



MITIGATED NEGATIVE DECLARATION

San Joaquin Consolidated Water Treatment Project

October 2017

PREPARED FOR:



City of San Joaquin
21900 Colorado Avenue
San Joaquin, CA 93660

PREPARED BY:



Crawford & Bowen Planning, Inc.
113 N. Church Street, Suite 302
Visalia, CA 93291

Initial Study/Mitigated Negative Declaration
San Joaquin Consolidated Water Treatment Project

Prepared for:



City of San Joaquin
21900 Colorado Avenue
San Joaquin, CA 93660

Contact: Elizabeth Nunez, City Manager
(559) 693-4311

Prepared by:



Crawford & Bowen Planning, Inc.
113 N. Church Street, Suite 302
Visalia, CA 93291

Contact: Travis Crawford, AICP
(559) 840-4414

October 2017



TABLE OF CONTENTS

CHAPTER ONE - INTRODUCTION

1.1 Project Summary	1-1
1.2 Document Format	1-1

CHAPTER TWO – PROJECT DESCRIPTION

2.1 Location	2-1
2.2 Setting and Surrounding Land Uses	2-1
2.3 Project Background	2-6
2.4 Project Description	2-7
2.5 Objectives	2-8
2.6 Other Required Approvals	2-8

CHAPTER THREE – INITIAL STUDY CHECKLIST

CHAPTER FOUR - MMRP

CHAPTER FIVE – PREPARERS

LIST OF FIGURES

1 – Regional Location Map	2-2
2 – Site Aerial	2-3
3 – Treatment System Site Plan	2-4

LIST OF TABLES

1 – Standards and Attainment Status for Listed Pollutants	3-12
2 – SJVAPCD Regulation VIII Control Measures	3-13
3 – Proposed Project Construction and Operation Emissions	3-17
4 – Screening Levels for Potential Odor Sources	3-18
5 – Typical Construction Vibration Levels	3-60

APPENDICES (UNDER SEPARATE COVER)

- A- CalEEMod Output Files
- B- Biological Evaluation Report
- C- Cultural Resources Inventory

Chapter 1

INTRODUCTION

INTRODUCTION

1.1 Project Summary

This document is the Initial Study/Mitigated Negative Declaration describing the potential environmental effects of constructing a new consolidated treatment system to treat raw water from Well Nos. 3 and 5. The wells are currently in violation of the manganese maximum contaminant levels (MCL) set forth by the U.S. Environmental Protection Agency. The proposed Project is more fully described in Chapter Two – Project Description.

The City of San Joaquin will act as the Lead Agency for this project pursuant to the *California Environmental Quality Act (CEQA)* and the *CEQA Guidelines*.

The Project is expected to be funded through a combination of City funds, Clean Water State Revolving Fund (CWSRF) funds administered through the California State Water Resources Control Board (Water Board), and a Community Development Block Grant from the U.S. Department of Housing and Urban Development. One requirement of CWSRF funding is that the City will be required to comply with the Water Board's environmental requirements including CEQA-Plus. CEQA-Plus involves additional environmental analysis of certain topics to include federal thresholds, rules and regulations (for topics such as air, biology, cultural, etc.). In addition to this Mitigated Negative Declaration, the City is preparing a separate Environmental Package for submittal to the Water Board which includes the CEQA-Plus analysis.

1.2 Document Format

This IS/MND contains five chapters, and appendices. Section 1, Introduction, provides an overview of the project and the CEQA environmental documentation process. Chapter 2, Project Description, provides a detailed description of project objectives and components. Chapter 3, Initial Study Checklist, presents the CEQA checklist and environmental analysis for all impact areas, mandatory findings of significance, and feasible mitigation measures. If the proposed 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 4, Mitigation Monitoring and Reporting Program, provides the proposed mitigation measures,

completion timeline, and person/agency responsible for implementation and Chapter 5, List of Preparers, provides a list of key personnel involved in the preparation of the IS/MND.

Environmental impacts are separated into the following categories:

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 After 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 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.)

Regardless of the type of CEQA document that must be prepared, the basic purpose of the CEQA process as set forth in the CEQA Guidelines Section 15002(a) is to:

- (1) Inform governmental decision makers and the public about the potential, significant environmental effects of proposed activities.
- (2) Identify ways that environmental damage can be avoided or significantly reduced.
- (3) Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible.
- (4) Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

According to Section 15070(b), a Mitigated Negative Declaration is appropriate if it is determined that:

- (1) Revisions in the project plans or proposals made by or agreed to by the applicant before a proposed mitigated negative declaration and initial study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur, and
- (2) There is no substantial evidence, in light of the whole record before the agency, that the project as revised may have a significant effect on the environment.

The Initial Study contained in Section Three of this document has determined that with mitigation measures and features incorporated into the project design and operation, the environmental impacts are less than significant and therefore a Mitigated Negative Declaration will be adopted.

Chapter 2

PROJECT DESCRIPTION

Project Description

2.1 Location

The City of San Joaquin (City) is located within the San Joaquin Valley, approximately 25 miles southwest of the City of Fresno, in Fresno County. The City is approximately six miles northwest of State Route 145 and 15 miles east of Interstate 5 (see Figure 1 – Location Map). The Consolidated Water Treatment Project (Project) is within the City limits of San Joaquin in Township 15 South, Range 16 East, Sections 23, 24, 25, and 26, as depicted on the San Joaquin, California, U.S. Geological Survey 7.5-minute quadrangle.

2.2 Setting and Surrounding Land Use

The proposed Project site is located in the central-western portion of the San Joaquin Valley of California. The valley is a large, nearly flat alluvial plain bordered by the Sierra Nevada to the east, the Tehachapi Mountains to the south, the California coast ranges to the west, and the Sacramento-San Joaquin Delta to the north.

Like most of California, the central/southern San Joaquin Valley experiences a Mediterranean climate. Warm dry summers are followed by cool moist winters. Summer temperatures commonly exceed 90 degrees Fahrenheit, and the relative humidity is generally very low. Winter temperatures rarely exceed 70 degrees Fahrenheit, with daytime highs often below 60 degrees Fahrenheit. According to the Western Regional Climate Center, annual precipitation in the vicinity of the project sites is about 12 inches, about 85% of which falls between the months of October and March. Nearly all precipitation falls in the form of rain.

The proposed Project intends to pipe raw water from Well No. 3 to Well No. 5, and construct a consolidated treatment system to treat raw water from Well Nos. 3 and 5, immediately east of Well 5, as seen in Figure 2. The treatment system site plan is shown in Figure 3.

Figure 1 – Location Map



Figure 2 – Site Aerial

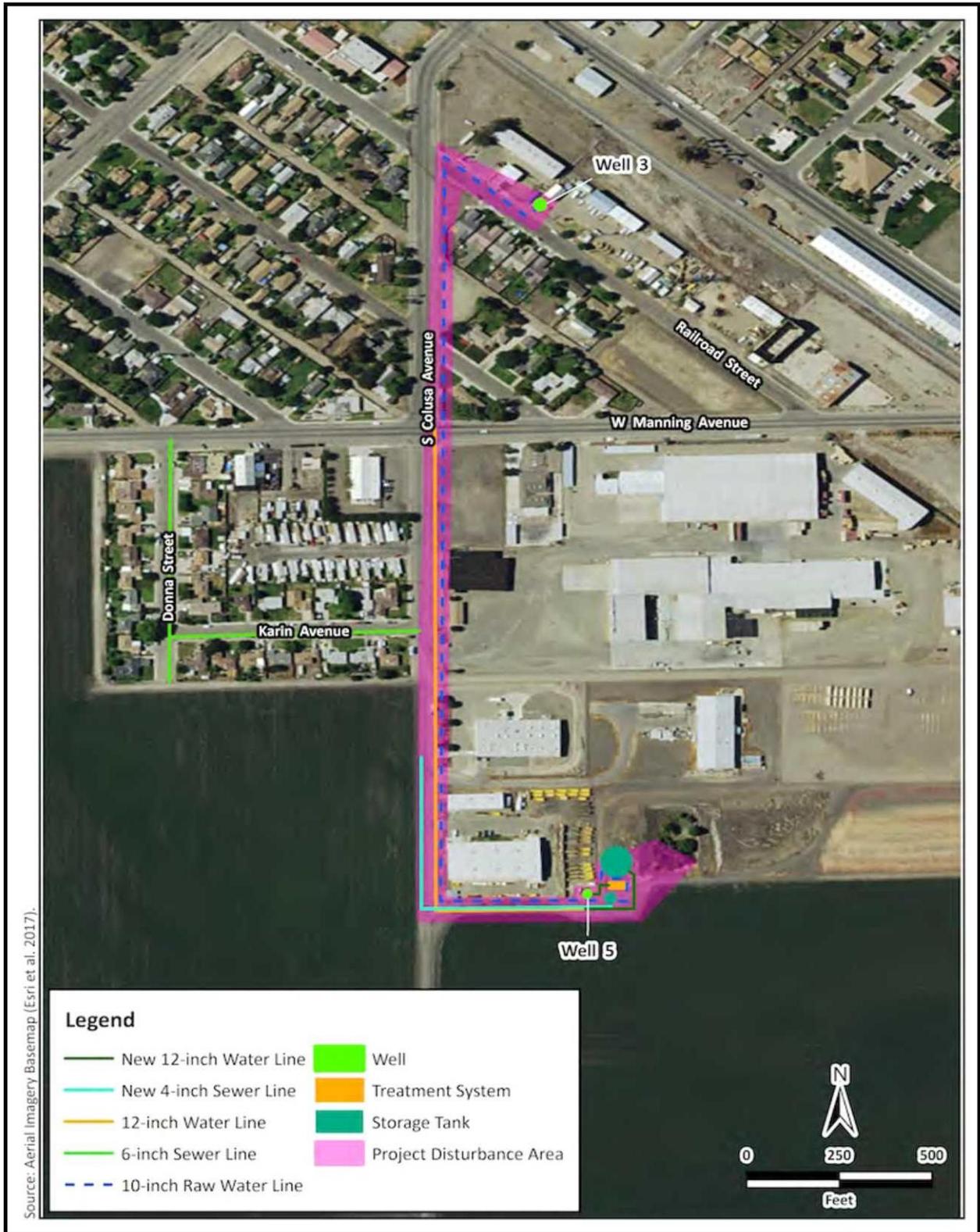
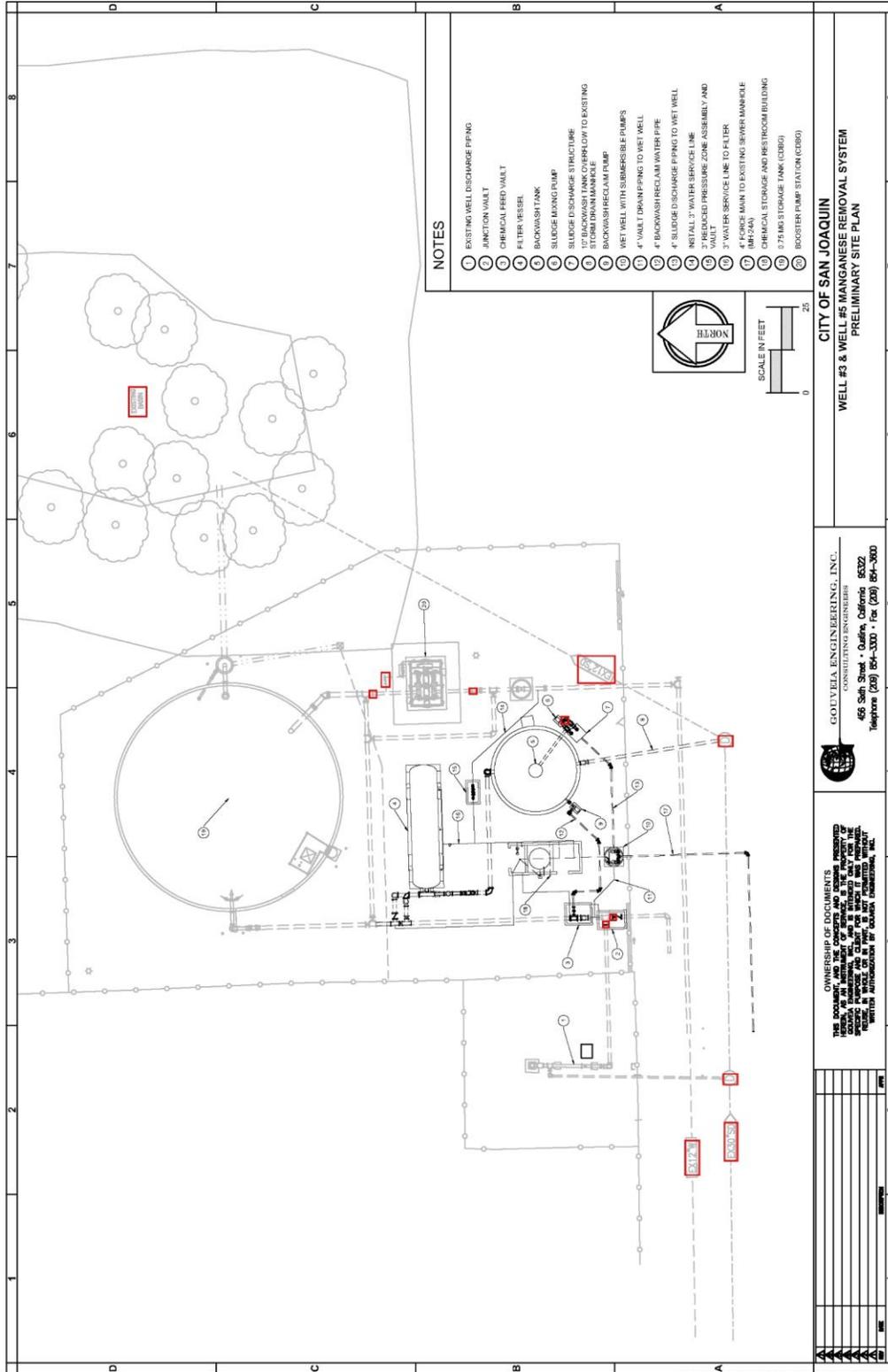


Figure 3 – Treatment System Site Plan



The proposed Project site consists of developed and disturbed land cover in an agricultural, residential, and commercial setting. Well No. 3 is located on the north side of Railroad Street in a residential/commercial area, adjacent to the existing Public Works Department building, with utility towers and electrical poles running along Railroad Street. Well No. 5 is located at 21926 West Cherry Lane, an unpaved farm road, and is surrounded by a vacant lot, agricultural fields, and commercial development.

Residential and commercial development and several vacant lots border the Project site's paved road surfaces along Railroad Avenue and South Colusa Avenue, as seen in Photo 1. The proposed Project site's dirt road surface along West Cherry Lane is bordered by commercial development to the north, agricultural fields to the south, and a vacant lot to the east, as seen in Photo 2.

Other land uses in the project vicinity include active agricultural fields, commercial and industrial development, and the residential development in the City of San Joaquin.



Photo 1: Looking north along South Colusa Avenue showing suburban residential development.



Photo 2: Looking west from Well No. 5 along West Cherry Lane showing agricultural and commercial development.

2.3 Project Background

The City of San Joaquin community water system (CWS) is currently serviced by three active wells: Well No. 3, Well No. 4 and Well No. 5. Well No. 3 is the lead well, which typically is operated to meet the average and maximum day demands and Well No. 5 is typically operated to meet the peak hour demands. Well No. 4 had been inactive since September 2010 due to sporadic detection of total coliform, *E. coli*, and pseudomonas bacteria in the well; however, Well No. 4 was recently rehabilitated and became an active source of supply.

Currently, the water produced by Well Nos. 3, 4 and 5 is in violation of the manganese maximum contaminant level (MCL), set forth by the U.S. Environmental Protection Agency. Removal of manganese is recommended by the State Water Resources Control Board Department of Drinking Water (SWRCB-DDW) when manganese is present in concentrations ten times greater than the notification level (500 µg/l). The proposed Project is to construct a consolidated treatment system to treat raw water from Well Nos. 3 and 5, at the site of Well 5. Well 4 is currently used as a reserve well during periods of high demand. When Well 4 is utilized, blending of raw water from Well 4 and treated water from the treatment system will occur in the distribution system. During these instances, the manganese concentration in the blended water may be higher than the MCL, but lower than that of the raw water from Well 4.

Funding

As described in Chapter 1 - Introduction, the Project is expected to be funded through a combination of City funds, Clean Water State Revolving Fund (CWSRF) funds administered through the California State Water Resources Control Board (Water Board), and a Community Development Block Grant from the U.S. Department of Housing and Urban Development. One requirement of CWSRF funding is that the City will be required to comply with the Water Board's environmental requirements including CEQA-Plus. CEQA-Plus involves additional environmental analysis of certain topics to include federal thresholds, rules and regulations (for topics such as air, biology, cultural, etc.). In addition to this Mitigated Negative Declaration, the City is preparing a separate Environmental Package for submittal to the Water Board which includes the CEQA-Plus analysis.

2.4 Project Description

The City intends construct and operate a consolidated water treatment plant to bring the existing Well Nos. 3 and 5 under current MCL's for manganese. The proposed Project includes construction of the following components:

- A 10-inch raw water pipeline approximately 2,700 feet long to deliver water from Well No. 3 to Well No. 5. As seen in Figure 2, this pipeline will run in the existing right of way from the site of Well No. 3 on Railroad Street and south along South Colusa Avenue to the site of Well 5.
- Approximately 1,100 feet of 4-inch sewer pipe to dispose of backwash sludge and other on-site wastewater will be connected to the existing sewer system near the intersection of South Colusa Avenue and Karin Avenue, as seen in Figure 2.
- A 0.75 million gallon storage tank (approximately 30 feet high and 50 feet in diameter) and booster pump station. Note: environmental evaluation of this storage tank was done in previous CEQA documentation under a different funding mechanism. A description of the tank is included herein to show the entirety of the project. There were no significant impacts identified in the previous CEQA documentation associated with construction or operation of this storage tank.
- A water treatment system, including:
 - A Loprest 2,000 gallon per minute Greensand Plus pressure filter system which will utilize sodium hypochlorite to oxidize manganese and would then be absorbed on the surface of the Greensand Plus media.
 - A chemical storage building will contain a sodium hypochlorite storage tank, a chemical skid, a chlorine residual analyzer, and a restroom.

- A 71,000-gallon backwash tank with mixing pumps and a backwash water reclaim pump will be used for backwash storage and sludge settling. The backwash tank overflow will be connected to the existing storm drain system.
- A wet well and lift station will be installed to pump backwash sludge, domestic waste from the restroom, and drainage from the chemical storage building.

Construction:

Construction will occur as plans and funding are in place and is expected to start in August 2018 and be complete by August 2019. All construction staging of equipment and materials for the water treatment system will be within the existing Well No. 5 site and vacant lot immediately to the east.

2.5 Objectives

The primary objectives of the proposed project are as follows:

- The City's primary objective is to provide water treatment while maintaining existing levels of regulatory compliance for the protection of water quality and public health.
- The City seeks to operate the improved water treatment plant with the most cost-effective methods available that meet the City's overall system performance and regulatory compliance requirements.

2.6 Other Required Approvals

The proposed Project will include, but not be limited to, the following regulatory requirements:

- The adoption of a Mitigated Negative Declaration by the City of San Joaquin.
- State Water Resources Control Board approval.

Chapter 3

IMPACT ANALYSIS

Initial Study Checklist

3.1 Environmental Checklist Form

Project title:

San Joaquin Consolidated Water Treatment Project

Lead agency name and address:

City of San Joaquin
21900 Colorado Avenue
San Joaquin, CA 93660

Contact person and phone number:

Elizabeth Nunez, City Manager: 559.693.4311
Alfonso Manrique, PE: 559.473.1371

Project location:

See Section 2.1

Project sponsor's name/address:

City of San Joaquin

General plan designation:

Vacant/Public Facility (City of San Joaquin)
Pipelines will be in existing roadways

Zoning:

LM – Light Manufacturing (City of San Joaquin)
Pipelines will be in existing roadways

Description of Project:

See Section 2.3

Surrounding land uses/setting:

See Section 2.2

Other public agencies whose approval or consultation is required (e.g., permits, financing approval, participation agreements):

See Section 2.5

3.2 Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this Project, involving at least one impact that is a “Potentially Significant Impact” as indicated by the checklist on the following pages.

- | | | |
|--|---|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture Resources and Forest Resources | <input type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources | <input type="checkbox"/> Geology /Soils |
| <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Hazards & Hazardous Materials | <input type="checkbox"/> Hydrology / Water Quality |
| <input type="checkbox"/> Land Use / Planning | <input type="checkbox"/> Mineral Resources | <input type="checkbox"/> Noise |
| <input type="checkbox"/> Transportation/Traffic | <input type="checkbox"/> Utilities / Service Systems | <input type="checkbox"/> Mandatory Findings of Significance |

3.3 Determination

On the basis of this initial evaluation:

- 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.

Travis Crawford, AICP (consultant)
For City of San Joaquin

10/20/17

Elizabeth Nunez

Date

City Manager

City of San Joaquin

I. AESTHETICS

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a. Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

SETTING

The City of San Joaquin (City) lies in the San Joaquin Valley’s central-western region, in western Fresno County. The City is approximately 15 miles east of the Coast Range. The existing Well No. 3 is in the central portion of the City surrounded by commercial and residential land uses while the existing Well No. 5 is at the southernmost edge of the City surrounded by commercial and agricultural land uses. No State Routes are within five miles of the City and there are no designated scenic vistas or scenic resources in the proposed Project vicinity.

RESPONSES

a. Have a substantial adverse effect on a scenic vista?

No Impact. The proposed Project involves installing approximately 3,800 linear feet of pipeline (combined) and constructing a water treatment facility adjacent to the existing Well No. 5 location.

The City of San Joaquin and Fresno County General Plans do not identify any scenic vistas within the Project area; however, the foothills to the west could be considered scenic. A scenic vista is generally

considered a view of an area that has remarkable scenery or a resource that is indigenous to the area. The Project will not impede any views of the foothills.

Construction activities will occur over a 12-month and will be visible from the adjacent roadsides; however, the construction activities will be temporary in nature and will not affect a scenic vista, as none exist in the Project area. The impact will be *less than significant*.

Mitigation Measures: None are required.

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

Less than Significant Impact. There are no state designated scenic highways within the immediate proximity to the Project site. California Department of Transportation Scenic Highway Mapping System identifies SR 198 west of Interstate 5 as an Eligible State Scenic Highway. This is the closest scenic highway, located approximately 23 miles south of the Project site; however, the Project site is both physically and visually separated from SR 198 by intervening land uses. In addition, no scenic highways or roadways are listed within the Project area in the City of San Joaquin's General Plan or Fresno County's General Plan. The proposed Project would not damage any trees, rock outcroppings or historic buildings within a State scenic highway corridor. Any impacts would be considered *less than significant*.

Mitigation Measures: None are required.

c. Substantially degrade the existing visual character or quality of the site and its surroundings?

Less than Significant Impact. The proposed Project involves the installation of pipelines and the construction of a water treatment plant immediately east of the Well No. 5 site. The pipeline will be installed within the existing roadway right-of-way and will not be visible once installed. The existing Well No. 5 site is approximately 410 feet east of S. Colusa Avenue, behind existing commercial buildings. Views of the proposed water treatment plant will be partially obstructed due to the commercial buildings.

Additionally, the water treatment plant will be similar in visual character to the existing landscape and is not likely to be seen as unusual or out of place in the surrounding setting. In addition, public facilities and agriculture are found in close proximity to one another throughout both rural and urban parts of the Central Valley. As such, the proposed Project will not substantially degrade the existing visual character or quality of the area or its surroundings.

The impact will be *less than significant*.

Mitigation Measures: None are required.

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

Less Than Significant Impact. Currently the sources of light in the Project area are from street lights, the vehicles traveling along surrounding roads, and security lights at the existing Well No. 5. No lighting will be associated with pipeline installation. The proposed water treatment plant may include a minimal amount of additional security lighting; however, any additional lighting would not be expected to appreciably change any existing glare or lighting conditions because the visibility of the site from residential areas and public spaces and roadways is limited. In addition, security lighting will be faced downward in a manner that would reduce light spill onto adjacent properties. Accordingly, the proposed Project would not create substantial new sources of light or glare. Potential impacts are *less than significant*.

Mitigation Measures: None are required.

II. AGRICULTURE AND FOREST RESOURCES

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

SETTING

There are 220 acres of agricultural land in the City, generally located on the periphery of the City. None of these agricultural lands are under a Williamson Act Contract.¹

The proposed Project site is located in an area of the City considered urban, built up land by the State Farmland Mapping and Monitoring Program (FMMP). Well No. 3 is completely surrounded by urban land and the agricultural lands to the south of Well No. 5 are considered Prime Farmland by the FMMP. Other land uses in the Project vicinity include active agricultural fields, industrial and commercial development, and the residential housing in the City of San Joaquin.

RESPONSES

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?

No Impact. The Project does not include conversion of farmland to non-farmland. The Project site is located in an area of the City considered urban, built up land by the FMMP. The purpose of the Project is to treat the water from two existing wells so manganese levels fall below MCL's. The proposed Project does not have the potential to result in the conversion of farmland to non-agricultural uses or forestland uses to non-forestland. There is *no impact*.

Mitigation Measures: None are required.

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

No Impact. There are no agricultural lands in the City under a Williamson Act Contract. The proposed Project is not zoned for agricultural and does not propose any zone changes related to agriculture. There is *no impact*.

Mitigation Measures: None are required.

¹ City of San Joaquin 2040 Community Plan. Background Report. June 11. Page 57.

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

No Impact. The proposed Project is not zoned for forestland and does not propose any zone changes related to forest or timberland. There is *no impact*.

Mitigation Measures: None are required.

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

No Impact. No conversion of forestland, as defined under Public Resource Code or General Code, as referenced above, would occur as a result of the proposed Project. There is *no impact*.

Mitigation Measures: None are required.

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. No land conversion from Farmland would occur as a result of the proposed Project. Surrounding land uses include residential, commercial and industrial lands, vacant land, and agricultural land. The proposed Project includes constructing a water treatment plant to bring manganese levels under MCL at two existing wells. As such, the proposed Project does not have the potential to result in the conversion of Farmland to non-agricultural uses or forestland uses to non-forestland. There is *no impact*.

Mitigation Measures: None are required.

III. AIR QUALITY

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

SETTING

The climate of the San Joaquin Valley is characterized by long, hot summers and stagnant, foggy, winters. Precipitation is low and temperature inversions are common. These characteristics are conducive to the formation and retention of air pollutants and are in part influenced by the surrounding mountains which intercept precipitation and act as a barrier to the passage of cold air and air pollutants. The proposed Project lies within the San Joaquin Valley Air Basin (Air Basin), which is managed by the San Joaquin Valley Air Pollution Control District (SJVAPCD or Air District). National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) have been established for the following criteria pollutants: carbon monoxide (CO), ozone (O₃), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), particulate matter (PM₁₀ and PM_{2.5}), and lead (Pb). The CAAQS also set standards for sulfates, hydrogen sulfide, and visibility.

Air quality plans or attainment plans are used to bring the applicable air basin into attainment with all state and federal ambient air quality standards designed to protect the health and safety of residents within that air basin. Areas are classified under the Federal Clean Air Act as either “attainment”, “non-attainment”, or “extreme non-attainment” areas for each criteria pollutant based on whether the NAAQS have been achieved or not. Attainment relative to the State standards is determined by the California Air Resources Board (CARB). The San Joaquin Valley is designated as a State and Federal extreme non-attainment area for O₃, a State and Federal non-attainment area for PM_{2.5}, a State non-attainment area for PM₁₀, and Federal and State attainment area for CO, SO₂, NO₂, and Pb.

Clean Air Act

The federal Clean Air Act of 1970 (as amended in 1990) required the U.S. Environmental Protection Agency (EPA) to develop standards for pollutants considered harmful to public health or the environment. Two types of National Ambient Air Quality Standards (NAAQS) were established. Primary standards protect public health, while secondary standards protect public welfare, by including protection against decreased visibility, and damage to animals, crops, landscaping and vegetation, or buildings. NAAQS have been established for six “criteria” pollutants: carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), ozone (O₃), particulate matter (PM₁₀ and PM_{2.5}), and lead (Pb).

California Air Resources Board

The California Air Resources Board (CARB) is the state agency responsible for implementing the federal and state Clean Air Acts. CARB has established California Ambient Air Quality Standards (CAAQS), which include all criteria pollutants established by the NAAQS, but with additional regulations for Visibility Reducing Particles, sulfates, hydrogen Sulfide (H₂S), and vinyl chloride.

The proposed Project is located within the Air Basin, which includes San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare, and parts of Kern counties and is managed by the SJVAPCD.

Air basins are classified as attainment, nonattainment, or unclassified. Attainment is achieved when monitored ambient air quality data is in compliance with the standards for a specified pollutant. Non-compliance with an established standard will result in a nonattainment designation and an unclassified designation indicates insufficient data is available to determine compliance for that pollutant.

Standards and attainment status for listed pollutants in the Air District can be found in Table 1. Note that both state and federal standards are presented.

**Table 1
Standards and Attainment Status for Listed Pollutants in the Air District**

	Federal Standard	California Standard
Ozone	0.075 ppm (8-hr avg)	0.07 ppm (8-hr avg) 0.09 ppm (1-hr avg)
Carbon Monoxide	9.0 ppm (8-hr avg) 35.0 ppm (1-hr avg)	9.0 ppm (8-hr avg) 20.0 ppm (1-hr avg)
Nitrogen Dioxide	0.053 ppm (annual avg)	0.30 ppm (annual avg) 0.18 ppm (1-hr avg)
Sulfur Dioxide	0.03 ppm (annual avg) 0.14 ppm (24-hr avg) 0.5 ppm (3-hr avg)	0.04 ppm (24-hr avg) 0.25 ppm (1hr avg)
Lead	1.5 µg/m ³ (calendar quarter) 0.15 µg/m ³ (rolling 3-month avg)	1.5 µg/m ³ (30-day avg)
Particulate Matter (PM10)	150 µg/m ³ (24-hr avg)	20 µg/m ³ (annual avg) 50 µg/m ³ (24-hr avg)
Particulate Matter (PM2.5)	15 µg/m ³ (annual avg)	35 µg/m ³ (24-hr avg) 12 µg/m ³ (annual avg)

µg/m³ = micrograms per cubic meter

Additional State regulations include:

CARB Portable Equipment Registration Program – This program was designed to allow owners and operators of portable engines and other common construction or farming equipment to register their equipment under a statewide program so they may operate it statewide without the need to obtain a permit from the local air district.

U.S. EPA/CARB Off-Road Mobile Sources Emission Reduction Program – The California Clean Air Act (CCAA) requires CARB to achieve a maximum degree of emissions reductions from off-road mobile sources to attain State Ambient Air Quality Standards (SAAQS); off- road mobile sources include most construction equipment. Tier 1 standards for large compression-ignition engines used in off-road mobile sources went into effect in California in 1996. These standards, along with ongoing rulemaking, address emissions of nitrogen oxides (NOX) and toxic particulate matter from diesel engines. CARB is currently developing a control measure to reduce diesel PM and NOX emissions from existing off-road diesel equipment throughout the state.

California Global Warming Solutions Act – Established in 2006, Assembly Bill 32 (AB 32) requires that California’s GHG emissions be reduced to 1990 levels by the year 2020. This will be implemented through a statewide cap on GHG emissions, which will be phased in beginning in 2012. AB 32 requires CARB to develop regulations and a mandatory reporting system to monitor global warming emissions levels.

San Joaquin Valley Air Pollution Control District

The San Joaquin Valley Air Pollution Control District (SJVAPCD) is the local agency charged with preparing, adopting, and implementing mobile, stationary, and area air emission control measures and standards. The SJVAPCD has rules and regulations that may apply to the Project, including, but not limited to:

Rules 4101 (Visible Emissions) and 4102 (Nuisance) – These rules apply to any source of air contaminants and prohibits the visible emissions of air contaminants or any activity which creates a public nuisance.

Rule 4702 (Internal Combustion Engine) – This rule applies to any internal combustion engine rated at 25 brake horsepower or greater.

Regulation VIII (Fugitive PM₁₀ Prohibitions) – This regulation, a series of eight regulations, is designed to reduce PM₁₀ emissions by reducing fugitive dust. Regulation VIII requires implementation of control measures to ensure that visible dust emissions are substantially reduced. The control measures are summarized in Table 2.

Table 2
San Joaquin Valley Air Pollution Control District
Regulation VIII Control Measures for Construction Related Emissions of PM₁₀

The following are required to be implemented at all construction sites:
All disturbed areas, including storage piles, which are not actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizers/suppressants, covered with a tarp or other similar cover, or vegetative
All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions during construction using water or chemical stabilizer
All land clearing, grubbing, scraping, excavation, land leveling, grading cut and fill, and demolition activities during construction shall be effectively controlled of fugitive dust emissions utilizing application of water or pre-soaking.
When materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from top of container shall be maintained.
All operations shall limit, or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of
Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.
Within urban areas, trackout shall be immediately removed when it extends 50 or more feet from the site at the end of each workday.
Any site with 150 or more vehicle trips per day shall prevent carryout and trackout.

RESPONSES

a. Conflict with or obstruct implementation of the applicable air quality plan?

Less than Significant Impact. The San Joaquin Valley Air Basin (SJVAB) is designated nonattainment of state and federal health based air quality standards for ozone and PM_{2.5}. The SJVAB is designated nonattainment of state PM₁₀. To meet Federal Clean Air Act (CAA) requirements, the SJVAPCD has multiple air quality attainment plan (AQAP) documents, including:

- Extreme Ozone Attainment Demonstration Plan (EOADP) for attainment of the 1-hour ozone standard (2004);
- 2007 Ozone Plan for attainment of the 8-hour ozone standard;
- 2007 PM₁₀ Maintenance Plan and Request for Redesignation; and
- 2008 PM_{2.5} Plan.

Because of the region's non-attainment status for ozone, PM_{2.5}, and PM₁₀, if the Project-generated emissions of either of the ozone precursor pollutants (ROG or NO_x), PM₁₀, or PM_{2.5} were to exceed the SJVAPCD's significance thresholds, then the Project uses would be considered to conflict with the attainment plans. In addition, if the Project uses were to result in a change in land use and corresponding increases in vehicle miles traveled, they may result in an increase in vehicle miles traveled that is unaccounted for in regional emissions inventories contained in regional air quality control plans.

As discussed in Impact c), below, predicted construction and operational emissions would not exceed the SJVAPCD's significance thresholds for ROG, NO_x, PM₁₀, and PM_{2.5}. As a result, the Project uses would not conflict with emissions inventories contained in regional air quality attainment plans, and would not result in a significant contribution to the region's air quality non-attainment status. Additionally, the Project would comply with all applicable rules and regulations. Therefore, this impact is *less than significant*.

Mitigation Measures: None are required.

b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less than Significant Impact. Because ozone is a regional pollutant², the pollutants of concern for localized impacts are CO and fugitive PM₁₀ dust from construction. Ozone and PM₁₀ exhaust impacts are addressed under Impact c), below. The proposed Project would not result in localized CO hotspots or PM₁₀ impacts, as discussed below. Therefore, the proposed Project would not violate an air quality standard or contribute to a violation of an air quality standard in the proposed Project area.

Localized PM₁₀

Localized PM₁₀ would be generated by proposed Project construction activities, which would include earth-disturbing activities. The SJVAPCD indicates that all control measures in Regulation VIII are required for all construction sites by regulation. The SJVAPCD's Guide for Assessing and Mitigating Air Quality Impacts³ (GAMAQI) lists additional measures that may be required of very large projects or projects close to sensitive receptors. If all appropriate "enhanced control measures" in the GAMAQI are not implemented for very large projects or those close to sensitive receptors, then construction impacts would be considered significant (unless the Lead Agency provides a satisfactory detailed explanation as to why a specific measure is unnecessary). The GAMAQI also lists additional control measures (Optional Measures) that may be implemented if further emission reductions are deemed necessary by the Lead Agency. The SJVAPCD's Regulation VIII (Fugitive PM₁₀ Prohibitions) has been updated and expanded since the GAMAQI guidance was written in 2002. Regulation VIII now includes the "enhanced control measures" contained in the GAMAQI.

The proposed Project would comply with the SJVAPCD's Regulation VIII dust control requirements during any proposed construction (including Rules 8011, 8031, 8041, and 8071). Compliance with this regulation would reduce the potential for significant localized PM₁₀ impacts to *less than significant* levels.

CO Hotspot

Localized high levels of CO are associated with traffic congestion and idling or slow-moving vehicles. The SJVAPCD provides screening criteria to determine when to quantify local CO concentrations based on impacts to the level of service (LOS) of roadways in the Project vicinity.

As further discussed in the Transportation/Traffic checklist evaluation, the Project would not generate, or substantially contribute to, additional traffic that would reduce the level of surface on local

² San Joaquin Valley Air Pollution Control District. Air Quality Plans. Ozone Plans, 8-hour ozone standard. https://www.valleyair.org/Air_Quality_Plans/Ozone_Plans.htm. Accessed April 2017.

³ San Joaquin Valley Air Pollution Control District. March 19, 2015. Guide for Assessing and Mitigating Air Quality Impacts. http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf. Accessed April 2017.

roadways. Therefore, the Project would not significantly contribute to an exceedance that would exceed state or federal CO standards. Impacts are considered *less than significant*.

Mitigation Measures: None are required.

c. 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Less than Significant Impact. The nonattainment pollutants for the SJVAPCD are ozone, PM₁₀ and PM_{2.5}. Therefore, the pollutants of concern for this impact are ozone precursors, regional PM₁₀, and PM_{2.5}. Ozone is a regional pollutant formed by chemical reaction in the atmosphere, and the Project’s incremental increase in ozone precursor generation is used to determine the potential air quality impacts, as set forth in the GAMAQI.

The annual significance thresholds to be used for the Project emissions are as follows⁴:

Pollutant/ Precursor	Construction Emissions (tpy)	Operational Emissions (permitted) (tpy)	Operational Emissions (non- permitted) (tpy)
CO	100	100	100
NOx	10	10	10
ROG	10	10	10
SOx	27	27	27
PM₁₀	15	15	15
PM_{2.5}	15	15	15

The estimated annual construction and operational emissions are shown below. The California Emissions Estimator (CalEEMod), Version 2016.3.1, was used to estimate construction of the water treatment plant and operational (vehicle trips) emissions. The water treatment plant will run off electrical power so there will be no on-site emissions generated by plant operations. The Sacramento Metropolitan Air Quality Management District’s Road Construction Emissions Model, Version 8.1.0 was utilized to estimate emissions generated from installing the approximately 3,800 linear feet of pipeline. Modeling results are provided in Table 3 and the CalEEMod and Road Construction Emissions Model output files are provided in Appendix A.

⁴ San Joaquin Valley Air Pollution Control District. March 19, 2015. Guide for Assessing and Mitigating Air Quality Impacts. http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf. Page 80. Accessed March 2017.

Table 3
Proposed Project Construction and Operation Emissions

Pollutant/ Precursor	Construction Emissions (tpy)	Threshold/ Exceed?	Operational Emissions (permitted) (tpy)	Threshold/ Exceed?
CO	0.56	100/N	0.02	100/N
NOx	0.90	10/N	0.01	10/N
ROG	0.10	10/N	0.00	10/N
SOx	0.00	27/N	0.00	27/N
PM ₁₀	0.20	15/N	0.00	15/N
PM _{2.5}	0.08	15/N	0.00	15/N
CO _{2e}	91.33	n/a	8.39	n/a

Any impacts would be considered *less than significant*.

Mitigation Measures: None are required.

d. Expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact. Sensitive receptors are those segments of the population most susceptible to poor air quality (i.e., children, the elderly, and those with pre-existing serious health problems affected by air quality). Land uses where sensitive individuals are most likely to spend time include schools and school yards, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential communities are also considered sensitive receptors.⁵ The nearest sensitive receptors to the proposed Project site are residential houses located immediately adjacent to the existing Well No. 3 site, and the residences along S. Colusa Street (the proposed pipeline alignment).

Construction would take place within the vicinity of sensitive receptors, however, construction emissions would be well below SJVAPCD thresholds and be temporary in nature. Therefore, the small amount of emissions generated and the short duration of the construction period would not expose sensitive receptors to substantial pollutant concentrations. Operational emissions would be limited to the insignificant emissions generated by the water treatment plant and the infrequent maintenance vehicle trips at the water treatment plant. Impacts to sensitive receptors would be *less than significant*.

Mitigation Measures: None are required.

⁵ San Joaquin Valley Air Pollution Control District. March 19, 2015. Guide for Assessing and Mitigating Air Quality Impacts. http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf. Page 44. Accessed April 2017.

e. Create objectionable odors affecting a substantial number of people?

Less than Significant Impact. If the proposed Project were to result in a sensitive odor receptor being located in the vicinity of an undesirable odor generator, the impact would be considered significant. The SJVAPCD regulates odor sources through its nuisance rule, Rule 4102, but has no quantitative standards for odors. The SJVAPCD presents a list of project screening trigger levels for potential odor sources in its GAMAQI, which is displayed in Table 4. If the project were to result in sensitive receptors being located closer to an odor generator in the list in Table 4 than the recommended distances, a more detailed analysis including a review of SJVAPCD odor complaint records is recommended.

**Table 4
Screening Levels for Potential
Odor Sources⁶**

Odor Generator	Distance (Miles)
Wastewater Treatment Facilities	2
Sanitary Landfill	1
Transfer Station	1
Composting Facility	1
Petroleum Refinery	2
Asphalt Batch Plant	1
Chemical Manufacturing	1
Fiberglass Manufacturing	1
Painting/Coating Operations (e.g., auto body shop)	1
Food Processing Facility	1
Feed Lot/Dairy	1
Rendering Plant	1

Significant odor problems are defined as more than one confirmed complaint per year averaged over a three year period or three unconfirmed complaints per year averaged over a three-year period.

The water treatment plant would not be a source of objectionable odors to sensitive receptors. While the potential for odor formation is minimal, any odors released from the treatment process would be localized to the project site (email communication with Paul Sereno, project engineer – August 2017). and as a result, any impacts would be considered *less than significant*.

Mitigation Measures: None are required.

⁶ San Joaquin Valley Air Pollution Control District. March 19, 2015. Guide for Assessing and Mitigating Air Quality Impacts. http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf. Page 103. Accessed March 2017.

IV. BIOLOGICAL RESOURCES

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	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 Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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 Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

- 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?

SETTING

Colibri Ecological Consulting, LLC, (CEC) was retained to conduct a reconnaissance survey to describe the biotic resources of the proposed Project site and to evaluate potential impacts to those resources that could result from proposed Project development.

Methodology

CEC performed a search of the California Natural Diversity Database (CNDDDB) and the California Native Plant Society’s Inventory of Rare and Endangered Plants (CNPS) for records of special-status plants and animal species in the proposed Project area. Regional lists of special-status species were compiled using U.S. Fish and Wildlife Service, CNDDDB, and CNPS database searches confined to the San Joaquin 7.5-minute United States Geological Survey topographic quad, which encompasses the proposed Project site, and the eight surrounding quads (Cantua Creek, Five Points, Helm, Jamesan, Kerman, Tranquility, Tres Picos Farms, and Westside). Local lists of special-status species were compiled using CNDDDB records from within five miles of the proposed Project site and species for which the Project site does not provide suitable habitat were eliminated from further consideration. Field surveys were conducted on January 24, 2017. The results of these database searches and surveys are summarized herein and the full reports are included in Appendix B – Biological Resource Evaluation (March 2017).

Land Use, Habitats and Observed Species

The proposed Project site consists of developed and disturbed land cover in an agricultural, residential, and commercial setting, as seen in Figure 2 – Site Aerial. Residential and commercial development and several vacant lots border the Project site’s paved road surfaces along Railroad Avenue and South Colusa Avenue. The Project site’s dirt road surface along West Chery Lane is bordered by commercial development to the north, agricultural fields to the south, and a vacant lot to the east. A 0.8-acre

ponding basin, which contained water at the time of the biological survey, is approximately 30 feet northeast of the location for the proposed water treatment system. The proposed Project site does not occur in a designated or proposed critical habitat.

The proposed Project site supports vegetation typical of highly disturbed areas. Unpaved portions of the Project site are dominated by foxtail (*Hordeum leporinum*) and other annual grasses, cheeseweed (*Malva parviflora*), filaree (*Erodium cicutarium*), and other ruderal plants (see Table 1 of Appendix B). Trees, which occur along Colusa Avenue, include Mexican fan palm (*Washingtonia robusta*), and blue gum (*Eucalyptus globulatus*). A total of 21 plant species (3 native and 18 nonnative) and 10 bird species were detected during the reconnaissance survey (see Table 2 of Appendix B).

Special Status Species

The official species list for the Project site includes eight species listed as threatened or endangered under the FESA, and can be seen in Appendix B. Those species include the threatened vernal pool fairy shrimp (*Branchinecta lynchi*), the threatened Delta smelt (*Hypomesus transpacificus*), the endangered blunt-nosed leopard lizard (*Gambelia sila*), the threatened California red-legged frog (*Rana draytonii*), the threatened giant garter snake (*Thamnophis gigas*), the endangered Fresno kangaroo rat (*Dipodomys nitratoides exilis*), the endangered Giant kangaroo rat (*Dipodomys ingens*), and the endangered San Joaquin kit fox (*Vulpes macrotis mutica*). The survey area lacked habitat for all of the species aforementioned. Therefore, those eight species are not addressed further.

