by the state to resolve intrastate water shortage issues but was ultimately built by the federal government. The state was unable to procure the necessary money to fund the plan and construction was delayed. In 1933, California officials responded by lobbying the federal government to undertake the project as a federal reclamation project, and the Bureau of Reclamation received the chance to construct the largest integrated water and power project ever undertaken in California (JRP Historical Consulting 2019). After more studies were conducted between 1927 and 1930, the State Water Plan became the CVP, where:

> essential units of the Central Valley portion of the plan included Kennett (Shasta) Reservoir on the Sacramento River, one of the highest overflow dams in the world with a storage capacity of 4.5 million acre feet; a 50-mile long industrial and irrigation conduit in the Delta diverting water to supply areas in Contra Costa County; a cross canal in the

> Sacramento-San Joaquin Delta; pumping plants and canals in the San Joaquin River and Valley; Friant Reservoir on the San Joaquin River in the foothills north of Fresno and canals running north from the reservoir to supply lands in Madera County and south to irrigate lands between the reservoir and Kern River (JRP Historical Consulting 2019).

The CVP is composed of 20 dams and reservoirs, 11 powerplants, and 500 miles of major canals as well as conduits, tunnels, and related facilities (Bailey 2018). The CVP also checked the "centuries-long" cycle of floods that have routinely devastated agricultural areas and rural and urban communities, particularly those along the Sacramento and American Rivers (Bailey 2018).

In 1936, the Bureau of Reclamation established administrative headquarters in Sacramento as well as three field offices in the Central Valley. By 1937, the Bureau of Reclamation was given authority to take over control of the construction of the project, and the project proceeded on a piecemeal basis (Pisani 1984). The CVP was designed under the Bureau of Reclamation in five fundamental units operating as an integrated system: Shasta Dam, the Delta-Mendota Canal, Friant Dam, the Madera and Friant-Kern Canals, and the Contra Costa Canal. The core of the system was designed to deliver Sacramento River water to the arid San Joaquin Valley and divert the upper San Joaquin River flow for distribution on the east side of the San Joaquin Valley. The main units of the project (excluding the Contra Costa Canal) operate in two groups: Shasta Dam and the Delta-Mendota Canal deliver Sacramento River water on the westside of the San Joaquin Valley to as far south as Fresno County, and Friant Dam conserved and stored floor flows for release and diversion into the Madera and Friant-Kern Canals. These units work in conjunction with each other and were completed by the Bureau of Reclamation in the early 1950s.

Since the 1980s, about 7 million acre-feet of water annually is made available to CVP contractors, about 70 percent of which are agricultural contractors. Today, 9.5 million acre-feet of water is potentially available to CVP contractors, depending on hydraulic conditions. The CVP is undoubtedly an important aspect of California and national history:

> The CVP is widely recognized as one of the greatest pieces of water planning, engineering, and conservation development ever undertaken and represents one of the most ambitious and successful water development projects ever built. It significantly altered California's natural hydrologic system in order to enhance water supplies for irrigated agriculture, municipalities and hydroelectric power. Within the contexts of hydraulic engineering, the politics of public works, state-federal conflict over reclamation policy, and the economics of large-scale irrigation, the CVP is recognized as great achievement on the national and even the international scale, although every component of the CPV is located within the boundaries of California (JRP Historical Consulting 2019).

It is estimated that the CVP has prevented billions of dollars in flood damages to urban and rural areas over the past decades since its construction and implementation (Bailey 2018).

In addition to the five major components of the CVP mentioned above, the Bureau of Reclamation along with other associated agencies constructed engineering features that are found within the jurisdiction of the CVP. These engineering features include dikes, powerplants, bridges, laterals,

sub-laterals, drains, pumping plants, administrative/staff/ancillary buildings, fish facilities, recording stations, and gaging stations.

2.4.3 Friant-Kern Canal

Reclamation engineers lead by Harry Raymond McBirney designed the Friant-Kern Canal (FKC) for surplus water delivery from Northern California diverted at Friant Dam 151.8 miles to the San Joaquin Valley with deliveries made along the route. As a result of the FKC, an estimated 1 million acres were irrigated in Fresno, Kings, Tulare, and Kern counties providing farmland with water to grow a variety of fruit and nut crops. Given the intercrossing of many waterways along the massive canal, the FKC required intensive studies that ultimately resulted in an irrigation project that became an important engineering feat. Due to construction delays resultant from World War II, Reclamation awarded the first contract of the FKC in 1945. While water first entered the canal in 1949, construction of conveyance structures down to the Kern River continued until 1951 (Norby and Wee 2019:19-23).