Searching the CNDDDB for records of special-status species from within the San Joaquin 7.5 minute USGS topographic quad and the eight surrounding quads produced 135 records of 37 species, eight of which are listed as threatened or endangered under the FESA. The entire list can be seen in Appendix B. Of those species, eight are known from within five miles of the proposed Project site, and three of those are listed as threatened or endangered under the FESA. Those include the endangered longhorn fairy shrimp (*Branchinecta longiantenna*), the threatened giant garter snake, which is also state-listed as threatened, and the endangered Fresno kangaroo rat, which is also state-listed as endangered. The other non-federally listed species known from within five miles of the proposed Project site include the state-listed as threatened Swainson's hawk (*Buteo swainsoni*); the burrowing owl (*Athene cunicularia*), mountain plover (*Charadrius montanus*), and American badger (*Taxidea taxus*), which are recognized as State Species of Special Concern; and Munz's tidy-tips (*Layia munzii*), recognized by CNPS with a Rare Rank of 1B.2. The survey area lacked habitat for all of the species identified in the CNDDDB search, with the exception of Swainson's hawk. Therefore, only Swainson's hawk will be further discussed.

Swainson's hawk

The Swainson's hawk is a long-distance migrant, breeding in the Western United States and Canada and over-wintering mainly in southern South America. Historically, Swainson's hawks bred in most of the open regions of California, occupying grasslands, shrubsteppe, canyons, foothills, and small interior valleys. The current range of the species in California is substantially diminished, being largely limited to the Central Valley and Great Basin.⁷

Swainson's hawks are aerial foragers, soaring or coursing over open habitats, sometimes over long distances (up to 29 km), in search of food. During the breeding season in California, Swainson's hawks prey primarily on small mammals, including voles, pocket gophers, and deer mice. Following the breeding season, their diet shifts to largely insect prey, especially grasshoppers and crickets. Swainson's hawks occupy large territories in the Central Valley that contain a suitable nesting site and large swaths of open foraging habitat. In the Central Valley, these foraging habitats consist primarily of agricultural areas, preferring alfalfa fields to other crops. In the Central Valley, they most frequently construct their nests in cottonwoods (*Populus* sp.), willows (*Salix* sp.), sycamores (*Platanus* sp.), valley oaks (*Quercus lobata*), walnuts (*Juglans* sp.), or eucalyptus (*Eucalyptus* sp.).⁸

There is one CNDDDB occurrence record of Swainson's hawk from within five miles of the proposed Project site (see Figure 7 of Appendix B). This 2011 record consists of a nest in eucalyptus tree, 1.15 miles northeast of the proposed Project site. Although the Project site itself does not provide habitat for Swainson's hawk, potential nest trees and foraging habitat in the form of alfalfa fields are present within the 0.5-mile buffer surrounding the Project site.

Regulated Habitats

No feature on or within 50 feet of the proposed Project site qualifies as a regulated habitat. Due to the lack of direct or indirect connectivity or adjacency with navigable waters or interstate waters and the lack of potential to support interstate or foreign commerce, the ponding basin 30 feet northeast of the proposed treatment system would not qualify as a federally protected wetland as defined by Section 404 of the Clean Water Act. Therefore, the basin would not fall under the jurisdiction of the USACE. Likewise, as this feature is neither a lake nor a stream, it would not be regulated by the CDFW.

⁷ Biological Resource Evaluation. City of San Joaquin Water System Improvement Project. Colibri Ecological Consulting, March 2017. Appendix B.

⁸ Ibid.

The nearest stretch of river designated as Wild and Scenic is along the Kings River, approximately 70 miles northeast of the Project site. The San Joaquin River, with no Wild and Scenic designation, is approximately 12 miles north of the proposed Project site.

No marine or estuarine fishery resources or migratory routes to and from anadromous fish spawning grounds are present in the survey area. In addition, no EFH, defined by the Magnuson-Stevens Act as those resources necessary for fish spawning, breeding, feeding, or growth to maturity, are present in the survey area.

The Project site is not within a 100-year flood plain. The nearest flood plains are approximately two miles east of the Project site along the Fresno Slough Bypass and approximately two miles south along the Fresno Slough near Floral Avenue.

RESPONSES

- 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 Game or U.S. Fish and Wildlife Service?

Less than Significant Impact with Mitigation. The state-listed as threatened Swainson’s hawk could nest in the vicinity of the proposed Project site. Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Disturbance that causes nest abandonment or loss of reproductive effort is considered take by the CDFW. Loss of fertile eggs or nestlings, or any activities resulting in nest abandonment, would constitute a significant impact. Implementation of Mitigation Measure Bio-1 would reduce any impacts to Swainson’s hawk to *less than significant*.

Migratory birds are expected to nest on or in the vicinity of the Project site. Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Disturbance that causes nest abandonment or loss of reproductive effort is considered take by the CDFW. Loss of fertile eggs or nestlings, or any activities resulting in nest abandonment, could constitute a significant impact if the species is particularly rare in the region. Construction activities such as trenching or grading that disturb a rare nesting bird on the site or immediately adjacent to the construction zone could constitute a significant impact. Implementation of Mitigation Measure Bio-2 would reduce the potential impact to a *less than significant* level.

Mitigation Measures:

Bio-1: If construction activities will occur during the Swainson’s hawk nesting season (March 15 – June 30), a qualified biologist shall conduct a survey for active Swainson’s hawk nests within 0.25 miles of all work locations no more than 14 days prior to the start of construction. If an active nest is found within 0.25 miles and the activity would disrupt nesting, a buffer or limited operating period shall be implemented in consultation with the California Department of Fish and Wildlife.

Bio-2: If construction activities occur during the migratory bird nesting season (February through August), a qualified biologist shall conduct a survey for active bird nests within 250 feet of all work locations no more than 14 days prior to the start of construction. If an active nest is found close enough to the construction area to be disturbed by the construction activities, the qualified biologist shall determine the extent of a construction-free buffer to be established around the nest. If work cannot proceed without disturbing the nesting birds, work may shall be halted or redirected to other areas until nesting and fledging are completed or the nest has otherwise failed for non-construction related reasons.

- 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 Game or U.S. Fish and Wildlife Service?

No Impact. There is no riparian habitat or other sensitive natural community in the proposed Project vicinity. There is *no impact*.

Mitigation Measure: None required.

- 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?

No Impact. There are no protected wetlands in the proposed Project vicinity. There is *no impact*.

Mitigation Measure: None required.

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

No Impact. The Project site does not contain features likely to function as a wildlife movement corridor as the proposed Project includes the installation of a pipeline along an existing road alignment and the construction of a water treatment plant on and immediately adjacent to the existing Well No. 5 site. The Project will have no effect on the Pacific flyway; birds using the flyway will continue to do so during and following Project development.

Mitigation Measure: None required.

e.,f. 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, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Impact. Proposed Project design is consistent with the goals and policies of the City of San Joaquin General Plan. The Project will be consistent with the goals and policies of the Fresno County General Plan with implementation of the mitigation measures presented earlier. These measures require disturbance-free buffers around the active nests of special status animals and migratory birds, which will ensure consistency with the General Plan policy that calls for construction setbacks to protect significant wildlife resources. The Project will not conflict with the General Plan's policies related to "no-net-loss" of wetlands and preservation of riparian habitats because wetlands and riparian habitats are absent from the Project site. The Project will not result in significant loss of habitat for special status animal species and will therefore be consistent with General Plan policies related to wildlife habitat. There are no adopted habitat conservation plans or natural community conservation plans in the City of San Joaquin. There are *no impacts* with regard to this impact analysis.

Mitigation. None required.

V. CULTURAL RESOURCES

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

SETTING

The proposed Project is in the San Joaquin Valley, the southern half of an elongated trough called the Great Valley. The Great Valley is a 50-mile-wide lowland that extends approximately 500 miles south from the Cascade Range to the Tehachapi Mountains. The Great Valley is divided by two prominent hydrologic features, the Sacramento and San Joaquin Rivers, which drain into San Francisco Bay. Between the Mesozoic and Cenozoic eras, the Great Valley served as a shallow marine embayment containing numerous lakes, primarily within the San Joaquin Valley. As a result, the upper levels of the Great Valley floor are composed of alluvium and flood materials. Below these strata are layers of marine and nonmarine rocks, including claystone, sandstone, shale, basalt, andesite, and serpentine. Waters began to diminish about 10 million years ago, eventually dwindling to the drainages, tributaries, and small lakes that exist today.⁹

⁹ Appendix C. Cultural Resource Inventory for the City of San Joaquin Well No. 3 and Well No. 5 Manganese Removal System Project, Fresno County, California. April 2017.

The San Joaquin Valley makes up the Great Valley's lower half. It is bounded by the Sacramento/San Joaquin River Delta to the north, the mountains of the Sierra Nevada to the east, the Coast Ranges to the west, and the Tehachapi Mountains to the south. The San Joaquin Valley comprises two distinct hydrologic subbasins: the San Joaquin and the Tulare. The San Joaquin Subbasin is drained by the San Joaquin River. The Tulare Subbasin has no regular surface outlet; it was formed by the merging of alluvial fans from the Kings River to the east and the Los Gatos Creek to the west. The Tulare Subbasin rivers—the Kings, Kaweah, Tule, and Kern—flowed into the subbasin forming large inland lakes. The Tulare Lake basin lies approximately 30 miles south of the Project. This seasonal lake was extremely shallow and expanded horizontally across the flat landscape as it filled with winter and spring runoff. Its broad but shallow dimensions resulted in wide fluctuations of the lake's shoreline during both prehistoric and historical times. As it filled beyond its natural alluvial barriers, water was channeled down the Fresno Slough into the San Joaquin River. Tulare Lake was the largest naturally occurring lake in California as recently as 1920. The size of the lake was gradually reduced by historic development of irrigation systems and reclamation of waters draining from the Kings River and other sources. Today the lake only exists in times of flooding, and the deep reserve of groundwater is tapped for private and public use.¹⁰

The Fresno Slough is approximately four miles east of the proposed Project area. Historically, it served as the northern flood outlet of Tulare Lake and the Kings River. The Fresno Slough was also a flooded backwater swamp of the San Joaquin River. Prior to agricultural development and the control of the natural waterways, the area between Tulare Lake and the San Joaquin River was a vast swampland. A historical account written by George Derby, who circa 1850 had aspired to travel up the slough that connected the San Joaquin with Tulare Lake reports:

*the ground between the lake and the San Joaquin entirely cut up by small sloughs which had overflowed in every direction making the country a perfect swamp, which I found it a matter of great difficulty to cross.*¹¹

Ethnography

The Project lies within the homeland of the Southern Valley Yokuts. At the time of first contact with the Spanish missionaries, the Yokuts people, which also includes northern valley and foothill groups, collectively inhabited the San Joaquin Valley as well as the eastern foothills of the Sierra Nevada from the Fresno River southward to the Kern River. The Yokuts language belongs to the broader Penutian family, which subsumes a relatively diverse assemblage of languages including Miwok, Costanoan,

¹⁰ Appendix C. Cultural Resource Inventory for the City of San Joaquin Well No. 3 and Well No. 5 Manganese Removal System Project, Fresno County, California. April 2017.

¹¹ Ibid.

Maiduan, and Wintuan. Compared to other Penutian languages, however, Yokuts shows considerable internal linguistic homogeneity, especially given the extent of its geographic distribution. Dialects differ minimally and were mutually intelligible, at least among speakers of contiguous groups. This relative lack of linguistic differentiation suggests that ancestors of the Yokuts entered California after the arrival and subsequent radiation of the more linguistically diverse Penutian groups such as the Miwok and Costanoan.¹²

At the broader interregional level, the villages of Tulare Lake profited from the east–west trade of goods that flowed between the Pacific Coast, Central Valley, Sierra Nevada, and Great Basin (Davis 1961). In particular, the village of *Bubal*, located on a dune causeway that provided access across the swamps of the southern lakeshore, served as a natural intermediary along the trade routes. Latta (1977:141–143) states that to some extent the village of *Udjiu*, which marked the trailhead for the route west toward the coast, also served as a trading center. The southern Yokuts no doubt used their local staples (e.g., freshwater fish, acorns, and tule reeds) to barter for such goods as Olivella beads and other shell material from the west as well as obsidian from the east. Along with locally produced soapstone bowls and ground stone implements, beads and pendants made from Pacific Coast seashells are found at CA-FRE-49, the site of *Udjiu*.¹³

History

During the mid to late 1840s settlers began to claim rights to former Mexican land grants in the area. Struggles ensued with the Indians as the claims were made and the settlers waited to be recognized legally by the U.S. government during a period of conflict and confusion over the ownership of these lands. Several government expeditions to the southern San Joaquin Valley during the mid to late 1840s resulted in recommendations for the development of agricultural settlements that would permanently alter the area. In 1853, a project to develop irrigations systems near Visalia was implemented as rich alluvial fans created by flooding of the Kaweah and Kings rivers created highly desirable agricultural lands. By the beginning of the twentieth century, large tracts of land in the Project vicinity were under irrigation. This, combined with the availability of federally surveyed lands for purchase and the establishment of transportation routes, increased the rate of settlement throughout the basin.¹⁴

Petroleum was identified in the San Joaquin Valley in 1864 on the eastern slope of the southern Coast Ranges. The first company to organize was the San Joaquin Petroleum Company of Fresno County in 1865. Most early oil companies achieved little success because efficient techniques for drilling,

¹² Appendix C. Cultural Resource Inventory for the City of San Joaquin Well No. 3 and Well No. 5 Manganese Removal System Project, Fresno County, California. April 2017.

¹³ Ibid.

¹⁴ Ibid.

transporting, and refining had not been developed. Technological advances by the 1890s resulted in better drilling methods and commercial refineries. Oil industry development in Fresno County is centered around the Coalinga Oil Field, which witnessed its first boom in 1897 with Chanslor and Caulfield's Blue Goose Well. Additional oil fields eventually were discovered near the communities of Burrel, Helm, Riverdale, and Five Points.¹⁵

The southwestern San Joaquin Valley has seen further developments since the 1960s, including the construction of the California Aqueduct and several major highways.

Methodology

To meet State and federal requirements, the City retained Applied EarthWorks, Inc. (Æ) to conduct background research, complete a records search, request a search of the Native American Heritage Commission's Sacred Lands File and reach out to appropriate Native American contacts, conduct a cultural resources survey, and prepare a technical report, dated April 2017 (see Appendix C). The results of the Report are summarized herein and were used to support the determinations made in this CEQA document.

Native American Outreach

On January 20, 2017, Æ contacted the Native American Heritage Commission (NAHC) in Sacramento, California. Æ provided a brief description of the Project and a map showing its location and requested that the NAHC perform a search of the Sacred Lands File to determine if any Native American resources have been recorded in the immediate study area. Æ also requested a current list of local Native American tribes and representatives to contact for additional information.

Records Search and Site-Specific Research

Æ requested a records search of the CHRIS from the SSJVIC at California State University, Bakersfield on January 20, 2017. The records search encompassed the Project area and all land within a 0.5 mile radius of the Project. Sources consulted included archaeological site and survey base maps, reports of previous investigations, cultural resource records, the listings of the Historic Properties Directory of the Office of Historic Preservation, Archaeological Determinations of Eligibility, and the California Inventory of Historic Resources (Appendix C of Appendix C).

In addition to the records search, Æ consulted various online sources, primarily to ascertain the general chronology of land use in the proposed Project area. These included the listings of the National

¹⁵ Appendix C. Cultural Resource Inventory for the City of San Joaquin Well No. 3 and Well No. 5 Manganese Removal System Project, Fresno County, California. April 2017.

Register of Historic Places, the California Register of Historical Resources, California Historical Landmarks, and California Points of Historical Interest as well as historical USGS maps, Fresno County property atlases available from the Online Archive of California, and aerial photographs in the collection of the Henry Madden Library at California State University, Fresno, accessed using the Map and Aerial Locator Tool (MALT).

Pedestrian Survey

On February 24, 2017, Æ Staff Archaeologists Jessica Jones and Josh Tibbet conducted a pedestrian survey of the proposed Project area. Jones and Tibbet surveyed the area using parallel transects spaced 15–20 meters apart. A Trimble Global Positioning System unit was used to maintain transect spacing. Tibbet photographed the Project area conditions with an iPhone 6 and recorded observations on a Survey Field Records form. All field records and photographs are archived at Æ's office in Fresno, California.

Findings and Results

Native American Outreach

In a letter dated January 26, 2017, the NAHC replied that a search of the Sacred Lands File failed to indicate the presence of Native American cultural resources in the immediate Project area. However, the NAHC cautioned that the absence of specific site information in their file does not indicate the absence of cultural resources in the Project area. The NAHC suggested contacting other sources who might have specific knowledge regarding Native American use of the Project areas and provided contact information for seven Native American individuals, representing four organizations (Appendix B of Appendix C).

On February 10, 2017, Æ sent a letter describing the Project and its location to each of the following;

- Delia Dominguez, Chairperson, Kitanemuk & Yowlumne Tejon Indians;
- Katherine Erolinda Perez, Chairperson, North Valley Yokuts Tribe;
- Rueben Barrios, Chairperson, Santa Rosa Rancheria Tachi Yokut Tribe;
- Lois Martin, Chairperson, Southern Sierra Miwuk Nation;
- Leanne Walker-Grant, Chairperson, Table Mountain Rancheria of California;
- Bob Pennell, Cultural Resources Director, Table Mountain Rancheria of California;
- Kerri Vera, Environmental Department, Tule River Indian Tribe;

- Neil Peyron, Chairperson, Tule River Indian Tribe;
- Joey Garfield, Tribal Archaeologist, Tule River Indian Tribe;

Æ received responses from two of the organizations. Bob Pennell, Table Mountain Rancheria’s Cultural Resources Director, responded with a letter on February 22, 2017, declining the Tribe’s participation at this time, but would appreciate being notified of any identified cultural resources. In a March 8, 2017 e-mail, Felix Christman, on behalf of Kerri Vera, stated that the Project area is in close proximity to the Table Mountain Rancheria and would defer communication, unless Table Mountain Rancheria could not be reached. On March 31, 2017, Æ followed up with an email or phone call to those individuals for which no response was received. In a April 9, 2017 email, Chairperson Katherine Perez of the North Valley Yokuts Tribe responded that there is no known sensitivity in the Project area. The full text of all responses received are contained in Appendix B of Appendix C. Æ will forward any additional responses received to the City of San Joaquin.

Records Search

On February 8, 2017, the SSJVIC responded with a letter detailing the records search results. The records search revealed two reports (FR-02354 and FR-02532) on file pertaining to previous studies within the Project APE (Area of Potential Effect), as well as six reports documenting investigations (FR-00116, -00511, -00631, -00632, -01857, -02416) within a half mile of the Project APE. The studies that occurred within the APE include a cultural resources investigation for a water storage tank and a sensitivity study for the Carvalo Solar PV Project Gen-Tie lines. No resources were recorded as a result of these earlier studies.

There are two known cultural resources recorded as a result of investigations that occurred within a half-mile radius of the proposed Project area. The first is P-10-006614, a segment of the Panoche-Kearney 230 kV transmission line, and the second is P-10-006632, the James Irrigation District Lateral R Canal. Both were recorded as part of a cultural resources inventory for the Central Valley Power Connect Project cited in report number FR-02769.¹⁶ The SSJVIC records search results are detailed in Appendix C of Appendix C.

Pedestrian Survey

The Project lies in a developed area of the City and much of the area of potential effect (APE) along S. Colusa Avenue is covered by paved roads, sidewalks, and landscaped vegetation (see Figure 2). At the

¹⁶ Appendix C. Cultural Resource Inventory for the City of San Joaquin Well No. 3 and Well No. 5 Manganese Removal System Project, Fresno County, California. April 2017.

southern end of the Project APE, where the new water line will connect into Well No. 5, there is a dirt road that leads to a basin currently filled with water. Thick grass and weeds covers the ground adjacent to the dirt road obscuring all visibility of the native surface. At the intersection of Railroad Street and S. Colusa Avenue, the APE turns southwest down Railroad Street. Houses line the south side of the road and industrial developments border the north side, leaving little visibility of the natural ground surface.

Æ's archaeologists observed modern trash consisting of broken glass, plastic bottles, soda cans, and various metal and plastic debris strewn along S. Colusa Avenue and the dirt road to the basin. The proposed Project falls within the boundary of the James Irrigation District; however, no irrigation ditches, laterals, or features associated with the district lie within the APE. Æ did not observe any archaeological sites, isolated artifacts, features, historic built environment resources or other cultural resources in the APE.

Regulations

The Project is subject to the California Environmental Quality Act (CEQA), which holds municipal and state agencies accountable for impacts to the cultural environment. If a project has the potential to cause substantial adverse change in the characteristics of an important cultural resource, known as a "historical resource" under CEQA—either through demolition, destruction, relocation, alteration, or other means—then the project is judged to have a significant impact on the environment (CEQA Guidelines, Section 15064.5[b]). Section 15064.5(a) of the CEQA Guidelines (as amended) defines a historical resource as one that: (1) is listed or determined eligible for listing in the California Register of Historical Resources (California Public Resources Code [PRC] Section 5024.1; Title 14, California Code of Regulations [CCR], Section 4852); (2) is included in a local register of historical resources (pursuant to Section 5020.1[k]) of the PRC) or identified as significant in a historical resources survey per the California Register eligibility criteria (PRC 5024.1[c]); or (3) is considered eligible by a lead agency under PRC 5020.1(j) or 5024.1. The definition subsumes a variety of resources, including prehistoric and historical archaeological sites, as well as built-environment resources, such as buildings, structures, and objects (CEQA Guidelines Section 15064.5[a][3] and Section 15064.5[c]). Given that the Project will involve ground-disturbing activities, it has the potential to impact historical resources, if present, within the Project area.

In addition, because the proposed Project will be funded through the State Water Resources Control Board Safe Drinking Water State Revolving Fund, a joint federal-state program, it is federal undertaking per Title 36, Code of Federal Regulations, Section 800.16(y) subject to Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (Title 54, U.S. Code, Section 306108). As such, the lead federal agency must consider whether a project will have an adverse effect on historic

properties (i.e., resources that are eligible for inclusion on the National Register of Historic Places) within the Project Area of Potential Effects (APE).

Human Remains

Section 7050.5 of the California Health and Safety Code states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the remains are discovered has determined whether or not the remains are subject to the coroner's authority. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Native American Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper and dignified treatment of the remains and associated grave artifacts.

Paleontological Resources

Paleontological resources are the fossilized remains of plants and animals and associated deposits. The Society of Vertebrate Paleontology has identified vertebrate fossils, their taphonomic and associated environmental indicators, and fossiliferous deposits as significant nonrenewable paleontological resources. Botanical and invertebrate fossils and assemblages may also be considered significant resources.

CEQA requires that a determination be made as to whether a project would directly or indirectly destroy a unique paleontological resource or site or unique geological feature (CEQA Appendix G(v)(c)). If an impact is significant, CEQA requires feasible measures to minimize the impact (CCR Title 14(3) §15126.4 (a)(1)). California Public Resources Code §5097.5 (see above) also applies to paleontological resources.

RESPONSES

a. Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

Less than Significant Impact with Mitigation. As described in the Cultural Resources Report, the records search, background historical research, Native American outreach and a pedestrian survey revealed that no cultural resources occur on the Project site or in the Project area.

Unidentified cultural resources could be uncovered during proposed Project construction which could result in a potentially significant impact; however, implementation of Mitigation Measure CUL-1 would ensure that significant impacts remain *less than significant with mitigation incorporation*.

Mitigation Measure CUL-1: In the event that archaeological remains are encountered at any time during development or ground-moving activities within the entire Project area, all work in the vicinity of the find should be halted until a qualified archaeologist can assess the discovery and take appropriate actions as necessary.

b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Less than Significant Impact with Mitigation. The possibility exists that subsurface construction activities may encounter undiscovered archaeological resources. This would be a potentially significant impact. Implementation of Mitigation Measure CUL-1 would require inadvertently discovery practices to be implemented should previously undiscovered archeological resources be located. As such, impacts to undiscovered archeological resources would be *less than significant with mitigation incorporation*.

c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less than Significant Impact with Mitigation. There are no unique geological features or known fossil-bearing sediments in the vicinity of the proposed Project site. However, there remains the possibility for previously unknown, buried paleontological resources or unique geological sites to be uncovered during subsurface construction activities. Implementation of Mitigation Measure CUL-1 would require inadvertently discovery practices to be implemented should previously undiscovered paleontological resources be located. As such, impacts to undiscovered paleontological resources would be *less than significant with mitigation incorporation*.

d. Disturb any human remains, including those interred outside of formal cemeteries?

Less than Significant Impact. Although unlikely given the highly disturbed nature of the site and the records search did not indicate the presence of such resources, subsurface construction activities associated with the proposed Project could potentially disturb previously undiscovered human burial

sites. Accordingly, this is a potentially significant impact. The California Health and Safety Code Section 7050.5 states that if human remains are discovered on-site, no further disturbance shall occur until the Fresno County Coroner has made a determination of origin and disposition. If the Coroner determines that the remains are not subject to his or her authority and if the Coroner recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the NAHC. The NAHC shall identify the person or persons it believes to be the “most likely descendant” (MLD) of the deceased Native American. The MLD may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resource Code Section 5097.98.

Although considered unlikely subsurface construction activities could cause a potentially significant impact to previously undiscovered human burial sites, however compliance with regulations would reduce this impact to *less than significant*.

Mitigation Measures: None are required.

VI. GEOLOGY AND SOILS

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a. Expose people or structures to 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.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii. Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii. Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv. Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Be located on expansive soil, as defined in Table 18-1-B of the most recently	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

adopted Uniform Building Code
creating substantial risks to life or
property?

- e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

SETTING

San Joaquin is located in the west center of the Great Valley of California, a nearly flat northwest-southeast trending basin approximately 450 miles long by 50 miles wide. The basin is bordered by Mesozoic platonic, volcanic, and metamorphic rocks of the Sierra Nevada mountains on the east and by the Mesozoic and Cenozoic metamorphic and sedimentary rocks of the Coast Ranges on the west.

There are no known active faults that run through the City. The nearest active fault, the Coalinga Fault, is approximately 40 miles west of the City. The San Andreas Fault is located 50 miles to the west, and the Owens Valley Fault is located approximately 100 miles to the east. The Clovis Fault is northwest-trending fault about five miles east of the City of Clovis. It has been determined that the greatest potential for a significant earthquake would be from the San Andreas Fault.¹⁷

Uniform Building Code

The California Code of Regulations (CCR) Title 24 is assigned to the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. The California Building Code incorporates by reference the Uniform Building Code with necessary California amendments. The Uniform Building Code is a widely adopted model building code in the United States published by the International Conference of Building Officials. About one-third of the text within the California Building Code has been tailored for California earthquake conditions.

RESPONSES

- a-i. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving 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

¹⁷ City of San Joaquin 2040 Community Plan. Background Report. June 11. Page 181.

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

Less Than Significant Impact. The proposed Project site is not located within a currently designated Alquist-Priolo Earthquake Fault Zone; thus, the risk of surface fault ruptures within the City is low. Any impacts would be *Less Than Significant*.

Mitigation Measures: None are required.

a (ii-iv). Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking, liquefaction or landslides?

Less than Significant Impact. The 2007 Uniform Building Code (UBC) indicates that the City is located within Seismic Risk Zone 3, although it is relatively close to Zone 4 located to the west. UBC states that buildings constructed in Zone 4 are subject to higher standards than other zone designation buildings. Places located on alluvial deposits, like the City, tend to experience more intense ground shaking than those located on solid rock. However, because the City is far from any active faults, it is relatively unlikely that ground shaking in the City would be more than minimal.¹⁸

The Fresno County Multi-Hazard Mitigation Plan (2008) states that locations where the water table is less than 30 feet below the surface are prone to liquefaction. This happens in the San Joaquin Valley; however, the soils in the San Joaquin area are often too coarse or too high in clay content to liquefy. Again, the distance of the City from the nearest active fault reduces its probability of soil liquefaction.¹⁹

Due to the relatively flat topography of the proposed Project area, impacts associated with landslides are not anticipated. Impacts would be *less than significant*.

Mitigation Measures: None are required.

b. Result in substantial soil erosion or the loss of topsoil?

Less than Significant Impact. The proposed Project site has a generally flat topography and does not include any Project features that would result in soil erosion or loss of topsoil. Therefore, the impact is *less than significant*.

¹⁸ City of San Joaquin 2040 Community Plan. Background Report. June 11. Page 183.

¹⁹ Ibid.

Mitigation Measures: None are required.

- 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?

Less than Significant Impact. The proposed Project site has a generally flat topography which precludes the area from risk of landslides. The City of San Joaquin is in an area of deep subsidence. Subsidence has been studied by both the U.S. Geological Survey and the Department of Water Resources. These groups found that between 1950 and 1970, 5,200 square miles in the Valley had subsided more than one foot and certain areas had subsided up to eight feet. According to the Fresno County Multi-Hazard Mitigation Plan, subsidence has stabilized in the County.²⁰ City building officials will also be contacted prior to construction to provide information applicable to the geology of the site.

The impact is *less than significant*.

Mitigation Measures: None are required.

- d. Be located on expansive soil, as defined in Table 18-1-B of the most recently adopted Uniform Building Code creating substantial risks to life or property?

Less than Significant Impact. Soils are usually classified into three expansive soil classes with low, moderate and high potential for expansion. According to Figure 7-1 of the Fresno County General Plan, the City does not contain moderately-high or high expansive soil potential.²¹ The impact is *less than significant*.

Mitigation Measures: None are required.

- e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

No Impact. The proposed Project would not contribute to use of septic tanks or alternative wastewater disposal systems. Therefore, there would be no *impact*.

Mitigation Measures: None are required.

²⁰ City of San Joaquin 2040 Community Plan. Background Report. June 11. Page 185.

²¹ City of San Joaquin 2040 Community Plan. Background Report. June 11. Page 185.

VII. GREENHOUSE GAS EMISSIONS

Would the project:

a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
--------------------------------	---	------------------------------	-----------

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	-------------------------------------	--------------------------

b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	-------------------------------------	--------------------------

SETTING

Various gases in the earth’s atmosphere play an important role in moderating the earth’s surface temperature. Solar radiation enters earth’s atmosphere from space and a portion of the radiation is absorbed by the earth’s surface. The earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation. GHGs are transparent to solar radiation, but are effective in absorbing infrared radiation. Consequently, radiation that would otherwise escape back into space is retained, resulting in a warming of the earth’s atmosphere. This phenomenon is known as the greenhouse effect. Scientific research to date indicates that some of the observed climate change is a result of increased GHG emissions associated with human activity. Among the GHGs contributing to the greenhouse effect are water vapor, carbon dioxide (CO₂), methane (CH₄), ozone, Nitrous Oxide (NO_x), and chlorofluorocarbons. Human-caused emissions of these GHGs in excess of natural ambient concentrations are considered responsible for enhancing the greenhouse effect. GHG emissions contributing to global climate change are attributable, in large part, to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. In California, the transportation sector is the largest emitter of GHGs, followed by electricity generation. Global climate change is, indeed, a global issue. GHGs are global pollutants, unlike criteria pollutants and toxic air contaminants (which are pollutants of regional and/or local concern). Global climate change, if it occurs, could potentially affect water resources in California. Rising temperatures could be anticipated to result in sea-level rise (as polar ice caps melt) and possibly change the timing and amount of precipitation, which could alter water quality. According to some research, climate change could result in more extreme weather patterns; both heavier precipitation that could lead to flooding, as well as more extended drought periods. There is

uncertainty regarding the timing, magnitude, and nature of the potential changes to water resources as a result of climate change; however, several trends are evident.

Snowpack and snowmelt may also be affected by climate change. Much of California's precipitation falls as snow in the Sierra Nevada and southern Cascades, and snowpack represents approximately 35 percent of the state's useable annual water supply. The snowmelt typically occurs from April through July; it provides natural water flow to streams and reservoirs after the annual rainy season has ended. As air temperatures increase due to climate change, the water stored in California's snowpack could be affected by increasing temperatures resulting in: (1) decreased snowfall, and (2) earlier snowmelt.

US EPA

The USEPA Mandatory Reporting Rule (40 CFR Part 98), which became effective December 29, 2009, requires that all facilities that emit more than 25,000 metric tons CO₂-equivalent per year beginning in 2010, report their emissions on an annual basis. On May 13, 2010, the USEPA issued a final rule that established an approach to addressing GHG emissions from stationary sources under the CAA permitting programs. The final rule set thresholds for GHG emissions that define when permits under the New Source Review Prevention of Significant Deterioration and title V Operating Permit programs are required for new and existing industrial facilities.

In addition, the Supreme Court decision in *Massachusetts v. EPA* (Supreme Court Case 05-1120) found that the USEPA has the authority to list GHGs as pollutants and to regulate emissions of GHGs under the CAA. On April 17, 2009, the USEPA found that CO₂, CH₄, NO_x, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride may contribute to air pollution and may endanger public health and welfare. This finding may result in the USEPA regulating GHG emissions; however, to date the USEPA has not proposed regulations based on this finding.

Executive Order S-3-05

California is taking action to reduce GHG emissions. In June 2005, Governor Schwarzenegger signed Executive Order S-3-05 to address climate change and GHG emissions in California. This order sets the following goals for statewide GHG emissions:

- Reduce to 2000 levels by 2010
- Reduce to 1990 levels by 2020
- Reduce to 80 percent below 1990 levels by 2050

Assembly Bill 32

In 2006, California passed AB 32, the California Global Warming Solutions Act of 2006 (Act). The Act requires ARB to design and implement emission limits, regulations, and other feasible cost-effective measures to reduce statewide GHG emissions to 1990 levels by 2020. Senate Bill 97 was signed into law in August 2007. The Senate Bill required the Office of Planning and Research (OPR) to prepare, develop, and transmit to the Resource Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions by July 1, 2009. On April 13, 2009, the OPR submitted to the Secretary for Natural Resources its recommended amendments to the State CEQA Guidelines for addressing GHG emissions. On July 3, 2009, the Natural Resources Agency commenced the Administrative Procedure Act rulemaking process for certifying and adopting the amendments. Following a 55-day public comment period and 2 public hearings, and in response to comments, the Natural Resources Agency proposed revisions to the text of the proposed Guidelines amendments. The Natural Resources Agency transmitted the adopted amendments and the entire rulemaking file to the Office of Administrative Law on December 31, 2009. On February 16, 2010, the Office of Administrative Law approved the amendments, and filed them with the Secretary of State for inclusion in the CCR. The Amendments became effective on March 18, 2010.

The AB 32 Scoping Plan contains the main strategies California will use to reduce GHG emissions that cause climate change. The scoping plan has a range of GHG reduction actions which include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms such as a cap-and-trade system, and an AB 32 cost of implementation fee regulation to fund the program. The first regulation adopted by the ARB pursuant to AB 32 was the regulation requiring mandatory reporting of GHG emissions. The regulation requires large industrial sources emitting more than 25,000 metric tons of CO₂ per year to report and verify their GHG emissions from combustion of both fossil fuels and biomass-derived fuels. The California Cap and Trade program is being developed and the ARB adopted regulations on January 1, 2011. Finally, Governor Schwarzenegger directed the ARB, pursuant to Executive Order S-21-09, to adopt a regulation by July 31, 2010, requiring the state's load serving entities to meet a 33 percent renewable energy target by 2020.

In addition, the proposed Project is being evaluated pursuant to CEQA.

RESPONSES

- a., b. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment or conflict with applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less than Significant Impact. The proposed Project involves upgrades to the City's community water system to bring the water below MCL's for manganese. As shown in Table 3, the Project is estimated to produce 99.72 tons per year of CO₂ (combined construction and operational totals), which is less than 1% of the reporting threshold set by the USEPA. Therefore, the proposed Project would not generate significant greenhouse gas emissions, conflict with an applicable plan, policy or regulation adopted for the purpose of reducing greenhouse gas emissions, or result in significant global climate change impacts. Impacts would be *less than significant*.

Mitigation Measures: None are required.

VIII. HAZARDS AND HAZARDOUS MATERIALS

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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 for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f. For a project within the vicinity of a private airstrip, would the project result in	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a safety hazard for people residing or working in the project area?

- g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?
- h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands

SETTING

The proposed Project site is located in the southern portion of the City and includes installing a pipeline connecting Well No. 3 to Well No. 5 and constructing a water treatment plant immediately east of Well No. 5. The nearest sensitive receptors to the proposed Project site are residential houses located immediately across from Well No. 3 and along the majority of the pipeline alignments.

US EPA

The primary federal agencies with responsibility for hazardous materials management include the EPA, U.S. Department of Labor Occupational Safety and Health Administration (OSHA), and the U.S. Department of Transportation (DOT). The Environmental Protection Agency (EPA) was created to protect human health and to safeguard the natural environment – air, water and land – and works closely with other federal agencies, and state and local governments to develop and enforce regulations under existing environmental laws. Where national standards are not met, EPA can issue sanctions and take other steps to assist the states in reaching the desired levels of environmental quality. EPA also works with industries and all levels of government in a wide variety of voluntary pollution prevention programs and energy conservation efforts.

State of California

The California Department of Industrial Relations, Division of Occupational Safety and Health is the administering agency designed to protect worker health and general facility safety. The California Department of Forestry and Fire Protection has designated the area that includes the proposed Project

site as a Local Responsibility Area, defined as an area where the local fire jurisdiction is responsible for emergency fire response.

In addition, the proposed Project is being evaluated pursuant to CEQA.

RESPONSES

- a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less than Significant Impact. While grading and construction activities may involve the limited transport, storage, use or disposal of hazardous materials, such as the fueling/servicing of construction equipment onsite, the activities would be short-term or one-time in nature and would be subject to federal, state, and local health and safety regulations.

Long-term operation of the proposed Project would involve transport, storage, use or disposal of hazardous materials. Water treatment chemicals would be utilized at the water treatment site, including sodium hypochlorite. Small quantities of petroleum products, thinners, and paints would also likely be stored on-site. Sodium hypochlorite is a caustic material which can cause burns in high concentrations.

There are a number of federal, state and local requirements and regulations that are designed to minimize risks from accidental releases of hazardous materials and the proposed Project will be in compliance with all applicable requirements and regulations. Hazardous material storage and use areas at the water treatment plant will be built and operated in compliance with the minimum requirements of the Uniform Fire Code and the California Fire Code. Some of the requirements are secondary containment for liquids, fire water sprinklers over inside storage/use areas, and non-combustible building construction. Additionally, the water treatment plant building will be constructed in compliance with the California Building Code, which requires design features to resist forces generated by a major earthquake with limited architectural or structural damage and to provide adequate fire protection that precludes accidental releases of hazardous chemicals due to fire.

With implementation of the proposed Project, there are no reasonably foreseeable upset and accident conditions that would create a significant hazard to the public due to the release of hazardous materials. Impacts are considered *less than significant*.

Mitigation Measures: None are required.

- 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?

Less than Significant Impact. See Impact VIII (a) above. Any impacts would be *less than significant*.

Mitigation Measures: None are required.

- c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Less than Significant Impact. San Joaquin Elementary School is approximately 0.30 miles north of Well No. 3 and approximately 0.60 miles north of Well No. 5. Additionally, see Impact VIII (a) above. Any impacts would be *less than significant*.

Mitigation Measures: None are required.

- 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?

No Impact. The proposed Project site is not located on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.²² As such, there is *no impact*.

Mitigation Measures: None are required.

- 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 for people residing or working in the project area?

Less Than Significant Impact. The nearest international airport to the City is the Fresno Yosemite International Airport, approximately 40 miles east of the City. There are no public airports within a five mile radius of the City and the proposed Project is not located within any airport safety zone. There is a

²² California Department of Toxic Substance Control. EnviroStor. http://www.envirostor.dtsc.ca.gov/public/mapfull.asp?global_id=&x=-119&y=37&z=18&ms=640,480&mt=m&findaddress=True&city=san%20joaquin%20california&zip=&county=&federal_superfund=true&state_response=true&voluntary_cleanup=true&school_cleanup=true&ca_site=true&fiered_permit=true&evaluation=true&military_evaluation=true&school_investigation=true&operating=true&post_closure=true&non_operating=true. Accessed March 2017.

private air tractor service approximately 1.7 miles to the west of the proposed Project site; however, the construction and operation of a water treatment plant and associated pipeline will not result in a safety hazard for the people residing or working in the Project area.

The Project will have a *less than significant impact* to airport operations.

Mitigation Measures: None are required.

f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

Less Than Significant Impact. See response to Impact VIII (e). Any impacts would be *less than significant*.

Mitigation Measures: None are required.

g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less Than Significant Impact. The proposed Project consists of the construction and operation of a water treatment plant and the installation of approximately 3,800 linear feet of pipeline along the existing right-of-way of South Colusa Avenue and Railroad Street. Pipeline installation will be temporary in nature and will not cause any road closures that could interfere with any adopted emergency response or evacuation plan. As such, any impacts will be *less than significant*.

Mitigation Measures: None are required.

h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

No Impact. As the proposed Project site is an urbanized area, there are no wildland areas adjacent in proximity to the proposed Project site. There is *no impact*.

Mitigation Measures: None are required.

IX. HYDROLOGY AND WATER QUALITY

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

IX. HYDROLOGY AND WATER QUALITY

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
provide substantial additional sources of polluted runoff?				
f. Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h. Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
j. Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

SETTING

Like most of California, the San Joaquin Valley experiences a Mediterranean climate. Warm dry summers are followed by cool moist winters. Summer temperatures commonly exceed 90 degrees Fahrenheit, and the relative humidity is generally very low. Winter temperatures rarely exceed 70 degrees Fahrenheit, with daytime highs often below 60 degrees Fahrenheit. According to the Western Regional Climate Center, annual precipitation in the vicinity of the Project sites is about 12 inches, about 85% of which falls between the months of October and March. Nearly all precipitation falls in the form of rain.

The City is located in the Tulare Lakes Hydrologic Region within the southern half of the San Joaquin Valley Basin, in the Kings River Subbasin.²³ The City of San Joaquin utilizes pumped water from the Subbasin for its entire water supply. The City does not purchase water from other sources or purveyors. The groundwater supply serves all users within the City, including residential, commercial, industrial and irrigation uses. Surrounding agricultural users outside the City also utilize groundwater for irrigation purposes.²⁴

RESPONSES

a. Violate any water quality standards or waste discharge requirements?

Less than Significant Impact. The purpose of the Project is to improve water quality to meet existing standards and requirements. The proposed Project includes improvements to the existing community water system. Currently, water from Wells No. 3 and 5 are over the manganese MCL's. Construction and operation of a water treatment system would reduce those levels to under MCL's. As a result, any impacts would be *less than significant*.

Mitigation Measures: None are required.

b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

Less Than Significant Impact. According to the City's General Plan Background Report, the City of San Joaquin obtains all of its domestic water supply from the groundwater underneath the City, which is then treated prior to distribution. Construction of the consolidated water treatment plant will treat the water from Wells No. 3 and 5 for excessive manganese levels and will not expand current capacity of the existing wells. Additionally, the proposed Project will not significantly interfere with groundwater recharge as it will introduce minimal amounts of impermeable surfaces. As such, any impacts to groundwater supplies will be *less than significant*.

Mitigation Measures: None are required.

²³ City of San Joaquin 2040 Community Plan. Background Report. June 11. Page 120.

²⁴ City of San Joaquin 2040 Community Plan. Background Report. June 11. Page 90.

- c., d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

Less than Significant Impact. The proposed improvements to the existing community water system will introduce minimal non-permeable surfaces. The water treatment plant will conservatively introduce approximately 0.3 acres of impermeable area to the site, which will not substantially increase the rate or amount of surface runoff which would then result in on or off-site flooding. The pipeline will be installed within the existing road right-of-way and will not alter any existing drainage patterns. There are no waterways in the immediate vicinity of the proposed Project. Any impacts would be *less than significant*.

Mitigation Measures: None are required.

- e. 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?

No Impact. Implementation of the proposed Project will not require expansion of the City's existing stormwater system, nor will it result in additional sources of polluted runoff. Drainage from the site will be directed to the existing ponding basin to the east. There is *no impact*.

Mitigation Measures: None are required.

- f. Otherwise substantially degrade water quality?

Less than Significant Impact. See Impact IX (a), (c) and (d). The Project would not otherwise degrade water quality and therefore the impact is *less than significant*.

Mitigation Measures: None are required.

- g. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

No Impact. The proposed Project site is not within a 100-year flood zone (as identified by FEMA Flood Insurance Rate Map 06019C2550H, current 2/18/2009). In addition, there is no housing associated with the Project. Therefore, there is *no impact*.

Mitigation Measures: None are required.

h. Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

No Impact. As stated in Impact IX(g), the proposed Project site is not within a 100-year flood zone (as identified by FEMA Flood Insurance Rate Map 06019C2550H, current 2/18/2009). Therefore, there is *no impact*.

Mitigation Measures: None are required.

i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

Less than Significant Impact. There are a number of dams on both San Joaquin and Kings Rivers that could cause flooding in the event of dam failure. The extent of the flooding which could occur would depend on whether one or more dams failed simultaneously, where they are located, the time of the year, and several other factors. The City of San Joaquin is within the flood inundation area of the Pine Flat Dam, approximately 50 miles to the northeast, the Friant Dam, approximately 37 miles to the northeast, and the Little Panoche Dam, approximately 36 miles to the northwest.²⁵ Due to the extended distance, the City would have adequate time to prepare for such flooding in order to protect City residents and facilities. As such, impacts related to exposure of people or structures to a risk of loss, injury, or death involving flooding as a result of the failure of a levee or dam would be *less than significant*.

Mitigation Measures: None are required.

j. Inundation by seiche, tsunami, or mudflow?

No Impact. There are no inland water bodies that could be potentially susceptible to a seiche in the Project vicinity. This precludes the possibility of a seiche inundating the Project site. The Project site is more than 100 miles from the Pacific Ocean, a condition that precludes the possibility of inundation by tsunami. There are no steep slopes that would be susceptible to a mudflow in the Project vicinity, nor

²⁵ City of San Joaquin 2040 Community Plan. Background Report. June 11. Page 191.

are there any volcanically active features that could produce a mudflow in the City of San Joaquin. This precludes the possibility of a mudflow inundating the Project site. *No impacts* would occur.

Mitigation Measures: None are required.

X. LAND USE AND PLANNING

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a. Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the General Plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

SETTING

The existing Well No. 3 is in the central portion of the City of San Joaquin while the Well No. 5 site is at the southern edge of the City. Surrounding land uses include residential, commercial, industrial and agriculture. See Figure 2 – Site Aerial. The water treatment plant site is designated as Public Facilities and Vacant by the City of San Joaquin. The pipelines will be constructed within existing roadways.

RESPONSES

a. Physically divide an established community?

No Impact. The proposed Project is located in the central and southern portion of the City. The pipeline will be installed within the existing right-of-way of roadways and the water treatment plant will be constructed immediately adjacent to the existing Well No. 5 site, on vacant land. The construction and operation of the water treatment plant would not cause any land use changes in the surrounding vicinity nor would it divide an established community. *No impacts* would occur as a result of Project implementation.

Mitigation Measures: None are required.

- b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the General Plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact. The proposed Project involves improvements to the existing community well system and does not conflict with any land use plans, policies or regulations. There are *no impacts*.

Mitigation Measures: None are required.

- c. Conflict with any applicable habitat conservation plan or natural community conservation plan?

No Impact. The proposed Project site is not included in any adopted habitat conservation plans or natural community conservation plans. Therefore, the proposed Project would not conflict with any such plans and *no impacts* would result.

Mitigation Measures: None are required.

XI. MINERAL RESOURCES

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

SETTING

Fresno County has been a leading producer of minerals because of the abundance and wide variety of mineral resources that are present in the County. Extracted resources include aggregate products (sand and gravel), fossil fuels (oil and coal), metals (chromite, copper, gold, mercury, and tungsten), and other minerals used in construction or industrial applications (asbestos, high-grade clay, diatomite, granite, gypsum, and limestone). Aggregate and petroleum are considered the County’s most significant extractive mineral resources. Oil fields are within the vicinity of the City of San Joaquin.²⁶

RESPONSES

- 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?

No Impact. The City is in an area with oil fields; however, the proposed Project will take place within existing roadway right-of-ways, and at and immediately adjacent to the existing Well 5 location. The proposed Project includes improvements to the existing water community system and will not result in a loss of availability of a known mineral resource. Therefore, there is *no impact*.

²⁶ Fresno County General Plan Background Report. Adopted 2000. Page 7-66. Accessed April 2017. <http://www.co.fresno.ca.us/viewdocument.aspx?id=5696>

Mitigation Measures: None are required.

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?

No Impact. As stated in the analysis for Impact XI(a), the proposed Project will occur in the roadway right-of-way and on land on and immediately adjacent to Well Site No. 5. Therefore, there is *no impact*.

Mitigation Measures: None are required.

XII. NOISE

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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 expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

SETTING

The proposed Project site is located in the southeastern part of the City of San Joaquin. See Figure 2 – Site Aerial. The sites are surrounded by residential, commercial and industrial uses, public facilities, active agriculture, and vacant land.

Federal Railway Administration

The Federal Railway Administration (FRA) and the Federal Transit Administration (FTA) have published guidance relative to vibration impacts. The FRA has determined that ground vibrations from construction activities do not often reach the levels that can damage structures, but they can be within the audible and perceptible ranges in buildings very close to the site²⁷. The FTA has identified the human annoyance response to vibration levels as 80 RMS²⁸.

Fresno County

Measuring and reporting noise levels involves accounting for variations in sensitivity to noise during the daytime versus nighttime hours. Noise descriptors used for analysis need to factor in human sensitivity to nighttime noise when background noise levels are generally lower than in the daytime and outside noise intrusions are more noticeable. Common descriptors include the Community Noise Equivalent Level (CNEL) and the Day-Night Average Level (Ldn). Both reflect noise exposure over an average day with weighting to reflect the increased sensitivity to noise during the evening and night. The two descriptors are roughly equivalent. The CNEL descriptor is used in relation to major continuous noise sources, such as aircraft or traffic, and is the reference level for the Noise Element under State planning law.

RESPONSES

- a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less than Significant Impact. The nearest sensitive receptors to the proposed Project would be the residences along the pipeline alignments on Railroad Street and S. Colusa Avenue. The proposed pipeline will not generate any noise once it is in operation.

²⁷ U.S. Federal Railroad Administration. High Speed Ground Transportation Noise and Vibration Impact Assessment. Final Report No. DOT/FRA/ORD-12/15. September 2012. Page 10-11.

²⁸ U.S. Federal Transit Administration. Transit Noise and Vibration Impact Assessment. Final Report No. FTA-VA-90-1003 prepared by Harris Miller Miller & Hanson Inc., May 2006. Page 7-5. http://www.rtd-fastracks.com/media/uploads/nm/14_Section_38_NoiseandVibration_Part3.pdf. Accessed March 2017.

The nearest residence to the water treatment plant site is approximately 763 feet to the northwest. Once the water treatment plant is constructed, noise levels generated during normal operation would not exceed applicable noise standards established in the Fresno County Ordinance Code.

Neither the City of San Joaquin Municipal Code nor the Fresno County Ordinance Code identifies a short-term, construction-noise-level threshold. The distinction between short-term construction noise impacts and long-term operational noise impacts is a typical one in both CEQA documents and local noise ordinances, which generally recognize the reality that short-term noise from construction is inevitable and cannot be mitigated beyond a certain level. Thus, local agencies frequently tolerate short-term noise at levels that they would not accept for permanent noise sources. A more severe approach would be impractical and might preclude the kind of construction activities that are to be expected from time to time in urban environments. Most residents of urban areas recognize this reality and expect to hear construction activities on occasion. As the construction period will be brief and periodic, and construction hours would be limited to those established in the City’s Municipal Code, any impacts would be *less than significant*.

Mitigation Measures: None are required.

b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Less than Significant Impact. Typical outdoor sources of perceptible ground borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. Construction vibrations can be transient, random, or continuous. Construction associated with the proposed Project is earthmoving activities associated installing pipelines and installing equipment.

The approximate threshold of vibration perception is 65 VdB, while 85 VdB is the vibration acceptable only if there are an infrequent number of events per day.²⁹ Table 5 describes the typical construction equipment vibration levels.

Table 5
Typical Construction Vibration Levels

Equipment	VdB at 25 ft
Small Bulldozer	58
Jackhammer	79

²⁹ Transit Noise and Vibration Impact Assessment. Final Report No. FTA-VA-90-1003 prepared for the U.S. Federal Transit Administration by Harris Miller Miller & Hanson Inc., May 2006. Page 7-5. http://www.rtd-fastracks.com/media/uploads/nm/14_Section_38_NoiseandVibration_Part3.pdf. Accessed March 2017.

Vibration from construction activities will be temporary and not exceed the Federal Transit Authority threshold for the nearest residence which is located approximately 763 feet northwest of the Project site. The impact will be *less than significant*.

Mitigation Measures: None are required.

c., d. A substantial temporary or permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Less than Significant Impact. See Impact XII (a). There will be no substantial temporary or permanent increase in ambient noise levels and therefore the impact is *less than significant*.

Mitigation Measures: None are required.

e., f. For a project within the vicinity of a public or private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. The proposed Project is not located in the vicinity of an airport. Therefore, there would be *no impact*.

Mitigation Measures: None are required.

XIII. POPULATION AND HOUSING

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a. Induce substantial 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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

SETTING

The City of San Joaquin’s primary industry is agriculture, but there is sufficient labor force in the area to support many other types of industries, including manufacturing. The 2009 population estimate for the City of San Joaquin as 4,071. The population reported in the 2000 Census was 3,270, which represents a 25 percent increase in population between 2000 and 2009.³⁰

RESPONSES

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

No Impact. The proposed Project includes the construction and operation of a water treatment plant to lower manganese levels to below the MCL and will not expand the current capacity of the existing

³⁰ City of San Joaquin 2040 Community Plan. Background Report. June 11. Page 35.

community water system. The Project will not require a significant amount of new employees. As such, the proposed Project would not directly or indirectly induce population growth. There is *no impact*.

Mitigation Measures: None are required.

b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

No Significant. The proposed water treatment plant will be constructed at the location of the existing Well No. 5 and on the vacant land immediately to the east of the Well site. It will not result in the displacement of housing or people, or cause replacement housing to be constructed elsewhere. *No impact* would occur.

Mitigation Measures: None are required.

c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact. The proposed Project will not displace any people and therefore there is *no impact*.

Mitigation Measures: None are required.

XIV. PUBLIC SERVICES

Would the project:

	Less than Significant			
Potentially Significant Impact	With Mitigation Incorporation	Less than Significant Impact	No Impact	

- 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:

Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

SETTING

Law enforcement services within the City are provided by the Fresno County Sheriff’s Office under contract to the City. The Sheriff maintains its Area 1 Patrol Station within the City. The Fresno County Fire Protection District provides firefighting, emergency medical service and rescue services in San Joaquin. The City does not have its own fire station – the nearest station, District Station 95, is located in Tranquillity, approximately four miles to the northwest of the City.

The Golden Plains Unified School District provides public school services within the City. San Joaquin Elementary School is the only public school facility within the City limits, approximately 0.3 miles to the north of Well Site No. 3 and accommodates children in kindergarten through grade eight. High school grades nine through 12 are offered at Tranquillity High School.

RESPONSES

- 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:

Fire protection?

No Impact. The proposed Project would continue to be served by the Fresno County Fire Protection District. The proposed Project would not directly or indirectly induce population growth; therefore, no additional fire personnel or equipment is needed to support the Project. There is *no impact*.

Police Protection?

No Impact. The proposed Project will continue to be served by the Fresno County Sheriff's Department. No additional police personnel or equipment is needed to support the Project. There is *no impact*.

Schools, Parks, Other Public Facilities?

No Impact. The proposed Project would not increase the number of residents in the City, as the Project does not include residential units. Because the demand for schools, parks, and other public facilities is driven by population, the proposed Project would not increase demand for those services. As such, the proposed Project would result in *no impacts*.

Mitigation Measures: None are required.

XV. RECREATION

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

SETTING

The City currently has three areas of open space within the City. The first is a 1.2-acre park which includes a young children’s play area, a basketball court, a skate park, and a covered barbeque pit and picnic area. The second is the 8.6-acre elementary school playground, composed primarily of four baseball diamonds, as well as four basketball courts and a kindergarten play are. The third is an area on the northeast edge of the City comprised of a 0.15 acre play structure and grass hillside with benches next to a 3.5-acre.³¹

RESPONSES

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

No Impact. The proposed Project does not include the construction of residential uses and would not directly or indirectly induce population growth. Therefore, the proposed Project would not cause physical deterioration of existing recreational facilities from increased usage or result in the need for new or expanded recreational facilities. The Project would have *no impact* to existing parks.

Mitigation Measures: None are required.

³¹ City of San Joaquin 2040 Community Plan. Background Report. June 11. Page 171.

- 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 does not include the construction of residential uses and would not directly induce population growth. Therefore, the Project would not cause physical deterioration of existing recreational facilities from increased usage or result in the need for new or expanded recreational facilities. There is *no impact*.

Mitigation Measures: None are required.

XVI. TRANSPORTATION/ TRAFFIC

Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
--------------------------------------	---	------------------------------------	--------------

Would the project:

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| <p>a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?</p> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| <p>b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?</p> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| <p>c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?</p> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| <p>d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?</p> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| <p>e. Result in inadequate emergency access?</p> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

- f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

SETTING

The City is approximately six miles northwest of State Route 145 and 15 miles east of Interstate 5 (see Figure 1 – Location Map). Two main thoroughfares cut across the City. Colorado Avenue bisects the City from northwest to southeast and Manning Avenue crosses the City from west to east. The downtown is designed in a traditional grid pattern but the rest of the City is laid out in a mixture of loops and cul-de-sacs. Railroad Street is considered a local street and S. Colusa is considered a major collector.³²

The nearest international airport to the City is the Fresno Yosemite International Airport, approximately 40 miles east of the City.

RESPONSES

- a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

No Impact. The proposed Project would not cause a substantial increase in traffic, reduce the existing level of service, or create any additional congestion at any intersections. The proposed Project would require periodic service or maintenance, approximately two trips per day. As such, level of service standards would not be exceeded and the proposed Project would not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system. There is *no impact*.

Mitigation Measures: None are required.

³² City of San Joaquin 2040 Community Plan. Background Report. June 11. Page 62.

- b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

No Impact. As shown in Response a., the proposed Project will have *no impact* on any existing level of service or other travel demand measures. The proposed Project will not conflict with any congestion management programs, as none are applicable to the Project.

Mitigation Measures: None are required.

- c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?

No Impact. The nearest international airport to the City is the Fresno Yosemite International Airport, approximately 40 miles east of the City. There are no public airports within a five-mile radius of the City and the proposed Project is not located within any airport safety zone. There is a private air tractor service approximately 1.7 miles to the west of the proposed Project site; however, there are no characteristics of the proposed Project that would have any impact on air traffic patterns at the private airport. As such, there is *no impact*.

Mitigation Measures: None are required.

- d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Impact. No roadway design features are associated with this proposed Project that would result in an increase in hazards due to a design feature or be an incompatible use. See also Impact XVI (a). There is *no impact*.

Mitigation Measures: None are required.

XVII. UTILITIES AND SERVICE SYSTEMS

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g. Comply with federal, state, and local	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

statutes and regulations related to solid waste?

SETTING

The City of San Joaquin has responsibility for providing water and wastewater services for the community. The proposed Project would not involve any construction or changes to stormwater drainage, solid waste management, or wastewater treatment.

RESPONSES

a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

Less Than Significant Impact. The proposed Project includes improvements to the City's existing community water system and would not exceed any wastewater treatment requirements set by the Central Valley Regional Water Quality Control Board. *Less Than Significant Impacts* related to these utilities and service systems would occur.

Mitigation Measures: None are required.

b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Less Than Significant Impact With Mitigation. The project itself is the construction of a new water treatment plant to bring the water quality up to the U.S. EPA established standards. Any environmental impacts resulting from the improvements are discussed within this document.

Mitigation Measures: The Project will require mitigation measures as identified throughout this document.

c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Less Than Significant. The proposed Project constructing a water treatment facility immediately adjacent to the Well No. 5 site and also includes the installation of approximately 3,800 linear feet of pipeline within the existing right-of-way of roadways. The proposed improvements to the WTP would have a minimal impact on the drainage conditions of the Project site when compared to the existing

baseline environmental conditions. Drainage from the site will be directed to the ponding basin to the east.

Any impacts would be *less than significant*.

Mitigation Measures: None are required.

d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

No Impact. The proposed Project includes improving the existing community water system by treating the water at Wells No 3 and 5 for excessive manganese levels. No new water supplies would be required or produced as a result of this Project. There is *no impact*.

Mitigation Measures: None are required.

e. 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?

Less Than Significant Impact. The proposed Project includes improvements to the existing community water system by constructing a water treatment plant adjacent to the Well No. 5 site. A single stall restroom will be constructed at the water treatment plant; however, it will generate minimal amounts of wastewater, which will be discharged to the City's existing wastewater collection system. Any impacts would be *less than significant*.

Mitigation Measures: None are required.

f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Less than Significant Impact. Proposed Project construction and operation will generate minimal amounts of solid waste. Any impacts will be *less than significant*.

Mitigation Measures: None are required.

g. Comply with federal, state, and local statutes and regulations related to solid waste?

No Impact. The proposed Project will comply with all federal, state and local statutes and regulations related to solid waste. There is *no impact*.

Mitigation Measures: None are required.

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE

Would the project:

Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
--------------------------------	---	------------------------------	-----------

a. Does the project have the potential to 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 a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	-------------------------------------	--------------------------	--------------------------

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)?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	-------------------------------------	--------------------------

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

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	-------------------------------------	--------------------------	--------------------------

RESPONSES

- a. Does the project have the potential to 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 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. The analyses of environmental issues contained in this Initial Study indicate that the proposed Project is not expected to have substantial impact on the environment or on any resources identified in the Initial Study. Mitigation measures have been incorporated in the Project design to reduce all potentially significant impacts to *less than significant*.

- 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. Due to the nature of the Project and consistency with environmental policies, incremental contributions to impacts are considered less than cumulatively considerable. The proposed Project would not contribute substantially to adverse cumulative conditions, or create any substantial indirect impacts (i.e., increase in population could lead to an increase need for housing, increase in traffic, air pollutants, etc). The impact is *less than significant*.

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

Less than Significant Impact With Mitigation. The analyses of environmental issues contained in this Initial Study indicate that the Project is not expected to have substantial impact on human beings, either directly or indirectly. Mitigation measures have been incorporated in the Project design to reduce all potentially significant impacts to *less than significant*.

Chapter 4

MITIGATION MONITORING & REPORTING PROGRAM

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 San Joaquin Consolidated Water Treatment Project located in the southern portion of the City of San Joaquin. The MMRP lists mitigation measures recommended in the IS/MND for the proposed Project and identifies monitoring and reporting requirements as well as conditions recommended by responsible agencies who commented on the project.

The first column of the Table identifies the mitigation measure. The second column, entitled “Party Responsible for Implementing Mitigation,” names the party responsible for carrying out the required action. The third column, “Implementation Timing,” identifies the time the mitigation measure should be initiated. The fourth column, “Party Responsible for Monitoring,” names the party ultimately responsible for ensuring that the mitigation measure is implemented. The last column will be used by the City to ensure that individual mitigation measures have been monitored.

Mitigation Measure	Party responsible for Implementing Mitigation	Implementation Timing	Party responsible for Monitoring	Verification (name/date)
Biology				
<p>Mitigation Measure BIO-1 – If work will occur during the Swainson's hawk nesting season (March 15 – June 30), a qualified biologist shall conduct a survey for active Swainson's hawk nests within 0.25 miles of all work locations no more than 14 days prior to the start of construction. If an active nest is found within 0.25 miles and the activity would disrupt nesting, a buffer or limited operating period shall be implemented in consultation with the California Department of Fish and Wildlife.</p> <p>Mitigation Measure BIO-2 – If construction activities occur during nesting season (February through August), a qualified biologist shall conduct a survey for active bird nests within 250 feet of all work locations no more than 14 days prior to the start of construction. If an active nest is found close enough to the construction area to be disturbed by the construction activities, the qualified biologist shall determine the extent of a construction-free buffer to be established around the nest. If work cannot proceed without disturbing the nesting birds, work may shall be halted or redirected to other areas until nesting and fledging are completed or the nest has otherwise failed for non-construction related reasons.</p>	City of San Joaquin	Prior to and during construction	City of San Joaquin	

Mitigation Measure	Party responsible for Implementing Mitigation	Implementation Timing	Party responsible for Monitoring	Verification (name/date)
Cultural Resources				
<p>Measure CUL-1: In the event that archaeological remains are encountered at any time during development or ground-moving activities within the entire Project area, all work in the vicinity of the find should be halted until a qualified archaeologist can assess the discovery and take appropriate actions as necessary.</p>	City of San Joaquin	Prior to and during construction	City of San Joaquin	

Chapter 5

PREPARERS

LIST OF PREPARERS

Crawford & Bowen Planning, Inc.

- Travis Crawford, AICP, Principal Environmental Planner
- Emily Bowen, LEED AP, Principal Environmental Planner

AM Consulting Engineers

- Alfonso Manrique, PE
- Paul Sereno, EIT

Colibri Ecological Consulting, LLC.

- Jeff Davis

Applied EarthWorks, Inc.

- Mary Baloian

Appendices

Appendix A

CalEEMod Output Files

San Joaquin Consolidated Water Treatment System - San Joaquin Valley Unified APCD Air District, Annual

San Joaquin Consolidated Water Treatment System
San Joaquin Valley Unified APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	1.40	1000sqft	0.03	1,400.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.7	Precipitation Freq (Days)	45
Climate Zone	3			Operational Year	2019
Utility Company					
CO2 Intensity (lb/MW hr)	0	CH4 Intensity (lb/MW hr)	0	N2O Intensity (lb/MW hr)	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Project consists of 1,400 square foot water treatment facility

Construction Phase - construction is anticipated to take three months.

Off-road Equipment -

Vehicle Trips - It is anticipated that two trips will be made to the site per day.

San Joaquin Consolidated Water Treatment System - San Joaquin Valley Unified APCD Air District, Annual

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	22.00
tblConstructionPhase	NumDays	1.00	11.00
tblConstructionPhase	PhaseEndDate	5/31/2017	6/30/2017
tblConstructionPhase	PhaseEndDate	5/31/2017	7/4/2017
tblConstructionPhase	PhaseEndDate	5/31/2017	8/15/2017
tblConstructionPhase	PhaseStartDate	6/1/2017	7/1/2017
tblConstructionPhase	PhaseStartDate	6/1/2017	8/1/2017
tblGrading	AcresOfGrading	5.50	0.50
tblProjectCharacteristics	OperationalYear	2018	2019
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblVehicleTrips	WD_TR	6.97	2.00

2.0 Emissions Summary

San Joaquin Consolidated Water Treatment System - San Joaquin Valley Unified APCD Air District, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-1-2017	8-31-2017	0.2288	0.2288
		Highest	0.2288	0.2288

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	6.4400e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Energy	1.6000e-004	1.4400e-003	1.2100e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.5652	1.5652	3.0000e-005	3.0000e-005	1.5745
Mobile	1.2500e-003	0.0131	0.0143	6.0000e-005	3.5400e-003	8.0000e-005	3.6200e-003	9.5000e-004	8.0000e-005	1.0300e-003	0.0000	5.4937	5.4937	3.4000e-004	0.0000	5.5021
Waste						0.0000	0.0000		0.0000	0.0000	0.3532	0.0000	0.3532	0.0209	0.0000	0.8751
Water						0.0000	0.0000		0.0000	0.0000	0.1027	0.0000	0.1027	0.0106	2.5000e-004	0.4407
Total	7.8500e-003	0.0145	0.0155	7.0000e-005	3.5400e-003	1.9000e-004	3.7300e-003	9.5000e-004	1.9000e-004	1.1400e-003	0.4559	7.0589	7.5148	0.0318	2.8000e-004	8.3923

San Joaquin Consolidated Water Treatment System - San Joaquin Valley Unified APCD Air District, Annual

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	6.4400e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Energy	1.6000e-004	1.4400e-003	1.2100e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.5652	1.5652	3.0000e-005	3.0000e-005	1.5745
Mobile	1.2500e-003	0.0131	0.0143	6.0000e-005	3.5400e-003	8.0000e-005	3.6200e-003	9.5000e-004	8.0000e-005	1.0300e-003	0.0000	5.4937	5.4937	3.4000e-004	0.0000	5.5021
Waste						0.0000	0.0000		0.0000	0.0000	0.3532	0.0000	0.3532	0.0209	0.0000	0.8751
Water						0.0000	0.0000		0.0000	0.0000	0.1027	0.0000	0.1027	0.0106	2.5000e-004	0.4407
Total	7.8500e-003	0.0145	0.0155	7.0000e-005	3.5400e-003	1.9000e-004	3.7300e-003	9.5000e-004	1.9000e-004	1.1400e-003	0.4559	7.0589	7.5148	0.0318	2.8000e-004	8.3923

	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
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	Building Construction	Building Construction	6/1/2017	6/30/2017	5	22	
2	Grading	Grading	7/1/2017	7/4/2017	5	2	
3	Site Preparation	Site Preparation	8/1/2017	8/15/2017	5	11	

San Joaquin Consolidated Water Treatment System - San Joaquin Valley Unified APCD Air District, Annual

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

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
Building Construction	5	1.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

San Joaquin Consolidated Water Treatment System - San Joaquin Valley Unified APCD Air District, Annual

3.2 Building Construction - 2017

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	0.0141	0.1404	0.0888	1.3000e-004		9.4500e-003	9.4500e-003		8.6900e-003	8.6900e-003	0.0000	11.6347	11.6347	3.5600e-003	0.0000	11.7238
Total	0.0141	0.1404	0.0888	1.3000e-004		9.4500e-003	9.4500e-003		8.6900e-003	8.6900e-003	0.0000	11.6347	11.6347	3.5600e-003	0.0000	11.7238

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	9.0000e-005	7.0000e-005	6.9000e-004	0.0000	1.4000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1328	0.1328	1.0000e-005	0.0000	0.1329
Total	9.0000e-005	7.0000e-005	6.9000e-004	0.0000	1.4000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1328	0.1328	1.0000e-005	0.0000	0.1329

San Joaquin Consolidated Water Treatment System - San Joaquin Valley Unified APCD Air District, Annual

3.2 Building Construction - 2017

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	0.0141	0.1404	0.0888	1.3000e-004		9.4500e-003	9.4500e-003		8.6900e-003	8.6900e-003	0.0000	11.6347	11.6347	3.5600e-003	0.0000	11.7238
Total	0.0141	0.1404	0.0888	1.3000e-004		9.4500e-003	9.4500e-003		8.6900e-003	8.6900e-003	0.0000	11.6347	11.6347	3.5600e-003	0.0000	11.7238

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	9.0000e-005	7.0000e-005	6.9000e-004	0.0000	1.4000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1328	0.1328	1.0000e-005	0.0000	0.1329
Total	9.0000e-005	7.0000e-005	6.9000e-004	0.0000	1.4000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1328	0.1328	1.0000e-005	0.0000	0.1329

San Joaquin Consolidated Water Treatment System - San Joaquin Valley Unified APCD Air District, Annual

3.3 Grading - 2017

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					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	0.0105	7.9200e-003	1.0000e-005		7.3000e-004	7.3000e-004		7.0000e-004	7.0000e-004	0.0000	1.0699	1.0699	2.1000e-004	0.0000	1.0751
Total	1.2100e-003	0.0105	7.9200e-003	1.0000e-005	7.5000e-004	7.3000e-004	1.4800e-003	4.1000e-004	7.0000e-004	1.1100e-003	0.0000	1.0699	1.0699	2.1000e-004	0.0000	1.0751

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	8.0000e-005	6.0000e-005	6.3000e-004	0.0000	1.2000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1207	0.1207	0.0000	0.0000	0.1208
Total	8.0000e-005	6.0000e-005	6.3000e-004	0.0000	1.2000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1207	0.1207	0.0000	0.0000	0.1208

San Joaquin Consolidated Water Treatment System - San Joaquin Valley Unified APCD Air District, Annual

3.3 Grading - 2017

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					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	0.0105	7.9200e-003	1.0000e-005		7.3000e-004	7.3000e-004		7.0000e-004	7.0000e-004	0.0000	1.0699	1.0699	2.1000e-004	0.0000	1.0751
Total	1.2100e-003	0.0105	7.9200e-003	1.0000e-005	7.5000e-004	7.3000e-004	1.4800e-003	4.1000e-004	7.0000e-004	1.1100e-003	0.0000	1.0699	1.0699	2.1000e-004	0.0000	1.0751

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	8.0000e-005	6.0000e-005	6.3000e-004	0.0000	1.2000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1207	0.1207	0.0000	0.0000	0.1208
Total	8.0000e-005	6.0000e-005	6.3000e-004	0.0000	1.2000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1207	0.1207	0.0000	0.0000	0.1208

San Joaquin Consolidated Water Treatment System - San Joaquin Valley Unified APCD Air District, Annual

3.4 Site Preparation - 2017

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					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.6900e-003	0.0578	0.0239	5.0000e-005		2.6000e-003	2.6000e-003		2.3900e-003	2.3900e-003	0.0000	4.9871	4.9871	1.5300e-003	0.0000	5.0253
Total	4.6900e-003	0.0578	0.0239	5.0000e-005	2.7000e-004	2.6000e-003	2.8700e-003	3.0000e-005	2.3900e-003	2.4200e-003	0.0000	4.9871	4.9871	1.5300e-003	0.0000	5.0253

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	1.8000e-004	1.7200e-003	0.0000	3.4000e-004	0.0000	3.4000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.3319	0.3319	1.0000e-005	0.0000	0.3322
Total	2.2000e-004	1.8000e-004	1.7200e-003	0.0000	3.4000e-004	0.0000	3.4000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.3319	0.3319	1.0000e-005	0.0000	0.3322

San Joaquin Consolidated Water Treatment System - San Joaquin Valley Unified APCD Air District, Annual

3.4 Site Preparation - 2017

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					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.6900e-003	0.0578	0.0239	5.0000e-005		2.6000e-003	2.6000e-003		2.3900e-003	2.3900e-003	0.0000	4.9871	4.9871	1.5300e-003	0.0000	5.0253
Total	4.6900e-003	0.0578	0.0239	5.0000e-005	2.7000e-004	2.6000e-003	2.8700e-003	3.0000e-005	2.3900e-003	2.4200e-003	0.0000	4.9871	4.9871	1.5300e-003	0.0000	5.0253

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	1.8000e-004	1.7200e-003	0.0000	3.4000e-004	0.0000	3.4000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.3319	0.3319	1.0000e-005	0.0000	0.3322
Total	2.2000e-004	1.8000e-004	1.7200e-003	0.0000	3.4000e-004	0.0000	3.4000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.3319	0.3319	1.0000e-005	0.0000	0.3322

4.0 Operational Detail - Mobile

San Joaquin Consolidated Water Treatment System - San Joaquin Valley Unified APCD Air District, Annual

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	1.2500e-003	0.0131	0.0143	6.0000e-005	3.5400e-003	8.0000e-005	3.6200e-003	9.5000e-004	8.0000e-005	1.0300e-003	0.0000	5.4937	5.4937	3.4000e-004	0.0000	5.5021
Unmitigated	1.2500e-003	0.0131	0.0143	6.0000e-005	3.5400e-003	8.0000e-005	3.6200e-003	9.5000e-004	8.0000e-005	1.0300e-003	0.0000	5.4937	5.4937	3.4000e-004	0.0000	5.5021

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	2.80	1.85	0.95	9,272	9,272
Total	2.80	1.85	0.95	9,272	9,272

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.492402	0.034496	0.167383	0.136948	0.023406	0.006040	0.021602	0.106741	0.001802	0.001770	0.005495	0.001006	0.000911

San Joaquin Consolidated Water Treatment System - San Joaquin Valley Unified APCD Air District, Annual

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	1.6000e-004	1.4400e-003	1.2100e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.5652	1.5652	3.0000e-005	3.0000e-005	1.5745
NaturalGas Unmitigated	1.6000e-004	1.4400e-003	1.2100e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.5652	1.5652	3.0000e-005	3.0000e-005	1.5745

San Joaquin Consolidated Water Treatment System - San Joaquin Valley Unified APCD Air District, Annual

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					
General Light Industry	29330	1.6000e-004	1.4400e-003	1.2100e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.5652	1.5652	3.0000e-005	3.0000e-005	1.5745
Total		1.6000e-004	1.4400e-003	1.2100e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.5652	1.5652	3.0000e-005	3.0000e-005	1.5745

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					
General Light Industry	29330	1.6000e-004	1.4400e-003	1.2100e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.5652	1.5652	3.0000e-005	3.0000e-005	1.5745
Total		1.6000e-004	1.4400e-003	1.2100e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.5652	1.5652	3.0000e-005	3.0000e-005	1.5745

San Joaquin Consolidated Water Treatment System - San Joaquin Valley Unified APCD Air District, Annual

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	12586	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			
General Light Industry	12586	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

San Joaquin Consolidated Water Treatment System - San Joaquin Valley Unified APCD Air District, Annual

	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	6.4400e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	6.4400e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005

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	9.7000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	5.4700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Total	6.4400e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005

San Joaquin Consolidated Water Treatment System - San Joaquin Valley Unified APCD Air District, Annual

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	9.7000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	5.4700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Total	6.4400e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005

7.0 Water Detail

7.1 Mitigation Measures Water

San Joaquin Consolidated Water Treatment System - San Joaquin Valley Unified APCD Air District, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.1027	0.0106	2.5000e-004	0.4407
Unmitigated	0.1027	0.0106	2.5000e-004	0.4407

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0.32375 / 0	0.1027	0.0106	2.5000e-004	0.4407
Total		0.1027	0.0106	2.5000e-004	0.4407

San Joaquin Consolidated Water Treatment System - San Joaquin Valley Unified APCD Air District, Annual

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0.32375 / 0	0.1027	0.0106	2.5000e-004	0.4407
Total		0.1027	0.0106	2.5000e-004	0.4407

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.3532	0.0209	0.0000	0.8751
Unmitigated	0.3532	0.0209	0.0000	0.8751

San Joaquin Consolidated Water Treatment System - San Joaquin Valley Unified APCD Air District, Annual

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	1.74	0.3532	0.0209	0.0000	0.8751
Total		0.3532	0.0209	0.0000	0.8751

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	1.74	0.3532	0.0209	0.0000	0.8751
Total		0.3532	0.0209	0.0000	0.8751

9.0 Operational Offroad

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

San Joaquin Consolidated Water Treatment System - San Joaquin Valley Unified APCD Air District, Annual

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 Report

Biological Resource Evaluation

City of San Joaquin Water System Improvement Project

Fresno County, California



PREPARED FOR:

The City of San Joaquin
21900 Colorado Avenue
San Joaquin, CA 93660

PREPARED BY:



Colibri Ecological Consulting
11238 N. Via Trevisio Way
Fresno, CA 93730
www.colibri-ecology.com

March 2017

Contents

Executive Summary	iii
Abbreviations	iv
1.0 Introduction	5
1.1 Background	5
1.2 Project Description	5
1.3 Project Location.....	6
1.4 Purpose and Need of Project	6
1.5 Consultation History	6
1.6 Regulatory Framework.....	9
1.6.1 Federal Requirements	9
1.6.2 State Requirements.....	11
2.1 Desktop Review.....	13
2.2 Reconnaissance Survey	13
2.3 Effects Analysis and Significance Criteria	13
2.3.1 Effects Analysis	13
2.3.2 Significance Criteria	14
3.0 Results	17
3.1 Land Use and Habitats	17
3.2 Critical Habitat.....	19
3.3 Special-Status Species	19
3.3.1 Swainson’s hawk	19
3.2.2 Plant and Animal Species Observed	26
3.2.3 Nesting birds and the Migratory Bird Treaty Act.....	28
3.2.4 Regulated Habitats	28
4.0 Environmental Impacts	30
4.1 Effects Determinations.....	30
4.1.1 Critical Habitat.....	30

4.1.2	Special-Status Species	30
4.1.3	Migratory Birds.....	30
4.1.4	Regulated Habitats	30
4.2	Significance Determinations.....	30
4.2.1	Direct and Indirect Impacts	31
4.3	Cumulative Impacts	32
4.4	Unavoidable Significant Adverse Impacts.....	32
5.0	Literature Cited.....	33
	Appendix A. Official list of threatened and endangered species and critical habitats.	35
	Appendix B. CNDDDB occurrence records.	43

Figures

Figure 1.	Site vicinity map.	7
Figure 2.	Project site map.	8
Figure 3.	Reconnaissance survey area map.	16
Figure 4.	Photograph looking north along South Colusa Avenue showing suburban residential development.	17
Figure 5.	Photograph looking west from Well #5 along West Cherry Lane showing agricultural and commercial development.	18
Figure 6.	Photograph of the ponding basin northeast of the proposed treatment system.....	18
Figure 7.	CNDDDB occurrence map.	21

Tables

Table 1.	Special-status species, their listing status, habitat requirements, and potential to occur on or near the Project site.....	22
Table 2.	Plant and animal species observed during the reconnaissance survey.....	27

Executive Summary

The City of San Joaquin (City) proposes to construct a consolidated water treatment system in San Joaquin, Fresno County, California. The proposed project will involve (1) constructing a new consolidated treatment system at an undeveloped lot at 21926 West Cherry Lane, (2) installing approximately 2700 linear feet of 10-inch water pipeline below paved and dirt roadways between Well #3 on Railroad Street and Well #5 on West Cherry Lane, and (3) installing approximately 1100 linear feet of 4-inch sewer pipe below paved and dirt roadways between the new treatment system on West Cherry Lane and an existing sewer pipe near the intersection of South Colusa Avenue and Karin Avenue. The purpose of this project is to remove manganese from the water.

The City will obtain financing for the project from the Clean Water State Revolving Fund (CWSRF). The CWSRF is a state and federal partnership that helps ensure safe drinking water. It is administered by the State of California and partially funded by the United States Environmental Protection Agency. As a consequence, the project must not only meet environmental documentation and review requirements under the California Environmental Quality Act (CEQA) but must meet such requirements with respect to certain federal laws and regulations as well. This state and federal review process is known as CEQA-Plus.

To evaluate whether the project may affect biological resources under CEQA-Plus purview, we (1) obtained official lists from the United States Fish and Wildlife Service and the California Department of Fish and Wildlife of special-status species and designated and proposed critical habitat, (2) reviewed other relevant background information such as aerial images and topographic maps, and (3) conducted a field reconnaissance survey of the project site.

This biological resource evaluation summarizes existing biological conditions on the project site, the potential for special-status species and regulated habitats to occur on or near the project site, the potential impacts of the proposed project on biological resources and regulated habitats, and measures to reduce those potential impacts to a less-than-significant level under the CEQA.

We concluded the project will not affect regulated habitats. It may affect one special-status species and nesting migratory birds, but any effects can be reduced to less-than-significant levels with mitigation.

Abbreviations

Abbreviation	Definition
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CNDDDB	California Natural Diversity Database
CFR	Code of Federal Regulations
CNPS	California Native Plant Society
CSSC	California Species of Special Concern
CWC	California Water Code
CWSRF	Clean Water State Revolving Fund
EFH	Essential Fish Habitat
EPA	Environmental Protection Agency
FE	Federally listed as Endangered
FESA	Federal Endangered Species Act
FP	Fully Protected
FT	Federally listed as Threatened
MBTA	Migratory Bird Treaty Act
NOAA	National Oceanographic and Atmospheric Administration
SE	State-listed as Endangered
ST	State-listed as Threatened
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USC	United States Code
USGS	United States Geological Survey

1.0 Introduction

1.1 Background

The City of San Joaquin proposes to construct a consolidated water treatment system to remove manganese from the water. The City will obtain financing for this water system improvement project (Project) from the Clean Water State Revolving Fund (CWSRF). The CWSRF is administered by the State Water Resources Control Board and partially funded by a capitalization grant from the United States Environmental Protection Agency (EPA). Due to this federal nexus, issuing funds from the CWSRF constitutes a federal action, one that requires that the EPA determine whether the proposed action may affect federally protected resources. The Project must therefore comply with requirements of both the California Environmental Quality Act (CEQA) and certain federal environmental laws and regulations. This state and federal review process is known as CEQA-Plus.

The purpose of this biological resource evaluation is to assess whether the Project will affect state- or federally protected resources pursuant to CEQA-Plus guidelines. Such resources include species of plants or animals listed or proposed for listing under the Federal Endangered Species Act (FESA) or the California Endangered Species Act (CESA), as well as those covered under the Migratory Bird Treaty Act (MBTA), the California Native Plant Protection Act, and various other sections of the California Fish and Game Code. Biological resources considered here also include designated or proposed critical habitat recognized under the FESA. This biological resource evaluation also addresses Project-related impacts to regulated habitats, which, for purposes of this analysis, are those under the jurisdiction of the United States Army Corps of Engineers (USACE) or California Department of Fish and Wildlife (CDFW), as well as those addressed under the Wild and Scenic Rivers Act, Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), and Executive Order 11988 pertaining to floodplain management.

1.2 Project Description

The Project will involve (1) constructing a new consolidated treatment system at an undeveloped lot adjacent to Well #5, (2) installing approximately 2700 linear feet of 10-inch raw water pipeline below paved and dirt roadways between Well #3 and Well #5, and (3) installing approximately 1100 linear feet of 4-inch sewer pipe below paved and dirt roadways between the new treatment system and an existing sewer pipe in a suburban residential area.

The Project will begin after construction has started on a 0.75-million-gallon storage tank and booster pump adjacent to Well #5. Those elements are associated with a separate project funded by a Community Development Block Grant from the U.S. Department of Housing and

Urban Development. Nevertheless, those features are addressed here because they will occur within the footprint of the Project.

1.3 Project Location

Construction will occur in the City of San Joaquin, approximately 25 miles southwest of Fresno, in Fresno County, California (Figure 1). A total of 2700 linear feet of 10-inch raw water pipeline will be installed below paved and dirt roadways from Well #3 on Railroad Street, south along South Colusa Avenue, to Well #5 on West Cherry Lane (Figure 2). Well #3 on Railroad Street is adjacent to the Public Works Department Building, about 250 feet east of its intersection with South Colusa Avenue, and is surrounded by residential and commercial development. Well #5 is at 21926 West Cherry Lane, an unpaved farm road, and is surrounded by a vacant lot, agricultural fields, and commercial development. The new treatment system and the 0.75-million-gallon storage tank and booster pump will be constructed in the vacant lot adjacent to Well #5 (Figure 2). A total of 1100 linear feet of 4-inch sewer pipe will be installed below paved and dirt roadways between Well #5 and the intersection of South Colusa Avenue and Karin Avenue in a suburban residential area, where it will connect to existing sewer pipe (Figure 2).

1.4 Purpose and Need of Project

The purpose of the Project is to remove manganese from the water. The water produced by Well #3 and Well #5 is in violation of the manganese maximum contaminant level. The State Water Resources Control Board Department of Drinking Water recommends removing manganese when manganese is present in concentrations ten times greater than the notification level (500 micrograms per liter).

1.5 Consultation History

A list of all species listed or proposed for listing as threatened or endangered and all designated or proposed critical habitat under the ESA that could occur in the vicinity of the Project locations was obtained by Colibri Staff Scientist Renée Robison from the United States Fish and Wildlife Service (USFWS) website (<https://ecos.fws.gov/ipac/>) on January 24, 2017. This list is presented in Appendix A.

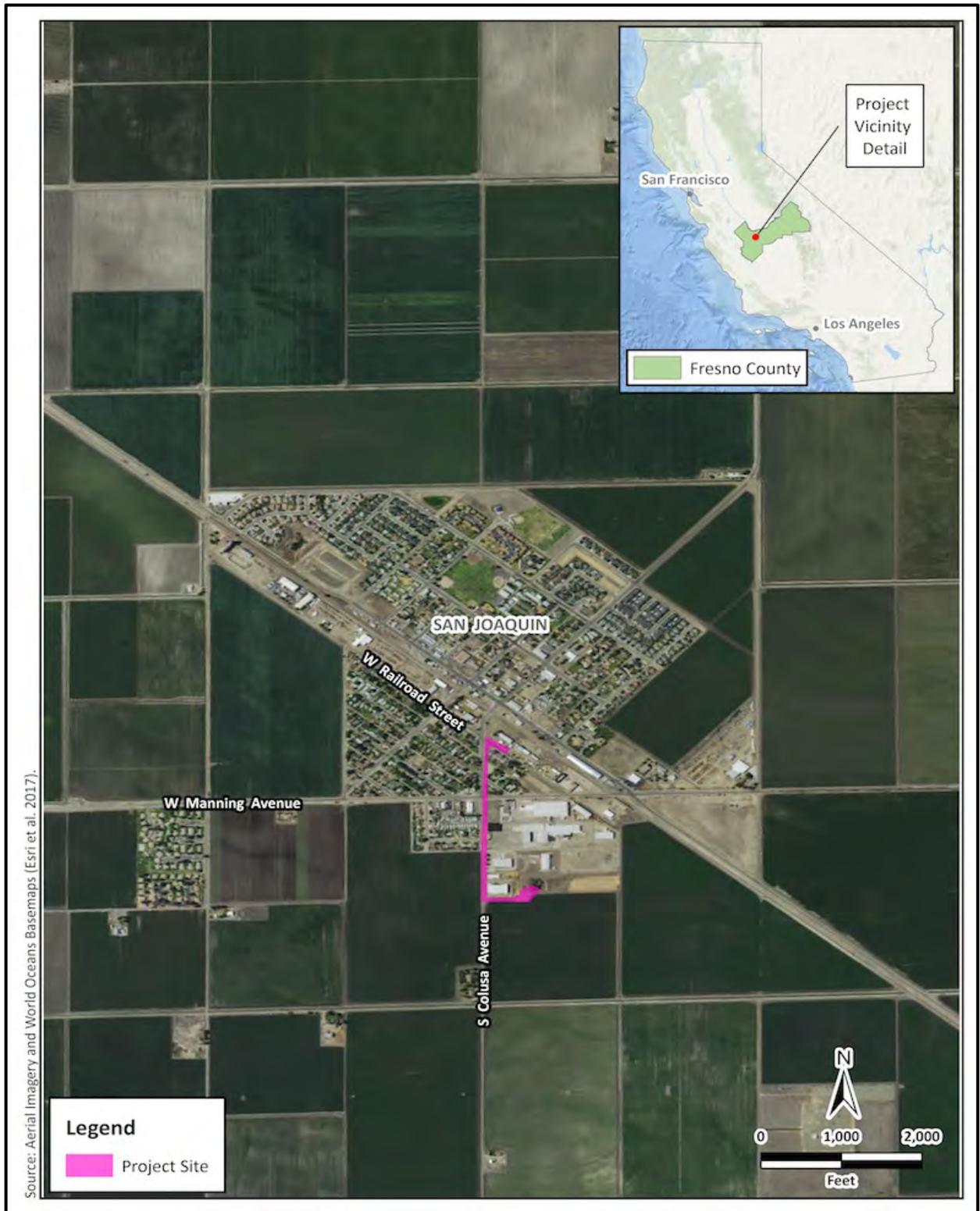


Figure 1. Site vicinity map.