The section of the FKC within the APE was constructed between 1945 and 1946 and included construction of the FKC Siphon at BDC at stations 817+79.13 (siphon intake) and 821+35.98 (siphon outtake). The siphon conveyed FKC water underneath BDC) (Norby and Wee 2019). While there is not currently a turnout within the APE, Figures 7-8 illustrate a typical FKC turnout. The earliest available historic aerial of the BDC siphon from 1957 reveals little to no changes to the siphon between the time it was constructed and the present. On the west side of the APE is a service road, which can be accessed from the south along Tollhouse Road (CA-168). This service road is visible in the earliest historic aerial available from 1957 and was likely created and utilized during the construction of the canal. The road follows the same route in the present as it did in the 1957 historic aerial, including the westward bend as the road crosses over the BDC (United States Department of Agriculture 1957). It does not appear that a bridge was ever constructed, rather that BDC routinely does not have water and can be crossed at that point during its dry seasons.

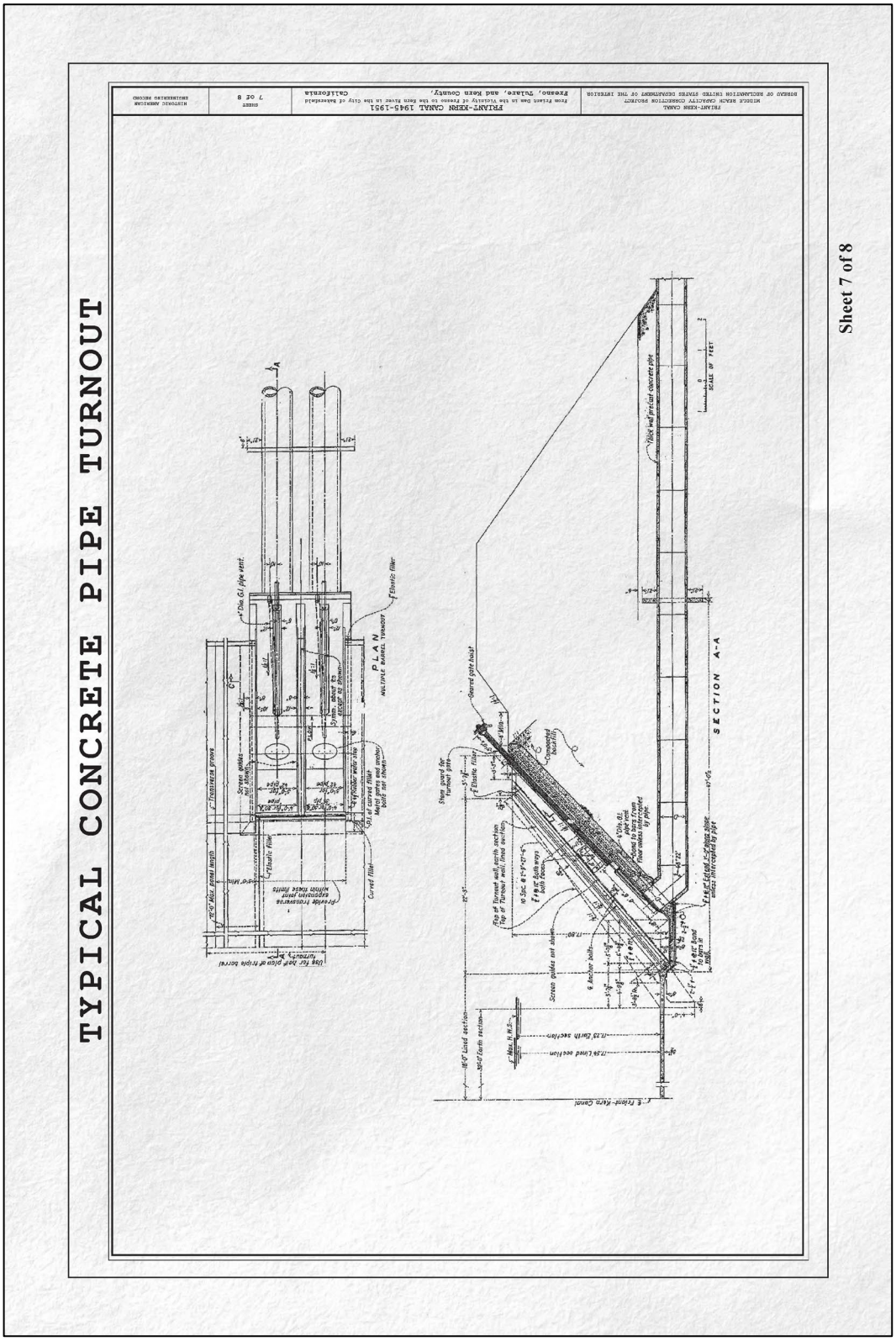

Figure 7. Typical turnout on the FKC. (Source: Stantec Consulting Services, Inc. 2021.)

2.5 NRHP 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.

2.5.1 Property Types

Norby and Wee (2019: 51-56) provides this guidance with respect to defining and evaluating canal property types and their appurtenant features:

Main Canals

Construction on the first main canal of the CVP, the Contra Costa Canal of the Delta Division, commenced in 1937 and was completed in 1948. In 1940, construction began on the Madera Canal of the Friant Division, with construction completed in 1945. In 1945, construction on the Friant-Kern Canal began. The following year, construction on the Delta-Mendota Canal commenced. Finally, in 1950, construction on the Delta Cross Channel began. The Friant-Kern Canal, Delta-Mendota Canal, and Delta Cross Channel were all completed in 1951. The longest main canal is the Friant-Kern Canal at 151.8 miles, while the shortest is the Delta Cross Channel at 1.2 miles. All main canals are on Reclamation fee title or easement land.

Significance

In conjunction with the storage and diversion dams, canals form the CVP's backbone. They provide the means to transfer, transport, and deliver water through the system and ultimately to the water users. Traversing across hundreds of miles, the canals form a significant feature of the physical landscape and define the geographical limits of the project. In keeping with the original CVP plan of large-scale water transfers, canals are the primary means behind the geographical redistribution of fresh water from the valley's wetter northern reaches to the drier southern stretches.

Registration Requirements for CVP Canals