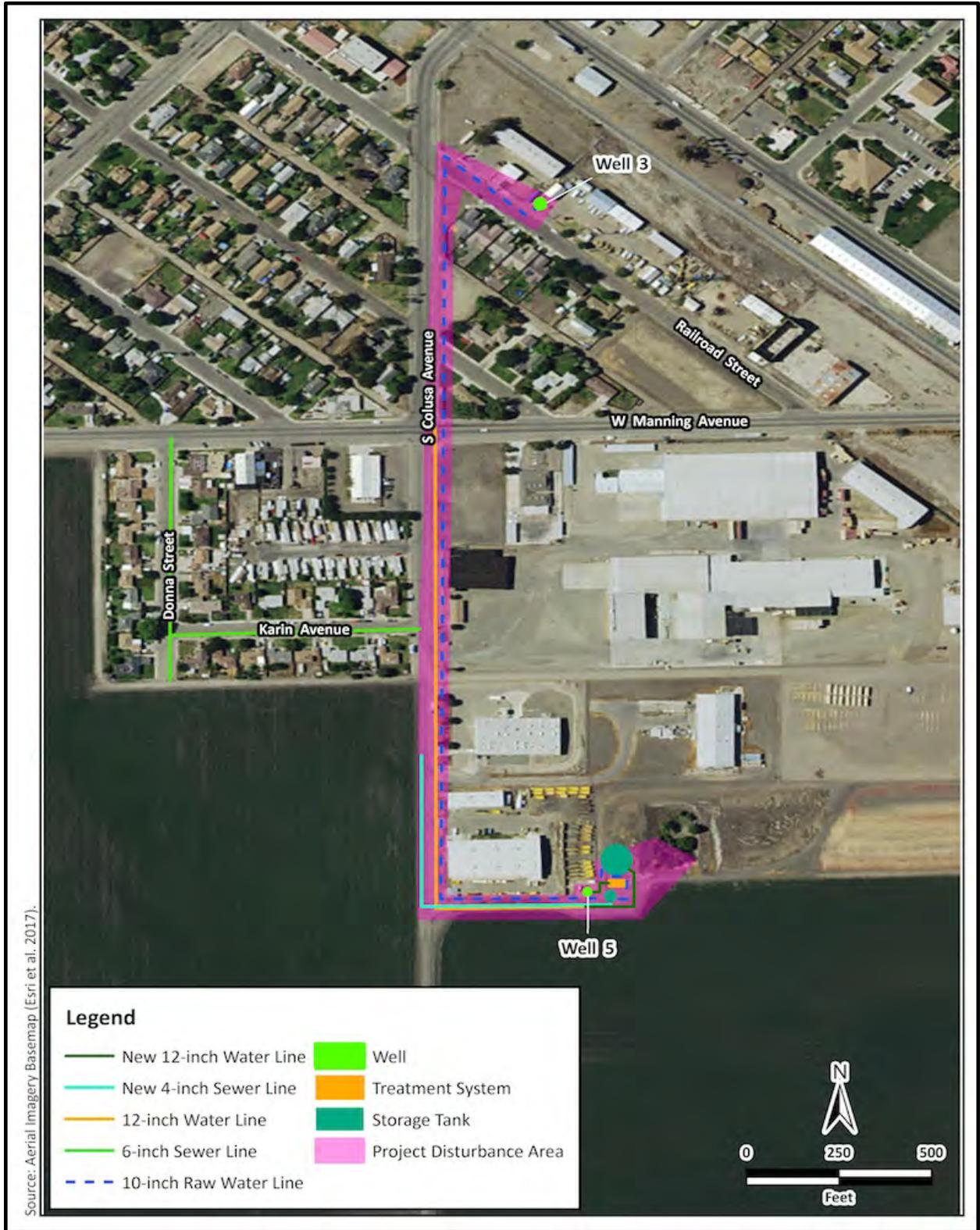


Figure 2. Project site map.

1.6 Regulatory Framework

The relevant federal and state regulatory requirements and policies that guide the impact analysis of the project are summarized below.

1.6.1 Federal Requirements

Federal Endangered Species Act. The USFWS and the National Oceanographic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS) enforce the provisions stipulated in the Federal Endangered Species Act of 1973 (FESA, 16 USC Section 1531 et seq.). Threatened and endangered species on the federal list (50 Code of Federal Regulations [CFR] 17.11 and 17.12) are protected from take unless a Section 10 permit is granted to an entity other than a federal agency or a Biological Opinion with incidental take provisions is rendered to a federal lead agency via a Section 7 consultation. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct. Pursuant to the requirements of the FESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federally listed species may be present on the project site and determine whether the proposed project may affect such species. Under the FESA, habitat loss is considered to be an impact to a species. In addition, the agency is required to determine whether the project is likely to jeopardize the continued existence of any species that is listed or proposed for listing under the FESA or result in the destruction or adverse modification of critical habitat proposed or designated for such species (16 USC §1536[3], [4]). Therefore, project-related impacts to these species or their habitats would be considered significant and would require mitigation.

Migratory Bird Treaty Act. The federal Migratory Bird Treaty Act (MBTA) (16 United States Code [USC] §703, Supp. I, 1989) prohibits killing, possessing, trading, or other forms of take of migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. "Take" is defined as the pursuing, hunting, shooting, capturing, collecting, or killing of birds, their nests, eggs, or young (16 USC §703 and §715n). This act encompasses whole birds, parts of birds, and bird nests and eggs. The MBTA specifically protects migratory bird nests from possession, sale, purchase, barter transport, import, and export, and take. For nests, the definition of take per 50 CFR 10.12 is to collect. The MBTA does not include a definition of an "active nest." However, the "Migratory Bird Permit Memorandum" issued by the USFWS in 2003 clarifies the MBTA in that regard and states that the removal of nests, without eggs or birds, is legal under the MBTA, provided no possession (which is interpreted as holding the nest with the intent of retaining it) occurs during the destruction (USFWS 2003).

United States Army Corps of Engineers Jurisdiction. Areas meeting the regulatory definition of "waters of the United States" (jurisdictional waters) are subject to the jurisdiction of the United States Army Corps of Engineers (USACE) under provisions of Section 404 of the Clean Water Act (1972) and Section 10 of the Rivers and Harbors Act (1899). These waters may include all

waters used, or potentially used, for interstate commerce, including all waters subject to the ebb and flow of the tide, all interstate waters, all other waters (intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, natural ponds, etc.), all impoundments of waters otherwise defined as waters of the United States, tributaries of waters otherwise defined as waters of the United States, the territorial seas, and wetlands adjacent to waters of the United States (33 CFR part 328.3). Ditches and drainage canals where water flows intermittently or ephemerally are not regulated as waters of the United States. Wetlands on non-agricultural lands are identified using the *Corps of Engineers Wetlands Delineation Manual* and related Regional Supplement (USACE 1987 and 2008). Construction activities, including direct removal, filling, hydrologic disruption, or other means in jurisdictional waters are regulated by the USACE. The placement of dredged or fill material into such waters must comply with permit requirements of the USACE. No USACE permit will be effective in the absence of state water quality certification pursuant to Section 401 of the Clean Water Act. The State Water Resources Control Board is the state agency (together with the Regional Water Quality Control Boards) charged with implementing water quality certification in California.

Wild and Scenic Rivers Act. The National Wild and Scenic Rivers System was created by Congress in 1968 (Public Law 90-542; 16 U.S.C. 1271 et seq.) to preserve certain rivers with significant natural, cultural, and recreational values in a free-flowing condition. The Act safeguards the special character of these rivers, while also recognizing the potential for their appropriate use and development.

Magnuson-Stevens Fishery Conservation and Management Act. The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) (Public law 94-265; Statutes at Large 90 Stat. 331; 16 U.S.C. ch. 38 § 1801 et seq.) establishes a management system for national marine and estuarine fishery resources. This legislation requires that all federal agencies consult the NMFS regarding all actions or proposed actions permitted, funded, or undertaken that may adversely affect “essential fish habitat (EFH).” EFH is defined as “waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” The Magnuson-Stevens Act states that migratory routes to and from anadromous fish spawning grounds are considered EFH. The phrase “adversely affect” refers to any impact that reduces the quality or quantity of EFH. Federal activities that occur outside of EFH, but which may have an impact on EFH must also be considered. The Act applies to salmon species, groundfish species, highly migratory species such as tuna, and coastal pelagic species such as anchovies.

Executive Order 11988: Floodplain Management. Executive Order 11988 (42 Federal Register 26951, 3 CFR, 1977 Comp., p. 117) requires federal agencies to avoid to the extent possible the long-term and short-term adverse impacts associated with occupying and modifying flood plains and to avoid direct and indirect support of developing floodplains wherever there is a practicable alternative.

1.6.2 State Requirements

California Endangered Species Act. The California Endangered Species Act (CESA) of 1970 (Fish and Game Code Section 2050 et seq., and CCR Title 14, Subsection 670.2, 670.51) prohibits the take of species listed under CESA (14 CCR Subsection 670.2, 670.5). Take is defined as hunt, pursue, catch, capture, or kill or attempt to hunt, pursue, catch, capture, or kill. Under CESA, state agencies are required to consult with the California Department of Fish and Wildlife [CDFW, formerly California Department of Fish and Game (CDFG)] when preparing CEQA documents. Consultation ensures that proposed projects or actions do not have a negative effect on state-listed species. During consultation, CDFW determines whether take would occur and identifies “reasonable and prudent alternatives” for the project and conservation of special-status species. CDFW can authorize take of state-listed species under Sections 2080.1 and 2081(b) of Fish and Game Code in those cases where it is demonstrated that the impacts are minimized and mitigated. Take authorized under section 2081(b) must be minimized and fully mitigated. A CESA permit must be obtained if a project will result in take of listed species, either during construction or over the life of the project. Under CESA, CDFW is responsible for maintaining a list of threatened and endangered species designated under state law (Fish and Game Code 2070). CDFW also maintains lists of species of special concern, which serve as “watch lists.” Pursuant to the requirements of CESA, a state or local agency reviewing a proposed project within its jurisdiction must determine whether the proposed project will have a potentially significant impact upon such species. Project-related impacts to species on the CESA list would be considered significant and would require mitigation. Impacts to species of concern or fully protected species would be considered significant under certain circumstances.

California Environmental Quality Act. The California Environmental Quality Act (CEQA) of 1970 (Subsections 21000–21178) requires that CDFW be consulted during the CEQA review process regarding impacts of proposed projects on special-status species. Special-status species are defined under CEQA Guidelines subsection 15380(b) and (d) as those listed under FESA and CESA and species that are not currently protected by statute or regulation but would be considered rare, threatened, or endangered under these criteria or by the scientific community. Therefore species that are considered rare or endangered are addressed in this biological resource evaluation regardless of whether they are afforded protection through any other statute or regulation. The California Native Plant Society (CNPS) inventories the native flora of California and ranks species according to rarity (CNPS 2017). Plants with Rare Plant Ranks 1A, 1B, 2A, or 2B are considered special-status species under CEQA.

Although threatened and endangered species are protected by specific federal and state statutes, CEQA Guidelines Section 15380(d) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if it can be shown to meet certain specified criteria. These criteria have been modeled after the definition in FESA and the section of the California Fish and Game Code dealing with rare and endangered plants and animals. Section 15380(d) allows a public agency to undertake a review to determine if a

significant effect on species that have not yet been listed by either the USFWS or CDFW (i.e., candidate species) would occur. Thus CEQA provides an agency with the ability to protect a species from the potential impacts of a project until the respective government agency has an opportunity to designate the species as protected, if warranted.

California Native Plant Protection Act. The California Native Plant Protection Act of 1977 (California Fish and Game Code Section 1900–1913) requires all state agencies to use their authority to carry out programs to conserve endangered and otherwise rare species of native plants. Provisions of the act prohibit the taking of listed plants from the wild and require the project proponent to notify CDFW at least 10 days in advance of any change in land use, which allows CDFW to salvage listed plants that would otherwise be destroyed.

Nesting birds. California Fish and Game Code Subsections 3503, 3503.5, and 3800 prohibit the possession, incidental take, or needless destruction of birds, their nests, and eggs. California Fish and Game Code Section 3511 lists birds that are “Fully Protected” as those that may not be taken or possessed except under specific permit.

California Department of Fish and Wildlife Jurisdiction. The CDFW has regulatory jurisdiction over lakes and streams in California. Streams include “intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams, and watercourses with subsurface flows. Canals, aqueducts, irrigation ditches, and other means of water conveyance can also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife” (CDFG 1994). Activities that divert or obstruct the natural flow of a stream; substantially change its bed, channel, or bank; or use any materials (including vegetation) from the streambed, may require that the project applicant enter into a Streambed Alteration Agreement with the CDFW in accordance with California Fish and Game Code Section 1602.

2.0 Methods

2.1 Desktop Review

As a framework for the evaluation and reconnaissance survey, we obtained an official USFWS species list for the Project (USFWS 2017). In addition, we searched the California Natural Diversity Database (CNDDDB; CDFW 2017) and the California Native Plant Society's Inventory of Rare and Endangered Plants (CNPS 2017) for records of special-status plant and animal species in the Project area. Regional lists of special-status species were compiled using USFWS, CNDDDB, and CNPS database searches confined to the San Joaquin 7.5-minute United States Geological Survey (USGS) topographic quad, which encompasses the Project site, and the eight surrounding quads (Cantua Creek, Five Points, Helm, Jamesan, Kerman, Tranquility, Tres Picos Farms, and Westside). Local lists of special-status species were compiled using CNDDDB records from within 5 miles of the Project site. Species for which the Project site does not provide suitable habitat were eliminated from further consideration. We also reviewed aerial imagery from Google Earth and other sources, USGS topographic maps, and relevant literature.

2.2 Reconnaissance Survey

Senior Scientist Howard Clark and Staff Scientist Joe Medley conducted a field reconnaissance survey of the Project site on 24 January 2017. The Project site and a 50-foot buffer surrounding the Project site were walked and thoroughly inspected to evaluate and document the potential for the site to support federally or state-protected resources. The survey area also included a 0.5-mile buffer around the Project site to evaluate the potential occurrence of nesting special-status raptors (Figure 3). All plants except those under cultivation in agricultural fields or planted in residential areas and all animals (vertebrate wildlife species) observed within the survey area were identified and documented. The survey area was evaluated for the presence of regulated habitats, including lakes, streams, and other waters using methods described in the *Wetlands Delineation Manual* and regional supplement (USACE 1987, 2008) and *A Field Guide to Lake and Streambed Alteration Agreements, Sections 1600–1607* (CDFG 1994).

2.3 Effects Analysis and Significance Criteria

2.3.1 Effects Analysis

Factors considered in evaluating the effects of the Project on critical habitat and special-status species included the (1) presence of designated or proposed critical habitat in the survey area, (2) potential for the survey area to support special-status species, (3) dependence of any such species on specific habitat components that would be removed or modified, (4) the degree of

impact to habitat, (5) abundance and distribution of habitat in the region, (6) distribution and population levels of the species, (7) cumulative effects of the Project and any future activities in the area, and (8) the potential to mitigate any adverse effects.

Factors considered in evaluating the effects of the Project on migratory birds included the potential for the Project to result in (1) mortality of migratory birds or (2) loss of migratory bird nests containing viable eggs or nestlings.

Factors considered in evaluating the effects of the Project on regulated habitats included the (1) presence of features comprising or potentially comprising waters of the United States, Wild and Scenic Rivers, essential fish habitat (EFH), floodplains, and lakes or streams within the survey area, and (2) potential for the Project to impact such habitats.

2.3.2 Significance Criteria

CEQA defines “significant effect on the environment” as “a substantial, or potentially substantial, adverse change in the environment.” (Pub. Res. Code, §21068). Under CEQA Guidelines Section 15065, a project's effects on biological resources are deemed significant where the project would do the following:

- 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

In addition to the Section 15065 criteria, Appendix G within the CEQA Guidelines includes six additional impacts to consider when analyzing the effects of a project. Under Appendix G, a project's effects on biological resources are deemed significant where the project would do the following:

- 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 CDFW or USFWS.
- 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 CDFW or USFWS.

- 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.

These criteria were used to determine whether the potential effects of the Project on biological resources qualify as significant.

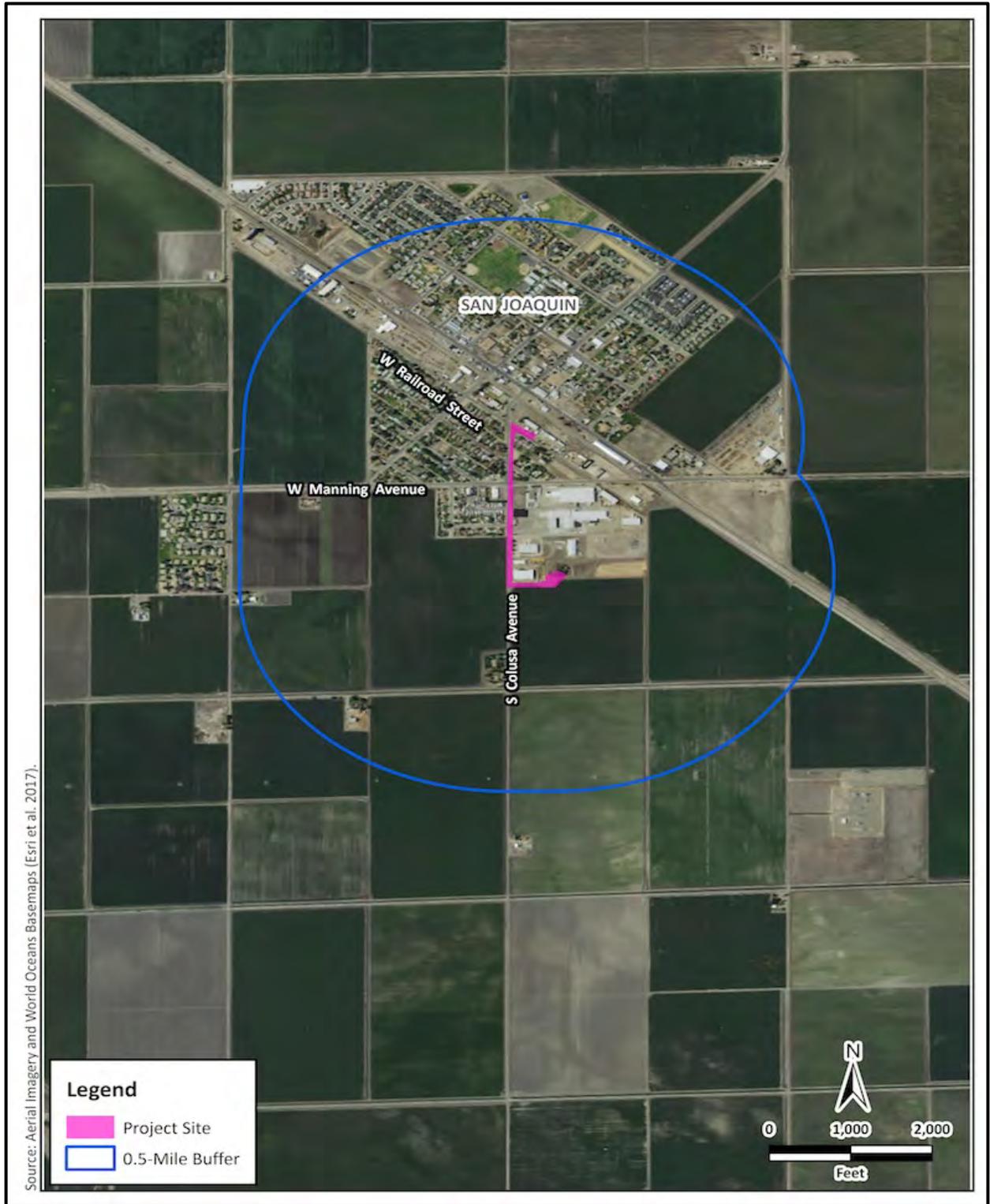


Figure 3. Reconnaissance survey area map.

3.0 Results

3.1 Land Use and Habitats

The Project site consists of developed and disturbed land cover in an agricultural, residential, and commercial setting (Figures 5 and 6). Residential and commercial development and several vacant lots border the Project site's paved road surfaces along Railroad Avenue and South Colusa Avenue (Figure 5). The Project site's dirt road surface along West Cherry Lane is bordered by commercial development to the north, agricultural fields to the south, and a vacant lot to the east (Figure 6). A 0.8-acre ponding basin, which contained water at the time of the survey, is about 30 feet northeast of the location for the proposed water treatment system (Figure 7).



Figure 4. Photograph looking north along South Colusa Avenue showing suburban residential development.



Figure 5. Photograph looking west from Well #5 along West Cherry Lane showing agricultural and commercial development.



Figure 6. Photograph of the ponding basin northeast of the proposed treatment system.

3.2 Critical Habitat

As identified in the official species list (USFWS 2017, Appendix A), the Project site does not occur in designated or proposed critical habitat.

3.3 Special-Status Species

The official species list for the Project site (USFWS 2017, Appendix A) includes eight species listed as threatened or endangered under the FESA. Those species include the threatened vernal pool fairy shrimp (*Branchinecta lynchi*), the threatened Delta smelt (*Hypomesus transpacificus*), the endangered blunt-nosed leopard lizard (*Gambelia sila*), the threatened California red-legged frog (*Rana draytonii*), the threatened giant garter snake (*Thamnophis gigas*), the endangered Fresno kangaroo rat (*Dipodomys nitratooides exilis*), the endangered Giant kangaroo rat (*Dipodomys ingens*), and the endangered San Joaquin kit fox (*Vulpes macrotis mutica*). The survey area lacked habitat for all of those species (Table 1). Therefore, those species are not addressed further.

Searching the CNDDDB (CDFW 2017) for records of special-status species from within the San Joaquin 7.5 minute USGS topographic quad and the eight surrounding quads produced 135 records of 37 species, eight of which are listed as threatened or endangered under the FESA (Table 1, Appendix B). Of those species, eight are known from within 5 miles of the Project site, and three of those are listed as threatened or endangered under the FESA (Table 1, Figure 7, Appendix B). Those include the endangered longhorn fairy shrimp (*Branchinecta longiantenna*), the threatened giant garter snake, which is also state-listed as threatened, and the endangered Fresno kangaroo rat, which is also state-listed as endangered. The other non-federally listed species known from within 5 miles of the Project site include the state-listed as threatened Swainson's hawk (*Buteo swainsoni*); the burrowing owl (*Athene cunicularia*), mountain plover (*Charadrius montanus*), and American badger (*Taxidea taxus*), which are recognized as State Species of Special Concern; and Munz's tidy-tips (*Layia munzii*), recognized by CNPS with a Rare Rank of 1B.2. The survey area lacked habitat for all of those species except one (Table 1). Therefore, those species, with the one exception, are not addressed further. The one exception is Swainson's hawk.

3.3.1 Swainson's hawk

The Swainson's hawk is a long-distance migrant, breeding in the Western United States and Canada and over-wintering mainly in southern South America. Historically, Swainson's hawks bred in most of the open regions of California, occupying grasslands, shrubsteppe, canyons, foothills, and small interior valleys (Woodbridge 1998). The current range of the species in California is substantially diminished, being largely limited to the Central Valley and Great Basin.

The historic population of Swainson's Hawks in California was thought to consist of roughly 17,000 pairs (Battistone 2016). It reached a low of 425 pairs by 1980 (Bloom 1980) and rebounded to about 2080 pairs by 2005 (Battistone 2016). The main cause of the population decline was mortality on the wintering grounds due to organophosphate insecticide poisoning (Woodbridge 1998). These insecticides were applied to crops to control grasshopper outbreaks. Farmer education programs and government regulation of these compounds have reduced incidents of Swainson's hawk mortality on the wintering grounds (Woodbridge 1998). Other threats to Swainson's hawks include the loss of preferred nesting habitat in mature riparian forests and loss of high quality foraging habitat to development or conversion to incompatible crop types (Woodbridge 1998).

Swainson's hawks are aerial foragers, soaring or coursing over open habitats, sometimes over long distances (up to 29 km), in search of food (Estep 1989, Woodbridge 1991). During the breeding season in California, Swainson's hawks prey primarily on small mammals, including voles, pocket gophers, and deer mice (Woodbridge 1998). Following the breeding season, their diet shifts to largely insect prey, especially grasshoppers and crickets (Woodbridge 1998). Swainson's hawks occupy large territories in the Central Valley that contain a suitable nesting site and large swaths of open foraging habitat. In the Central Valley, these foraging habitats consist primarily of agricultural areas. Swainson's hawks prefer alfalfa fields to other crops for foraging (Woodbridge 1998). Swainson's hawks build open platform stick nests typical. In the Central Valley, they most frequently construct their nests in cottonwoods (*Populus* sp.), willows (*Salix* sp.), sycamores (*Platanus* sp.), valley oaks (*Quercus lobata*), walnuts (*Juglans* sp.), or eucalyptus (*Eucalyptus* sp.) (Woodbridge 1998).

There is one CNDDDB occurrence record of Swainson's hawk from within 5 miles of the Project site (Figure 7; Appendix B, Occurrence No. 1946). This 2011 record consists of a nest in eucalyptus tree, 1.15 miles northeast of the Project site. Although the Project site itself does not provide habitat for Swainson's hawk, potential nest trees and foraging habitat in the form of alfalfa fields are present within the 0.5-mile buffer surrounding the Project site (Figure 3).

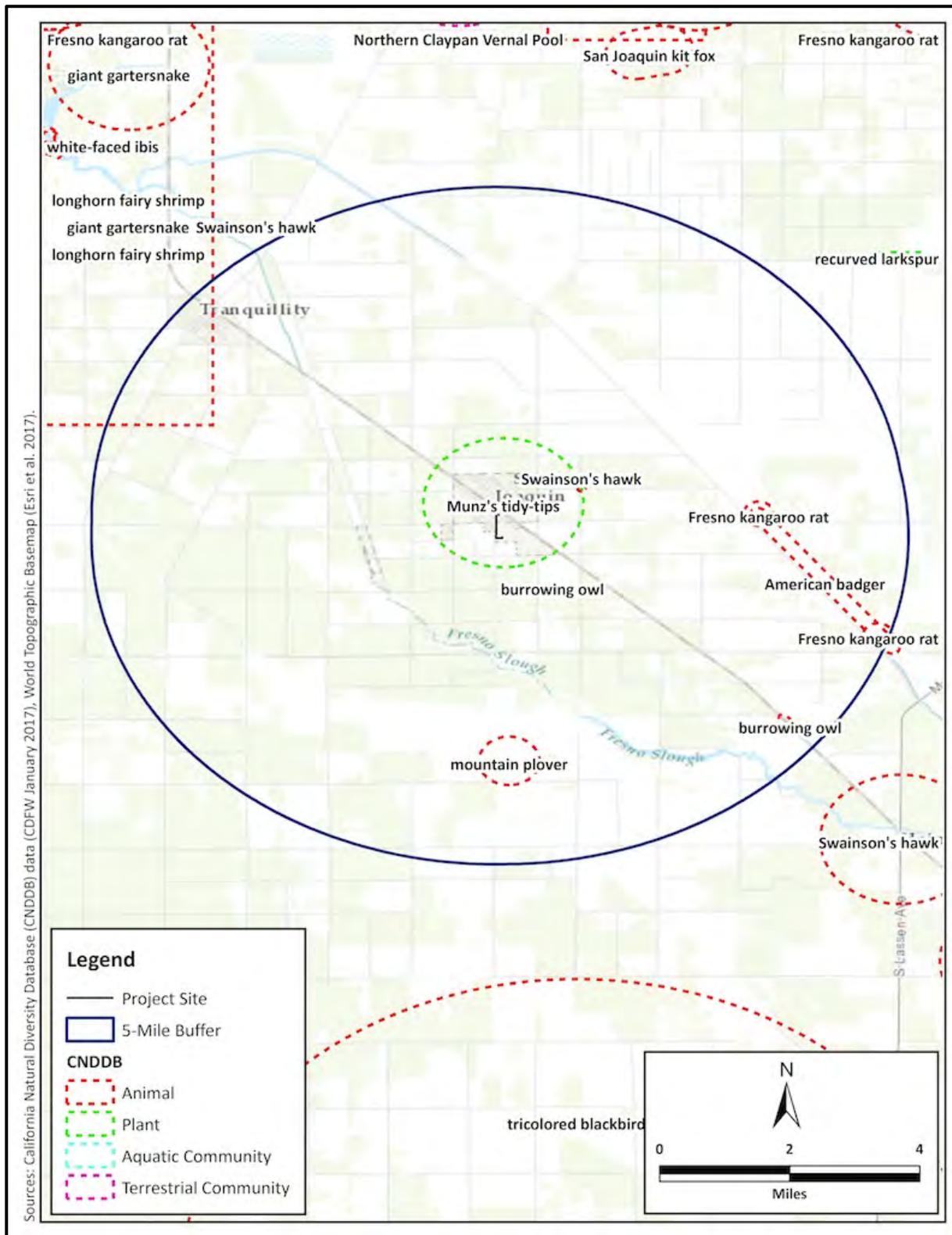


Figure 7. CNDDDB occurrence map.

Table 1. Special-status species, their listing status, habitat requirements, and potential to occur on or near the Project site.

Species	Status ¹	Habitat	Potential to Occur ²
Federally and State-Listed Endangered or Threatened Species			
Palmate-bracted salty bird's-beak (<i>Chloropyron palmatum</i>)	FE, SE, 1B.1	Alkaline flats in upland scrub and grassland.	Absent. Habitat lacking; no records from within 5 miles.
San Joaquin woollythreads (<i>Monolopia congdonii</i>)	FE, 1B.2	Upland scrub and grasslands with sandy soils.	Absent. Habitat lacking; no records from within 5 miles.
Longhorn fairy shrimp (<i>Branchinecta longiantenna</i>)	FE	Vernal pools and depressions.	Absent. Habitat lacking; record from within 5 miles.
Vernal pool fairy shrimp (<i>Branchinecta lynchi</i>)	FT	Vernal pools; some artificial depressions, stock ponds, vernal swales, ephemeral drainages, and seasonal wetlands.	Absent. Habitat lacking; no records from within 5 miles.
Delta smelt (<i>Hypomesus transpacificus</i>)	FT, SE	River channels, tidally influenced sloughs.	Absent. Habitat lacking; no records from within 5 miles.
California red-legged frog (<i>Rana draytonii</i>)	FT, SSSC	Creeks, ponds, and marshes for breeding; burrows for upland refuge.	Absent. Habitat lacking; no records from within 5 miles.
Giant gartersnake (<i>Thamnophis gigas</i>)	FT, ST	Marshes, sloughs, ponds, or other permanent sources of water with emergent vegetation, and grassy banks or open areas during active season; uplands with underground refuges or crevices during inactive season.	Absent. Habitat lacking; record from within 5 miles.
Blunt-nosed leopard lizard (<i>Gambelia sila</i>)	FE, SE, FP	Grassland and upland scrub.	Absent. Habitat lacking; no records from within 5 miles.
Swainson's hawk (<i>Buteo swainsoni</i>)	ST	Large trees for nesting with adjacent grasslands, alfalfa fields, or grain fields for foraging.	Possible. Large trees suitable for nesting were within 250 feet of the Project site, and suitable foraging areas in the form of alfalfa fields were nearby.

Species	Status ¹	Habitat	Potential to Occur ²
Tricolored blackbird (<i>Agelaius tricolor</i>)	SE	Freshwater marsh with emergent or spiny vegetation for nesting; mainly grassland and feedlots for foraging.	Absent. Habitat lacking; ponding basin near proposed treatment system lacks emergent or spiny vegetation; no records from within 5 miles.
Fresno kangaroo rat (<i>Dipodomys nitratooides exilis</i>)	FE, SE	Sandy, alkaline, saline, and clay-based soils in upland scrub and grassland.	Absent. Habitat lacking; record from within 5 miles.
Giant kangaroo rat (<i>Dipodomys ingens</i>)	FE, SE	Grassland and upland scrub; also fallowed agricultural fields.	Absent. Habitat lacking; no records from within 5 miles.
San Joaquin antelope squirrel (<i>Ammospermophilus nelsoni</i>)	ST	Arid grasslands and upland scrub with sandy loam soils, widely spaced shrubs, and dry washes.	Absent. Habitat lacking; no records from within 5 miles.
San Joaquin kit fox (<i>Vulpes macrotis mutica</i>)	FE, ST	Grassland and upland scrub.	Absent. Habitat lacking; no records from within 5 miles.
California Species of Special Concern			
Western spadefoot (<i>Spea hammondi</i>)	CSSC	Open areas with sandy gravelly soils; rain pools for breeding.	Absent. Habitat lacking; no records from within 5 miles.
Coast horned lizard (<i>Phrynosoma blainvillii</i>)	CSSC	Open, generally sandy areas, washes, and flood plains in a variety of habitats.	Absent. Habitat lacking; no records from within 5 miles.
San Joaquin coachwhip (<i>Masticophis flagellum ruddocki</i>)	CSSC	Grassland and saltbush scrub with surface objects and rodent burrows for refuge.	Absent. Habitat lacking; no records from within 5 miles.
Two-striped gartersnake (<i>Thamnophis hammondi</i>)	CSSC	Permanent or semi-permanent fresh water bordered by dense vegetation; mammal burrows for cover.	Absent. Habitat lacking; no records from within 5 miles.
Western pond turtle (<i>Emys marmorata</i>)	CSSC	Ponds, rivers, marshes, streams, and irrigation ditches, usually with aquatic	Absent. Habitat lacking; ponding basin near proposed treatment system

Species	Status ¹	Habitat	Potential to Occur ²
		vegetation. Need basking sites and suitable upland habitat for egg laying.	lacks aquatic vegetation and basking sites; no records from within 5 miles.
Burrowing owl (<i>Athene cunicularia</i>)	CSSC	Grassland and upland scrub with friable soil; some agricultural or other developed and disturbed areas with ground squirrel burrows.	Absent. Habitat lacking; no ground squirrel burrows or burrow surrogates in the survey area.
Mountain plover (<i>Charadrius montanus</i>)	CSSC	Open, flat, and arid habitats with low, sparse vegetation.	Absent. Habitat lacking.
American badger (<i>Taxidea taxus</i>)	CSSC	Grassland and upland scrub.	Absent. Habitat lacking.
Western mastiff bat (<i>Eumops perotis californicus</i>)	CSSC	Prefers open, arid areas with high cliffs; open forests, woodlands, and grasslands for foraging.	Absent. Habitat lacking; no records from within 5 miles.
Western red bat (<i>Lasiurus blossevilli</i>)	CSSC	Trees within forested canyons and riparian zones for roosting; open areas for foraging.	Absent. Habitat lacking; no records from within 5 miles.
California Rare Plants			
Brittlescale (<i>Atriplex depressa</i>)	1B.2	Vernal pools, grasslands, or upland scrub with alkaline or clay soils.	Absent. Habitat lacking; no records from within 5 miles.
California alkali grass (<i>Puccinellia simplex</i>)	1B.2	Scrub, meadows, seeps, grassland, and vernal pools.	Absent. Habitat lacking; no records from within 5 miles.
Heartscale (<i>Atriplex cordulata</i> var. <i>cordulata</i>)	1B.2	Grasslands, meadows and seeps, and chenopod scrub communities with saline or alkaline soils.	Absent. Habitat lacking; no records from within 5 miles.
Indian Valley bush-mallow (<i>Malacothamnus aboriginum</i>)	1B.2	Cismontane woodland and chaparral with granite outcrops and sandy bare soils.	Absent. Habitat lacking; no records from within 5 miles.
Lesser saltscale	1B.1	Chenopod scrub, playa, and	Absent. Habitat lacking; no

Species	Status ¹	Habitat	Potential to Occur ²
<i>(Atriplex minuscula)</i>		grassland communities with sandy, alkaline soil.	records from within 5 miles.
Lost Hills crownscale <i>(Atriplex coronata var. vallicola)</i>	1B.2	Grassland and upland scrub with alkaline soils.	Absent. Habitat lacking; no records from within 5 miles.
Munz's tidy-tips <i>(Layia munzii)</i>	1B.2	Grassland and upland scrub with alkaline clay soils.	Absent. Habitat lacking.
Recurved larkspur <i>(Delphinium recurvatum)</i>	1B.2	Grassland and upland scrub with alkaline soils.	Absent. Habitat lacking; no records from within 5 miles.
Sanford's arrowhead <i>(Sagittaria sanfordii)</i>	1B.2	Freshwater marsh-wetlands.	Absent. Habitat lacking; no records from within 5 miles.
Subtle orache <i>(Atriplex subtilis)</i>	1B.2	Saline depressions.	Absent. Habitat lacking; no records from within 5 miles.
Other Rare Species			
Hoover's eriastrum (<i>Eriastrum hooveri</i>)	4.2, CNDDDB	Chenopod scrub, pinyon and juniper woodland, and valley and foothill grassland.	Absent. Habitat lacking; no records from within 5 miles.
Crotch bumble bee (<i>Bombus crotchii</i>)	CNDDDB	Open grassland and scrub habitats.	Absent. Habitat lacking; no records from within 5 miles.
Merlin (<i>Falco columbarius</i>)	CNDDDB	Grasslands, open forests, and coastal areas in winter only.	Absent. Habitat lacking; no records from within 5 miles.
White-faced ibis (<i>Plegadis chihi</i>)	CNDDDB	Freshwater marshes, irrigated land, tules with very shallow water.	Absent. Habitat lacking; no records from within 5 miles.
San Joaquin pocket mouse <i>(Perognathus inornatus)</i>	CNDDDB	Dry, open, grassy or weedy ground, arid annual grassland, and desert-shrub with sandy or finely textured soil.	Absent. Habitat lacking; no records from within 5 miles.
Yuma myotis (<i>Myotis yumanensis</i>)	CNDDDB	Juniper and riparian woodlands and desert regions closely associated with open water.	Absent. Habitat lacking; no records from within 5 miles.

CDFW (2017), CNPS (2017), USFWS (2017b).

Status¹	Potential to Occur²
FE = Federally listed as Endangered	Present: Species or sign of presence observed.
FT = Federally listed as Threatened	Likely: Species or sign not observed, but species reasonably certain to occur.
FP = Fully Protected	Possible: Species or sign not observed, but conditions suitable for occurrence.
SE = State-listed as Endangered	Unlikely: Species or sign not observed; conditions marginal for occurrence.
ST = State-listed as Threatened	Absent: Species or sign not observed; conditions unsuitable for occurrence.
CSSC = California Species of Special Concern	
CNDDDB = Recognized by the CNDDDB, other state or federal agencies, or conservation groups as rare or imperiled.	

CNPS California Rare Plant Rank:	Threat Ranks:
1B – plants rare, threatened, or endangered in California and elsewhere.	0.1 – seriously threatened in California (> 80% of occurrences).
4 – plants have limited distribution in California.	0.2 – moderately threatened in California (20-80% of occurrences).

3.2.2 Plant and Animal Species Observed

The Project site supports vegetation typical of highly disturbed areas. Unpaved portions of the Project site are dominated by foxtail (*Hordeum leporinum*) and other annual grasses, cheeseweed (*Malva parviflora*), filaree (*Erodium cicutarium*), and other ruderal plants (Table 1). Trees, which occur along Colusa Avenue, include Mexican fan palm (*Washingtonia robusta*), and blue gum (*Eucalyptus globulatus*) (Figure 5, Table 1). A total of 21 plant species (3 native and 18 nonnative) and 10 bird species were detected during the reconnaissance survey (Table 2).

Table 2. Plant and animal species observed during the reconnaissance survey.

Common Name	Scientific Name	Status
Plants		
Family Arecaceae		
Mexican fan palm	<i>Washingtonia robusta</i>	Nonnative
Family Asteraceae		
Common groundsel	<i>Senecio vulgaris</i>	Nonnative
Common sow thistle	<i>Sonchus oleraceus</i>	Nonnative
Common sunflower	<i>Helianthus annuus</i>	Native
Prickly lettuce	<i>Lactuca serriola</i>	Nonnative
Family Boraginaceae		
Common fiddleneck	<i>Amsinckia intermedia</i>	Native
Family Brassicaceae		
London rocket	<i>Sysimbrium irio</i>	Nonnative
Family Caryophyllaceae		
Chickweed	<i>Stellaria media</i>	Nonnative
Family Chenopodiaceae		
Lamb's quarters	<i>Chenopodium album</i>	Nonnative
Russian thistle	<i>Salsola tragus</i>	Nonnative
Family Fabaceae		
California burclover	<i>Medicago polymorpha</i>	Nonnative
Family Geraniaceae		
Filaree	<i>Erodium cicutarium</i>	Nonnative
Family Lamiaceae		
Giraffe head	<i>Lamium amplexicaule</i>	Nonnative
Family Malvaceae		
Cheeseweed	<i>Malva parviflora</i>	Nonnative
Family Myrtaceae		
Blue gum	<i>Eucalyptus globulus</i>	Nonnative
Family Poaceae		
Annual bluegrass	<i>Poa annua</i>	Nonnative
Bermuda grass	<i>Cynodon dactylon</i>	Nonnative
Foxtail	<i>Hordeum leporinum</i>	Nonnative
Large crabgrass	<i>Digitaria sanguinalis</i>	Nonnative
Family Polygonaceae		
Curly dock	<i>Rumex crispus</i>	Nonnative
Family Urticaceae		
Stinging nettle	<i>Urtica dioica</i>	Native
Birds		
Family Columbidae		
Rock pigeon	<i>Columba livia</i>	-
Eurasian collared-dove	<i>Streptopelia decaocto</i>	-
Family Trochilidae		

Common Name	Scientific Name	Status
Anna's hummingbird	<i>Calypte anna</i>	MBTA
Family Tyrannidae		
Black Phoebe	<i>Sayornis nigricans</i>	MBTA
Family Corvidae		
American crow	<i>Corvus brachyrhynchos</i>	MBTA
Family Mimidae		
Northern mockingbird	<i>Mimus polyglottos</i>	MBTA
Family Passeridae		
House sparrow	<i>Passer domesticus</i>	-
Family Motacillidae		
American pipit	<i>Anthus rubescens</i>	MBTA
Family Fringillidae		
House finch	<i>Haemorhous mexicanus</i>	MBTA
Family Emberizidae		
White-crowned sparrow	<i>Zonotrichia leucophrys</i>	MBTA

MTBA: Covered under the Migratory Bird Treaty Act.

3.2.3 Nesting birds and the Migratory Bird Treaty Act

Migratory birds have the potential to nest on or near the Project site. Species that may use the Project site or adjacent habitat include, but are not limited to, Swainson's hawk (*Buteo swainsonii*), western kingbird (*Tyrannus verticalis*), California scrub-jay (*Aphelocoma californica*), northern mockingbird (*Mimus polyglottos*), and house finch (*Carpodacus mexicanus*).

3.2.4 Regulated Habitats

No feature on or within 50 feet of the Project site qualifies as a regulated habitat. Due to the lack of direct or indirect connectivity or adjacency with navigable waters or interstate waters and the lack of potential to support interstate or foreign commerce, the ponding basin 30 feet northeast of the proposed treatment system (Figure 7) would not qualify as a federally protected wetland as defined by Section 404 of the Clean Water Act. Therefore, the basin would not fall under the jurisdiction of the USACE. Likewise, as this feature is neither a lake nor a stream, it would not be regulated by the CDFW.

The nearest stretch of river designated as Wild and Scenic is along the Kings River, about 70 miles northeast of the Project site (USFWS 2017a). The San Joaquin River, with no Wild and Scenic designation, is about 12 miles north of the Project site.

No marine or estuarine fishery resources or migratory routes to and from anadromous fish spawning grounds are present in the survey area. In addition, no EFH, defined by the Magnuson-Stevens Act as those resources necessary for fish spawning, breeding, feeding, or growth to maturity, are present in the survey area.

The Project site is not within a 100-year flood plain (Federal Emergency Management Agency 2017). The nearest flood plains are approximately 2 miles east of the Project site along the Fresno Slough Bypass and approximately 2 miles south along the Fresno Slough near Floral Avenue.

4.0 Environmental Impacts

4.1 Effects Determinations

Although effects determinations are traditionally made only in connection with federally listed species and critical habitat, they are applied in this CEQA-Plus context to all biological resource areas for consistency.

4.1.1 Critical Habitat

We conclude the Project will have **no effect** on critical habitat as no critical habitat has been designated or proposed in the survey area.

4.1.2 Special-Status Species

We conclude the Project **may affect but is not likely to adversely affect** the state-listed as threatened Swainson's hawk. The Project is not expected to affect any other special-status species due to the lack of habitat for those species in the survey area.

4.1.3 Migratory Birds

We conclude the Project **may affect but is not likely to adversely affect** nesting migratory birds.

4.1.4 Regulated Habitats

We conclude the Project will have **no effect** on regulated habitats.

4.2 Significance Determinations

This Project will not: (1) 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 (i.e., no such regulated habitat exists in the survey area); (2) have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act through direct removal, filling, hydrological interruption, or other means (i.e., no federally protected wetland exists in the survey area); (2) conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (i.e., no such policies exist, and no trees will be removed); or (3) conflict with the provisions of an adopted

Habitat Conservation Plan, Natural Communities Conservation Plan, or other approved local, regional, or state habitat conservation plan (i.e., no such plan exists). Therefore, these significance criteria are not analyzed further.

The remaining statutorily defined criteria provided the framework for criteria BIO1 and BIO2 below. These criteria are used to assess the impacts to biological resources stemming from the Project and provide the basis for determinations of significance:

- Criterion BIO1: 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.
- Criterion BIO2: 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.

4.2.1 Direct and Indirect Impacts

4.2.1 Potential Impact #1: Have a Substantial Adverse Effect on Special-Status Species (Criterion BIO1)

The state-listed as threatened Swainson's hawk could nest in the vicinity of the Project site. Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Disturbance that causes nest abandonment or loss of reproductive effort is considered take by the CDFW. Loss of fertile eggs or nestlings, or any activities resulting in nest abandonment, would constitute a significant impact. We recommend that the mitigation measure B1 (below) be included in the conditions of approval to reduce the potential impact to a less-than-significant level.

Mitigation B1. Protect nesting Swainson's hawks.

If work will occur during the Swainson's hawk nesting season (March 15 – June 30), a qualified biologist shall conduct a survey for active Swainson's hawk nests within 0.25 miles of all work locations no more than 14 days prior to the start of construction. If an active nest is found within 0.25 miles and the activity would disrupt nesting, a buffer or limited operating period shall be implemented in consultation with the California Department of Fish and Wildlife.

4.2.2 Potential Impact #2: Interfere Substantially with Native Wildlife Movements, Corridors, or Nursery Sites (Criterion BIO2)

Migratory birds are expected to nest on or in the vicinity of the Project site. Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Disturbance that causes nest abandonment or loss of reproductive effort is considered take by the CDFW. Loss of fertile eggs or nestlings, or any activities resulting in nest abandonment, could constitute a significant impact if the species is particularly rare in the region. Construction activities such as trenching or grading that disturb a rare nesting bird on the site or immediately adjacent to the construction zone could constitute a significant impact. We recommend that the mitigation measure B2 (below) be included in the conditions of approval to reduce the potential impact to a less-than-significant level.