The period of significance for historic water conveyance structures begins in 1937 with the initial construction of the first CVP canal, the Contra Costa Canal, and ends in 1951 with the completion of the Friant-Kern, Delta-Mendota, and Delta Cross Channel canals. Like the dams, these canals are part of the initial CVP authorizations. The main canals within the period of significance for this historic context are all considered individually eligible because of their primary role in operating the CVP. The main canals can be individually eligible for the National Register under one or more of the criteria, as follows:

Criterion A: 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: They are the result of the direct efforts of a prominent individual associated with the CVP and are the most prominent feature associated with that individual.

Criterion C: They represent the distinctive characteristics of Reclamation canal design and/or methods of construction used on the CVP; they involved challenging engineering design problems due to topography, grade, length, 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: They have the ability to yield information important to understanding the history of the CVP.

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 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

Although appurtenant canal features are all operationally and thematically related to canals, 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 located at the source of the water supply include headworks and turnouts. Headworks control the release of water into the canal and are often located downstream from a major diversion or storage facility. Regulating structures located 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. The type most commonly used in Reclamation's systems are Parshall flumes, weirs, open-flow meters, and constant head orifices.

5. Miscellaneous Structures

a. *Bridges*

Bridges crossing CVP canals range from single-lane bridges, multi-lane highway bridges, farm bridges, pedestrian bridges, and maintenance bridges. Most of the bridges constructed within the period of significance were built by Reclamation according to standard designs. Ownership of the bridges were turned over upon their completion to other entities, including city, county, or state transportation agencies. There are also many bridges not constructed by Reclamation that have been added over CVP canals and were built outside the period of significance for this historic context. Additionally, some original bridges built by Reclamation have been replaced.

b. *Gauging or Recording Stations*

Several types of small structures were built in association with gauging or recording stations to measure canal flows. The most common are small circular plan, sheet metal structures called "tin whistles" or "silver bullets" that provide enclosure for recording devices. A second type of shelter is small, reinforced concrete "houses." When gauging or recording stations are located over the canal, simple wooden footbridges with wood handrails were constructed to permit the taking of measurements. In some cases, the original bridges have been replaced with concrete or metal ones, which are easier to maintain. Many of the gauging or recording structures are built on concrete pads, adjacent to the canal, on the canal berm.