Mitigation B2. Protect nesting birds.

If construction activities occur during nesting season (February through August), a qualified biologist shall conduct a survey for active bird nests within 250 feet of all work locations no more than 14 days prior to the start of construction. If an active nest is found close enough to the construction area to be disturbed by the construction activities, the qualified biologist shall determine the extent of a construction-free buffer to be established around the nest. If work cannot proceed without disturbing the nesting birds, work may need to be halted or redirected to other areas until nesting and fledging are completed or the nest has otherwise failed for non-construction related reasons.

4.3 Cumulative Impacts

Mitigation Measures B1 and B2 would reduce any contribution to cumulative impacts on biological resources to a less-than-significant level.

4.4 Unavoidable Significant Adverse Impacts

No unavoidable significant adverse impacts on biological resources would occur from implementing the Project.

5.0 Literature Cited

- Battistone, C. 2017. California Department of Fish and Wildlife: Swainson's Hawks in California. <https://www.wildlife.ca.gov/Conservation/Birds/Swainson-Hawks>. Accessed 27 January 2017.
- Bloom, P.H. 1979. The Status of Swainson's Hawk in California. State of California Department of Fish and Game. Sacramento, CA. 44pp.
- California Department of Fish and Game (CDFG). 1994. A Field Guide to Lake and Streambed Alteration Agreements, Sections 1600-1607, California Department of Fish and Game Code.
- California Department of Fish and Wildlife (CDFW). 2014a. Endangered and threatened animals in California. Biogeographic data branch, California Natural Diversity Data Base. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109405>. Accessed 23 January 2017.
- California Department of Fish and Wildlife (CDFW). 2017. State and Federally Listed Endangered, Threatened, and Rare Plants of California. Biogeographic data branch, California Natural Diversity Data Base. <https://www.wildlife.ca.gov/Data/CNDDB/Maps-and-Data>, accessed 26 January 2017.
- CNPS. 2017. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society, Sacramento, CA. <http://www.rareplants.cnps.org>. Accessed 23 January 2017.
- Estep, J. A. 1989. Biology, movements, and habitat relationships of the Swainson's Hawk in the Central Valley of California, 1986-87. California Department of Fish and Game, Nongame Bird and Mammal Sec. Rep. 52pp.
- Federal Emergency Management Agency. 2015. Guidelines for Implementing Executive Order 11988, Floodplain Management, and Executive Order 13690, Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input. 81 p.
- Federal Emergency Management Agency. 2017. Map Number FM06019C2550H, Fresno County, California. National Flood Insurance Program. Map revised February 18, 2009. <https://msc.fema.gov/portal/>. Accessed 26 January 2017.
- National Oceanic and Atmospheric Administration (NOAA). 2007. Magnuson-Stevens Fishery Conservation and Management Act. Second printing. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service. 178 p.

- United States Army Corps of Engineers (USACE). 1987. Corps of Engineers Wetlands Delineation Manual. Wetland Research Program Technical Report Y-87-1.
- United States Army Corps of Engineers (USACE). 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). ERDC/EL TR-08-28. http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/reg_supp/trel08-28.pdf. Accessed 26 January 2017.
- United States Fish and Wildlife Service. 2017a. National Wild and Scenic Rivers System. <https://www.rivers.gov/rivers/kings.php>. Accessed 26 January 2017.
- United States Fish and Wildlife Service. 2017b. IPaC Information for Planning and Conservation. <https://ecos.fws.gov/ipac/>. Accessed 23 January 2017.
- Woodbridge, B. 1991. Habitat selection by nesting Swainson's hawk: a hierarchical approach. M.Sc. Thesis, Oregon State University, Corvallis, OR. 80pp.
- Woodbridge, B. 1998. Swainson's Hawk (*Buteo swainsonii*). In: The Riparian Bird Conservation Plan: a strategy for reversing the decline of riparian-associated birds in California. California Partners in Flight. http://www.prbo.org/calpif/htmldocs/riparian_v-2.html. Accessed 27 January 2017.

Appendix A. Official list of threatened and endangered species and critical habitats.



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

PHONE: (916)414-6600 FAX: (916)414-6713

Consultation Code: 08ESMF00-2017-SLI-0878

January 23, 2017

Event Code: 08ESMF00-2017-E-01929

Project Name: City of San Joaquin Manganese Removal Project

Subject: List of threatened and endangered species that may occur in your proposed project location, and/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, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) 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 Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

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

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2)

of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

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

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

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 Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment



United States Department of Interior
Fish and Wildlife Service

Project name: City of San Joaquin Manganese Removal Project

Official Species List

Provided by:

Sacramento Fish and Wildlife Office
FEDERAL BUILDING
2800 COTTAGE WAY, ROOM W-2605
SACRAMENTO, CA 95825
(916) 414-6600

Consultation Code: 08ESMF00-2017-SLI-0878

Event Code: 08ESMF00-2017-E-01929

Project Type: WATER QUALITY MODIFICATION

Project Name: City of San Joaquin Manganese Removal Project

Project Description: The City of San Joaquin will construct a consolidated water treatment system. The project will involve (1) installing 2700 feet of 10-inch water pipe between Well # 3 on Railroad Street and Well #5 on W. Cherry Avenue, (2) installing 1110 feet of 4-inch sewer pipe between the new treatment system on W. Cherry Lane and existing sewer pipe near the intersection of S. Colusa Avenue and Karin Avenue, and (3) constructing a new treatment system at an undeveloped lot at 21926 W. Cherry Lane.

Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.



United States Department of Interior
Fish and Wildlife Service

Project name: City of San Joaquin Manganese Removal Project

Project Location Map:



Project Coordinates: MULTIPOLYGON (((-120.18708625799997 36.60504988900004, -120.187264718 36.604802426000056, -120.18783876199997 36.60520396000004, -120.18790419799994 36.604873809000026, -120.18790419799994 36.59982042900003, -120.18693754199995 36.59982042900003, -120.18694348999998 36.59985314700003, -120.18677990199996 36.59985612100007, -120.18678882499995 36.60007324700007, -120.18631888199998 36.60028145000007, -120.18603037199995 36.60015355400003, -120.18645570099993 36.59961222600003, -120.18809752899995 36.599585457000046, -120.18805469899996 36.605475813000055, -120.18708625799997 36.60504988900004)))

Project Counties: Fresno, CA



United States Department of Interior
Fish and Wildlife Service

Project name: City of San Joaquin Manganese Removal Project

Endangered Species Act Species List

There are a total of 8 threatened or endangered species on your 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. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Amphibians	Status	Has Critical Habitat	Condition(s)
California red-legged frog (<i>Rana draytonii</i>) Population: Wherever found	Threatened	Final designated	
Crustaceans			
Vernal Pool fairy shrimp (<i>Branchinecta lynchi</i>) Population: Wherever found	Threatened	Final designated	
Fishes			
Delta smelt (<i>Hypomesus transpacificus</i>) Population: Wherever found	Threatened	Final designated	
Mammals			
Fresno kangaroo rat (<i>Dipodomys nitratoides exilis</i>) Population: Wherever found	Endangered	Final designated	
Giant kangaroo rat (<i>Dipodomys ingens</i>) Population: Wherever found	Endangered		



United States Department of Interior
Fish and Wildlife Service

Project name: City of San Joaquin Manganese Removal Project

San Joaquin Kit fox (<i>Vulpes macrotis mutica</i>) Population: wherever found	Endangered		
Reptiles			
Blunt-Nosed Leopard lizard (<i>Gambelia silus</i>) Population: Wherever found	Endangered		
Giant Garter snake (<i>Thamnophis gigas</i>) Population: Wherever found	Threatened		



United States Department of Interior
Fish and Wildlife Service

Project name: City of San Joaquin Manganese Removal Project

Critical habitats that lie within your project area

There are no critical habitats within your project area.

Appendix B. CNDDDB occurrence records.



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Query Criteria: Quad IS (Cantua Creek (3612053) OR Five Points (3612041) OR Helm (3612051) OR Jamesan (3612062) OR Kerman (3612061) OR San Joaquin (3612052) OR Tranquillity (3612063) OR Tres Picos Farms (3612043) OR Westside (3612042))

<i>Spea hammondii</i>		Element Code: AAABF02020	
western spadefoot			
Listing Status:	Federal: None	CNDDDB Element Ranks:	Global: G3
	State: None		State: S3
Other:	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_NT-Near Threatened		
Habitat:	General: OCCURS PRIMARILY IN GRASSLAND HABITATS, BUT CAN BE FOUND IN VALLEY-FOOTHILL HARDWOOD WOODLANDS.		
	Micro: VERNAL POOLS ARE ESSENTIAL FOR BREEDING AND EGG-LAYING.		

Occurrence No.	238	Map Index: 48458	EO Index: 48458	Element Last Seen:	2001-03-30
Occ. Rank:	Excellent		Presence: Presumed Extant	Site Last Seen:	2001-03-30
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2002-08-06
Quad Summary:	Tranquillity (3612063)				
County Summary:	Fresno				
Lat/Long:	36.72494 / -120.29738		Accuracy:	80 meters	
UTM:	Zone-10 N4067765 E741357		Elevation (ft):	160	
PLSS:	T14S, R15E, Sec. 11, SE (M)		Acres:	0.0	
Location:	MENDOTA WILDLIFE AREA; 1.15 MILE SE OF THE INTERSECTION OF SAN MATEO AVE AND WHITES BRIDGE ROAD.				
Detailed Location:					
Ecological:	HABITAT CONSISTS OF A ALKALI SINK COMMUNITY WITH IODINE BUSH AND GOLDFIELDS AROUND VERNAL POOLS. AREA SURROUNDED BY A WILDLIFE REFUGE ON 3 SIDES AND BY A HORSE RANCH ON THE OTHER SIDE.				
General:	MANY LARVAE OBSERVED ON 30 MAR 2001.				
Owner/Manager:	DFG-MENDOTA WA				

Occurrence No.	298	Map Index: 56765	EO Index: 56781	Element Last Seen:	2004-03-10
Occ. Rank:	Fair		Presence: Presumed Extant	Site Last Seen:	2004-03-10
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2004-09-14
Quad Summary:	Jamesan (3612062)				
County Summary:	Fresno				
Lat/Long:	36.73964 / -120.20086		Accuracy:	80 meters	
UTM:	Zone-10 N4069644 E749931		Elevation (ft):	185	
PLSS:	T14S, R16E, Sec. 02, SW (M)		Acres:	0.0	
Location:	0.4 MILE NE OF THE INTERSECTION OF WHITES BRIDGE ROAD AND JAMES ROAD, KERMAN ECOLOGICAL RESERVE.				
Detailed Location:					
Ecological:	HABITAT CONSISTS OF A VERY LARGE VERNAL POOL, ALMOST COMPLETELY DRY; SURROUNDED BY ANNUAL GRASSLAND.				
General:	1 TADPOLE OBSERVED ON 10 MAR 2004.				
Owner/Manager:	DFG-KERMAN ER				



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	299	Map Index: 56766	EO Index: 56782	Element Last Seen:	2004-03-18
Occ. Rank:	Fair		Presence: Presumed Extant	Site Last Seen:	2004-03-18
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2010-02-11
Quad Summary:	Jamesan (3612062)				
County Summary:	Fresno				
Lat/Long:	36.72715 / -120.19081		Accuracy:	80 meters	
UTM:	Zone-10 N4068284 E750869		Elevation (ft):	185	
PLSS:	T14S, R16E, Sec. 11, SE (M)		Acres:	0.0	
Location:	0.9 MILE SE OF THE INTERSECTION OF WHITES BRIDGE ROAD AND JAMES ROAD, KERMAN ECOLOGICAL RESERVE.				
Detailed Location:					
Ecological:	HABITAT CONSISTS OF A VERY SMALL VERNAL POOL, IN A SCALD; SURROUNDED BY ANNUAL GRASSLAND.				
General:	25 TADPOLES OBSERVED ON 18 MAR 2004.				
Owner/Manager:	DFG-KERMAN ER				

Occurrence No.	300	Map Index: 56768	EO Index: 56784	Element Last Seen:	2004-03-10
Occ. Rank:	Good		Presence: Presumed Extant	Site Last Seen:	2004-03-10
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2010-02-16
Quad Summary:	Tranquillity (3612063)				
County Summary:	Fresno				
Lat/Long:	36.73361 / -120.28067		Accuracy:	80 meters	
UTM:	Zone-10 N4068770 E742822		Elevation (ft):	165	
PLSS:	T14S, R15E, Sec. 12, NE (M)		Acres:	0.0	
Location:	JUST SOUTH OF WHITES BRIDGE ROAD, 1.9 MILES EAST OF SAN MATEO AVENUE, ALKALI SINK ECOLOGICAL RESERVE.				
Detailed Location:					
Ecological:	HABITAT CONSISTS OF A VERNAL POOL, WITH IODINE BUSH; SURROUNDED BY ANNUAL GRASSLAND.				
General:	100 TADPOLES OBSERVED ON 10 MAR 2004.				
Owner/Manager:	DFG-ALKALI SINK ER				



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



<i>Plegadis chihi</i>		Element Code: ABNGE02020	
white-faced ibis			
Listing Status:	Federal: None	CNDDDB Element Ranks:	Global: G5
	State: None		State: S3S4
	Other: CDFW_WL-Watch List, IUCN_LC-Least Concern		
Habitat:	General: SHALLOW FRESH-WATER MARSH.		
	Micro: DENSE TULE THICKETS FOR NESTING INTERSPERSED WITH AREAS OF SHALLOW WATER FOR FORAGING.		

Occurrence No.	9	Map Index:	13707	EO Index:	17659	Element Last Seen:	1983-XX-XX
Occ. Rank:	Unknown	Presence:	Presumed Extant	Site Last Seen:		1983-XX-XX	
Occ. Type:	Natural/Native occurrence	Trend:	Unknown	Record Last Updated:		1994-02-25	

Quad Summary: Tranquillity (3612063)
County Summary: Fresno

Lat/Long:	36.69250 / -120.29753	Accuracy:	nonspecific area
UTM:	Zone-10 N4064165 E741445	Elevation (ft):	150
PLSS:	T14S, R15E, Sec. 23 (M)	Acres:	284.1

Location: MENDOTA WILDLIFE MANAGEMENT AREA, 4 MILES NORTHWEST OF TRANQUILITY.
Detailed Location:
Ecological: WETLAND AND OPEN WATER OF FRESNO SLOUGH; TYPHA SPP. AND SCIRPUS SPP.
General: IN 1979 FOUR PAIRS WERE OBSERVED NESTING IN A CATTAIL (TYPHA SP.) MARSH; IN 1983, 24 PAIRS OBSERVED NESTING.
Owner/Manager: DFG-MENDOTA WA

<i>Buteo swainsoni</i>		Element Code: ABNKC19070	
Swainson's hawk			
Listing Status:	Federal: None	CNDDDB Element Ranks:	Global: G5
	State: Threatened		State: S3
	Other: BLM_S-Sensitive, IUCN_LC-Least Concern, USFWS_BCC-Birds of Conservation Concern		
Habitat:	General: BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, & AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.		
	Micro: REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.		



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	42	Map Index: 14317	EO Index: 27256	Element Last Seen: 1979-07-31
Occ. Rank:	Unknown		Presence: Presumed Extant	Site Last Seen: 1994-06-23
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated: 2013-01-15

Quad Summary: Five Points (3612041)

County Summary: Fresno

Lat/Long:	36.48515 / -120.00498	Accuracy:	1/5 mile
UTM:	Zone-10 N4041932 E768306	Elevation (ft):	195
PLSS:	T17S, R18E, Sec. 03, NW (M)	Acres:	0.0

Location: INTERSECTION OF ELKHORN AVE & FRESNO SLOUGH, 1 MI W OF BURREL.

Detailed Location: TERRITORY #FR006. MAPPED TO "INTERSECTION OF ELKHORN AVE & THE FRESNO SLOUGH."

Ecological: RIPARIAN SITE SURROUNDED BY AGRICULTURE.

General: 3 FLEDGLINGS FLEW FROM WILLOWS, 31 JUL 1979 (P. BLOOM); NO ADULTS OR NEST FOUND. "NO TREES OF SUITABLE NESTING SIZE AT THE SITE OR ANYWHERE WITHIN A COUPLE OF MILES" ON 23 JUN 1994 (PRESLEY), BUT TREES ALONG SLOUGH AND IN BURREL (AERIALS).

Owner/Manager: UNKNOWN

Occurrence No.	1428	Map Index: 61413	EO Index: 61449	Element Last Seen: 2005-05-13
Occ. Rank:	Unknown		Presence: Presumed Extant	Site Last Seen: 2005-05-13
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated: 2005-05-25

Quad Summary: Tres Picos Farms (3612043)

County Summary: Fresno

Lat/Long:	36.37794 / -120.26354	Accuracy:	80 meters
UTM:	Zone-10 N4029347 E745475	Elevation (ft):	320
PLSS:	T18S, R16E, Sec. 08, SW (M)	Acres:	0.0

Location: EAST SIDE OF THE CALIFORNIA AQUEDUCT, 5.8 MILES NORTH OF THE JUNCTION OF HIGHWAY 145 WITH I-5, 7 MILES WEST OF WESTSIDE.

Detailed Location: NEST TREE IS A EUCALYPTUS (45 ABOUT IN HEIGHT, NEST ABOUT 30 FEET HIGH IN THE TREE), LOCATED WITHIN A ROW OF EUCALYPTUS LINING THE EDGE OF AN AGRICULTURAL FIELD.

Ecological: NEST TREE IS A EUCALYPTUS; SURROUNDED BY THE CALIFORNIA AQUEDUCT, AGRICULTURE, AND SCATTERED HOUSES.

General: 1 ADULT OBSERVED BRINGING PREY TO A SECOND ADULT SITTING ON THE NEST ON 13 MAY 2005.

Owner/Manager: UNKNOWN



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	1430	Map Index: 61814	EO Index: 61850	Element Last Seen:	2005-06-27
Occ. Rank:	Poor		Presence: Presumed Extant	Site Last Seen:	2005-06-27
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2005-06-29

Quad Summary: Tres Picos Farms (3612043)
County Summary: Fresno

Lat/Long:	36.40798 / -120.28487	Accuracy:	80 meters
UTM:	Zone-10 N4032626 E743468	Elevation (ft):	335
PLSS:	T17S, R15E, Sec. 36, NE (M)	Acres:	0.0

Location: WEST SIDE OF THE CALIFORNIA AQUEDUCT, BETWEEN LAGUNA AVENUE AND PARKHURST AVENUE, 8 MILES WEST OF WESTSIDE.
Detailed Location: NEST TREE LOCATED AT THE CALIFORNIA AQUEDUCT AND SALT CREEK.
Ecological: NEST TREE TYPE UNKNOWN. THIS WAS THE ONLY AVAILABLE NEST TREE AT THIS SITE. SURROUNDING AREA IS IN ROW CROPS.
General: 1 ADULT AND 1 CHICK (VISIBLE IN NEST) OBSERVED ON 27 JUN 2005. THIS WAS ALSO A SUCCESSFUL NESTING SITE IN 2003.
Owner/Manager: DWR

Occurrence No.	1729	Map Index: 83075	EO Index: 84071	Element Last Seen:	2008-06-24
Occ. Rank:	Good		Presence: Presumed Extant	Site Last Seen:	2008-07-02
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2011-06-22

Quad Summary: Tranquillity (3612063)
County Summary: Fresno

Lat/Long:	36.73037 / -120.34286	Accuracy:	80 meters
UTM:	Zone-10 N4068254 E737277	Elevation (ft):	160
PLSS:	T14S, R15E, Sec. 09, N (M)	Acres:	0.0

Location: FRESNO SLOUGH, JUST SOUTH OF STATE ROUTE 180 (W WHITEBRIDGE AVE), 2.5 MI SE OF MENDOTA AIRPORT, MENDOTA WILDLIFE AREA.
Detailed Location: IN COTTONWOOD TREE APPROXIMATELY 800 FEET SOUTH OF THE KINGS SLOUGH (WHITES) BRIDGE. MAPPED TO PROVIDED MAP.
Ecological: NEST SITE IS LOCATED WITHIN THE MENDOTA WILDLIFE AREA. VISIBLE DISTURBANCES: DISTURBANCE FROM RECREATIONAL ACTIVITIES (BOATING & FISHING) IN SLOUGH.
General: ADULT OBSERVED NESTING IN MATURE COTTONWOOD TREE ON 16 APR 2008. ADULT AND NESTLING WERE OBSERVED ON 10TH, 16TH & 24TH OF JUNE 2008. NO ACTIVITY OBSERVED AT NEST SITE 2 JUL 2008 AND FOR THE REMAINDER OF NESTING SEASON.
Owner/Manager: CALTRANS, DFG-MENDOTA WA



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	1730	Map Index: 83077	EO Index: 84072	Element Last Seen:	2008-05-XX
Occ. Rank:	Good		Presence: Presumed Extant	Site Last Seen:	2008-05-XX
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2011-06-22

Quad Summary: Tranquillity (3612063)

County Summary: Fresno

Lat/Long:	36.74860 / -120.37189	Accuracy:	80 meters
UTM:	Zone-10 N4070205 E734629	Elevation (ft):	170
PLSS:	T14S, R15E, Sec. 06, NE (M)	Acres:	0.0

Location: JUST NNW OF BELMONT AVE & STATE ROUTE 180 (W WOODBRIDGE ROAD), 0.6 MI S OF MENDOTA AIRPORT, MENDOTA.

Detailed Location: IN EUCALYPTUS TREE LOCATED WITHIN CALTRANS MAINTENANCE YARD, JUST SW OF W BEMONT AVE AND STATE ROUTE 180. MAPPED TO COORDINATES AND PROVIDED MAPS.

Ecological: CALTRANS MAINTENANCE STATION SURROUNDED BY ROADWAY, AGRICULTURAL LANDS, AND INDUSTRIAL DEVELOPMENT. VISIBLE DISTURBANCES: DISTURBANCE FROM EQUIPMENT AND PERSONNEL.

General: 2 NESTING ADULTS WERE OBSERVED IN TREE ON 19 JUL 2007. 2 ADULTS OBS TENDING TO NEST/MATING ON 17 APR 2008. NEST INCUBATION OBS APR-MAY 2008, NO NESTLINGS OBS. NEST REDUCED IN SIZE W/PORIONS OF NEST MISSING ON 10 JUN 2008; NEST FAILED.

Owner/Manager: CALTRANS

Occurrence No.	1785	Map Index: 86228	EO Index: 87270	Element Last Seen:	2011-04-23
Occ. Rank:	Good		Presence: Presumed Extant	Site Last Seen:	2011-04-23
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2013-01-14

Quad Summary: Jamesan (3612062)

County Summary: Fresno

Lat/Long:	36.66805 / -120.24444	Accuracy:	80 meters
UTM:	Zone-10 N4061588 E746267	Elevation (ft):	165
PLSS:	T14S, R16E, Sec. 32, E (M)	Acres:	0.0

Location: ALONG FRESNO SLOUGH ABOUT 0.5 MILE DOWNSTREAM (NW) OF (SAINT) JAMES ROAD, ABOUT 1.4 MILES NNE OF THE TRANQUILLITY PO.

Detailed Location: MAPPED TO PROVIDED COORDINATES FOR NEST LOCATION. ROOSTING PAIR LOCATED ABOUT 1 MI WNW OF NEST SITE. GROUP FORAGING SITE LOCATED ABOUT 1 TO 1.5 MI SSE OF NEST SITE AT FIELDS ON EITHER SIDE OF S LEVEE RD JUST E OF TRANQUILITY (200-500 SWHA).

Ecological: NON-NATIVE GRASSLAND ALONG SLOUGH, THEN SURROUNDING LAND IS AGRICULTURE. NOT ONLY IS THIS SITE USED FOR NESTING, THE SURROUNDING AGRICULTURE LANDS APPEAR TO BE IMPORTANT FORAGING HABITAT FOR MIGRATING SWHA. POSSIBLY MORE NESTS UNDISCOVERED.

General: 200+ ADULTS OBSERVED FORAGING IN RECENTLY CUT ALFALFA FIELD 8 APR; 2 ADULTS OBS ROOSTING IN A COTTONWOOD TREE 14 APR; 2 ADULTS OBS NESTING IN A GOODDING'S BLACK WILLOW TREE 23 APR; 500+ OBS FORAGING IN RECENTLY CUT ALFALFA FIELD SEP 9 2011.

Owner/Manager: PVT



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	1946	Map Index: 87874	EO Index: 88905	Element Last Seen:	2011-07-14
Occ. Rank:	Fair		Presence: Presumed Extant	Site Last Seen:	2011-07-14
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2013-01-17
Quad Summary:	San Joaquin (3612052)				
County Summary:	Fresno				
Lat/Long:	36.61090 / -120.16889		Accuracy:	80 meters	
UTM:	Zone-10 N4055442 E753208		Elevation (ft):	175	
PLSS:	T15S, R17E, Sec. 19, W (M)		Acres:	0.0	
Location:	SE CORNER OF S YUBA AVE AT W PARLIER AVE, 1 MI ENE OF SAN JOAQUIN CITY HALL.				
Detailed Location:	MAPPED TO TREE AT PROVIDED LOCATION.				
Ecological:	SURROUNDED BY ANNUAL CROPS & ORCHARDS, WITH CITY OF SAN JOAQUIN TO THE W. PV SOLAR PROJECT PROPOSED ADJACENT TO NEST; CONSTRUCTION ACTIVITIES COULD ALTER NESTING BEHAVIOR. OTHER RARE SPECIES OBSERVED FORAGING NEARBY: BUOW, NOHA, & LOSH.				
General:	2 ADULTS BUILDING A NEST IN A EUCALYPTUS TREE ON 13 & 19 APR; 2 DOWNY NESTLINGS BY 22 JUN; 1 JUVENILE PERCHED IN BRANCHES NEAR NEST 14 JUL 2011.				
Owner/Manager:	PVT				

Occurrence No.	1947	Map Index: 87876	EO Index: 88910	Element Last Seen:	2012-05-19
Occ. Rank:	Fair		Presence: Presumed Extant	Site Last Seen:	2012-06-22
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2013-01-17
Quad Summary:	Tres Picos Farms (3612043)				
County Summary:	Fresno				
Lat/Long:	36.43046 / -120.33216		Accuracy:	80 meters	
UTM:	Zone-10 N4035002 E739158		Elevation (ft):	390	
PLSS:	T17S, R15E, Sec. 22, SW (M)		Acres:	0.0	
Location:	0.4 MI ENE OF MT WHITNEY AVE AT S STANISLAUS AVE, 2.7 MI W OF TERRY RANCH, 6 MI SE OF THREE ROCKS (TOWN).				
Detailed Location:	MAPPED TO PROVIDED COORDINATES. NEST WAS IN A FREMONT COTTONWOOD AMONG A RIBBON OF COTTONWOODS ALONG CANTUA CREEK.				
Ecological:	PLANTING OF ALMOND ORCHARDS W & N, ROW CROPS E & S. AMPLE NEST PREDATOR POPULATION & IRREGULARLY INTENSIVE AGRICULTURAL ACTIVITIES WITHIN 50 FT OF NEST MAY HAVE CAUSED NEST FAILURE.				
General:	SITE VISITED WEEKLY 15 MAR-22 JUN 2012: ADULT FEMALE PERCHED NEAR PRE-EXISTING NEST 30 MAR; FEMALE INCUBATING BY 5 MAY; FEMALE ON NEST AND ADULT MALE NEARBY THROUGH 19 MAY; BOTH ADULTS GONE FROM TERRITORY BY 26 MAY THROUGH 22 JUN 2012.				
Owner/Manager:	PVT				



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	2445	Map Index: 89984	EO Index: 90996	Element Last Seen:	1934-04-27
Occ. Rank:	Unknown		Presence: Presumed Extant	Site Last Seen:	1934-04-27
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2013-09-09
Quad Summary:	Tres Picos Farms (3612043), Lillis Ranch (3612044)				
County Summary:	Fresno				
Lat/Long:	36.41615 / -120.38869		Accuracy:	nonspecific area	
UTM:	Zone-10 N4033276 E734132		Elevation (ft):	500	
PLSS:	T17S, R15E, Sec. 30 (M)		Acres:	1321.0	
Location:	CANTUA CREEK.				
Detailed Location:	SPECIMENS WITH LOCALITIES "CANTUA CREEK" OR SIMILAR ATTRIBUTED HERE. EXACT COLLECTION LOCATIONS UNKNOWN, BUT MOST DESCRIPTIONS INCLUDED ON THE COLLECTORS' SPECIMEN LABELS INDICATE THE NEST TREES WERE LOCATED IN OR NEAR THE CREEK DRAINAGE.				
Ecological:	NEST TREES WERE COTTONWOODS IN OR ALONG CANTUA CREEK. FROM THE ABUNDANCE OF EGG SPECIMENS COLLECTED ALONG THE CREEK BETWEEN 1924 AND 1934, IT SEEMS THAT THIS WAS ONCE A SIGNIFICANT BREEDING GROUND FOR SWAINSON'S HAWKS.				
General:	TYLER COLLECTED 7 EGGS FROM 3 NESTS, APR-MAY 1924, 2 EGGS FROM 1 NEST IN APR 1925, AT LEAST 4 EGGS FROM 3 NESTS IN 1926, AND 2 EGGS FROM 1 NEST IN 1928. DEGROOT COLLECTED EGGS FROM 8 OR 9 NESTS IN APR 1934.				
Owner/Manager:	UNKNOWN				
Occurrence No.	2503	Map Index: 90260	EO Index: 91293	Element Last Seen:	1907-04-30
Occ. Rank:	Unknown		Presence: Presumed Extant	Site Last Seen:	1907-04-30
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2013-10-02
Quad Summary:	Helm (3612051)				
County Summary:	Fresno				
Lat/Long:	36.60500 / -120.03959		Accuracy:	1 mile	
UTM:	Zone-10 N4055137 E764795		Elevation (ft):	195	
PLSS:	T15S, R18E, Sec. 20 (M)		Acres:	0.0	
Location:	ABOUT 10 MILES NORTH OF WHEATVILLE.				
Detailed Location:	MAPPED TO SPECIMEN LOCALITY, "10 MI N. WHEATVILLE, FRESNO CO. (NEW HOPE)." EXACT COLLECTION LOCATION UNKNOWN.				
Ecological:	NEST 28.5' UP IN LONE COTTONWOOD TREE IN A FIELD. SINCE THIS COLLECTION, THE REGION HAS BEEN CONVERTED TO AGRICULTURE (RAISIN FARMS); LITTLE NESTING HABITAT IS DISCERNIBLE IN AERIAL PHOTOS.				
General:	TYLER COLLECTED 4 EGGS ON 30 APR 1907. BOTH BIRDS IN NESTING PAIR WERE OBSERVED.				
Owner/Manager:	UNKNOWN				



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	2504	Map Index: 90262	EO Index: 91295	Element Last Seen: 1912-04-29
Occ. Rank:	Unknown		Presence: Presumed Extant	Site Last Seen: 1912-04-29
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated: 2013-09-09

Quad Summary: Five Points (3612041), Helm (3612051)
County Summary: Fresno

Lat/Long:	36.50560 / -120.07119	Accuracy:	1 mile
UTM:	Zone-10 N4044019 E762305	Elevation (ft):	190
PLSS:	T16S, R17E, Sec. 25 (M)	Acres:	0.0

Location: 1.5 MILES EAST OF NEW HOPE SCHOOL, ABOUT 2 MILES SOUTHEAST OF HELM.
Detailed Location: MAPPED TO "1 1/2 MI EAST OF NEW HOPE SCHOOL HOUSE," EXACT COLLECTION LOCATION UNKNOWN.
Ecological: NEST WAS 35' UP IN THE TOPMOST BRANCHES OF A LONE WILLOW IN A WHEAT FIELD, A LIGHT BASKET OF SMALL DRY STICKS LINED WITH DRY STUBBLE, TWIGS, AND LEAVES.
General: TYLER COLLECTED 3 EGGS ON 29 APR 1912. A BIRD WAS FLUSHED FROM THE NEST.
Owner/Manager: UNKNOWN

Occurrence No.	2505	Map Index: 90263	EO Index: 91296	Element Last Seen: 1913-04-30
Occ. Rank:	Unknown		Presence: Presumed Extant	Site Last Seen: 1913-04-30
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated: 2013-09-09

Quad Summary: Helm (3612051)
County Summary: Fresno

Lat/Long:	36.53263 / -120.09785	Accuracy:	1 mile
UTM:	Zone-10 N4046946 E759825	Elevation (ft):	185
PLSS:	T16S, R17E, Sec. 15 (M)	Acres:	0.0

Location: HELM.
Detailed Location: MAPPED TO SPECIMEN LOCALITY "HELMS (NEW HOPE) FRESNO CO." EXACT COLLECTION LOCATION UNKNOWN.
Ecological: NEST TREE A WILLOW IN A SHALLOW, DRY SLOUGH. NEST A SUBSTANTIAL BASKET OF STICKS AND TWIGS LINED WITH DRY GRASS AND FEATHERS. UNKNOWN IF THE AREA IS STILL USED FOR BREEDING; 2008 DETECTION INDICATES IT MAY BE A MIGRATION STOPOVER.
General: 1 SWAINSON'S HAWK OBSERVED ON THE NEST ON 30 APR 1913, 2 EGGS COLLECTED. GROUP OF 60 HAWKS OBSERVED FORAGING IN DISKED CORNFIELD IN AUG 2008.
Owner/Manager: UNKNOWN



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Falco columbarius		Element Code: ABNKD06030	
merlin			
Listing Status:	Federal: None	CNDDDB Element Ranks:	Global: G5
	State: None		State: S3S4
	Other: CDFW_WL-Watch List, IUCN_LC-Least Concern		
Habitat:	General: SEACOAST, TIDAL ESTUARIES, OPEN WOODLANDS, SAVANNAHS, EDGES OF GRASSLANDS & DESERTS, FARMS & RANCHES.		
	Micro: CLUMPS OF TREES OR WINDBREAKS ARE REQUIRED FOR ROOSTING IN OPEN COUNTRY.		

Occurrence No.	11	Map Index: 71834	EO Index: 72715	Element Last Seen: 2007-12-19
Occ. Rank:	Good	Presence: Presumed Extant	Site Last Seen: 2007-12-19	
Occ. Type:	Natural/Native occurrence	Trend: Unknown	Record Last Updated: 2008-07-29	

Quad Summary:	Tranquillity (3612063)
County Summary:	Fresno

Lat/Long:	36.74633 / -120.36874	Accuracy:	1/10 mile
UTM:	Zone-10 N4069962 E734917	Elevation (ft):	165
PLSS:	T14S, R15E, Sec. 05, NW (M)	Acres:	0.0

Location:	SOUTHEAST OF MENDOTA, APPROXIMATELY 0.3 MILE SOUTH OF BELMONT AVE (CO HWY J1) ALONG SH 180 (N SAN BENITO AVE).
Detailed Location:	PRECISE LOCATION UNKNOWN. MAPPED TO WRITTEN DESCRIPTION OF "SOUTH OF RAILROAD TRACKS, 30 M NE OF SR180, SE OF THE CITY OF MENDOTA" AND AN EDUCATED INTERPRETATION OF PROVIDED MIS-TYPED COORDINATES.
Ecological:	IMMEDIATE LAND USE WAS DESCRIBED AS RURAL RESIDENTIAL/AGRICULTURE.
General:	1 ADULT "BOREAL" MALE PERCHED IN LEAFLESS TREE, PREENING AT 1PM ON 19 DEC 2007.
Owner/Manager:	UNKNOWN

Charadrius montanus		Element Code: ABNNB03100	
mountain plover			
Listing Status:	Federal: None	CNDDDB Element Ranks:	Global: G3
	State: None		State: S2S3
	Other: BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_NT-Near Threatened, NABCI_RWL-Red Watch List, USFWS_BCC-Birds of Conservation Concern		
Habitat:	General: SHORT GRASSLANDS, FRESHLY PLOWED FIELDS, NEWLY SPROUTING GRAIN FIELDS, & SOMETIMES SOD FARMS.		
	Micro: SHORT VEGETATION, BARE GROUND & FLAT TOPOGRAPHY. PREFERS GRAZED AREAS & AREAS WITH BURROWING RODENTS.		



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	3	Map Index: 40904	EO Index: 40904	Element Last Seen:	1998-01-23
Occ. Rank:	Unknown		Presence: Presumed Extant	Site Last Seen:	1998-01-23
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	1999-02-24
Quad Summary:	San Joaquin (3612052)				
County Summary:	Fresno				
Lat/Long:	36.55012 / -120.18503		Accuracy:	2/5 mile	
UTM:	Zone-10 N4048655 E751962		Elevation (ft):	175	
PLSS:	T16S, R16E, Sec. 12, SW (M)		Acres:	0.0	
Location:	EAST SIDE OF COLUSA AVENUE, 1.0-1.5 MILES NORTH OF KAMM AVENUE, SOUTH OF SAN JOAQUIN.				
Detailed Location:					
Ecological:	HABITAT CONSISTS HARVESTED CROPLAND - A BARE, DISKED FIELD ON CLAY SOIL.				
General:	ALTHOUGH THE CURRENT LAND USE AT THIS SITE IS AGRICULTURE, IT WILL BE PROTECTED BY A WETLAND RESERVE PROGRAM EASEMENT (USDA). BETWEEN 11-50 INDIVIDUALS WERE OBSERVED ON 23 JAN 1998.				
Owner/Manager:	PVT				
Occurrence No.	16	Map Index: 49674	EO Index: 49674	Element Last Seen:	2002-12-11
Occ. Rank:	Good		Presence: Presumed Extant	Site Last Seen:	2002-12-11
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2002-12-17
Quad Summary:	Tranquillity (3612063)				
County Summary:	Fresno				
Lat/Long:	36.64313 / -120.32010		Accuracy:	nonspecific area	
UTM:	Zone-10 N4058630 E739582		Elevation (ft):	140	
PLSS:	T15S, R15E, Sec. 10, NE (M)		Acres:	153.1	
Location:	SW OF THE INTERSECTION OF LINCOLN AVENUE AND SAN MATEO AVENUE, 3.5 MILES WEST OF TRANQUILLITY.				
Detailed Location:	THIS SITE IS AN EXPERIMENTAL RESORATION SITE, CONSISTING OF FALLOWED AND CULTIVATED FIELDS.				
Ecological:	HABITAT CONSISTS OF A FIELD OF SHORT BROMUS MADRITENSIS; NUMEROUS PLOWED FIELDS OCCUR IN THE AREA.				
General:	MOUNTAIN PLOVERS HAVE WINTERED AT THIS SITE FOR AT LEAST 3 CONSECUTIVE YEARS, 2000-2002. 40 WINTERING BIRDS OBSERVED ON 11 DEC 2002.				
Owner/Manager:	USBOR				
Occurrence No.	17	Map Index: 53590	EO Index: 53590	Element Last Seen:	2001-12-18
Occ. Rank:	Fair		Presence: Presumed Extant	Site Last Seen:	2001-12-18
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2003-12-16
Quad Summary:	Tranquillity (3612063)				
County Summary:	Fresno				
Lat/Long:	36.64483 / -120.33595		Accuracy:	nonspecific area	
UTM:	Zone-10 N4058780 E738159		Elevation (ft):	170	
PLSS:	T15S, R15E, Sec. 09, NE (M)		Acres:	39.3	
Location:	JUST SOUTH OF LINCOLN AVENUE, 1.2 MI WEST OF SAN MATEO AVENUE., ABOUT 4.5 MILES WEST OF TRANQUILITY.				
Detailed Location:					
Ecological:	OBSERVATION SITE IS NEXT TO A RESTORATION AREA MANAGED BY THE ENDANGERED SPECIES RECOVERY PLAN. SITE IS TILLED SOIL WITH NO VEGETATION. FURROWED FIELD WAS IRRIGATED A FEW DAYS BEFORE, NO STANDING WATER WAS PRESENT WHEN OBSERVED.				
General:	12/18/2001: 5 WINTERING ADULTS WERE OBSERVED FEEDING ON THE FIELD WITH A FLOCK OF BLACKBIRDS.				
Owner/Manager:	UNKNOWN				



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



<i>Athene cunicularia</i>		Element Code: ABNSB10010	
burrowing owl			
Listing Status:	Federal: None	CNDDB Element Ranks:	Global: G4
	State: None		State: S3
Other:	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFWS_BCC-Birds of Conservation Concern		
Habitat:	General:	OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.	
	Micro:	SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.	

Occurrence No.	89	Map Index: 17091	EO Index: 12088	Element Last Seen:	1989-07-12
Occ. Rank:	Fair		Presence: Presumed Extant	Site Last Seen:	1989-07-12
Occ. Type:	Natural/Native occurrence		Trend: Decreasing	Record Last Updated:	1990-11-08
Quad Summary:	Tranquillity (3612063)				
County Summary:	Fresno				
Lat/Long:	36.70829 / -120.33433		Accuracy:	3/5 mile	
UTM:	Zone-10 N4065825 E738108		Elevation (ft):	165	
PLSS:	T14S, R15E, Sec. 20 (M)		Acres:	0.0	
Location:	EAST BANK OF THE SAN LUIS DRAIN, APPROXIMATELY ONE MI NW OF MENDOTA WILDLIFE AREA HEADQUARTERS.				
Detailed Location:	EMBANKMENT ASPECT OF THE BURROW SITE IS ESE, WITH A SUBSTRATE OF GRAVELLY ALKALI SOIL; EMBANKMENT IS DEVOID OF VEGETATION.				
Ecological:	HABITAT IS DOMINATED BY ANNUAL GRASSES WITH A FEW SUNFLOWERS.				
General:	THE NUMBER OF JUVENILES, ADULTS, AND BURROWS IS LOWER THAN THE NUMBER OBSERVED IN 1987.				
Owner/Manager:	USBOR				

Occurrence No.	517	Map Index: 49097	EO Index: 49097	Element Last Seen:	2002-09-09
Occ. Rank:	Poor		Presence: Presumed Extant	Site Last Seen:	2002-09-09
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2002-10-22
Quad Summary:	Tres Picos Farms (3612043)				
County Summary:	Fresno				
Lat/Long:	36.41848 / -120.28948		Accuracy:	80 meters	
UTM:	Zone-10 N4033779 E743022		Elevation (ft):	330	
PLSS:	T17S, R15E, Sec. 25, SE (M)		Acres:	0.0	
Location:	WEST SIDE OF THE CALIFORNIA AQUEDUCT, SOUTH OF MILE MARKER 135.5R.				
Detailed Location:	LOCATED SOUTH OF THE MOUNT WHITNEY AVENUE CROSSING.				
Ecological:	HABITAT CONSISTS OF NON-NATIVE GRASSLAND, DOMINATED BY RED BROME, OATS, TOCOLATE, ETC, ROW CROPS SURROUND THE AQUEDUCT RIGHT-OF-WAY.				
General:	1 ADULT OWL AND 1 ACTIVE BURROW OBSERVED ON 9 SEP 2002.				
Owner/Manager:	DWR, USBOR				



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	518	Map Index: 49098	EO Index: 49098	Element Last Seen:	2005-06-27
Occ. Rank:	Fair		Presence: Presumed Extant	Site Last Seen:	2005-06-27
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2005-06-29
Quad Summary:	Tres Picos Farms (3612043)				
County Summary:	Fresno				
Lat/Long:	36.38996 / -120.27613		Accuracy:	specific area	
UTM:	Zone-10 N4030649 E744309		Elevation (ft):	325	
PLSS:	T18S, R16E, Sec. 06, SW (M)		Acres:	10.3	
Location:	WEST SIDE OF THE CALIFORNIA AQUEDUCT, JUST NORTH OF MILE MARKER 137.83R.				
Detailed Location:	LOCATED SOUTH OF THE PARKHURST AVENUE CROSSING. UNDISTURBED PORTION OF RIGHT-OF-WAY IS EXTREMELY NARROW ON THIS PART OF THE AQUEDUCT.				
Ecological:	BURROWS LOCATED ON THE BERM OF THE AQUEDUCT. SURROUNDING HABITAT CONSISTS OF NON-NATIVE GRASSLAND, DOMINATED BY RED BROME, OATS, TOCOLATE, ETC. ROW CROPS SURROUND THE AQUEDUCT RIGHT-OF-WAY.				
General:	5 ADULT OWLS AND 2 ACTIVE BURROWS OBSERVED ON 9 SEP 2002. 1 ADULT OBSERVED AT A BURROW ON 27 JUN 2005.				
Owner/Manager:	DWR, USBOR				
Occurrence No.	538	Map Index: 49178	EO Index: 49178	Element Last Seen:	1989-07-21
Occ. Rank:	Fair		Presence: Presumed Extant	Site Last Seen:	1989-07-21
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2002-10-29
Quad Summary:	Tranquillity (3612063)				
County Summary:	Fresno				
Lat/Long:	36.66908 / -120.33908		Accuracy:	nonspecific area	
UTM:	Zone-10 N4061462 E737804		Elevation (ft):	150	
PLSS:	T14S, R15E, Sec. 33 (M)		Acres:	69.4	
Location:	EAST BANK OF THE SAN LUIS CANAL, 0.5 MILE SOUTH OF THE MENDOTA WILDLIFE AREA HEADQUARTERS.				
Detailed Location:					
Ecological:	HABITAT CONSISTS OF A GRAVEL ROADWAY/CANAL LEVEE, VEGETATED WITH ANNUAL GRASSES INTERSPERSED WITH RUSSIAN THISTLE; GRAVELLY SOIL SUBSTRATE, FACING E-SE.				
General:	2 OWLS AND AN ACTIVE BURROW OBSERVED ON 21 JUL 1989.				
Owner/Manager:	USBOR				
Occurrence No.	539	Map Index: 49179	EO Index: 49179	Element Last Seen:	1991-05-XX
Occ. Rank:	Poor		Presence: Presumed Extant	Site Last Seen:	1991-05-XX
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2002-10-29
Quad Summary:	Tranquillity (3612063)				
County Summary:	Fresno				
Lat/Long:	36.69767 / -120.35668		Accuracy:	nonspecific area	
UTM:	Zone-10 N4064591 E736144		Elevation (ft):	163	
PLSS:	T14S, R15E, Sec. 20, E (M)		Acres:	66.1	
Location:	CANAL BANK, ALONG SANTA FE GRADE, SOUTH OF CALIFORNIA AVENUE, SE OF MENDOTA.				
Detailed Location:					
Ecological:	HABITAT CONSISTS OF A CANAL BANK.				
General:	2 ADULTS AND AN ACTIVE BURROW OBSERVED IN MAY 1991.				
Owner/Manager:	UNKNOWN				



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	589	Map Index: 51397	EO Index: 51397	Element Last Seen:	1984-07-31
Occ. Rank:	Unknown		Presence: Presumed Extant	Site Last Seen:	1984-07-31
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2003-05-27

Quad Summary: Jamesan (3612062), Gravelly Ford (3612072)

County Summary: Fresno

Lat/Long:	36.73566 / -120.15927	Accuracy:	nonspecific area
UTM:	Zone-10 N4069312 E753659	Elevation (ft):	200
PLSS:	T14S, R17E, Sec. 06 (M)	Acres:	4000.2

Location: NORTH & SOUTH OF HWY 180 AT THE YUBA ST INTERSECTION. 24 KM WEST OF KERMAN.

Detailed Location:

Ecological: HEAVILY GRAZED GRASSLAND DOMINATED BY BROME, FESCUE & OATS. TWO STUDY PLOTS: A 968 HA PLOT NORTH OF HWY 180 & A 896 HA PLOT SOUTH OF HWY 180.

General: 12 PAIRS OF OWLS MONITORED BETWEEN 1 FEB & 31 JUL 1984 AS PART OF A FOOD HABITS STUDY (PELLETS COLLECTED FROM BURROWS). 6 PAIRS IN NORTH PLOT AND 6 PAIRS IN SOUTH PLOT.

Owner/Manager: UNKNOWN

Occurrence No.	737	Map Index: 61417	EO Index: 61453	Element Last Seen:	2005-05-13
Occ. Rank:	Fair		Presence: Presumed Extant	Site Last Seen:	2005-05-13
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2005-05-25

Quad Summary: Tres Picos Farms (3612043)

County Summary: Fresno

Lat/Long:	36.39762 / -120.27991	Accuracy:	80 meters
UTM:	Zone-10 N4031489 E743945	Elevation (ft):	335
PLSS:	T18S, R16E, Sec. 06, NW (M)	Acres:	0.0

Location: WEST SIDE OF THE CALIFORNIA AQUEDUCT, 0.15 MILE SOUTH OF PARKHURST AVENUE, 7.8 MILES WEST OF WESTSIDE.

Detailed Location:

Ecological: HABITAT SURROUNDED THE BURROW SITE IS DOMINATED BY AGRICULTURE.

General: 1 ADULT OBSERVED ON 13 MAY 2005, WITH A LOT OF WHITEWASH AT THE ENTRANCE, ALONG WITH WHAT APPEARED TO BE FROG/TOAD PREY REMAINS.

Owner/Manager: DWR



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	742	Map Index:	62150	EO Index:	62186	Element Last Seen:	2005-06-27
Occ. Rank:	Fair	Presence:	Presumed Extant	Site Last Seen:		2005-06-27	
Occ. Type:	Natural/Native occurrence	Trend:	Unknown	Record Last Updated:		2005-08-02	

Quad Summary: Tres Picos Farms (3612043)
County Summary: Fresno

Lat/Long:	36.41103 / -120.28578	Accuracy:	80 meters
UTM:	Zone-10 N4032962 E743377	Elevation (ft):	310
PLSS:	T17S, R15E, Sec. 36, NE (M)	Acres:	0.0

Location: WEST SIDE OF THE CALIFORNIA AQUEDUCT, AT MILE 136.21, 0.2 MILE SOUTH OF LAGUNA AVENUE, 13 MILES SW OF HELM.
Detailed Location: BURROW CONSISTS OF A CULVERT ALONG THE CALIFORNIA AQUEDUCT.
Ecological: HABITAT SURROUNDING BURROW CONSISTS OF NON-NATIVE GRASSLAND AND RUDERAL; DOMINATED BY BROMUS DIANDRUS AND AVENA FATUA, WITH SANDY SOILS.
General: 1 ADULT OBSERVED AT THE BURROW ON 27 JUN 2005.
Owner/Manager: DWR

Occurrence No.	793	Map Index:	64636	EO Index:	64715	Element Last Seen:	2006-03-29
Occ. Rank:	Fair	Presence:	Presumed Extant	Site Last Seen:		2006-03-29	
Occ. Type:	Natural/Native occurrence	Trend:	Unknown	Record Last Updated:		2006-05-04	

Quad Summary: Cantua Creek (3612053), Tranquillity (3612063)
County Summary: Fresno

Lat/Long:	36.62686 / -120.31323	Accuracy:	nonspecific area
UTM:	Zone-10 N4056842 E740246	Elevation (ft):	165
PLSS:	T15S, R15E, Sec. 14, NW (M)	Acres:	27.6

Location: 2 MILES NE OF MANNING AVENUE AND STANISLAUS AVENUE, 3.5 MILES SW OF TRANQUILITY.
Detailed Location:
Ecological: HABITAT SURROUNDING THE BURROWS CONSISTS OF AG AND FALLOW AG.
General: ON 29 MAR 2006, 8 ADULTS WERE OBSERVED USING BURROWS AT THE TOP OF CANAL BANKS (BOTH SIDES), RIGHT NEXT TO THE ROAD EDGE.
Owner/Manager: UNKNOWN



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	845	Map Index:	66137	EO Index:	66216	Element Last Seen:	2006-06-01
Occ. Rank:	Good	Presence:	Presumed Extant	Site Last Seen:		2006-06-01	
Occ. Type:	Natural/Native occurrence	Trend:	Unknown	Record Last Updated:		2006-09-07	
Quad Summary:	Helm (3612051)						
County Summary:	Fresno						
Lat/Long:	36.55824 / -120.12230			Accuracy:	nonspecific area		
UTM:	Zone-10 N4049723 E757550			Elevation (ft):	185		
PLSS:	T16S, R17E, Sec. 09, NE (M)			Acres:	22.6		
Location:	ALONG THE RAILROAD TRACKS ON THE WEST SIDE OF COLORADO AVENUE, SOUTH OF NEBRASKA AVENUE, 5 MILES SE OF SAN JOAQUIN.						
Detailed Location:							
Ecological:	HABITAT SURROUNDING BURROW SITES CONSISTS OF ROW CROPS TO THE EAST AND GRASSLANDS TO THE WEST.						
General:	4 MALE BUOW'S OBSERVED ON 1 JUN 2006 STANDING ON RAILROAD TRACKS WITHIN 0.25 MILE OF EACH OTHER; BURROWS LOCATED IN THE RAILROAD TRACK BERM.						
Owner/Manager:	UNKNOWN						
Occurrence No.	971	Map Index:	69486	EO Index:	70266	Element Last Seen:	2007-03-15
Occ. Rank:	Poor	Presence:	Presumed Extant	Site Last Seen:		2007-03-15	
Occ. Type:	Natural/Native occurrence	Trend:	Unknown	Record Last Updated:		2007-06-06	
Quad Summary:	Westside (3612042)						
County Summary:	Fresno						
Lat/Long:	36.42979 / -120.16681			Accuracy:	80 meters		
UTM:	Zone-10 N4035351 E753986			Elevation (ft):	230		
PLSS:	T17S, R17E, Sec. 19, SE (M)			Acres:	0.0		
Location:	NORTH SIDE OF MT. WHITNEY AVENUE, 0.7 MILE EAST OF YUBA AVENUE, 3.5 MILES WEST OF FIVE POINTS.						
Detailed Location:	BURROW LOCATED AT THE BASE OF A WATER PUMP. IN SW1/4 OF SE1/4 OF SEC 19.						
Ecological:	HABITAT SURROUNDING BURROW CONSISTS OF ACTIVE AGRICULTURAL FIELDS.						
General:	1 ADULT OBSERVED PERCHED ON WATER PUMP ON 15 MAR 2007; BIRD FLEW DOWN TO BURROW AT THE PUMP BASE.						
Owner/Manager:	PVT						



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	1163	Map Index:	71587	EO Index:	72488	Element Last Seen:	2016-06-15
Occ. Rank:	Good	Presence:	Presumed Extant	Site Last Seen:		2016-06-15	
Occ. Type:	Natural/Native occurrence	Trend:	Unknown	Record Last Updated:		2016-12-21	
Quad Summary:	Helm (3612051), Kerman (3612061)						
County Summary:	Fresno						
Lat/Long:	36.62808 / -120.01648			Accuracy:	specific area		
UTM:	Zone-10 N4057762 E766785			Elevation (ft):	208		
PLSS:	T15S, R18E, Sec. 16, SW (M)			Acres:	29.0		
Location:	S MCMULLIN GRADE ROAD & VICINITY, 0.5 MI NE OF THE INTERSECTION OF S HOWARD AVE & W SOUTH AVE, 7.0 MI SSE OF KERMAN.						
Detailed Location:	1986: OWLS DETECTED IN VICINITY, EXACT LOCATIONS UNKNOWN. 2008: BURROWS LOCATED WITHIN A THIN STRIP OF AN ELEVATED EARTHEN BERM BETWEEN MCMULLIN GRADE RD & JAMES IRRIGATION DISTRICT CANAL. 2016: MAPPED TO PROVIDED COORDINATES N OF THE ROAD.						
Ecological:	2008: BURROWS ALONG A HEAVILY TRAVELED COUNTY ROAD, INTENSIVE AGRICULTURE (GRAPES & ROW CROPS) & SEVERAL OUTLYING FALLOW FIELDS; OWLS HIGHLY ACCLIMATED TO ROAD TRAFFIC. 2016: BURROWS ALONG IRRIGATION CANAL ADJACENT TO ROW CROPS & ORCHARDS.						
General:	UP TO 5 PAIRS OBSERVED IN 1986. 2 PAIRS OBS IN 2008; 1 PAIR WAS UNSUCCESSFUL IN BREEDING, THE 2ND HAD 5 YOUNG, 2 OF WHICH WERE FOUND DEAD AT THE BURROW, PRESUMABLY BY INFANTICIDE. 2 PAIRS OBS, 2016; 1 WITH 5 YOUNG, THE 2ND WITH 3.						
Owner/Manager:	FRE COUNTY, PVT						

Occurrence No.	1241	Map Index:	76766	EO Index:	77720	Element Last Seen:	2009-06-25
Occ. Rank:	Good	Presence:	Presumed Extant	Site Last Seen:		2009-06-25	
Occ. Type:	Natural/Native occurrence	Trend:	Unknown	Record Last Updated:		2009-09-29	
Quad Summary:	San Joaquin (3612052)						
County Summary:	Fresno						
Lat/Long:	36.58911 / -120.17537			Accuracy:	80 meters		
UTM:	Zone-10 N4053007 E752700			Elevation (ft):	180		
PLSS:	T15S, R16E, Sec. 36, NE (M)			Acres:	0.0		
Location:	NORTH SIDE OF DINUBA AVE BETWEEN S PLACER AVE AND S YUBA AVE, 1.5 MI SSE OF SAN JOAQUIN PO.						
Detailed Location:	MAPPED TO PROVIDED DISTANCE & COORDINATES ALONG IRRIGATION CANAL. EXACT BURROW LOCATION WAS NOT DETERMINED DUE TO PRIVATE PROPERTY ACCESS.						
Ecological:	SPARSELY VEGETATED TOP AND BANKS OF SOIL LINED AGRICULTURAL IRRIGATION CANAL SURROUNDED BY ROW CROPS AND FLAT.						
General:	1 ADULT AND 4 FLEDGED JUVENILES PERCHED IN VICINITY OF CANAL ON 25 JUN 2009.						
Owner/Manager:	UNKNOWN						

<i>Agelaius tricolor</i>	Element Code: ABPBXB0020						
tricolored blackbird							
Listing Status:	Federal:	None	CNDDB Element Ranks:	Global:	G2G3		
	State:	Candidate Endangered		State:	S1S2		
Other:	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_EN-Endangered, NABCI_RWL-Red Watch List, USFWS_BCC-Birds of Conservation Concern						
Habitat:	General:	HIGHLY COLONIAL SPECIES, MOST NUMEROUS IN CENTRAL VALLEY & VICINITY. LARGELY ENDEMIC TO CALIFORNIA.					
	Micro:	REQUIRES OPEN WATER, PROTECTED NESTING SUBSTRATE, & FORAGING AREA WITH INSECT PREY WITHIN A FEW KM OF THE COLONY.					



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	222	Map Index: 21600	EO Index: 14256	Element Last Seen: 1992-03-31
Occ. Rank:	Unknown		Presence: Presumed Extant	Site Last Seen: 1992-03-31
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated: 1992-07-14

Quad Summary: Tranquillity (3612063)

County Summary: Fresno

Lat/Long:	36.67804 / -120.31713	Accuracy:	80 meters
UTM:	Zone-10 N4062511 E739739	Elevation (ft):	160
PLSS:	T14S, R15E, Sec. 27, SE (M)	Acres:	0.0

Location: MENDOTA WILDLIFE AREA, 1.5 MI EAST OF THE AREA HEADQUARTERS, FRESNO COUNTY.

Detailed Location:

Ecological: HABITAT CONSISTS OF DUCK BROOD PONDS VEGETATED BY DENSE CATTAILS, UTILIZED FOR NESTING. WHEAT CELLS WITHIN THE WILDLIFE AREA ARE HEAVILY USED FOR FORAGING.

General: APPROXIMATELY 6000 ADULTS OBSERVED NESTING. JUVENILES WERE CAPABLE OF SHORT FLIGHTS BY MID-APRIL; ALL BIRDS GONE BY MAY.

Owner/Manager: DFG-MENDOTA WA

Occurrence No.	223	Map Index: 21599	EO Index: 14260	Element Last Seen: 1992-03-31
Occ. Rank:	Unknown		Presence: Presumed Extant	Site Last Seen: 1992-03-31
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated: 1992-07-14

Quad Summary: Tranquillity (3612063)

County Summary: Fresno

Lat/Long:	36.67364 / -120.33345	Accuracy:	80 meters
UTM:	Zone-10 N4061982 E738294	Elevation (ft):	160
PLSS:	T14S, R15E, Sec. 34, NW (M)	Acres:	0.0

Location: MENDOTA WILDLIFE AREA, 0.7 MI SE OF AREA HEADQUARTERS, FRESNO COUNTY.

Detailed Location:

Ecological: HABITAT CONSISTS OF DUCK BROOD PONDS VEGETATED BY DENSE CATTAILS. WHEAT CELLS WERE HEAVILY USED FOR FORAGING.

General: APPROXIMATELY 500 ADULTS OBSERVED NESTING. JUVENILES WERE CAPABLE OF SHORT FLIGHTS BY MID-APRIL; ALL BIRDS WERE GONE BY MAY.

Owner/Manager: DFG-MENDOTA WA



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	224	Map Index: 21598	EO Index: 21319	Element Last Seen:	1992-04-XX
Occ. Rank:	Unknown		Presence: Presumed Extant	Site Last Seen:	1992-05-XX
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2016-03-10
Quad Summary:	Tranquillity (3612063)				
County Summary:	Fresno				
Lat/Long:	36.70270 / -120.34849		Accuracy:	1/10 mile	
UTM:	Zone-10 N4065170 E736860		Elevation (ft):	160	
PLSS:	T14S, R15E, Sec. 21, NW (M)		Acres:	0.0	
Location:	ABOUT 2.4 MI SE OF HWY 33 & PANOCHE RD INTERSECTION, 3 MI N OF SANTA FE AVE & AMERICAN AVE INTERSECTION, SE OF MENDOTA.				
Detailed Location:	MAPPED ACCORDING TO PROVIDED MAP FOR COLONY LOCATION. COLONY LOCATED IN NW CORNER OF CELL #6 OF MENDOTA WILDLIFE AREA.				
Ecological:	HABITAT CONSISTED OF DUCK BROOD PONDS VEGETATED BY DENSE CATTAILS. WHEAT CELLS ARE HEAVILY UTILIZED FOR FORAGING.				
General:	APPROXIMATELY 800 ADULTS OBSERVED NESTING ON 31 MAR 1992; JUVENILES WERE CAPABLE OF SHORT FLIGHTS BY MID-APR; ALL BIRDS WERE GONE BY MAY.				
Owner/Manager:	DFG-MENDOTA WA				
Occurrence No.	225	Map Index: 21601	EO Index: 21322	Element Last Seen:	1992-04-XX
Occ. Rank:	Unknown		Presence: Presumed Extant	Site Last Seen:	2014-04-18
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2016-03-11
Quad Summary:	Tranquillity (3612063)				
County Summary:	Fresno				
Lat/Long:	36.67230 / -120.32209		Accuracy:	1/5 mile	
UTM:	Zone-10 N4061862 E739313		Elevation (ft):	160	
PLSS:	T14S, R15E, Sec. 34, NE (M)		Acres:	0.0	
Location:	~1 MI NE OF SANTA FE AVE & AMERICAN AVE INTXN, 1.5 MI NW OF AMERICAN AVE & TUOLUMNE AVE INTXN, MENDOTA WILDLIFE AREA.				
Detailed Location:	MAPPED ACCORDING TO PROVIDED LOCATION ON MAP. COLONY LOCATED IN S EDGE OF FIELD 25 OF MENDOTA WILDLIFE AREA; FIELD NUMBER DETERMINED USING HUNTER BLIND MAP.				
Ecological:	HABITAT CONSISTED OF DUCK BROOD PONDS VEGETATED BY DENSE CATTAILS. WHEAT CELLS ARE HEAVILY UTILIZED FOR FORAGING.				
General:	200 ADULTS OBSERVED NESTING ON 31 MAR 1992; JUVENILES WERE CAPABLE OF SHORT FLIGHTS BY MID-APR; ALL BIRDS WERE GONE BY MAY. 0 OBSERVED ON 18 APR 2014.				
Owner/Manager:	DFG-MENDOTA WA				



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	374	Map Index: 52422	EO Index: 52422	Element Last Seen:	2001-XX-XX
Occ. Rank:	Unknown		Presence: Presumed Extant	Site Last Seen:	2015-04-18
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2016-10-05

Quad Summary: Jamesan (3612062)

County Summary: Fresno

Lat/Long:	36.73900 / -120.23018	Accuracy:	3/5 mile
UTM:	Zone-10 N4069497 E747314	Elevation (ft):	170
PLSS:	T14S, R16E, Sec. 04 (M)	Acres:	0.0

Location: S SIDE OF BELMONT AVE, ABOUT 1 MI SW OF YOLO AVE INTERSECTION, 1.3 MI WNW OF HWY 180 & JAMES RD INTERSECTION, JAMESAN.

Detailed Location: MAPPED AS BEST GUESS BY CNDDDB. PROVIDED COORDINATES AND LOCATION DESCRIPTIONS ARE NOT ACCURATE BUT SEEM TO POINT TO THE AREA ON THE N SIDE OF HWY 180. COLONY DATA STORED IN THE UCD TRBL PORTAL: SITE NAMES PRODUCER'S DIARY & PRODUCER'S POND.

Ecological: HABITAT: SILAGE, BARLEY, & MUSTARD. 2 POSSIBLE COLONIES INCLUDED IN THE FEATURE. FEATURE INCLUDES AREAS THAT MAY HAVE SERVED AS THE NESTING AREA; WATER AND VEGETATION VISIBLE IN AERIAL IMAGES. COLONY MAY HAVE MOVED YEAR TO YEAR.

General: A NESTING COLONY ANECDOTALLY REPORTED IN 1995. 2K NESTING BIRDS OBS ON 25 APR 1997, 2-3K BIRDS OBS ON 1 MAY. 37.5K NESTING BIRDS OBS ON 20 APR 1999. 0 OBS IN 2000. 10K BIRDS OBS IN 2001; PRESUMED NESTING. 0 OBS IN APR OF 2008, 2014, & 2015.

Owner/Manager: PVT

Occurrence No.	671	Map Index: 97526	EO Index: 98835	Element Last Seen:	1994-04-23
Occ. Rank:	Unknown		Presence: Presumed Extant	Site Last Seen:	1994-04-23
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2015-12-08

Quad Summary: Tranquillity (3612063)

County Summary: Fresno

Lat/Long:	36.70891 / -120.34268	Accuracy:	nonspecific area
UTM:	Zone-10 N4065873 E737360	Elevation (ft):	160
PLSS:	T14S, R15E, Sec. 16, S (M)	Acres:	337.0

Location: ABOUT 2.6 MI ESE OF HWY 33 & CALIFORNIA AVE INTERSECTION, 2.3 MI SW OF HWY 180 & SAN MATEO AVE INTXN, SE OF MENDOTA.

Detailed Location: PROVIDED LOCATION WAS "FIELD 22, CELLS 4 & 5, MENDOTA WA." MAPPED AS BEST GUESS TO CELLS 4 & 5 OF MENDOTA WILDLIFE AREA BASED ON DFG MAP FOR WILDLIFE AREA. EXACT LOCATION UNKNOWN.

Ecological: CATTAILS.

General: 1,000 BIRDS OBSERVED IN LATE MAR 1994. SITE REINSPECTED ON 21 APR 1994; FINISHED & UNFINISHED ABANDONED NESTS FOUND, ABOUT 200-600 BIRDS OBS ON 23 APR 1994; PRESUMED NESTING. 6,000 NON-NESTING BIRDS SEEN IN T14S, R15E, SEC21 ON 4 APR 1997.

Owner/Manager: DFG-MENDOTA WA



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	672	Map Index:	97542	EO Index:	98852	Element Last Seen:	1995-04-20
Occ. Rank:	Unknown	Presence:	Presumed Extant	Site Last Seen:	2014-04-18	Record Last Updated:	2015-11-13
Occ. Type:	Natural/Native occurrence		Trend:	Unknown			
Quad Summary:	Tranquillity (3612063)						
County Summary:	Fresno						
Lat/Long:	36.71520 / -120.28649			Accuracy:	1/5 mile		
UTM:	Zone-10 N4066711 E742360			Elevation (ft):	160		
PLSS:	T14S, R15E, Sec. 13, NE (M)			Acres:	0.0		
Location:	ABOUT 4.4 MI ESE OF HWY 180 & PANOCHE RD INTERSECTION, 4.5 MI WSW OF HWY 180 & JAMES RD INTERSECTION, SE OF MENDOTA.						
Detailed Location:	PROVIDED LOCATION DESCRIPTION WAS "MENDOTA WILDLIFE AREA FIELD 47, CELL 1." MAPPED TO PROVIDED MAP AND WITH THE USE OF A CDFW MENDOTA WILDLIFE AREA HUNTING MAP AND FLOOD SCHEDULE MAP.						
Ecological:	BLACK-CROWNED NIGHT HERON OBSERVED FEEDING CHICKS ON 17 APR 1995.						
General:	ABOUT 1,000 BIRDS OBSERVED ON 28 MAR 1995; PRESUMED NESTING. ABOUT 500 BIRDS OBSERVED NESTING ON 20 APR 1995. 0 BIRDS OBSERVED ON 16 APR 2011 AND 18 APR 2014.						
Owner/Manager:	DFG-MENDOTA WA						
Occurrence No.	674	Map Index:	97555	EO Index:	98870	Element Last Seen:	1907-04-29
Occ. Rank:	Unknown	Presence:	Presumed Extant	Site Last Seen:	1907-04-29	Record Last Updated:	2015-09-16
Occ. Type:	Natural/Native occurrence		Trend:	Unknown			
Quad Summary:	Calflax (3612031), Harris Ranch (3612032), Five Points (3612041), Westside (3612042), Tres Picos Farms (3612043), San Joaquin (3612052)						
County Summary:	Fresno						
Lat/Long:	36.42950 / -120.16999			Accuracy:	5 miles		
UTM:	Zone-10 N4035310 E753702			Elevation (ft):	235		
PLSS:	T17S, R17E, Sec. 19 (M)			Acres:	0.0		
Location:	ABOUT 11 AIR MILES NE OF I-5 & HWY 145 INTERSECTION, 30 AIR MILES SW OF FRESNO.						
Detailed Location:	MAPPED GENERALLY TO PROVIDED LOCATION DESCRIPTION OF "THIRTY MILES SOUTHWEST OF FRESNO." EXACT LOCATION UNKNOWN. 30 MILES MEASURED APPROXIMATELY FROM CENTER OF HISTORIC FRESNO CITY CENTER.						
Ecological:	PATCH OF NETTLES GROWING IN A LOW, DAMP SINK AT THE END OF A LARGE ABANDONED SLOUGH. A DENSE FRINGE OF WILLOWS WAS LOCATED ON TWO SIDES OF THE NETTLE PATCH.						
General:	HUNDREDS OF BIRDS OBSERVED ON 30 APR 1907. TWO COLONIES ABOUT 200 YARDS APART OBSERVED ON THIS DATE, BOTH OCCUPYING ABOUT 0.5 ACRES. MANY NESTS WERE FOUND CONTAINING 3-5 EGGS. NESTS WITH YOUNG BIRDS ALSO FOUND IN THE CENTER OF NETTLE PATCH.						
Owner/Manager:	UNKNOWN						



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



<i>Myotis yumanensis</i>		Element Code: AMACC01020	
Yuma myotis			
Listing Status:	Federal: None	CNDDDB Element Ranks:	Global: G5
	State: None		State: S4
	Other: BLM_S-Sensitive, IUCN_LC-Least Concern, WBWG_LM-Low-Medium Priority		
Habitat:	General: OPTIMAL HABITATS ARE OPEN FORESTS AND WOODLANDS WITH SOURCES OF WATER OVER WHICH TO FEED.		
	Micro: DISTRIBUTION IS CLOSELY TIED TO BODIES OF WATER. MATERNITY COLONIES IN CAVES, MINES, BUILDINGS OR CREVICES.		

Occurrence No.	191	Map Index:	69000	EO Index:	69713	Element Last Seen:	1999-07-07
Occ. Rank:	Unknown	Presence:	Presumed Extant	Site Last Seen:		1999-07-07	
Occ. Type:	Natural/Native occurrence	Trend:	Unknown	Record Last Updated:		2007-04-19	
Quad Summary:	Tranquillity (3612063)						
County Summary:	Fresno						
Lat/Long:	36.73273 / -120.34195		Accuracy:	1/10 mile			
UTM:	Zone-10 N4068518 E737351		Elevation (ft):	160			
PLSS:	T14S, R15E, Sec. 09, N (M)		Acres:	0.0			
Location:	WHITES BRIDGE; NEAR FRESNO SLOUGH.						
Detailed Location:	MAPPED ACCORDING TO LAT/LONG COORDINATES PROVIDED BY SOURCE, WITH LOCALITY "MENDOTA WILDLIFE REFUGE SAN JOAQUIN RIVER EDGE."						
Ecological:	GRASSLAND.						
General:	BAT(S) DETECTED ON 7 JUL 1999.						
Owner/Manager:	UNKNOWN						



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



<i>Lasiurus blossevillii</i>		Element Code: AMACC05060	
western red bat			
Listing Status:	Federal: None	CNDDDB Element Ranks:	Global: G5
	State: None		State: S3
	Other: CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, WBWG_H-High Priority		
Habitat:	General: ROOSTS PRIMARILY IN TREES, 2-40 FT ABOVE GROUND, FROM SEA LEVEL UP THROUGH MIXED CONIFER FORESTS.		
	Micro: PREFERS HABITAT EDGES & MOSAICS WITH TREES THAT ARE PROTECTED FROM ABOVE & OPEN BELOW WITH OPEN AREAS FOR FORAGING.		
Occurrence No.	71	Map Index: 69000	EO Index: 69712
Occ. Rank:	Unknown	Presence: Presumed Extant	Element Last Seen: 1999-07-07
Occ. Type:	Natural/Native occurrence	Trend: Unknown	Site Last Seen: 1999-07-07
Quad Summary:	Tranquillity (3612063)		
County Summary:	Fresno		
Lat/Long:	36.73273 / -120.34195	Accuracy:	1/10 mile
UTM:	Zone-10 N4068518 E737351	Elevation (ft):	160
PLSS:	T14S, R15E, Sec. 09, N (M)	Acres:	0.0
Location:	WHITES BRIDGE; NEAR FRESNO SLOUGH.		
Detailed Location:	MAPPED ACCORDING TO LAT/LONG COORDINATES PROVIDED BY SOURCE, WITH LOCALITY "MENDOTA WILDLIFE REFUGE SAN JOAQUIN RIVER EDGE."		
Ecological:	GRASSLAND.		
General:	BAT(S) DETECTED ON 7 JUL 1999.		
Owner/Manager:	UNKNOWN		



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



<i>Eumops perotis californicus</i>		Element Code: AMACD02011	
western mastiff bat			
Listing Status:	Federal: None	CNDDDB Element Ranks:	Global: G5T4
	State: None		State: S3S4
	Other: BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, WBWG_H-High Priority		
Habitat:	General: MANY OPEN, SEMI-ARID TO ARID HABITATS, INCLUDING CONIFER & DECIDUOUS WOODLANDS, COASTAL SCRUB, GRASSLANDS, CHAPARRAL ETC		
	Micro: ROOSTS IN CREVICES IN CLIFF FACES, HIGH BUILDINGS, TREES & TUNNELS.		

Occurrence No.	162	Map Index:	13542	EO Index:	66518	Element Last Seen:	1911-12-XX
Occ. Rank:	Unknown	Presence:	Presumed Extant	Site Last Seen:	1911-12-XX		
Occ. Type:	Natural/Native occurrence	Trend:	Unknown	Record Last Updated:	2006-09-26		

Quad Summary: Tranquillity (3612063), Coit Ranch (3612064), Mendota Dam (3612073), Firebaugh (3612074)
County Summary: Fresno

Lat/Long:	36.75299 / -120.38045	Accuracy:	1 mile
UTM:	Zone-10 N4070671 E733852	Elevation (ft):	175
PLSS:	T13S, R15E, Sec. 31 (M)	Acres:	0.0

Location: MENDOTA.
Detailed Location: EXACT LOCATION UNKNOWN. MAPPED ACCORDING TO LAT/LONG COORDINATES PROVIDED IN PIERSON & RAINEY.
Ecological:
General: SPECIMEN COLLECTED DEC 1911, FROM GRINNELL 1918.
Owner/Manager: UNKNOWN

Occurrence No.	235	Map Index:	69000	EO Index:	69714	Element Last Seen:	1999-07-07
Occ. Rank:	Unknown	Presence:	Presumed Extant	Site Last Seen:	1999-07-07		
Occ. Type:	Natural/Native occurrence	Trend:	Unknown	Record Last Updated:	2007-04-19		

Quad Summary: Tranquillity (3612063)
County Summary: Fresno

Lat/Long:	36.73273 / -120.34195	Accuracy:	1/10 mile
UTM:	Zone-10 N4068518 E737351	Elevation (ft):	160
PLSS:	T14S, R15E, Sec. 09, N (M)	Acres:	0.0

Location: WHITES BRIDGE; NEAR FRESNO SLOUGH.
Detailed Location: MAPPED ACCORDING TO LAT/LONG COORDINATES PROVIDED BY SOURCE, WITH LOCALITY "MENDOTA WILDLIFE REFUGE SAN JOAQUIN RIVER EDGE."
Ecological: GRASSLAND.
General: BAT(S) DETECTED ON 7 JUL 1999.
Owner/Manager: UNKNOWN



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



<i>Ammospermophilus nelsoni</i>		Element Code: AMAFB04040	
Nelson's antelope squirrel			
Listing Status:	Federal: None	CNDDDB Element Ranks:	Global: G2
	State: Threatened		State: S2S3
	Other: BLM_S-Sensitive, IUCN_EN-Endangered		
Habitat:	General: WESTERN SAN JOAQUIN VALLEY FROM 200-1200 FT ELEV. ON DRY, SPARSELY VEGETATED LOAM SOILS.		
	Micro: DIG BURROWS OR USE K-RAT BURROWS. NEED WIDELY SCATTERED SHRUBS, FORBS & GRASSES IN BROKEN TERRAIN WITH GULLIES & WASHES		

Occurrence No.	81	Map Index:	64371	EO Index:	24159	Element Last Seen:	1918-06-17
Occ. Rank:	Unknown	Presence:	Presumed Extant	Site Last Seen:		1918-06-17	
Occ. Type:	Natural/Native occurrence	Trend:	Unknown	Record Last Updated:		2006-07-17	

Quad Summary: Tranquillity (3612063), Mendota Dam (3612073)
County Summary: Fresno

Lat/Long:	36.74978 / -120.35389	Accuracy:	1/5 mile
UTM:	Zone-10 N4070380 E736233	Elevation (ft):	176
PLSS:	T13S, R15E, Sec. 32, NE (M)	Acres:	0.0

Location: 1 MILE EAST OF MENDOTA.
Detailed Location:
Ecological:
General: ONE MALE MVZ SPECIMEN (#28698). FROM DRAFT REPORT SUBMITTED TO DFG IN 1980 & MANIS DATABASE.
Owner/Manager: UNKNOWN

Occurrence No.	297	Map Index:	65175	EO Index:	65254	Element Last Seen:	1932-11-13
Occ. Rank:	Unknown	Presence:	Presumed Extant	Site Last Seen:		1932-11-13	
Occ. Type:	Natural/Native occurrence	Trend:	Unknown	Record Last Updated:		2006-07-17	

Quad Summary: Cantua Creek (3612053), Levis (3612054)
County Summary: Fresno

Lat/Long:	36.53054 / -120.38862	Accuracy:	1 mile
UTM:	Zone-10 N4045968 E733793	Elevation (ft):	340
PLSS:	T16S, R15E, Sec. 19 (M)	Acres:	0.0

Location: 15 MILES SOUTH OF MENDOTA.
Detailed Location: MAPPED USING LAT/LONG GIVEN IN MANIS RECORD.
Ecological:
General: 1 MALE LACM SPECIMEN COLLECTED BY G.G. CANTWELL.
Owner/Manager: UNKNOWN



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



<i>Perognathus inornatus</i>		Element Code: AMAFD01060	
San Joaquin Pocket Mouse			
Listing Status:	Federal: None	CNDDB Element Ranks:	Global: G2G3
	State: None		State: S2S3
	Other: BLM_S-Sensitive		
Habitat:	General: GRASSLAND, OAK SAVANNA AND ARID SCRUBLAND IN THE SOUTHERN SACRAMENTO VALLEY, SALINAS VALLEY, SAN JOAQUIN VALLEY AND ADJACENT FOOTHILLS, SOUTH TO THE MOJAVE DESERT.		
	Micro: ASSOCIATED WITH FINE-TEXTURED, SANDY, FRIABLE SOILS.		

Occurrence No.	33	Map Index:	13600	EO Index:	23936	Element Last Seen:	1918-06-19
Occ. Rank:	Unknown	Presence:	Presumed Extant	Site Last Seen:			1918-06-19
Occ. Type:	Natural/Native occurrence	Trend:	Unknown	Record Last Updated:			1989-08-10

Quad Summary: Tranquillity (3612063), Mendota Dam (3612073)
County Summary: Fresno

Lat/Long:	36.74605 / -120.35739	Accuracy:	1 mile
UTM:	Zone-10 N4069958 E735932	Elevation (ft):	
PLSS:	T14S, R15E, Sec. 05 (M)	Acres:	0.0

Location: 1 MILE EAST MENDOTA.
Detailed Location:
Ecological:
General: MVZ #28365.
Owner/Manager: UNKNOWN

<i>Dipodomys nitratoides exilis</i>		Element Code: AMAFD03151	
Fresno kangaroo rat			
Listing Status:	Federal: Endangered	CNDDB Element Ranks:	Global: G3TH
	State: Endangered		State: SH
	Other: IUCN_VU-Vulnerable		
Habitat:	General: ALKALI SINK-OPEN GRASSLAND HABITATS IN WESTERN FRESNO COUNTY.		
	Micro: BARE ALKALINE CLAY-BASED SOILS SUBJECT TO SEASONAL INUNDATION, WITH MORE FRIABLE SOIL MOUNDS AROUND SHRUBS & GRASSES.		



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	1	Map Index: 13740	EO Index: 6075	Element Last Seen:	1992-11-11
Occ. Rank:	None		Presence: Possibly Extirpated	Site Last Seen:	2003-07-XX
Occ. Type:	Natural/Native occurrence		Trend: Increasing	Record Last Updated:	2006-07-31

Quad Summary: Tranquillity (3612063)

County Summary: Fresno

Lat/Long:	36.72743 / -120.28766	Accuracy:	1 mile
UTM:	Zone-10 N4068065 E742218	Elevation (ft):	160
PLSS:	T14S, R15E, Sec. 12 (M)	Acres:	0.0

Location: ALKALI SINK ECOLOGICAL RESERVE; NE OF MENDOTA WMA AND S OF WHITES BRIDGE RD.

Detailed Location: OBS IN NW OF SE SEC 12 IN 1992. N 1/2 SEC 11 & NW 1/4 SEC 12 IN 1981. 1975 SURVEY (KNAPP) TRAPPED K-RATS IN S 1/2 SEC 12. AS OF 1985, THESE SMALL PARCELS (INCL S 1/4 SEC 7) HAD ONLY CONFIRMED EXTANT POP, BUT NOT FOUND IN RECENT SURVEYS.

Ecological: HABITAT IS ALKALI SINK SCRUB W/LIGHT TO MODERATE GRAZING.

General: CDFG ECOLOGICAL RESERVE IS REFUGE FOR THIS TAXON. SDNHM #18687 (MALE) COLLECTED 17 FEB 1934 BY A.E. CULBERTSON FROM "11.8 MI W KERMAN." NONE FOUND DURING RECONNAISSANCE TRAPPING IN OCT 2001, OCT 2002 & JULY 2003.

Owner/Manager: DFG, PVT

Occurrence No.	4	Map Index: 62795	EO Index: 62849	Element Last Seen:	1975-04-27
Occ. Rank:	None		Presence: Possibly Extirpated	Site Last Seen:	2003-10-XX
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2006-07-31

Quad Summary: Jamesan (3612062)

County Summary: Fresno

Lat/Long:	36.73476 / -120.19078	Accuracy:	nonspecific area
UTM:	Zone-10 N4069129 E750847	Elevation (ft):	200
PLSS:	T14S, R16E, Sec. 11 (M)	Acres:	2940.9

Location: NEAR THE INTERSECTIONS OF JAMES ROAD & WHITES BRIDGE ROAD (HWY 180). ABOUT 7.5 MILES WEST OF KERMAN.

Detailed Location: 1974-1975 TRAPPING OCCURRED IN T14S R16E SECTIONS 2, 10 & 11. 1981-1982 TRAPPING OCCURRED IN T14S R16E SECTIONS 1, 2, 11 & 12.

Ecological: HABITAT IS OVERGRAZED ALKALI SINK PLANT COMMUNITIES WITH SUAEDEA FRUTICOSA BEING THE DOMINANT PLANT. 1981-1982 SURVEYS NOTED THAT SITE HAD AREAS OF BARE ALKALINE SOIL, AND MOST AREAS WERE COVERED WITH GRASSES AND SEEP WEED.

General: 1974-1975 TRAPPING HAD 17 CAPTURES (TRAPPING SUCCESS OF 2.1%). 1981-1982 TRAPPING RESULTED IN 0 CAPTURES (1450 TRAPPING NIGHTS). TRAPPING DURING OCT 2001 & JULY 2003 RESULTED IN 0 CAPTURES (305 TRAPPING NIGHTS).

Owner/Manager: DFG-KERMAN ER



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	18	Map Index: 65257	EO Index: 65336	Element Last Seen:	1990-08-XX
Occ. Rank:	Fair		Presence: Presumed Extant	Site Last Seen:	1990-08-XX
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2006-07-20
Quad Summary:	Helm (3612051)				
County Summary:	Fresno				
Lat/Long:	36.57808 / -120.10287		Accuracy:	1/5 mile	
UTM:	Zone-10 N4051977 E759224		Elevation (ft):	180	
PLSS:	T15S, R17E, Sec. 34, SE (M)		Acres:	0.0	
Location:	JAMES BYPASS AT FLORAL AVE, 3.2 AIR MI NNW OF HELM.				
Detailed Location:					
Ecological:	SANDY WASH WITH EXPANSE OF HIGHER FLAT GROUND. NO SHRUBS. FEW LARGE WILLOW AND COTTONWOOD TREES ALONG WATER CHANNEL. GRASSES AND SMALL ANNUAL PLANTS PREDOMINATE.				
General:	BREEDING, FORAGING & BURROW SITE. BURROWS OBSERVED IN AUG 1990.				
Owner/Manager:	UNKNOWN				
Occurrence No.	19	Map Index: 65260	EO Index: 65339	Element Last Seen:	1990-09-01
Occ. Rank:	Fair		Presence: Presumed Extant	Site Last Seen:	1990-09-01
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2006-07-20
Quad Summary:	San Joaquin (3612052)				
County Summary:	Fresno				
Lat/Long:	36.60519 / -120.12944		Accuracy:	1/5 mile	
UTM:	Zone-10 N4054913 E756755		Elevation (ft):	180	
PLSS:	T15S, R17E, Sec. 21, SW (M)		Acres:	0.0	
Location:	JAMES BYPASS AT MANNING AVE., ABOUT 3.2 MI EAST OF SAN JOAQUIN.				
Detailed Location:	THERE IS ALSO A SPECIMEN FROM THE SDNHM (#18691) COLLECTED 26 MAR 1935 BY A. E. CULBERTSON FROM "11 MI SW ROLINDA"				
Ecological:	SANDY WASH WITH EXPANSE OF HIGHER FLAT GROUND. NO SHRUBS. FEW LARGE WILLOW AND COTTONWOOD TREES ALONG WATER CHANNEL. GRASSES AND SMALL ANNUAL PLANTS PREDOMINATE.				
General:	BREEDING, FORAGING & BURROW SITE. MANY BURROWS OBSERVED ON 01 SEP 1990.				
Owner/Manager:	UNKNOWN				
Occurrence No.	20	Map Index: 65385	EO Index: 65464	Element Last Seen:	1934-03-10
Occ. Rank:	Unknown		Presence: Presumed Extant	Site Last Seen:	1934-03-10
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2006-07-25
Quad Summary:	Kerman (3612061)				
County Summary:	Fresno				
Lat/Long:	36.72527 / -120.08752		Accuracy:	1 mile	
UTM:	Zone-10 N4068351 E760102		Elevation (ft):	200	
PLSS:	T14S, R17E, Sec. 11 (M)		Acres:	0.0	
Location:	0.5 TO 1.5 MILES WEST OF KERMAN.				
Detailed Location:	5 SDNHM SPECIMENS (3 MALES & 2 FEMALES) COLLECTED FROM 0.5 TO 1.5 MILES WEST OF KERMAN.				
Ecological:					
General:	SDNHM #17703 COLLECTED 6 OCT 1933. #18683-18685 COLLECTED 6 OCT & 22 NOV 1933. #18689 COLLECTED 20 MAR 1934. ALL COLLECTIONS BY A. E. CULBERTSON.				
Owner/Manager:	UNKNOWN				



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	21	Map Index: 65399	EO Index: 65478	Element Last Seen:	1934-06-25
Occ. Rank:	Unknown		Presence: Presumed Extant	Site Last Seen:	1934-06-25
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2006-07-26

Quad Summary:	Kerman (3612061), Jamesan (3612062)				
County Summary:	Fresno				

Lat/Long:	36.72730 / -120.14334	Accuracy:	1 mile		
UTM:	Zone-10 N4068427 E755108	Elevation (ft):	200		
PLSS:	T14S, R17E, Sec. 08 (M)	Acres:	0.0		

Location:	5 MILES WEST OF KERMAN.				
Detailed Location:					
Ecological:					
General:	SDNHM #18686 COLLECTED 17 FEB 1934 & #18690 COLLECTED 25 JUN 1934. BOTH COLLECTIONS BY A. E. CULBERTSON.				
Owner/Manager:	UNKNOWN				



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Vulpes macrotis mutica

Element Code: AMAJA03041

San Joaquin kit fox

Listing Status: Federal: Endangered

CNDDDB Element Ranks: Global: G4T2

State: Threatened

State: S2

Other:

Habitat: General: ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro: NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Occurrence No. 13 **Map Index:** 23595 **EO Index:** 9335 **Element Last Seen:** 1975-07-XX

Occ. Rank: Unknown **Presence:** Presumed Extant **Site Last Seen:** 1975-07-XX

Occ. Type: Natural/Native occurrence **Trend:** Unknown **Record Last Updated:** 2007-03-02

Quad Summary: Jamesan (3612062)

County Summary: Fresno

Lat/Long: 36.70831 / -120.15428 **Accuracy:** nonspecific area

UTM: Zone-10 N4066290 E754194 **Elevation (ft):** 190

PLSS: T14S, R17E, Sec. 18 (M) **Acres:** 446.0

Location: VICINITY OF JAMESON; APPROXIMATELY 12 MILES ESE OF MENDOTA.

Detailed Location:

Ecological:

General: ONE FOX SIGHTED AT DEN SOMETIME BETWEEN 1972 AND JUL 1975.

Owner/Manager: UNKNOWN

Occurrence No. 373 **Map Index:** 13542 **EO Index:** 67162 **Element Last Seen:** 1947-02-01

Occ. Rank: Unknown **Presence:** Presumed Extant **Site Last Seen:** 1947-02-01

Occ. Type: Natural/Native occurrence **Trend:** Unknown **Record Last Updated:** 2006-11-08

Quad Summary: Tranquillity (3612063), Coit Ranch (3612064), Mendota Dam (3612073), Firebaugh (3612074)

County Summary: Fresno

Lat/Long: 36.75299 / -120.38045 **Accuracy:** 1 mile

UTM: Zone-10 N4070671 E733852 **Elevation (ft):** 175

PLSS: T13S, R15E, Sec. 31 (M) **Acres:** 0.0

Location: VICINITY OF MENDOTA.