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 CVP and therefore merit separate evaluation from other appurtenant features. In addition, most of the bridges were either constructed by Reclamation and ownership was turned over to a different entity or they were constructed by a different entity. Because of these reasons, bridges would rarely be individually eligible for the National Register in association with this historic context.

Registration Requirements
The period of significance for historic appurtenant canal features begins in 1937 with the initial construction of the first CVP canal, the Contra Costa Canal, and ends in 1951 with the completion of the Friant-Kern, Delta-Mendota, and Delta Cross Channel canals. CVP appurtenant canal features can be eligible for the National Register for the following reasons:

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

Criterion B: not applicable;

Criterion C: 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: They have the ability to yield information important to understanding the history of the CVP.

Integrity
As with canals, many appurtenant features are upgraded, altered, or even replaced over time due to the constant ongoing maintenance needs. Integrity of a structure's historic materials, workmanship and design is essential for National Register eligibility under any criterion. Because location is of primary importance under Criterion A, a structure will rarely qualify under this criterion if it does not remain on its historic site along its associated canal. Location can also have importance under Criterion C, but this association is less vital.

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.

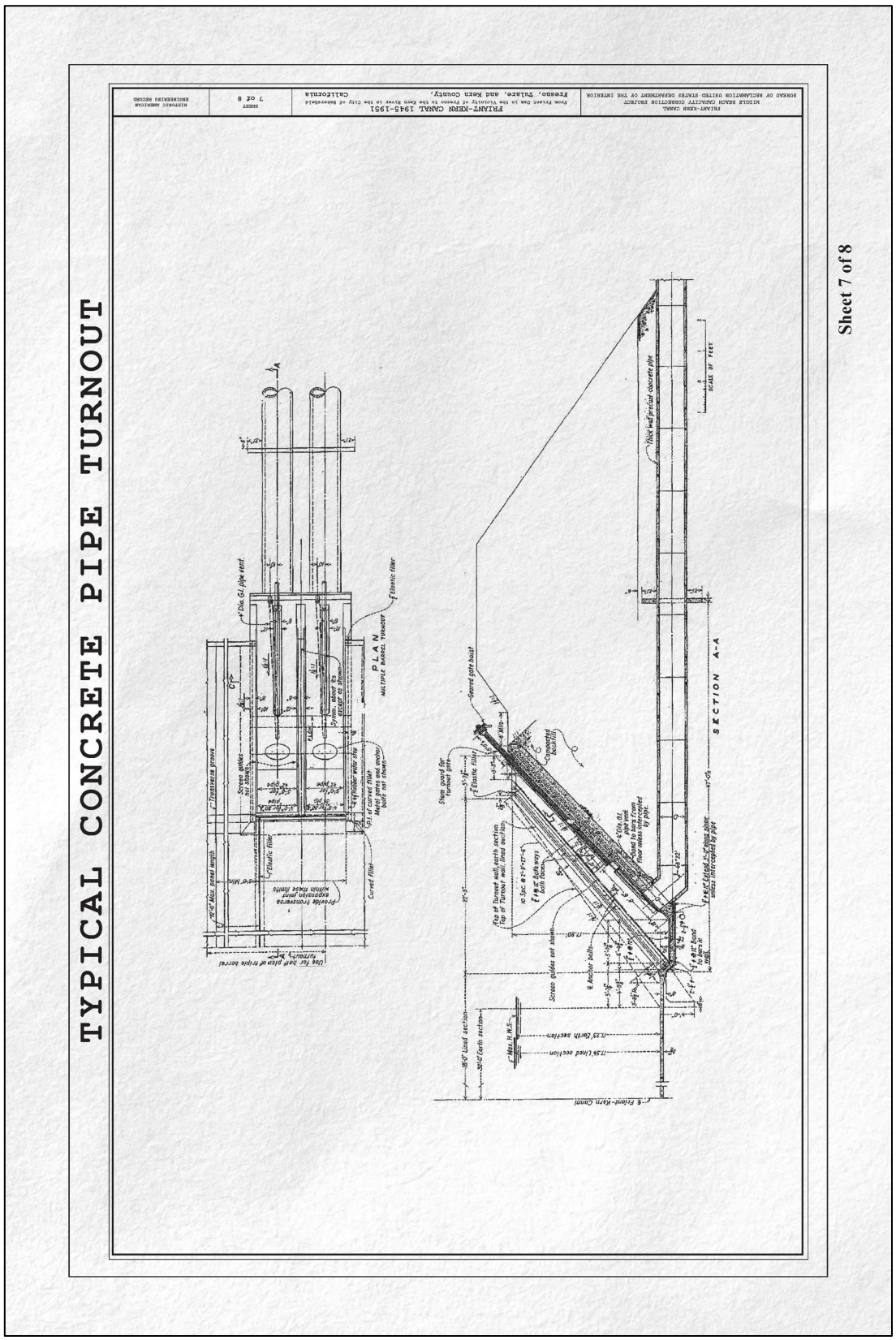

Figure 8. Typical turnout on the FKC. (Source: Stantec Consulting Services, Inc. 2021.)

3. RECORD SEARCH AND TRIBAL OUTREACH

3.1 RECORD 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, an archival records search was conducted by the staff of the Southern San Joaquin Valley Information Center (SSJVIC) on February 4, 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 half mile buffer.

According to the SSJVIC, a single previous study (FR-00548) had been conducted within the Project APE, and six previous studies were identified within the half mile buffer (Table 1). The SSJVIC results identified a single built environment resource within the APE, consisting of the FKC (P-54-004614). An additional two built archaeological sites were identified within the 0.5 mi. buffer, with the nearest located approximately 0.1 mi. from the Project APE (Table 2). The results of the SSJVIC records search are available in Confidential Appendix A.

Table 1. Previous Recorded Reports

Report #	Year	Author	Title	APE Relationship
FR-00548	1987	Meighan, Clement, Dillon, Brian, Verano, John, and Indermill, Roc	Redbank and Fancher Creeks Intensive Cultural Resources Survey, Fresno County, California	**Within**
FR-00661	1992	Price, Barry, Moratto, Michael, and Lebow, C.	Archaeological Survey Report of Route 168 Study Areas, Fresno County, California	Outside
FR-01130	1975	Wren, Donald and Crist, Michael	Archaeological Reconnaissance of the Redbank and Fancher Creek Investigation Area	Outside
FR-01588	1991	Smith, Ephraim	Historical Architectural Survey Report for Route 168 Rural Project	Outside
FR-01590	1991	Corbett, Michael	Route 168 Temperance Avenue to Lodge Road 06-FRE-168-R9.0/R28.1	Outside
FR-02414	2010	Leach-Palm, Laura, Brandy, Paul, King, Jay, Mikkelson, Pat, Seil, Libby, Hartman, Lindsay, and Bradeen, Jill	Cultural Resources Inventory of Caltrans District 6 Rural Conventional Highways in Fresno, Western Kern, Kings, Madera, and Tulare Counties Summary of Methods and Findings	Outside
FR-02658	1992	Price, Barry, Moratto, Michael, and Lebow, C.	Archaeological Survey Report of Route 168 Study Areas, Fresno County, California	Outside

Table 2. Previously Recorded Resources

Primary #	Type	Description	Eligibility Status	APE Relationship
P-10-002574	Multicomponent site	Lithic scatter and historic-era refuse scatter	Unknown	Outside
P-10-002610	Prehistoric site	Lithic scatter	Unknown	Outside
P-10-005801	Historic-era structure	Friant Kern Canal	Determined eligible	**Within**

3.1.1 Previously Recorded Built Environment Resources

One previously recorded built environment resource, Friant-Kern Canal (P-54-004614) is present within the APE. The 152 mi. irrigation canal was constructed by Reclamation. Construction of the canal was completed in 1951 as part of the CVP. The FKC carries water via gravity from the Friant Dam on the San Joaquin River to its terminus at the Kern River 4 mi. west of Bakersfield. Approximately 127 mi. of the canal are concrete-lined with a bottom width of 36 ft.; the remaining 25 mi. of the canal are earth-lined with a bottom width of 64 ft. The canal is approximately 15.5 ft. deep. In 2019, JRP (Norby and Wee 2019) recommended (and SHPO concurred) that the FKC is eligible for listing in the NRHP under Criteria A and C, and identified all the contributing and non-contributing structures. All siphons along the FKC were identified as contributing features of the FKC, including the FKC Siphon at BDC (Appendices B and C).

3.2 TRIBAL OUTREACH

As part of the CEQA process, a search of the NAHC *Sacred Lands File* (SLF)was completed on February 7, 2024. Based on the SLF results, the APE is negative for sacred sites or traditional cultural places (Confidential Appendix D). Outreach letters and emails were sent on February 9, 2024to tribal organizations on the NAHC contact list. The Santa Rosa Rancheria Tachi Yokut Tribe responded that tribe will be deferring to Table Mountain Rancheria. No other responses were received as a result of this outreach.