Detailed Location: LOCATION GIVEN AS "VICINITY OF MENDOTA." MAPPED ACCORDING TO LAT/LONG COORDINATES PROVIDED BY MVZ WITH MAX ERROR OF 30 M.

Ecological:

General: 1 MALE SPECIMEN (MVZ #184062) COLLECTED BY CARL B. KOFORD ON 1 FEB 1947.

Owner/Manager: UNKNOWN



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



<i>Taxidea taxus</i>		Element Code: AMAJF04010	
American badger			
Listing Status:	Federal: None	CNDDB Element Ranks:	Global: G5
	State: None		State: S3
	Other: CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern		
Habitat:	General: MOST ABUNDANT IN DRIER OPEN STAGES OF MOST SHRUB, FOREST, AND HERBACEOUS HABITATS, WITH FRIABLE SOILS.		
	Micro: NEEDS SUFFICIENT FOOD, FRIABLE SOILS & OPEN, UNCULTIVATED GROUND. PREYS ON BURROWING RODENTS. DIGS BURROWS.		

Occurrence No.	82	Map Index: 56602	EO Index: 56618	Element Last Seen:	1985-11-03
Occ. Rank:	Excellent		Presence: Presumed Extant	Site Last Seen:	1985-11-03
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2004-09-02
Quad Summary:	Tranquillity (3612063)				
County Summary:	Fresno				
Lat/Long:	36.72278 / -120.28097		Accuracy:	nonspecific area	
UTM:	Zone-10 N4067567 E742829		Elevation (ft):	160	
PLSS:	T14S, R15E, Sec. 12 (M)		Acres:	624.1	
Location:	ALKALI SINK ECOLOGICAL RESERVE, SOUTH OF WHITES BRIDGE ROAD, 6 MILES SE OF MENDOTA.				
Detailed Location:	T14S R15E WEST 1/2 SECTION 12; T14S R16E SOUTH 1/2 SECTION 7, NORTH 1/2 SECTION 18.				
Ecological:	VALLEY SINK SCRUB. HUMMOCKY WITH SHALLOW DEPRESSIONS AND ALKALI SCALDS, SOME VERNAL POOLS.				
General:	1 ADULT OBSERVED STANDING ON BURROW ON 3 NOV 1985.				
Owner/Manager:	DFG-ALKALI SINK/MENDOTA				

Occurrence No.	497	Map Index: A0746	EO Index: 102313	Element Last Seen:	2008-08-08
Occ. Rank:	Good		Presence: Presumed Extant	Site Last Seen:	2008-08-08
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2016-06-28
Quad Summary:	Helm (3612051), San Joaquin (3612052)				
County Summary:	Fresno				
Lat/Long:	36.59025 / -120.11466		Accuracy:	nonspecific area	
UTM:	Zone-10 N4053296 E758129		Elevation (ft):	180	
PLSS:	T15S, R17E, Sec. 27, NW (M)		Acres:	332.0	
Location:	FRESNO SLOUGH BYPASS, ABOUT 0.9 MI NNE OF W FLORAL AVE AT S TRINITY AVE & 1.9 MI NNW OF SR-145 AT GRAHAM RD; N OF HELM.				
Detailed Location:	MAPPED TO SURVEY AREA.				
Ecological:	ANNUAL GRASSLAND HABITAT. SURROUNDING LAND USED FOR AGRICULTURE.				
General:	BADGERS AND DENS WERE OBSERVED DURING SAN JOAQUIN KIT FOX SURVEY IN 2008.				
Owner/Manager:	JAMES IRRIGATION DISTRICT				

<i>Emys marmorata</i>		Element Code: ARAAD02030	
western pond turtle			
Listing Status:	Federal: None	CNDDB Element Ranks:	Global: G3G4
	State: None		State: S3
	Other: BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_VU-Vulnerable, USFS_S-Sensitive		
Habitat:	General: A THOROUGHLY AQUATIC TURTLE OF PONDS, MARSHES, RIVERS, STREAMS & IRRIGATION DITCHES, USUALLY WITH AQUATIC VEGETATION, BELOW 6000 FT ELEVATION.		
	Micro:		



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



NEED BASKING SITES AND SUITABLE (SANDY BANKS OR GRASSY OPEN FIELDS) UPLAND HABITAT UP TO 0.5 KM FROM WATER FOR EGG-LAYING.

Occurrence No.	25	Map Index:	13707	EO Index:	865	Element Last Seen:	2001-05-29
Occ. Rank:	Excellent	Presence:	Presumed Extant	Site Last Seen:		2001-05-29	
Occ. Type:	Natural/Native occurrence	Trend:	Unknown	Record Last Updated:		2002-12-09	
Quad Summary:	Tranquillity (3612063)						
County Summary:	Fresno						
Lat/Long:	36.69250 / -120.29753		Accuracy:	nonspecific area			
UTM:	Zone-10 N4064165 E741445		Elevation (ft):	155			
PLSS:	T14S, R15E, Sec. 23, SE (M)		Acres:	284.1			
Location:	FRESNO SLOUGH, MENDOTA WILDLIFE AREA; APPROX. 4 MILES NORTHWEST OF TRANQUILITY.						
Detailed Location:	2001-ONE JUVENILE SITED IN FRESNO SLOUGH, T14S, R15E, SE 1/4 OF SW 1/4 OF SECTION 24.						
Ecological:	2001 FRESNO SLOUGH IS LINED MOSTLY WITH TULE AND CATTAILS IN THIS AREA. IT IS FAIRLY DEEP AND WIDE WITH ISLANDS IN THE CENTER. GIANT GARTER SNAKES ALSO FOUND HERE.						
General:	DATE UNKNOWN - UC BERKELEY, MUSEUM OF VERTEBRATE ZOOLOGY, SPECIMEN NUMBER UNKNOWN, 2001 OBSERVATION OF JUVENILE BY DFG EMPLOYEE.						
Owner/Manager:	DFG-MENDOTA WA						

Occurrence No.	226	Map Index:	49607	EO Index:	49607	Element Last Seen:	2001-04-16
Occ. Rank:	Good	Presence:	Presumed Extant	Site Last Seen:		2001-04-16	
Occ. Type:	Natural/Native occurrence	Trend:	Unknown	Record Last Updated:		2002-12-10	
Quad Summary:	Tranquillity (3612063)						
County Summary:	Fresno						
Lat/Long:	36.72754 / -120.33173		Accuracy:	80 meters			
UTM:	Zone-10 N4067967 E738281		Elevation (ft):	159			
PLSS:	T14S, R15E, Sec. 10, NW (M)		Acres:	0.0			
Location:	MENDOTA WILDLIFE MANAGEMENT AREA - 3.5 MILES SE OF THE TOWN OF MENDOTA.						
Detailed Location:	ONE ADULT OBSERVED IN HAMBURGER SLOUGH; T14S, R15E, SW 1/4 OF NW 1/4 SECTION 10, EAST OF FRESNO SLOUGH.						
Ecological:	HAMBURGER SLOUGH IS LINED WITH TULE AND CATTAIL. THERE ARE PLACES ON THE BANK WHERE TURTLES CAN GET OUT.						
General:	04-16-2001, ONE ADULT OBSERVED IN HAMBURGER SLOUGH, MENDOTA WILDLIFE MANAGEMENT AREA.						
Owner/Manager:	DFG-MENDOTA WA						



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	227	Map Index:	49723	EO Index:	49723	Element Last Seen:	2001-04-18
Occ. Rank:	Good	Presence:	Presumed Extant	Site Last Seen:		2001-04-18	
Occ. Type:	Natural/Native occurrence	Trend:	Unknown	Record Last Updated:		2002-12-24	
Quad Summary:	Tranquillity (3612063)						
County Summary:	Fresno						
Lat/Long:	36.72330 / -120.30197		Accuracy:	specific area			
UTM:	Zone-10 N4067571 E740952		Elevation (ft):	160			
PLSS:	T14S, R15E, Sec. 11, SE (M)		Acres:	25.2			
Location:	TIN CAN SLOUGH, 2.25 MILES SE OF WHITES BRIDGE (WHITES BRIDGE ROAD X FRESNO SLOUGH), MENDOTA WILDLIFE MANAGEMENT AREA.						
Detailed Location:	22 JUVENILE TURTLES WERE CAUGHT IN GIANT GARTER SNAKE TRAPS DURING 04/06/2001 TO 04/18/2001 SURVEY.						
Ecological:	TIN CAN SLOUGH'S BANKS SUPPORT JUNCUS AND ATRIPLEX.						
General:	2 JUVENILES CAUGHT INCIDENTALLY IN GIANT GARTER SNAKE TRAPS DURING 11 DAYS OF SURVEYING (4/6 TO 4/18/2001). PROBABLE RECAPTURES.						
Owner/Manager:	DFG-MENDOTA WA						

Occurrence No.	228	Map Index:	49731	EO Index:	49731	Element Last Seen:	2001-05-07
Occ. Rank:	Good	Presence:	Presumed Extant	Site Last Seen:		2001-05-07	
Occ. Type:	Natural/Native occurrence	Trend:	Unknown	Record Last Updated:		2002-12-26	
Quad Summary:	Tranquillity (3612063)						
County Summary:	Fresno						
Lat/Long:	36.72162 / -120.31194		Accuracy:	nonspecific area			
UTM:	Zone-10 N4067360 E740067		Elevation (ft):	160			
PLSS:	T14S, R15E, Sec. 11, NE (M)		Acres:	95.3			
Location:	APPROX. 4 MI SE MENDOTA, MENDOTA WA. 2 MI SE OF WHITES BRIDGE AND FRESNO SLOUGH CROSSING.						
Detailed Location:	1 JUVENILE IN DITCH IN FIELD #33; 1 JUV IN PUMP 4 DITCH; 1 ADULT BASKING ON A BRANCH OF A DEAD TREE IN H-LINE DITCH; 1 ADULT IN NETTLE DITCH. PUMP 4, H-LINE, & NETTLE DITCHES MAY CONNECT.						
Ecological:	DITCH IN FIELD #33 - BANKS WITH JUNCUS; PUMP 4 - BANKS WITH ATRIPLEX, IODINE BUSH, JUNCUS, SALTGRASS AND BLACK MUSTARD; NETTLE DITCH - PREDOMINATELY JUNCUS LINED. HABITAT IN THE AREA IS CONSIDERED GOOD TO EXCELLENT.						
General:	DFG STAFF PERSON CITED 2 JUVENILE AND 2 ADULT TURTLES ON 4 DATES. 4/28/2001 1 ADULT BASKING ON BRANCH IN H-LINE DITCH; 4/30/2001 1 ADULT IN NETTLE DITCH; 5/06/2001 1 JUV. IN PUMP 4 DITCH; 5/07/2001 1 JUV. IN DITCH IN FIELD #33.						
Owner/Manager:	DFG-MENDOTA WA						

<i>Gambelia sila</i>	Element Code: ARACF07010						
blunt-nosed leopard lizard							
Listing Status:	Federal:	Endangered	CNDDDB Element Ranks:	Global:	G1		
	State:	Endangered		State:	S1		
	Other:	CDFW_FP-Fully Protected, IUCN_EN-Endangered					
Habitat:	General:	RESIDENT OF SPARSELY VEGETATED ALKALI AND DESERT SCRUB HABITATS, IN AREAS OF LOW TOPOGRAPHIC RELIEF.					
	Micro:	SEEKS COVER IN MAMMAL BURROWS, UNDER SHRUBS OR STRUCTURES SUCH AS FENCE POSTS; THEY DO NOT EXCAVATE THEIR OWN BURROWS.					



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	4	Map Index: 13600	EO Index: 27874	Element Last Seen: 1979-07-XX
Occ. Rank:	Unknown		Presence: Presumed Extant	Site Last Seen: 1979-07-XX
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated: 1989-08-10

Quad Summary: Tranquillity (3612063), Mendota Dam (3612073)

County Summary: Fresno

Lat/Long:	36.74605 / -120.35739	Accuracy:	1 mile
UTM:	Zone-10 N4069958 E735932	Elevation (ft):	1302
PLSS:	T14S, R15E, Sec. 05, SW (M)	Acres:	0.0

Location: 1 MI E OF MENDOTA.

Detailed Location:

Ecological:

General: MVZ SPECIMENS.

Owner/Manager: UNKNOWN

Occurrence No.	207	Map Index: 13947	EO Index: 27727	Element Last Seen: 1976-XX-XX
Occ. Rank:	Unknown		Presence: Presumed Extant	Site Last Seen: 1976-XX-XX
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated: 2006-07-28

Quad Summary: Jamesan (3612062), Gravelly Ford (3612072)

County Summary: Fresno

Lat/Long:	36.74133 / -120.19489	Accuracy:	1 mile
UTM:	Zone-10 N4069847 E750459	Elevation (ft):	190
PLSS:	T14S, R16E, Sec. 02 (M)	Acres:	0.0

Location: N OF WHITES BRIDGE RD BETW NAPA AVE AND YUBA AVE.

Detailed Location:

Ecological: CALIFORNIA ANNUAL GRASSLAND.

General: ESSENTIAL HABITAT. OBS BASED UPON CDFG BNLL SURVEY 1976. INFORMATION PROVIDED BY J. BRODE, CDFG. NONE FOUND DURING SURVEYS IN JUNE/JULY 1998, MAY/JUNE 1999 & JUL 2003. LOW #'S INDICATE INHOSPITABLE CONDITIONS FOR BNLL.

Owner/Manager: UNKNOWN



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	208	Map Index:	13717	EO Index:	27734	Element Last Seen:	1981-XX-XX
Occ. Rank:	Unknown	Presence:	Presumed Extant	Site Last Seen:	2003-05-XX	Record Last Updated:	2012-06-01
Occ. Type:	Natural/Native occurrence	Trend:	Unknown				

Quad Summary: Tranquillity (3612063)

County Summary: Fresno

Lat/Long: 36.73027 / -120.29706 **Accuracy:** 3/5 mile

UTM: Zone-10 N4068358 E741368 **Elevation (ft):** 160

PLSS: T14S, R15E, Sec. 11 (M) **Acres:** 0.0

Location: 2 MI E OF JCT OF WHITES BRIDGE RD AND S. PACIFIC RAILROAD.

Detailed Location: DFG85U0003: OBS IN T14S R15E SECS 11 & 12.

Ecological: KOCHIA CALIFORNICA, SUAEDA MOQUINII, BROMUS SP., HEMIZONIA PUNGENS, CUSCUTA SP. (OR SUAEDA), HORDEUM SP. CALIF. ANNUAL GRASSLAND & IODINE BUSH SERIES, ALLSCALE/BUSH SEEPWEED IN PATCHES. SCATTERED SCALDS THROUGHOUT SALINE SOILS.

General: ESSENTIAL HABITAT. OBSERVATIONS FROM CDFG BNLL 1981 SURVEY. INFO PROVIDED BY J. BRODE, CDFG. NO BNLL FOUND IN ALKALI SINK ECOLOGICAL RESERVE DURING SURVEYS IN JUN & JUL 1998, MAY & JUN 1999, JUN 2002, AND APR & MAY 2003.

Owner/Manager: DFG-ALKALI SINK/MENDOTA, PVT



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



<i>Phrynosoma blainvillii</i>		Element Code: ARACF12100	
coast horned lizard			
Listing Status:	Federal: None	CNDDDB Element Ranks:	Global: G3G4
	State: None		State: S3S4
	Other: BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern		
Habitat:	General: FREQUENTS A WIDE VARIETY OF HABITATS, MOST COMMON IN LOWLANDS ALONG SANDY WASHES WITH SCATTERED LOW BUSHES.		
	Micro: OPEN AREAS FOR SUNNING, BUSHES FOR COVER, PATCHES OF LOOSE SOIL FOR BURIAL, & ABUNDANT SUPPLY OF ANTS & OTHER INSECTS.		

Occurrence No.	622	Map Index: 53174	EO Index: 53174	Element Last Seen: 2004-04-19
Occ. Rank:	Good		Presence: Presumed Extant	Site Last Seen: 2004-04-19
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated: 2016-07-18

Quad Summary: Tranquillity (3612063)
County Summary: Fresno

Lat/Long:	36.73044 / -120.29671	Accuracy:	specific area
UTM:	Zone-10 N4068377 E741399	Elevation (ft):	165
PLSS:	T14S, R15E, Sec. 12, NW (M)	Acres:	15.0

Location: ALKALI SINK ECOLOGICAL RESERVE, 0.1 MI S OF WHITES BRIDGE RD (HWY 180) & 0.9 MI E OF SAN MATEO RD AT WHITES BRIDGE RD.
Detailed Location: 3 LOCATIONS MAPPED IN NE1/4 SEC 11 & NW1/4 SEC 12. NORTH-MOST LOCATION WAS IN BURNED AREA, WEST OF THE ACCESS ROAD & EAST OF A STREAM.
Ecological: ALKLAI SINK SCRUB, DOMINATED BY HEMIZONIA PUNGENS, ALLENROLFEA OCCIDENTALIS, FRANKENIA SALINA, & LASTHENIA CALIFORNICA, KOCHIA CALIFORNICA, BROMUS RUBENS. IODINE BUSH SERIES & CALIF ANNUAL GRASSLAND SERIES. ALKALINE CLAY SOILS.
General: 2 INDIVIDUALS (1 ADULT, 1 UNKNOWN AGE) OBSERVED ON 12 JUN 2002. 1 ADULT OBSERVED ON 28 MAY 2003. 1 ADULT OBSERVED ON 19 APR 2004.
Owner/Manager: DFG-ALKALI SINK ER

Occurrence No.	655	Map Index: 66204	EO Index: 66248	Element Last Seen: 2003-05-28
Occ. Rank:	Excellent		Presence: Presumed Extant	Site Last Seen: 2003-05-28
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated: 2016-07-18

Quad Summary: Tranquillity (3612063)
County Summary: Fresno

Lat/Long:	36.73422 / -120.27927	Accuracy:	80 meters
UTM:	Zone-10 N4068841 E742945	Elevation (ft):	170
PLSS:	T14S, R15E, Sec. 12, NE (M)	Acres:	0.0

Location: ALKALI SINK ECOLOGICAL RESERVE, ABOUT 1.9 MILES EAST OF THE INTERSECTION OF SAN MATEO AVE. AND WHITES BRIDGE ROAD.
Detailed Location: MAPPED IN THE NE1/4 OF THE NE1/4 SEC 12.
Ecological: ALKALI SINK ER. IODINE BUSH SERIES & CALIFORNIA ANNUAL GRASSLAND SERIES W/ALKALINE CLAY SOILS. DOMINANT SPECIES INCLUDE ALLENROLFEA OCCIDENTALIS, KOCHIA CALIFORNICA, BROMUS MADRITENSIS RUBENS. SUAEDA MOQUINII, FRANKENIA SALINA.
General: 1 ADULT OBSERVED ON 28 MAY 2003.
Owner/Manager: DFG-ALKALI SINK ER



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



<i>Masticophis flagellum ruddocki</i>		Element Code: ARADB21021
San Joaquin coachwhip		
Listing Status:	Federal: None	CNDDB Element Ranks: Global: G5T2T3
	State: None	State: S2?
	Other: CDFW_SSC-Species of Special Concern	
Habitat:	General: OPEN, DRY HABITATS WITH LITTLE OR NO TREE COVER. FOUND IN VALLEY GRASSLAND & SALTBUSH SCRUB IN THE SAN JOAQUIN VALLEY.	
	Micro: NEEDS MAMMAL BURROWS FOR REFUGE AND OVIPOSITION SITES.	

Occurrence No.	32	Map Index: 60804	EO Index: 60840	Element Last Seen:	2004-03-30
Occ. Rank:	Good		Presence: Presumed Extant	Site Last Seen:	2004-03-30
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2005-04-04
Quad Summary:	Jamesan (3612062)				
County Summary:	Fresno				
Lat/Long:	36.73311 / -120.19302		Accuracy:	80 meters	
UTM:	Zone-10 N4068940 E750652		Elevation (ft):	180	
PLSS:	T14S, R16E, Sec. 11, NE (M)		Acres:	0.0	
Location:	KERMAN ECOLOGICAL RESERVE, NEAR MENDOTA.				
Detailed Location:					
Ecological:	HABITAT CONSISTS OF OPEN ANNUAL GRASSLAND, IN A RELATIVELY FLAT LOCATION, BUT WITH SOME MICRO-TOPOGRAPHY; VERY DRY AND HOT, AND SOILS ARE ALKALINE.				
General:	1 ADULT OBSERVED ON 30 MAR 2004, DURING THE MIDDAY.				
Owner/Manager:	DFG-KERMAN ER				

Occurrence No.	33	Map Index: 56763	EO Index: 60845	Element Last Seen:	2004-08-19
Occ. Rank:	Good		Presence: Presumed Extant	Site Last Seen:	2004-08-19
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2005-04-04
Quad Summary:	Tranquillity (3612063)				
County Summary:	Fresno				
Lat/Long:	36.72855 / -120.30049		Accuracy:	80 meters	
UTM:	Zone-10 N4068158 E741067		Elevation (ft):	160	
PLSS:	T14S, R15E, Sec. 11 (M)		Acres:	0.0	
Location:	0.4 MILE SOUTH OF WHITES BRIDGE ROAD, ALKALI SINK ECOLOGICAL RESERVE.				
Detailed Location:					
Ecological:	HABITAT CONSISTS OF A VEGETATION ALLIANCE OF IODINE BUSH, SUAEDA, SCALDS, AND PATCHES OF ANNUAL GRASSLAND; AREA HAS NO SLOPE. PROPERTY UNDISTURBED EXCEPT FOR GARBAGE BLOWING IN FROM HIGHWAY.				
General:	THE SHED SKIN OF 1 ADULT WAS FOUND WRAPPED THROUGH A TUFT OF DEAD GRASS NEAR THE EDGE OF A SMALL SCALD ON 19 AUG 2004; SKIN IDENTIFIED BY SCALE TYPES & COUNTS. SKIN WAS VERY WEATHERED AND BRITTLE, SO WAS LIKELY THERE FOR MOST/ALL OF SUMMER.				
Owner/Manager:	DFG-ALKALI SINK ER				

<i>Thamnophis gigas</i>		Element Code: ARADB36150
giant gartersnake		
Listing Status:	Federal: Threatened	CNDDB Element Ranks: Global: G2
	State: Threatened	State: S2
	Other: IUCN_VU-Vulnerable	
Habitat:	General: PREFERS FRESHWATER MARSH AND LOW GRADIENT STREAMS. HAS ADAPTED TO DRAINAGE CANALS & IRRIGATION DITCHES.	



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Micro: THIS IS THE MOST AQUATIC OF THE GARTERSNAKES IN CALIFORNIA.

Occurrence No.	1	Map Index:	13622	EO Index:	27604	Element Last Seen:	2001-XX-XX
Occ. Rank:	Unknown	Presence:	Presumed Extant	Site Last Seen:		2001-XX-XX	
Occ. Type:	Natural/Native occurrence	Trend:	Unknown	Record Last Updated:		2015-04-01	

Quad Summary: Tranquillity (3612063), Mendota Dam (3612073)
County Summary: Fresno

Lat/Long:	36.71363 / -120.32626	Accuracy:	nonspecific area
UTM:	Zone-10 N4066438 E738812	Elevation (ft):	160
PLSS:	T14S, R15E, Sec. 15 (M)	Acres:	8243.0

Location: FRESNO SLOUGH, JUST SE OF MENDOTA, VICINITY OF WHITESBRIDGE, N HALF OF MENDOTA WILDLIFE MANAGEMENT AREA.
Detailed Location: MAPPED GENERALLY TO PROVIDED LOCATION DESCRIPTIONS. LOCATIONS VAGUE & THEREFORE ASSOCIATED W/ THIS FEATURE. LOC: MENDOTA WILDLIFE REFUGE, E OF MAIN SLOUGH, 0.2 MI SE OF MENDOTA, N OF WHITES BRIDGE, FRESNO SLOUGH, CHECK STATION, & PUMP 4.
Ecological: 1-2 COLLECTED IN 1879. 2 LIVE COLLECTIONS MADE IN JUL 1972; DELIVERED TO CAL POLY, POMONA. 3 COLLECTED IN 1973 (CAS #178592-93 & 244229); 1 SNAKE COLL W/ 2 EGGS & MAY HAVE POSSIBLY DIED OF SKIN TUMORS. 1 COLL ON 5 APR 1990 (MVZ #215986).
General: 1 DETECTED IN 1970. 4 COLLECTED 24 JUN-30 SEP 1972. 2 COLLECTED 26 JUL-22 AUG 1973. 3 DETECTED 10 JUN-30 OCT 1974. 12 COLLECTED 5 APR-2 JUN 1976. 0 DETECTED DURING 1986-87, 1992 & 1998 SURVEYS. 1 COLLECTED 1990. 1 DETECTED IN 2001.
Owner/Manager: DFG-MENDOTA WA, UNKNOWN

Occurrence No.	8	Map Index:	14315	EO Index:	27607	Element Last Seen:	1976-06-09
Occ. Rank:	None	Presence:	Possibly Extirpated	Site Last Seen:		1992-XX-XX	
Occ. Type:	Natural/Native occurrence	Trend:	Unknown	Record Last Updated:		2014-11-13	

Quad Summary: Burrell (3611948), Raisin (3611958), Five Points (3612041), Helm (3612051)
County Summary: Fresno

Lat/Long:	36.48700 / -120.00757	Accuracy:	1 mile
UTM:	Zone-10 N4042131 E768068	Elevation (ft):	195
PLSS:	T17S, R18E, Sec. 03 (M)	Acres:	0.0

Location: FRESNO SLOUGH, ABOUT 1.2 MILES W OF BURRELL, 6 MILES SE OF HELM.
Detailed Location: MAPPED TO PROVIDED 1976 DETECTION LOCATION OF "FRESNO SLOUGH, 1 MILE W BURRELL, N. SIDE ELKHORN AVE." EXACT LOCATION OF 1992 HABITAT ASSESSMENT NOT KNOWN; DESCRIBED AS GENERAL AREA AT BURRELL-LANARE.
Ecological:
General: AT LEAST 1 DETECTED ON 9 JUN 1976; G. HANSEN FIELD #247. 0 DETECTED DURING 1986-87 SURVEYS; LEVEL OF EFFORT UNKNOWN. OBSERVATIONS OF HABITAT DETERIORATION IN 1992 ATTRIBUTED TO THE POSSIBLE EXTIRPATION AT THIS LOCATION.
Owner/Manager: UNKNOWN



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



*** SENSITIVE ***

Occurrence No.	159	Map Index:	46373	EO Index:	46373	Element Last Seen:	2001-06-04
Occ. Rank:	Excellent	Presence:	Presumed Extant	Site Last Seen:		2001-06-04	
Occ. Type:	Natural/Native occurrence	Trend:	Unknown	Record Last Updated:		2014-12-15	

Quad Summary: Tranquillity (3612063)

County Summary: Fresno

Lat/Long: Accuracy: 1/10 mile

UTM: Elevation (ft): 160

PLSS: Acres: 0.0

Location: *SENSITIVE* LOCATION INFORMATION SUPPRESSED.

Detailed Location: PLEASE CONTACT THE CALIFORNIA NATURAL DIVERSITY DATABASE, CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE, FOR MORE INFORMATION: (916) 322-2493

Ecological: WIDE, SLOW MOVING SLOUGH. SIDES LINED WITH TULE AND CATTAIL.

General:

Owner/Manager:

Occurrence No.	395	Map Index:	94479	EO Index:	95594	Element Last Seen:	1976-04-29
Occ. Rank:	Unknown	Presence:	Presumed Extant	Site Last Seen:		1976-04-29	
Occ. Type:	Natural/Native occurrence	Trend:	Unknown	Record Last Updated:		2014-11-13	

Quad Summary: Tranquillity (3612063)

County Summary: Fresno

Lat/Long: 36.70510 / -120.26969 Accuracy: 1 mile

UTM: Zone-10 N4065633 E743893 Elevation (ft): 160

PLSS: T14S, R16E, Sec. 19 (M) Acres: 0.0

Location: ABOUT 4 MI NNW OF TRANQUILITY, 4.1 MI SW OF JAMES RD & WHITESBRIDGE RD INTERSECTION, E EDGE IN MENDOTA WILDLIFE AREA.

Detailed Location: MAPPED GENERALLY TO PROVIDED LOCATION DESCRIPTION OF "PUMP #5, MENDOTA WILDLIFE AREA." USED MAP FROM "MENDOTA WILDLIFE REFUGE WATER MANAGEMENT PLAN" PAGE 22 & 24 TO DETERMINE LOCATION OF PUMPS.

Ecological:

General: 1 DETECTED/COLLECTED ON 5 APR 1976; G. HANSEN #FG154. 1 DETECTED/COLLECTED ON 14 APR 1976; G. HANSEN FIELD #159. 1 DETECTED/COLLECTED ON 29 APR 1976: G. HANSEN FIELD #200.

Owner/Manager: DFG-MENDOTA WA



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	401	Map Index:	94707	EO Index:	95819	Element Last Seen:	2008-08-16
Occ. Rank:	Fair	Presence:	Presumed Extant	Site Last Seen:		2008-08-16	
Occ. Type:	Natural/Native occurrence	Trend:	Unknown	Record Last Updated:		2014-12-16	
Quad Summary:	Tranquillity (3612063)						
County Summary:	Fresno						
Lat/Long:	36.68920 / -120.28729		Accuracy:	1/10 mile			
UTM:	Zone-10 N4063825 E742370		Elevation (ft):	160			
PLSS:	T14S, R15E, Sec. 25, NE (M)		Acres:	0.0			
Location:	ABOUT 3.4 MILES NNW OF TRANQUILITY POST OFFICE, ALONG FRESNO SLOUGH, 7 MILES SE OF MENDOTA.						
Detailed Location:	MAPPED TO PROVIDED COORDINATES. LOCATION DESCRIPTION WAS "FRESNO SLOUGH, MENDOTA WILDLIFE AREA, APPROXIMATELY 7.0 KM SOUTHEAST OF WHITE'S BRIDGE ROAD CROSSING."						
Ecological:	WIDE, SLOW-MOVING SLOUGH CHARACTERIZED BY MUD/SILT SUBSTRATE WITH STEEP BANKS. BANKS AND MARGINS DENSELY VEGETATED WITH CATTAILS, BULRUSH, AND WILLOWS. MANAGED UPLAND & SEASONAL WETLAND TO THE SW & ROW CROPS TO THE NE.						
General:	1 ADULT FEMALE CAPTURED BY HAND ON 16 AUG 2008; SNAKE WAS WEIGHED, MEASURED, PIT TAGGED, AND RELEASED.						
Owner/Manager:	DFG-MENDOTA WA						
<i>Thamnophis hammondi</i>							
						Element Code: ARADB36160	
two-striped gartersnake							
Listing Status:	Federal:	None		CNDDDB Element Ranks:	Global:	G4	
	State:	None			State:	S3S4	
	Other:	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFS_S-Sensitive					
Habitat:	General:	COASTAL CALIFORNIA FROM VICINITY OF SALINAS TO NORTHWEST BAJA CALIFORNIA. FROM SEA TO ABOUT 7,000 FT ELEVATION.					
	Micro:	HIGHLY AQUATIC. FOUND IN OR NEAR PERMANENT FRESH WATER. OFTEN ALONG STREAMS WITH ROCKY BEDS AND RIPARIAN GROWTH.					
Occurrence No.	135	Map Index:	80493	EO Index:	81253	Element Last Seen:	1990-04-05
Occ. Rank:	Unknown	Presence:	Presumed Extant	Site Last Seen:		1990-04-05	
Occ. Type:	Natural/Native occurrence	Trend:	Unknown	Record Last Updated:		2010-10-26	
Quad Summary:	Tranquillity (3612063)						
County Summary:	Fresno						
Lat/Long:	36.73266 / -120.34382		Accuracy:	80 meters			
UTM:	Zone-10 N4068506 E737185		Elevation (ft):	160			
PLSS:	T14S, R15E, Sec. 09, N (M)		Acres:	0.0			
Location:	50 FT WEST OF WHITES BRIDGE, 1 MI E OF W PANOCHE RD AT WHITESBRIDGE RD (HWY180), 1.8 MI SE OF HWY180 AT BELMONT AVE.						
Detailed Location:	MVZ SPECIMEN STATED AS "50 FT W FROM BRIDGE OVER FRESNO SLOUGH ON HWY180, NW CORNER OF MENDOTA WILDLIFE AREA." MAPPED TO THE STATED LOCALITY.						
Ecological:							
General:	MVZ #215986 COLLECTED BY G. BEEMAN ON 5 APR 1990.						
Owner/Manager:	DFG-MENDOTA WA, UNKNOWN						



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Valley Sink Scrub

Element Code: CTT36210CA

Valley Sink Scrub

Listing Status: **Federal:** None

CNDDDB Element Ranks: **Global:** G1

State: None

State: S1.1

Other:

Habitat: **General:**

Micro:

Occurrence No. 10 **Map Index:** 13749 **EO Index:** 16339 **Element Last Seen:** 1985-03-11

Occ. Rank: Excellent **Presence:** Presumed Extant **Site Last Seen:** 1985-03-11

Occ. Type: Natural/Native occurrence **Trend:** Unknown **Record Last Updated:** 1998-07-14

Quad Summary: Tranquillity (3612063)

County Summary: Fresno

Lat/Long: 36.72576 / -120.28164 **Accuracy:** specific area

UTM: Zone-10 N4067896 E742761 **Elevation (ft):** 160

PLSS: T14S, R15E, Sec. 12 (M) **Acres:** 768.2

Location: ALKALI SINK ECOLOGICAL RESERVE AND MENDOTA WILDLIFE AREA, SOUTH OF WHITESBRIDGE ROAD.

Detailed Location: THREE AREAS SINK SCRUB (BOUNDARY INCL CORRIDORS W/O HABITAT).

Ecological: LARGE EAST PART IS EXCELLENT QUALITY ALLENROLFEA SCRUB W/SPOROBOLUS, DISTICHLIS. VERNAL POOLS, ALKALI SCALDS, HUMMOCKS OF WILDFLOWERS, OCC RANK A. TO WEST, POCKETS OF ALLENROLFEA, SUAEDA, FRANKENIA IN AG, RANK C. MAY RECOVER AS ER.

General: SEE WWW.DFG.CA.GOV/BIOGEO/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: DFG-ALKALI SINK/MENDOTA



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Northern Claypan Vernal Pool		Element Code: CTT44120CA	
Northern Claypan Vernal Pool			
Listing Status:	Federal: None	CNDDDB Element Ranks:	Global: G1
	State: None		State: S1.1
	Other:		
Habitat:	General: <input type="checkbox"/>		
	Micro: <input type="checkbox"/>		
Occurrence No.	7	Map Index:	13942
Occ. Rank:	Unknown	EO Index:	26441
Occ. Type:	Natural/Native occurrence	Presence:	Presumed Extant
		Trend:	Unknown
		Element Last Seen:	1975-11-XX
		Site Last Seen:	1975-11-XX
		Record Last Updated:	1998-07-15
Quad Summary:	Jamesan (3612062)		
County Summary:	Fresno		
Lat/Long:	36.72827 / -120.19627	Accuracy:	1 mile
UTM:	Zone-10 N4068394 E750378	Elevation (ft):	175
PLSS:	T14S, R16E, Sec. 11 (M)	Acres:	0.0
Location:	KERMAN VERNAL POOLS. A FEW KM WEST OF KERMAN. ALSO INCLUDES SECTIONS 10 & 12.		
Detailed Location:	APPROX 1000 ACRES.		
Ecological:	HIGHER AREAS W/ GRASSLAND SPP: MYOSURUS MINIMUS, SIBARA VIRGINICA, SESUVIUM VERRUCOSUM. LOWER AREAS W/ ALKALI TOLERANT SPP: DELPHINIUM RECURVATUM, HUTCHINSIA PROCUMBENS, LEPIDIUM DICTYOTUM, PLANTAGO BIGELOVII.		
General:	UNABLE TO CONVERT TO FLORISTIC CLASSIFICATION, LACKS SPP. INFO. SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.		
Owner/Manager:	UNKNOWN		



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Coastal and Valley Freshwater Marsh

Element Code: CTT52410CA

Coastal and Valley Freshwater Marsh

Listing Status: Federal: None

CNDDDB Element Ranks: Global: G3

State: None

State: S2.1

Other:

Habitat: General:

Micro:

Occurrence No. 10 **Map Index:** 13707 **EO Index:** 17648 **Element Last Seen:** 1977-02-XX

Occ. Rank: Unknown **Presence:** Presumed Extant **Site Last Seen:** 1977-02-XX

Occ. Type: Natural/Native occurrence **Trend:** Unknown **Record Last Updated:** 1998-07-16

Quad Summary: Tranquillity (3612063)

County Summary: Fresno

Lat/Long: 36.69250 / -120.29753 **Accuracy:** nonspecific area

UTM: Zone-10 N4064165 E741445 **Elevation (ft):** 155

PLSS: T14S, R15E, Sec. 23, SE (M) **Acres:** 284.1

Location: MENDOTA WILDLIFE MANAGEMENT AREA; 4 MILES NW OF TRANQUILITY, ALONG FRESNO SLOUGH.

Detailed Location:

Ecological: WETLAND & OPEN WATER OF FRESNO SLOUGH; TYPHA SPP, SCIRPUS SPP. OVER 130 SPP OF BIRDS OBS USING AREA. UNABLE TO CONVERT TO FLORISTIC CLASSIFICATION, LACKS SPP. INFO.

General: 3/4 OF MANAGEMENT AREA IS ARTIFICIALLY MAINTAINED FOR WATERFOWL. SEE WWW.DFG.CA.GOV/BIOGEO/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: DFG-MENDOTA WA



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



<i>Branchinecta longiantenna</i>		Element Code: ICBRA03020	
longhorn fairy shrimp			
Listing Status:	Federal: Endangered	CNDDDB Element Ranks:	Global: G1
	State: None		State: S1S2
	Other: IUCN_EN-Endangered		
Habitat:	General: ENDEMIC TO THE EASTERN MARGIN OF THE CENTRAL COAST MTNS IN SEASONALLY ASTATIC GRASSLAND VERNAL POOLS.		
	Micro: INHABIT SMALL, CLEAR-WATER DEPRESSIONS IN SANDSTONE AND CLEAR-TO-TURBID CLAY/GRASS-BOTTOMED POOLS IN SHALLOW SWALES.		

*** SENSITIVE ***

Occurrence No.	13	Map Index: 94652	EO Index: 95762	Element Last Seen:	2009-03-03
Occ. Rank:	Excellent		Presence: Presumed Extant	Site Last Seen:	2009-03-03
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2014-12-16
Quad Summary:	Tranquillity (3612063)				
County Summary:	Fresno				
Lat/Long:		Accuracy:	specific area		
UTM:		Elevation (ft):	165		
PLSS:		Acres:	8.0		
Location:	*SENSITIVE* LOCATION INFORMATION SUPPRESSED.				
Detailed Location:	PLEASE CONTACT THE CALIFORNIA NATURAL DIVERSITY DATABASE, CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE, FOR MORE INFORMATION: (916) 322-2493				
Ecological:	VERNAL POOL, 6 CM DEEP, IN ALKALI SINKS SURROUNDED BY CALIFORNIA ANNUAL GRASSLAND WITH POCKETS OF ALKALI SACATON GRASSLAND. B. LYNCHI AND SPEA HAMMONDII ALSO FOUND. MODERATE DISTURBANCE FROM GRAZING NOTED.				
General:					
Owner/Manager:					

*** SENSITIVE ***

Occurrence No.	14	Map Index: 94653	EO Index: 95763	Element Last Seen:	2009-03-03
Occ. Rank:	Excellent		Presence: Presumed Extant	Site Last Seen:	2009-03-03
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2014-12-16
Quad Summary:	Tranquillity (3612063)				
County Summary:	Fresno				
Lat/Long:		Accuracy:	specific area		
UTM:		Elevation (ft):	165		
PLSS:		Acres:	15.0		
Location:	*SENSITIVE* LOCATION INFORMATION SUPPRESSED.				
Detailed Location:	PLEASE CONTACT THE CALIFORNIA NATURAL DIVERSITY DATABASE, CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE, FOR MORE INFORMATION: (916) 322-2493				
Ecological:	VERNAL POOLS, 7.5-13 CM DEEP, IN ALKALI SINKS SURROUNDED BY CALIFORNIA ANNUAL GRASSLAND WITH POCKETS OF ALKALI SACATON GRASSLAND. B. LYNCHI, B. LINDAHLI & SPEA HAMMONDII ALSO FOUND. MODERATE TO HEAVY DISTURBANCE FROM CATTLE GRAZING NOTED.				
General:					
Owner/Manager:					



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



<i>Branchinecta lynchi</i>		Element Code: ICBRA03030	
vernal pool fairy shrimp			
Listing Status:	Federal: Threatened	CNDDDB Element Ranks:	Global: G3
	State: None		State: S3
	Other: IUCN_VU-Vulnerable		
Habitat:	General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.		
	Micro: INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.		
Occurrence No.	839	Map Index: 94241	EO Index: 95366
Occ. Rank:	Unknown	Presence: Presumed Extant	Element Last Seen: 2009-03-09
Occ. Type:	Natural/Native occurrence	Trend: Unknown	Site Last Seen: 2009-03-09
			Record Last Updated: 2015-03-05
Quad Summary:	Tranquillity (3612063)		
County Summary:	Fresno		
Lat/Long:	36.74008 / -120.30095	Accuracy:	specific area
UTM:	Zone-10 N4069436 E740991	Elevation (ft):	165
PLSS:	T14S, R15E, Sec. 02, SE (M)	Acres:	38.0
Location:	0.5 TO 1.1 MILES NE OF HIGHWAY 180 AT N SAN MATEO AVE, JUST NORTH OF ALKALI SINK ECOLOGICAL RESERVE, ESE OF MENDOTA.		
Detailed Location:	MAPPED TO PROVIDED COORDINATES.		
Ecological:	VERNAL POOLS WITHIN ALKALI SINKS SURROUNDED BY CALIFORNIA ANNUAL GRASSLAND WITH POCKETS OF ALKALI SACATON GRASSLAND ON 960-ACRE PARCEL. BRANCHINECTA LONGIANTENNA, SPEA HAMMONDII, & B. LINDAHLI ALSO FOUND ONSITE.		
General:	10,000S DETECTED IN 7 POOLS ON 3 MAR 2009. FOUND IN 9 POOLS, FEB-MAR 2009; 11 COLLECTED ON 3 MAR & 1 ON 9 MAR 2009.		
Owner/Manager:	PVT		



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



<i>Bombus crotchii</i>		Element Code: IIHYM24480	
Crotch bumble bee			
Listing Status:	Federal: None	CNDDDB Element Ranks:	Global: G3G4
	State: None		State: S1S2
	Other:		
Habitat:	General: COASTAL CALIFORNIA EAST TO THE SIERRA-CASCADE CREST AND SOUTH INTO MEXICO.		
	Micro: FOOD PLANT GENERA INCLUDE ANTIRRHINUM, PHACELIA, CLARKIA, DENDROMECON, ESCHSCHOLZIA, AND ERIOGONUM.		

Occurrence No.	57	Map Index:	97423	EO Index:	98711	Element Last Seen:	1964-04-22
Occ. Rank:	Unknown	Presence:	Presumed Extant	Site Last Seen:		1964-04-22	
Occ. Type:	Natural/Native occurrence	Trend:	Unknown	Record Last Updated:		2015-09-01	
Quad Summary:	Five Points (3612041)						
County Summary:	Fresno						
Lat/Long:	36.42940 / -120.10291		Accuracy:	1 mile			
UTM:	Zone-10 N4035478 E759717		Elevation (ft):	220			
PLSS:	T17S, R17E, Sec. 26 (M)		Acres:	0.0			
Location:	FIVE POINTS.						
Detailed Location:	EXACT LOCATION UNKNOWN. MAPPED BY CNDDDB IN THE GENERAL VICINITY OF FIVE POINTS.						
Ecological:							
General:	COLLECTED 22 APR 1964.						
Owner/Manager:	UNKNOWN						

<i>Layia munzii</i>		Element Code: PDAST5N0B0	
Munz's tidy-tips			
Listing Status:	Federal: None	CNDDDB Element Ranks:	Global: G1
	State: None		State: S1
	Other: Rare Plant Rank - 1B.2, BLM_S-Sensitive		
Habitat:	General: CHENOPOD SCRUB, VALLEY AND FOOTHILL GRASSLAND.		
	Micro: HILLSIDES, IN WHITE-GREY ALKALINE CLAY SOILS, W/GRASSES AND CHENOPOD SCRUB ASSOCIATES. 150-700 M.		

Occurrence No.	3	Map Index:	31287	EO Index:	3129	Element Last Seen:	1940-03-22
Occ. Rank:	Unknown	Presence:	Presumed Extant	Site Last Seen:		1940-03-22	
Occ. Type:	Natural/Native occurrence	Trend:	Unknown	Record Last Updated:		1995-05-25	
Quad Summary:	Tranquillity (3612063), Coit Ranch (3612064)						
County Summary:	Fresno						
Lat/Long:	36.64575 / -120.38647		Accuracy:	1 mile			
UTM:	Zone-10 N4058757 E733639		Elevation (ft):	190			
PLSS:	T15S, R15E, Sec. 07, NW (M)		Acres:	0.0			
Location:	8-9 MILES SOUTH OF MENDOTA.						
Detailed Location:							
Ecological:							
General:	SITE KNOWN FROM TWO COLLECTIONS BY HOOVER IN 1938 & 1940. NEEDS FIELDWORK.						
Owner/Manager:	UNKNOWN						



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	4	Map Index: 31286	EO Index: 22815	Element Last Seen: 1937-04-10
Occ. Rank:	Unknown		Presence: Presumed Extant	Site Last Seen: 1937-04-10
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated: 1995-05-30

Quad Summary: Five Points (3612041)

County Summary: Fresno

Lat/Long:	36.42836 / -120.02986	Accuracy:	1 mile
UTM:	Zone-10 N4035562 E766271	Elevation (ft):	210
PLSS:	T17S, R18E, Sec. 28, NW (M)	Acres:	0.0

Location: 2 MILES SOUTH OF WHEATVILLE (ABOUT 7.5 MILES SOUTHEAST OF HELM).