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 Maria Silva, B.A., on May 2, 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 ac. Project APE.

4.2 FIELD RESULTS

4.2.1 Archaeological Results

The proposed Project APE consists of paved roads, water conveyance features, and undeveloped land. The APE is bounded by agricultural fields, paved roads, and business and residential structures. Much of the Project APE appears to have been disturbed by the development of the FKC and associated structures. Ground surface visibility within the APE varied from good (approximately 70 percent) in the northern half of the APE to poor (less than 10 percent)in the southern half of the APE for the Class III inventory/Phase I survey. Hardscaped roads and non-native vegetation inhibited visibility. Soil consisted of light brown to tan sandy loam throughout the Project APE.

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

4.2.2 Built Environment Results

Field conditions for the inventory were excellent. At the study area, the APE is aligned on the east to the FKC and is bordered by active agricultural land on all other sides except for Tollhouse Road (CA-168), which borders on its southernmost edge. Surface visibility of the APE was excellent for Class III inventory/Phase I survey.

Update: Friant-Kern Canal (P-54-004614/CA-TUL-002873H)

ASM rerecorded a northwest-southeast trending 2,154 ft. long concrete-lined segment of the 152mi. FKC within the APE at the intersection of the FKC and the BDC, located above Tollhouse Road in the northeastern area of Fresno, California (Figures 9-12). The FKC Siphon at BDC within the APE extends underneath the BDC from MP 14.57 (Station 817+79.13) to MP 14.64 (Station 821+35.98). The poured concrete siphon intake and outtake structures at the BDC are

approximately 231 ft. apart. At the time of the site visit, a chain link fence existed along the edges of the siphon that prevented direct access between the BDC siphon intake and outtake structures.

Newly Recorded: Access Road located to the West of the FKC within the APE

Located within the APE is an access road located to the west of the FKC (Figure 13 and Figure 14). This access road parallels the FKC within and beyond the APE. In the area where the service road encounters the BDC, it bends west and, from aerial images, appears to allow for crossing during times when the BDC does not retain water. The access road is an unpaved gravel road and appears to retain the same alignment as it did in the earliest historic aerial from 1957 (United States Department of Agriculture 1957). The access road to the FKC Siphon at BDC can be entered from south of the APE, at Tollhouse Road.

Figure 9. FKC, BDC Siphon outtake. View toward north.

Figure 10. FKC overview, BDC Siphon intake (at center). View toward southeast.

Figure 11. FKC, BDC Siphon intake. View toward southeast.

Figure 12. FKC, view toward east.

Figure 13. Southern section of the APE, view toward north.

Figure 14. The access roads surrounding the APE. In view is the section of road that crosses BDC. View toward south.

5. SUMMARY, NRHP/CRHR ELIGIBILITY EVALUATIONS, AND RECOMMENDATIONS

An intensive Class III inventory/Phase I cultural resources survey was conducted for the Friant-Kern Canal (FKC) Turnout at Big Dry Creek (BDC) Reservoir Project (Project), Fresno County, California. A records search was conducted at the SSJVIC and a search of the NAHC *Sacred Lands File* was completed. Based on the *Sacred Lands File* search, the APE is negative for sacred sites or traditional cultural places. Survey fieldwork of the APE was conducted in May 2024 with parallel transects spaced at approximately 15-m intervals walked across the APE.

One segment of P-54-004614/CA-TUL-002837H (Friant-Kern Canal) was identified and its site records updated. Within the recorded segment, the FKC Siphon at BDC was identified, which had been identified by JRP in 2019 as a contributing resource of the FKC. An additional built environment resource was identified within the APE, the access road on the west side of the FKC. This road was constructed between 1945 and 1946, within the era of historic significance for the FKC, and is therefore considered a historic-era built environment resource.

No additional built environment resources and no archaeological resources were identified within the APE.

5.1 NRHP/CRHR ELIGIBILITY EVALUATIONS

The FKC (P-54-004614/CA-TUL-002837H) has already been determined eligible for listing in the NRHP (Appendix A and B). A Historic American Engineering Report (HAER) has already permanently documented the FKC as a mitigation for Friant-Kern Canal Middle Reach Capacity Correction Project (Appendix E). The FKC Siphon at BDC (Station 817+79.13 and Station 831+35.98) is located within the APE and was identified by Norby and Wee (2019) as a contributing feature of the FKC. Siphons must retain high overall integrity of location, design, setting, materials, workmanship, feeling, and association because of the high number of comparable examples. While repairs and modifications are acceptable, they must not substantially change the resource's character defining features or functionality. Given the current condition of the FKC Siphon at BDC, the siphon remains a contributing feature of the FKC. No other FKC features were identified within the APE and the proposed Project will not result in an adverse effect to the FKC Siphon at BDC.

Access Road to the west of the FKC within the APE

The access roads adjacent to the FKC were not evaluated in 2019 (Norby and Wee 2019). Although the presence of access roads was mentioned throughout the document, the access roads were not identified as part of the contributing features to the FKC. As such, ASM considered whether the access road adjacent to the FKC on the western side is eligible under any NRHP/CRHR criteria. The access road was laid likely around the same time that the section of the FKC was constructed between 1945 and 1946, providing access to all areas of the canal on its western side and providing an area to cross BDC to the west of the siphons. Research did not reveal that the access road to the west of the FKC was associated with any historic events. While the access roads remain important

for the construction and/or maintenance of the FKC itself, it did not directly contribute to any aspects of the FKC for which it is eligible under Criterion A/1. As such, ASM recommends that the access road to the west of the FKC within the APE is not eligible under Criterion A/1. Additionally, research did not reveal that the access road was associated with any person important to history. As such, ASM recommends that the access road to the west of the FKC within the APE is not eligible under Criterion B/2. Furthermore, research did not reveal that the access road represents a type, period, or method of construction, the work of a master, nor does it possess high artistic value. It does not contribute to any of the aspects for which the FKC is eligible under Criterion C/3. As such, ASM recommends that the access road to the west of the FKC within the APE is not eligible under Criterion C/3. Finally, the access road does not have the potential to provide information about history or prehistory that is not available through historic research. As such, ASM recommends the access road to the west of the FKC within the APE as not eligible under Criterion D/4. As such, ASM recommends the access road to the west of the FKC within the APE is not eligible under any NRHP/CRHR criteria.

5.2 ASSESSMENT OF EFFECTS

The proposed Project will potentially affect the FKC (P-54-004614/CA-TUL-002873H) with construction of a new turnout and detention basin that would divert water from the FKC to the BDC for a direct recharge along the BDC channel north and east of the City of Clovis. The proposed turnout (see Figures 3-6) would be installed at mile post 14.6, on the west bank of the FKC and would involve demolition of approximately 74 ft. of concrete lining, in kind replacement of concrete lining with retention of the 1.5:1 slope, installation of a large turn-in structure, and construction of a pipeline/open channel structure. The turnout would be a two-bay turnout with up to 72-in. diameter reinforced concrete pipeline of 260 ft. long for each bay or 520 ft. total to the discharge structure/open channel. The turnout proposes to deliver a maximum of 300 cu. ft. per second (CFS) to BDC. The new facility footprint is estimated to encompass an area 80 ft. wide by 200 ft. long within the FKC right-of-way.

Modifications of an operational irrigation system are expected and necessary for continued operations. The FKC has been determined eligible (with SHPO concurrence) as a historic property according to Section 106 and is considered a historical resource according to CEQA. The FKC Siphon at BDC is the only FKC contributing feature located within the APE and the proposed Project will not affect it. The addition of a ubiquitous turnout similar to others already extant along the FKC (see Figures 7-8) will require demolition of approximately 74 ft. of concrete lining that would be replaced in kind with the retention of its current 1.5:1 slope. Given that the proposed Project will use in-kind concrete and will retain the original design of a 1.5:1 slope, the proposed Project aligns with the *Secretary of the Interior Standards for Rehabilitation* (NPS 2017) preferred option of "replacement of the entire feature in kind" (NPS 2017:78). The proposed addition of a turnout also aligns with the *Secretary of the Interior Standards for Rehabilitation* (NPS 2017) in that it does not "radically change, obscure, or destroy character-defining spaces" (NPS 2017:78). ASM recommends that the proposed Project will not result in an adverse effect of a historic property under Section 106 and will not result in a significant impact to a historical resource under CEQA.

No other cultural resources were identified during the survey.

5.3 RECOMMENDATIONS

Based on the above analyses and findings, the proposed Project will not result in an adverse effect to a historic property under Section 106 or a significant impact to a historical resource under CEQA. 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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APPENDICES