Detailed Location:

Ecological:

General: SITE KNOWN FROM TWO COLLECTIONS BY HOOVER IN 1936 & 1937. NEEDS FIELDWORK.

Owner/Manager: UNKNOWN

Occurrence No.	19	Map Index: 31284	EO Index: 3136	Element Last Seen: XXXX-XX-XX
Occ. Rank:	Unknown		Presence: Presumed Extant	Site Last Seen: XXXX-XX-XX
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated: 2014-03-10

Quad Summary: San Joaquin (3612052)

County Summary: Fresno

Lat/Long:	36.60765 / -120.18630	Accuracy:	1 mile
UTM:	Zone-10 N4055036 E751661	Elevation (ft):	170
PLSS:	T15S, R16E, Sec. 24, SW (M)	Acres:	0.0

Location: SAN JOAQUIN.

Detailed Location: EXACT LOCATION UNKNOWN. MAPPED BY CNDDDB IN THE GENERAL VICINITY OF THE CITY OF SAN JOAQUIN.

Ecological:

General: SITE IS BASED ON TWO UNDATED COLLECTIONS BY GREENE AND BRANDEGEE. COLLECTION DATE IS LIKELY IN THE LATE 1800'S OR THE EARLY 1900'S. NEEDS FIELDWORK.

Owner/Manager: UNKNOWN



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	28	Map Index: 74509	EO Index: 75488	Element Last Seen:	2008-04-11
Occ. Rank:	Fair		Presence: Presumed Extant	Site Last Seen:	2010-04-26
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2014-03-10

Quad Summary: Tranquillity (3612063)

County Summary: Fresno

Lat/Long:	36.73500 / -120.29400	Accuracy:	80 meters
UTM:	Zone-10 N4068890 E741627	Elevation (ft):	160
PLSS:	T14S, R15E, Sec. 01, SW (M)	Acres:	0.0

Location: N SIDE OF HWY 180, ABOUT 0.13 RD MI E OF ITS INTERSECTION WITH WHITESBRIDGE RD, SE OF MENDOTA.

Detailed Location: S PORTION OF A LARGE UNDEVELOPED PARCEL TO THE N OF THE DFG ALKALI SINK PRESERVE. SEVERAL PATCHES OF PLANTS ALSO OBSERVED ALONG THE HWY 180 RIGHT-OF-WAY.

Ecological: GRASSLANDS SURROUNDING ALKALI SINK HABITAT. AREA IS A CATTLE PASTURE & GRAZING SEEMS TO HAVE REMOVED ALL THE SHRUB COVER FROM THE SITE. DOMINANT SPECIES IN THE GRASSLANDS INCLUDE HORDEUM MURINUM, BROMUS HORDEACEUS, & HEMIZONIA PUNGENS.

General: 20 PLANTS OBSERVED IN 2008. SPECIES NOT SEEN BY CYPHER IN 2010, ONLY LAYIA PLATYGLOSSA WAS OBSERVED. ATRIPLEX VALICOLA, A. DEPRESSA, & GOODMANIA LUTEOLA ALSO OCCUR AT THIS SITE.

Owner/Manager: PVT

<i>Monolopia congdonii</i>		Element Code: PDASTA8010
San Joaquin woollythreads		
Listing Status:	Federal: Endangered	CNDDDB Element Ranks: Global: G2
	State: None	State: S2
	Other: Rare Plant Rank - 1B.2, SB_UCBBG-UC Berkeley Botanical Garden	
Habitat:	General: CHENOPOD SCRUB, VALLEY AND FOOTHILL GRASSLAND.	
	Micro: ALKALINE OR LOAMY PLAINS; SANDY SOILS, OFTEN WITH GRASSES AND WITHIN CHENOPOD SCRUB. 55-840 M.	

Occurrence No.	9	Map Index: 13523	EO Index: 3108	Element Last Seen:	1940-03-22
Occ. Rank:	None		Presence: Possibly Extirpated	Site Last Seen:	1988-XX-XX
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2009-07-06

Quad Summary: Cantua Creek (3612053), Levis (3612054)

County Summary: Fresno

Lat/Long:	36.51689 / -120.38822	Accuracy:	1 mile
UTM:	Zone-10 N4044455 E733871	Elevation (ft):	380
PLSS:	T16S, R15E, Sec. 19 (M)	Acres:	0.0

Location: 17 MILES SOUTH OF MENDOTA, ALONG HWY 33.

Detailed Location:

Ecological:

General: SITE BASED ON A 1940 HOOVER COLLECTION. ACCORDING TO 1989 TAYLOR REPORT, NO NATIVE HABITAT REMAINS IN THE REGION OF THIS COLLECTION.

Owner/Manager: UNKNOWN



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	10	Map Index: 75706	EO Index: 76737	Element Last Seen:	1941-03-21
Occ. Rank:	None		Presence: Possibly Extirpated	Site Last Seen:	1988-XX-XX
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2009-07-02
Quad Summary:	Domengine Ranch (3612033), Tres Picos Farms (3612043)				
County Summary:	Fresno				
Lat/Long:	36.38497 / -120.35612		Accuracy:	1 mile	
UTM:	Zone-10 N4029895 E737148		Elevation (ft):	500	
PLSS:	T18S, R15E, Sec. 09 (M)		Acres:	0.0	
Location:	ABOUT 26 MILES SOUTH OF MENDOTA ON HWY 33.				
Detailed Location:	EXACT LOCATION UNKNOWN. MAPPED BY CNDDDB AS BEST GUESS ~26 MILES SOUTH OF MENDOTA ON HWY 33.				
Ecological:	UNCULTIVATED FIELDS.				
General:	ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1941 FERRIS COLLECTION. ACCORDING TO A 1989 TAYLOR REPORT, NO NATIVE UNCULTIVATED HABITAT REMAINS IN THE VICINITY.				
Owner/Manager:	UNKNOWN				
Occurrence No.	11	Map Index: 13527	EO Index: 16493	Element Last Seen:	1935-04-02
Occ. Rank:	None		Presence: Possibly Extirpated	Site Last Seen:	1988-XX-XX
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2009-07-06
Quad Summary:	Tranquillity (3612063), Coit Ranch (3612064)				
County Summary:	Fresno				
Lat/Long:	36.66383 / -120.38906		Accuracy:	1 mile	
UTM:	Zone-10 N4060757 E733353		Elevation (ft):	190	
PLSS:	T14S, R14E, Sec. 36 (M)		Acres:	0.0	
Location:	MENDOTA PLAIN; 6 MILES SOUTH OF MENDOTA.				
Detailed Location:					
Ecological:					
General:	SITE BASED ON A 1935 JEPSON COLLECTION. ACCORDING TO A 1989 TAYLOR REPORT, LITTLE NATIVE HABITAT REMAINS ON FLOOR OF THE SAN JOAQUIN VALLEY S OF MENDOTA. MUCH OF THE AREA CONVERTED TO IRRIGATED AGRICULTURE.				
Owner/Manager:	UNKNOWN				
Occurrence No.	12	Map Index: 13453	EO Index: 16497	Element Last Seen:	1938-05-01
Occ. Rank:	None		Presence: Possibly Extirpated	Site Last Seen:	1988-XX-XX
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2009-07-06
Quad Summary:	Tres Picos Farms (3612043), Lillis Ranch (3612044)				
County Summary:	Fresno				
Lat/Long:	36.45046 / -120.39292		Accuracy:	1 mile	
UTM:	Zone-10 N4037073 E733649		Elevation (ft):	460	
PLSS:	T17S, R15E, Sec. 18 (M)		Acres:	0.0	
Location:	PLAIN BETWEEN ARROYO HONDO & CANTUA.				
Detailed Location:	MAPPED BY CNDDDB AS BEST GUESS ABOUT HALF WAY BETWEEN ARROYO HONDO AND CANTUA CREEK NEAR HWY 33.				
Ecological:					
General:	ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1938 HOOVER COLLECTION. ACCORDING TO 1989 REPORT BY TAYLOR, LITTLE SUITABLE HABITAT REMAINS IN THIS GENERAL REGION.				
Owner/Manager:	UNKNOWN				



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



<i>Atriplex cordulata var. cordulata</i>		Element Code: PDCHE040B0
heartscale		
Listing Status:	Federal: None	CNDDDB Element Ranks: Global: G3T2
	State: None	State: S2
	Other: Rare Plant Rank - 1B.2, BLM_S-Sensitive	
Habitat:	General: CHENOPOD SCRUB, VALLEY AND FOOTHILL GRASSLAND, MEADOWS AND SEEPS.	
	Micro: ALKALINE FLATS AND SCALDS IN THE CENTRAL VALLEY, SANDY SOILS. 3-275 M.	

Occurrence No.	28	Map Index: 77138	EO Index: 6076	Element Last Seen:	2009-08-06
Occ. Rank:	Good		Presence: Presumed Extant	Site Last Seen:	2009-08-06
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2011-06-14
Quad Summary:	Tranquillity (3612063)				
County Summary:	Fresno				
Lat/Long:	36.72795 / -120.29520		Accuracy:	specific area	
UTM:	Zone-10 N4068105 E741542		Elevation (ft):	160	
PLSS:	T14S, R15E, Sec. 12, NW (M)		Acres:	5.0	

Location: ALKALI SINK ECOLOGICAL RESERVE; JUST NE OF THE INTERSECTION OF W WHITESBRIDGE RD AND THE SOUTHERN PACIFIC RR TRACKS.

Detailed Location: ALONG THE ROAD DEFINING THE SECTION LINE ABOUT 100 M NORTH OF THE SOUTHERN PACIFIC RAILROAD TRACKS.

Ecological: VALLEY SINK SCRUB WITH ALLENROLFEA OCCIDENTALIS, SUAEDA MOQUINII, CENTROMADIA PUNGENS, AND ANNUAL GRASSES. THE RARE CORDYLANTHUS PALMATUS AND ATRIPLEX MINUSCULA ALSO AT THIS SITE.

General: SEEN IN 2009 BY PRESTON; ALL HABITAT WAS NOT SURVEYED, SO POPULATION PROBABLY MORE EXTENSIVE THAN MAPPED. A 1987 TAYLOR COLLECTION FROM "ALKALI SINK ECOLOGICAL RESERVE, SECTION 12" ALSO ATTRIBUTED TO THIS SITE.

Owner/Manager: DFG-ALKALI SINK ER

Occurrence No.	29	Map Index: 14246	EO Index: 6078	Element Last Seen:	1937-07-29
Occ. Rank:	None		Presence: Extirpated	Site Last Seen:	2009-09-02
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2009-11-02
Quad Summary:	Kerman (3612061)				
County Summary:	Fresno				
Lat/Long:	36.63993 / -120.06182		Accuracy:	1 mile	
UTM:	Zone-10 N4058951 E762688		Elevation (ft):	200	
PLSS:	T15S, R17E, Sec. 12 (M)		Acres:	0.0	

Location: 6 MILES SOUTH OF KERMAN.

Detailed Location: MAPPED 6 MILES SOUTH OF KERMAN ALONG MADERA AVENUE, JUST SOUTH OF LINCOLN AVENUE.

Ecological:

General: ONLY SOURCE OF INFORMATION IS A 1937 HOOVER COLLECTION.

Owner/Manager: UNKNOWN



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	46	Map Index:	82533	EO Index:	12232	Element Last Seen:	1993-06-09
Occ. Rank:	Good	Presence:	Presumed Extant	Site Last Seen:		1993-06-09	
Occ. Type:	Natural/Native occurrence	Trend:	Unknown	Record Last Updated:		2011-05-10	

Quad Summary: Jamesan (3612062)

County Summary: Fresno

Lat/Long:	36.74099 / -120.18549	Accuracy:	specific area
UTM:	Zone-10 N4069834 E751299	Elevation (ft):	190
PLSS:	T14S, R16E, Sec. 01, W (M)	Acres:	21.0

Location: 0.2-0.5 MILE NORTH OF WHITESBRIDGE AVENUE, KERMAN ECOLOGICAL RESERVE, NNE OF JAMESAN.

Detailed Location: MAPPED AS A SERIES OF 4 POLYGONS 0.6-1.4 MILES WEST OF YUBA AVENUE. IN THE NW 1/4 SW 1/4 AND SE 1/4 NW 1/4 SECTION 1 AND IN THE SE 1/4 SECTION 2.

Ecological: ALKALI SINK/NON-NATIVE GRASSLAND SURROUNDED BY AGRICULTURE. ASSOCIATED WITH A. DEPRESSA, A. MINUSCULA, CRESSA TRUXILLENIS, AND NEARBY CORDYLANTHUS PALMATUS.

General: 2000 PLANTS SEEN IN 1993.

Owner/Manager: DFG-KERMAN ER

Occurrence No.	75	Map Index:	74992	EO Index:	76000	Element Last Seen:	1996-06-22
Occ. Rank:	Unknown	Presence:	Presumed Extant	Site Last Seen:		1996-06-22	
Occ. Type:	Natural/Native occurrence	Trend:	Unknown	Record Last Updated:		2009-05-08	

Quad Summary: Tranquillity (3612063)

County Summary: Fresno

Lat/Long:	36.73131 / -120.34740	Accuracy:	80 meters
UTM:	Zone-10 N4068347 E736869	Elevation (ft):	50
PLSS:	T14S, R15E, Sec. 09, NW (M)	Acres:	0.0

Location: 400 FT SOUTH OF WHITES BRIDGE ROAD (HIGHWAY 180) AND 1000 FT EAST OF ENTRANCE TO MENDOTA WILDLIFE AREA.

Detailed Location:

Ecological: ALKALI PLAYA. ASSOCIATED WITH LEPIDIUM DICTYOTUM, HORDEUM DEPRESSUM, SUAEDA MOQUINII, HEMIZONIA PUNGENS SSP. PUNGENS, PLANTAGO SP., BROMUS HORDEACEUS, SESUVIUM VERRUCOSUM, AND SPERGULARIA MACROTHERCA.

General: ONLY SOURCE OF INFORMATION FOR THIS OCCURRENCE IS A 1996 BRAMLET COLLECTION.

Owner/Manager: DFG-MENDOTA WA

Atriplex coronata var. vallicola

Element Code: PDCHE04250

Lost Hills crownscale

Listing Status:	Federal: None	CNDDB Element Ranks:	Global: G4T2
	State: None		State: S2
	Other: Rare Plant Rank - 1B.2, BLM_S-Sensitive		

Habitat: **General:** CHENOPOD SCRUB, VALLEY AND FOOTHILL GRASSLAND, VERNAL POOLS.
Micro: IN POWDERY, ALKALINE SOILS THAT ARE VERNALLY MOIST WITH FRANKENIA, ATRIPLEX SPP. AND DISTICHLIS. 45-885 M.



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	6	Map Index: 13542	EO Index: 21165	Element Last Seen: 1938-05-01
Occ. Rank:	Unknown		Presence: Presumed Extant	Site Last Seen: 1938-05-01
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated: 1989-08-11

Quad Summary: Tranquillity (3612063), Coit Ranch (3612064), Mendota Dam (3612073), Firebaugh (3612074)

County Summary: Fresno

Lat/Long:	36.75299 / -120.38045	Accuracy:	1 mile
UTM:	Zone-10 N4070671 E733852	Elevation (ft):	170
PLSS:	T13S, R15E, Sec. 31, SW (M)	Acres:	0.0

Location: MENDOTA.

Detailed Location: EXACT LOCATION UNKNOWN. MAPPED BY CNDDDB CENTERED ON MENDOTA.

Ecological:

General: ONLY SOURCES OF INFORMATION FOR THIS OCCURRENCE ARE 1937 AND 1938 COLLECTIONS BY HOOVER.

Owner/Manager: UNKNOWN

Occurrence No.	17	Map Index: 13961	EO Index: 14230	Element Last Seen: 1986-08-27
Occ. Rank:	Unknown		Presence: Presumed Extant	Site Last Seen: 1986-08-27
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated: 1994-04-20

Quad Summary: Jamesan (3612062)

County Summary: Fresno

Lat/Long:	36.73455 / -120.18929	Accuracy:	nonspecific area
UTM:	Zone-10 N4069109 E750981	Elevation (ft):	190
PLSS:	T14S, R16E, Sec. 11, SE (M)	Acres:	1840.1

Location: KERMAN ECOLOGICAL RESERVE, BOTH SIDES OF WHITES BRIDGE ROAD AT JUNCTION WITH JAMES ROAD, 7-8 MILES WEST OF KERMAN.

Detailed Location:

Ecological: FOUND ON ALKALINE SCALDS WITH VERNAL POOLS IN GRASSLANDS DOMINATED BY BROMUS SPP.

General: HUNDREDS OF PLANTS SCATTERED THROUGHOUT AREA IN 1986.

Owner/Manager: DFG-KERMAN ER

Occurrence No.	64	Map Index: 75189	EO Index: 76190	Element Last Seen: 2008-04-11
Occ. Rank:	Good		Presence: Presumed Extant	Site Last Seen: 2008-04-11
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated: 2009-05-22

Quad Summary: Tranquillity (3612063)

County Summary: Fresno

Lat/Long:	36.73600 / -120.29599	Accuracy:	80 meters
UTM:	Zone-10 N4068996 E741446	Elevation (ft):	160
PLSS:	T14S, R15E, Sec. 01, SW (M)	Acres:	0.0

Location: ALONG HWY 180, 1.0 MILE EAST OF INTERSECTION WITH SAN MATEO AVE, EAST OF MENDOTA.

Detailed Location: 100 METERS NORTH OF HIGHWAY 180, ACROSS THE STREET FROM THE DFG ALKALI SINK PRESERVE.

Ecological: ALKALI SINK HABITAT. ASSOCIATED WITH ATRIPLEX FRUTICULOSA AND A. PHYLLOSTEGIA IN ALKALI SCALDS. MARGINS OF SCALDS DOMINATED BY HEMIZONIA PUNGENS AND DISTICHLIS SPICATA. CATTLE GRAZING HAS REMOVED SHRUB COVER FROM SITE.

General: APPROXIMATELY 10 PLANTS OBSERVED IN 2008.

Owner/Manager: PVT



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



<i>Atriplex depressa</i>		Element Code: PDCHE042L0	
brittlescale			
Listing Status:	Federal: None	CNDDB Element Ranks:	Global: G2
	State: None		State: S2
	Other: Rare Plant Rank - 1B.2		
Habitat:	General: CHENOPOD SCRUB, MEADOWS AND SEEPS, PLAYAS, VALLEY AND FOOTHILL GRASSLAND, VERNAL POOLS.		
	Micro: USUALLY IN ALKALI SCALDS OR ALK. CLAY IN MEADOWS OR ANNUAL GRASSLAND; RARELY ASSOCIATED WITH RIPARIAN, MARSHES, OR VERNAL POOLS. 1-325 M.		

Occurrence No.	35	Map Index: 82531	EO Index: 8211	Element Last Seen: 1993-06-09
Occ. Rank:	Good		Presence: Presumed Extant	Site Last Seen: 1993-06-09
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated: 2011-05-10

Quad Summary: Jamesan (3612062)
County Summary: Fresno

Lat/Long:	36.74144 / -120.18544	Accuracy:	specific area
UTM:	Zone-10 N4069884 E751302	Elevation (ft):	190
PLSS:	T14S, R16E, Sec. 01, W (M)	Acres:	74.0

Location: 0.2-0.9 MILE N OF WHITESBRIDGE AVENUE, KERMAN ECOLOGICAL RESERVE, NNE OF JAMESAN.
Detailed Location: MAPPED AS A SERIES OF 7 POLYGONS 0.7-1.6 MILES W OF YUBA AVENUE. MOSTLY IN THE NW 1/4 SECTION 1 AND THE NE 1/4 NE 1/4 SECTION 2 AND MOSTLY IN THE SE 1/4 SECTION 2.
Ecological: ALKALI SINK/NON-NATIVE GRASSLAND SURROUNDED BY AGRICULTURE. ASSOCIATED WITH NITROPHILA OCCIDENTALIS, ATRIPLEX CORDULATA, AND A. MINUSCULA.
General: 3000 PLANTS SEEN IN THIS OCCURRENCE COMBINED WITH OCCURRENCES #34, #36 AND #37 IN 1993.
Owner/Manager: DFG-KERMAN ER

Occurrence No.	36	Map Index: 25874	EO Index: 3135	Element Last Seen: 1993-06-09
Occ. Rank:	Good		Presence: Presumed Extant	Site Last Seen: 1993-06-09
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated: 2011-05-10

Quad Summary: Jamesan (3612062)
County Summary: Fresno

Lat/Long:	36.73287 / -120.17714	Accuracy:	specific area
UTM:	Zone-10 N4068955 E752071	Elevation (ft):	185
PLSS:	T14S, R16E, Sec. 12, N (M)	Acres:	4.0

Location: 0.9 MILE N OF SOUTHERN PACIFIC RAILROAD, KERMAN ECOLOGICAL RESERVE, NE OF JAMESAN.
Detailed Location: 0.1 MILE S OF WHITESBRIDGE ROAD AND 0.4 MILE W OF YUBA AVENUE. MAPPED IN THE NW 1/4 NE 1/4 SECTION 12.
Ecological: ALKALI SINK/NON-NATIVE GRASSLAND. ASSOCIATED WITH NITROPHILA OCCIDENTALIS AND ATRIPLEX CORDULATA.
General: 3000 PLANTS SEEN IN THIS OCCURRENCE COMBINED WITH OCCURRENCES #34, #35 AND #37 IN 1993.
Owner/Manager: DFG-KERMAN ER



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	37	Map Index: 25840	EO Index: 3131	Element Last Seen:	1993-06-09
Occ. Rank:	Good		Presence: Presumed Extant	Site Last Seen:	1993-06-09
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2011-05-10

Quad Summary: Jamesan (3612062)

County Summary: Fresno

Lat/Long:	36.72636 / -120.18118	Accuracy:	specific area
UTM:	Zone-10 N4068222 E751732	Elevation (ft):	185
PLSS:	T14S, R16E, Sec. 12, SW (M)	Acres:	10.0

Location: 0.4 MILE N OF SOUTHERN PACIFIC RAILROAD, KERMAN ECOLOGICAL RESERVE, ENE OF JAMESAN.
Detailed Location: 0.6 MILE S OF WHITESBRIDGE ROAD AND 0.6 MILE W OF YUBA AVENUE. MAPPED MOSTLY IN THE NE 1/4 SW 1/4 SECTION 12.
Ecological: ALKALI SINK/NON-NATIVE GRASSLAND WITH NITROPHILA OCCIDENTALIS AND ATRIPLEX CORDULATA.
General: 3000 PLANTS SEEN IN THIS OCCURRENCE COMBINED WITH OCCURRENCES #34, #35 AND #36 IN 1993.
Owner/Manager: DFG-KERMAN ER

Occurrence No.	73	Map Index: 75062	EO Index: 76061	Element Last Seen:	2008-04-11
Occ. Rank:	Good		Presence: Presumed Extant	Site Last Seen:	2008-04-11
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2009-05-14

Quad Summary: Tranquillity (3612063)

County Summary: Fresno

Lat/Long:	36.74703 / -120.29484	Accuracy:	specific area
UTM:	Zone-10 N4070223 E741515	Elevation (ft):	165
PLSS:	T14S, R15E, Sec. 01, NW (M)	Acres:	1.0

Location: 1.3 AIR MILES NE OF THE INTERSECTION OF HIGHWAY 180 W (WHITESBRIDGE AVE) AND SAN MATEO AVE, 13 MILES W OF KERMAN.
Detailed Location: TWO SMALL POLYGONS MAPPED IN THE NW 1/4 SECTION 1 BASED ON UTM COORDINATES PROVIDED BY SOURCE.
Ecological: ALKALI SCALDS WITHIN CATTLE PASTURE. ASSOCIATED WITH ATRIPLEX FRUTICULOSA AND A. PHYLLOSTEGIA. DOMINANTS AT MARGINS OF SCALDS INCLUDE HEMIZONIA PUNGENS, LASTHENIA CALIFORNICA, DESCHAMPSIA DANTHONIODES, AND DISTICHLIS SPICATA.
General: APPROXIMATELY 50 PLANTS OBSERVED IN 2008 BUT MORE MAY BE FOUND ON SITE.
Owner/Manager: PVT

Occurrence No.	77	Map Index: 82785	EO Index: 83811	Element Last Seen:	1937-08-10
Occ. Rank:	Unknown		Presence: Presumed Extant	Site Last Seen:	1937-08-10
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2011-06-06

Quad Summary: Helm (3612051)

County Summary: Fresno

Lat/Long:	36.60370 / -120.06125	Accuracy:	3/5 mile
UTM:	Zone-10 N4054933 E762862	Elevation (ft):	
PLSS:	T15S, R17E, Sec. 25 (M)	Acres:	0.0

Location: 8 MILES S OF KERMAN.
Detailed Location: EXACT LOCATION UNKNOWN. MAPPED BY CNDDDB 8 MILES S OF KERMAN ALONG HIGHWAY 145.
Ecological:
General: ONLY SOURCE OF INFORMATION IS A 1937 HOOVER COLLECTION. NEEDS FIELDWORK.
Owner/Manager: UNKNOWN



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	82	Map Index: 89594	EO Index: 90593	Element Last Seen:	2010-06-14
Occ. Rank:	Unknown		Presence: Presumed Extant	Site Last Seen:	2010-06-14
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2013-06-28
Quad Summary:	Tranquillity (3612063)				
County Summary:	Fresno				
Lat/Long:	36.72196 / -120.28612		Accuracy:	specific area	
UTM:	Zone-10 N4067463 E742372		Elevation (ft):	160	
PLSS:	T14S, R15E, Sec. 12, SE (M)		Acres:	3.0	
Location:	ALKALI SINK ECOLOGICAL RESERVE; SOUTH OF RAILROAD TRACKS, APPROXIMATELY 3.3 AIR MILES ESE OF WHITES BRIDGE.				
Detailed Location:	SEVERAL SITES MAPPED BY CNDDDB AS 2 POLYGONS IN THE SOUTH HALF OF THE SE 1/4 OF SECTION 12.				
Ecological:					
General:	UNKNOWN NUMBER OF PLANTS SEEN IN 2010. ID FOR THIS POPULATION GIVEN AS ATRIPLEX CF. SUBTILIS/DEPRESSA; MAPPED BY CNDDDB AS A. DEPRESSA BECAUSE OF GREATER NUMBER OF OCCURRENCES IN VICINITY, BUT ID NEEDS TO BE VERIFIED.				
Owner/Manager:	DFG-ALKALI SINK ER				

<i>Atriplex minuscula</i>	Element Code: PDCHE042M0
lesser saltscare	
Listing Status:	Federal: None
	State: None
	Other: Rare Plant Rank - 1B.1
Habitat:	General: CHENOPOD SCRUB, PLAYAS, VALLEY AND FOOTHILL GRASSLAND.
	Micro: IN ALKALI SINK AND GRASSLAND IN SANDY, ALKALINE SOILS. 0-225 M.
	CNDDDB Element Ranks: Global: G2
	State: S2

Occurrence No.	2	Map Index: 25875	EO Index: 3130	Element Last Seen:	1993-06-09
Occ. Rank:	Good		Presence: Presumed Extant	Site Last Seen:	1993-06-09
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2011-05-10
Quad Summary:	Jamesan (3612062)				
County Summary:	Fresno				
Lat/Long:	36.72868 / -120.17666		Accuracy:	specific area	
UTM:	Zone-10 N4068491 E752128		Elevation (ft):	185	
PLSS:	T14S, R16E, Sec. 12 (M)		Acres:	17.0	
Location:	0.4-0.9 MILE N OF SOUTHERN PACIFIC RAILROAD, KERMAN ECOLOGICAL RESERVE, ENE OF JAMESAN.				
Detailed Location:	MAPPED AS A SERIES OF 3 POLYGONS FROM 0.1-0.6 MILE S OF WHITESBRIDGE AVENUE AND 0.4-0.7 MILE W OF YUBA AVENUE. ON N AND W SIDE OF UNNAMED ROAD TRAVERSING SECTION 12. IN THE NW 1/4 NE 1/4, SW 1/4 NE 1/4 AND THE NE 1/4 SW 1/4 SECTION 12.				
Ecological:	ALKALI SINK/NON-NATIVE GRASSLAND WITH CRESSA TRUXILLENIS, SUAEDA FRUTICOSA, NITROPHILA OCCIDENTALIS, AND TRICHOSTEMA OVATUM. THE RARE ATRIPLEX DEPRESSA IS ALSO PRESENT.				
General:	600 TOTAL PLANTS SEEN IN 3 POLYGONS COMBINED WITH OCCURRENCE #3 AND #47 IN 1993. INCLUDES FORMER OCCURRENCE #4.				
Owner/Manager:	DFG-KERMAN ER				



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	3	Map Index: 82528	EO Index: 3152	Element Last Seen:	1993-06-09
Occ. Rank:	Good		Presence: Presumed Extant	Site Last Seen:	1993-06-09
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2011-05-17

Quad Summary: Jamesan (3612062)

County Summary: Fresno

Lat/Long:	36.73914 / -120.19569	Accuracy:	specific area
UTM:	Zone-10 N4069603 E750394	Elevation (ft):	190
PLSS:	T14S, R16E, Sec. 02, SE (M)	Acres:	9.0

Location: 0.2 MILE N OF WHITESBRIDGE AVENUE, KERMAN ECOLOGICAL RESERVE, NNE OF JAMESAN.

Detailed Location: 1.4 MILES W OF YUBA AVENUE. IN THE NW 1/4 SE 1/4 SECTION 2.

Ecological: ALKALI SINK/NON-NATIVE GRASSLAND SURROUNDED BY AGRICULTURE. ASSOCIATED WITH CRESSA TRUXILLENIS, ATRIPLEX DEPRESSA, A. CORDULATA, SUAEDA FRUTICOSA, NITROPHILA OCCIDENTALIS, AND TRICHOSTEMA OVATUM.

General: 600 TOTAL PLANTS SEEN OCCURRENCE #3 COMBINED WITH OCCURRENCE #2 AND #47 IN 1993.

Owner/Manager: DFG-KERMAN ER

Occurrence No.	23	Map Index: 56426	EO Index: 56442	Element Last Seen:	1948-08-24
Occ. Rank:	Unknown		Presence: Presumed Extant	Site Last Seen:	1948-08-24
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2004-08-18

Quad Summary: Kerman (3612061)

County Summary: Fresno

Lat/Long:	36.69577 / -120.06023	Accuracy:	nonspecific area
UTM:	Zone-10 N4065153 E762640	Elevation (ft):	200
PLSS:	T14S, R18E, Sec. 19, NW (M)	Acres:	122.2

Location: ABOUT 2 MILES S OF KERMAN.

Detailed Location: MAPPED BY CNDDDB APPROXIMATELY 1.2-3.8 MILES S OF KERMAN ALONG MADERA AVENUE (SR-145).

Ecological: SEMI-ALKALI FLATS. ALKALINE GRASSLANDS.

General: ONLY SOURCE OF INFORMATION IS A 1948 NOBS & SMITH COLLECTION. ORIGINALLY COLLECTED AS A. DEPRESSA. IDENTIFIED AS A. MINUSCULA BY PRESTON IN 2003 AND ANNOTATED TO A. MINUSCULA BY ZACHARIAS IN 2010. FORMER A. DEPRESSA OCCURRENCE #38.

Owner/Manager: UNKNOWN



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	30	Map Index: 26016	EO Index: 56518	Element Last Seen:	1941-07-29
Occ. Rank:	Unknown		Presence: Presumed Extant	Site Last Seen:	1941-07-29
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2004-08-26
Quad Summary:	Jamesan (3612062)				
County Summary:	Fresno				
Lat/Long:	36.73479 / -120.15923		Accuracy:	nonspecific area	
UTM:	Zone-10 N4069215 E753665		Elevation (ft):	190	
PLSS:	T14S, R17E, Sec. 07, S (M)		Acres:	28.6	
Location:	ALONG WHITESBRIDGE AVENUE (HWY. 180), 2.5 MILES E OF TRANQUILITY JUNCTION.				
Detailed Location:	TOWN OF TRANQUILITY IS S OF HWY. 180 ALONG S JAMES ROAD. MAPPED FROM 2.3-2.7 MILES E OF HWY. 180 AND S JAMES ROAD JUNCTION.				
Ecological:	ALKALINE PLAINS.				
General:	ORIGINALLY COLLECTED AS ATRIPLEX DEPRESSA BY BACIGALUPI. IDENTIFIED AS A. MINUSCULA BY PRESTON IN 2003 AND ANNOTATED TO A. MINUSCULA BY ZACHARIAS IN 2010. FORMER A. DEPRESSA OCCURRENCE #42.				
Owner/Manager:	UNKNOWN				
Occurrence No.	40	Map Index: 82565	EO Index: 83598	Element Last Seen:	2009-08-06
Occ. Rank:	Good		Presence: Presumed Extant	Site Last Seen:	2009-08-06
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2011-05-17
Quad Summary:	Tranquillity (3612063)				
County Summary:	Fresno				
Lat/Long:	36.72957 / -120.29600		Accuracy:	specific area	
UTM:	Zone-10 N4068283 E741466		Elevation (ft):	163	
PLSS:	T14S, R15E, Sec. 12, NW (M)		Acres:	12.0	
Location:	0.1-0.2 MILE N OF SOUTHERN PACIFIC RAILROAD, APPROXIMATELY 4.6 MILES ESE OF MENDOTA, ALKALI SINK ECOLOGICAL RESERVE.				
Detailed Location:	MAPPED AS A SERIES OF 4 POLYGONS BASED ON MAP PROVIDED BY PRESTON AND STEBBINS. IN THE NE 1/4 SECTION 11 AND THE SW 1/4 NW 1/4 SECTION 12.				
Ecological:	VALLEY SINK SCRUB. ASSOCIATED WITH ALLENROLFEA OCCIDENTALIS, SUAEDA MOQUINII, CENTROMADIA PUNGENS, NITROPHILA OCCIDENTALIS, AND ANNUAL GRASSES. CORDYLANTHUS PALMATUS AND ATRIPLEX CORDULATA ALSO PRESENT AT THIS SITE.				
General:	UNKNOWN NUMBER OF PLANTS SEEN. ORIGINALLY IDENTIFIED AS A. DEPRESSA BY STEBBINS. IDENTIFIED AS A. MINUSCULA BY PRESTON IN 2009. INCLUDES FORMER A. DEPRESSA OCCURRENCE #34.				
Owner/Manager:	DFG-ALKALI SINK ER				



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	47	Map Index: 82572	EO Index: 83627	Element Last Seen: 1993-06-09
Occ. Rank:	Good		Presence: Presumed Extant	Site Last Seen: 1993-06-09
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated: 2011-05-17

Quad Summary: Jamesan (3612062)

County Summary: Fresno

Lat/Long:	36.74674 / -120.18538	Accuracy:	specific area
UTM:	Zone-10 N4070472 E751290	Elevation (ft):	190
PLSS:	T14S, R16E, Sec. 01, NW (M)	Acres:	15.0

Location: 0.8 MILE N OF WHITESBRIDGE AVENUE, KERMAN ECOLOGICAL RESERVE, NNE OF JAMESAN.

Detailed Location: MAPPED AS 2 POLYGONS 0.8 MILE N OF WHITESBRIDGE AVENUE AND 0.9-1.1 MILES W OF YUBA AVENUE. IN THE NW 1/4 NW 1/4 SECTION 1 AND THE NE 1/4 NE 1/4 SECTION 2.

Ecological: ALKALI SINK/NON-NATIVE GRASSLAND SURROUNDED BY AGRICULTURE. ASSOCIATED WITH CRESSA TRUXILLENIS, ATRIPLEX DEPRESSA, A. CORDULATA, SUAEDA FRUTICOSA, NITROPHILA OCCIDENTALIS, AND TRICHOSTEMA OVATUM.

General: 600 TOTAL PLANTS SEEN IN 2 POLYGONS COMBINED WITH OCCURRENCE #2 AND #3 IN 1993. FORMERLY PART OF OCCURRENCE #3.

Owner/Manager: DFG-KERMAN ER

Atriplex subtilis

Element Code: PDCHE042T0

subtle orache

Listing Status:	Federal: None	CNDDDB Element Ranks:	Global: G1
	State: None		State: S1

Other: Rare Plant Rank - 1B.2, BLM_S-Sensitive

Habitat: General: VALLEY AND FOOTHILL GRASSLAND.

Micro: ALKALINE SOILS. 20-100 M.

Occurrence No.	1	Map Index: 27780	EO Index: 33899	Element Last Seen: 1962-11-09
Occ. Rank:	Unknown		Presence: Presumed Extant	Site Last Seen: 1962-11-09
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated: 2011-05-23

Quad Summary: Jamesan (3612062)

County Summary: Fresno

Lat/Long:	36.73430 / -120.19451	Accuracy:	nonspecific area
UTM:	Zone-10 N4069068 E750515	Elevation (ft):	188
PLSS:	T14S, R16E, Sec. 11, N (M)	Acres:	38.0

Location: ALONG HIGHWAY 180 (WHITESBRIDGE AVE), 0.6 MILE E OF JUNCTION WITH ROAD S TOWARDS JAMESAN AND TRANQUILITY, W OF KERMAN.

Detailed Location: ROAD LEADING SOUTH TOWARDS JAMESAN AND TRANQUILITY IS JAMES ROAD. MAPPED ALONG HIGHWAY 180 FROM 0.3-0.9 MILE EAST OF JAMES ROAD AND HIGHWAY 180 INTERSECTION.

Ecological: IN VERY FLAT, SANDY, SALINE AREA.

General: HOOVER 1937 COLLECTION "8 MILES WEST OF KERMAN" ATTRIBUTED TO THIS SITE. HOOVER 1937 AND BACIGALUPI 1962 COLLECTIONS WERE LISTED AS A. SUBTILIS BY STUTZ & CHU IN 1997 AND ANNOTATED TO A. SUBTILIS BY ZACHARIAS IN 2010.

Owner/Manager: DFG-KERMAN ER?



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	21	Map Index: 14241	EO Index: 56676	Element Last Seen: 1937-05-27
Occ. Rank:	None		Presence: Possibly Extirpated	Site Last Seen: 1986-XX-XX
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated: 2011-05-24

Quad Summary: Helm (3612051)

County Summary: Fresno

Lat/Long:	36.58967 / -120.06293	Accuracy:	3/5 mile
UTM:	Zone-10 N4053371 E762760	Elevation (ft):	190
PLSS:	T15S, R17E, Sec. 36, SE (M)	Acres:	0.0

Location: 9 MILES SOUTH OF KERMAN.

Detailed Location: MAPPED 9 MILES SOUTH OF KERMAN ALONG HIGHWAY 145.

Ecological: ERIASTRUM HOOVERI COLLECTED AT THIS SITE ON SAME DAY BY HOOVER.

General: SITE BASED ON A 1937 HOOVER COLLECTION. IDENTIFIED AS A. SUBTILIS BY PRESTON IN 2003 AND ANNOTATED TO A. SUBTILIS BY ZACHARIAS IN 2010. FORMER A. MINUSCULA OCCURRENCE #9.

Owner/Manager: PVT

Occurrence No.	28	Map Index: 82667	EO Index: 83671	Element Last Seen: 1996-06-22
Occ. Rank:	Unknown		Presence: Presumed Extant	Site Last Seen: 1996-06-22
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated: 2011-05-24

Quad Summary: Jamesan (3612062)

County Summary: Fresno

Lat/Long:	36.73249 / -120.18041	Accuracy:	1/5 mile
UTM:	Zone-10 N4068905 E751781	Elevation (ft):	185
PLSS:	T14S, R16E, Sec. 12, NW (M)	Acres:	0.0

Location: SOUTH OF WHITESBRIDGE AVENUE (HIGHWAY 180) AND WEST OF YUBA AVENUE, ALKALI SINK ECOLOGICAL RESERVE.

Detailed Location: 800 FT SOUTH OF WHITESBRIDGE AVENUE AND 3500 FT WEST OF YUBA AVENUE. 1 MILE NORTH OF SOUTHERN PACIFIC RAILROAD TRACKS. IN SECTION 12.

Ecological: ALKALI PLAYA. ASSOCIATED WITH PLAGIOBOTHRYUS LEPTOCLADUS, LASTHENIA CALIFORNICA, SPERGULARIA MACROTHERCA, SUAEDA MOQUINII, HORDEUM DEPRESSUM, AND BROMUS MADRITENSIS SSP. RUBENS.

General: UNKNOWN NUMBER OF PLANTS SEEN IN 1996.

Owner/Manager: DFG-ALKALI SINK ER



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



<i>Malacothamnus aboriginum</i>		Element Code: PDMAL0Q020	
Indian Valley bush-mallow			
Listing Status:	Federal: None	CNDDB Element Ranks:	Global: G3
	State: None		State: S3
	Other: Rare Plant Rank - 1B.2, BLM_S-Sensitive, SB_RSABG-Rancho Santa Ana Botanic Garden		
Habitat:	General: CISMONTANE WOODLAND, CHAPARRAL.		
	Micro: GRANITIC OUTCROPS AND SANDY BARE SOIL, OFTEN IN DISTURBED SOILS. 150-1130 M.		

Occurrence No.	47	Map Index:	96205	EO Index:	97339	Element Last Seen:	1998-03-16
Occ. Rank:	Unknown	Presence:	Presumed Extant	Site Last Seen:		1998-03-16	
Occ. Type:	Natural/Native occurrence	Trend:	Unknown	Record Last Updated:		2015-05-26	
Quad Summary:	Tres Picos Farms (3612043)						
County Summary:	Fresno						
Lat/Long:	36.39689 / -120.36033		Accuracy:	2/5 mile			
UTM:	Zone-10 N4031208 E736733		Elevation (ft):	500			
PLSS:	T18S, R15E, Sec. 05, NE (M)		Acres:	0.0			
Location:	WEST SIDE OF I-5 NEAR SALT CREEK, WITHIN HIGHWAY RIGHT OF WAY, SAN JOAQUIN VALLEY.						
Detailed Location:	IN A DITCH ALONG THE HIGHWAY FENCE, AS WELL AS ALONG SALT CREEK. MAPPED BY CNDDB AS BEST GUESS AROUND HIGHWAY WHERE IT PASSES OVER SALT CREEK.						
Ecological:	RUDERAL HABITAT WITH ARTEMISIA CALIFORNICA, ATRIPLEX LENTIFORMIS, BROMUS DIANDRUS, DATURA WRIGHTII, SALSOLA TRAGUS, AND SALVIA MELLIFERA.						
General:	SITE BASED ON A 1998 YORK COLLECTION; DESCRIBED AS "UNCOMMON".						
Owner/Manager:	CALTRANS?						

<i>Eriastrum hooveri</i>		Element Code: PDPLM03070	
Hoover's eriastrum			
Listing Status:	Federal: Delisted	CNDDB Element Ranks:	Global: G3
	State: None		State: S3
	Other: Rare Plant Rank - 4.2, SB_RSABG-Rancho Santa Ana Botanic Garden		
Habitat:	General: CHENOPOD SCRUB, VALLEY AND FOOTHILL GRASSLAND, PINYON AND JUNIPER WOODLAND.		
	Micro: ON SPARSELY VEGETATED ALKALINE ALLUVIAL FANS; ALSO IN THE TEMBLOR RANGE ON SANDY SOILS. 50-915 M.		

Occurrence No.	7	Map Index:	14249	EO Index:	18406	Element Last Seen:	1979-08-01
Occ. Rank:	None	Presence:	Extirpated	Site Last Seen:		1979-08-01	
Occ. Type:	Natural/Native occurrence	Trend:	Unknown	Record Last Updated:		2007-12-19	
Quad Summary:	Kerman (3612061)						
County Summary:	Fresno						
Lat/Long:	36.65398 / -120.06106		Accuracy:	nonspecific area			
UTM:	Zone-10 N4060512 E762708		Elevation (ft):	200			
PLSS:	T15S, R17E, Sec. 01, E (M)		Acres:	69.0			
Location:	4.7 MI S OF KERMAN RR STATION ALONG HWY 145 (MADERA AVE).						
Detailed Location:	MAPPED ALONG MADERA AVENUE ABOUT 4.7 MI SOUTH OF KERMAN.						
Ecological:	ON SLIGHT HUMMOCKS (WHERE LESS ALKALINE) IN ALKALINE PLAIN.						
General:	NEEDS FIELDWORK.						
Owner/Manager:	PVT						



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	9	Map Index: 14241	EO Index: 19149	Element Last Seen: 1963-05-06
Occ. Rank:	None		Presence: Extirpated	Site Last Seen: 1986-XX-XX
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated: 1989-08-11

Quad Summary: Helm (3612051)

County Summary: Fresno

Lat/Long: 36.58967 / -120.06293 **Accuracy:** 3/5 mile

UTM: Zone-10 N4053371 E762760 **Elevation (ft):** 190

PLSS: T15S, R17E, Sec. 36, SE (M) **Acres:** 0.0

Location: 9 MI S OF KERMAN, JCT OF MADERA AVE & MCMULLIN GRADE.

Detailed Location:

Ecological:

General:

Owner/Manager: PVT

Occurrence No.	16	Map Index: 13917	EO Index: 18401	Element Last Seen: 1975-04-XX
Occ. Rank:	None		Presence: Extirpated	Site Last Seen: 1986-03-XX
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated: 2007-12-18

Quad Summary: Jamesan (3612062)

County Summary: Fresno

Lat/Long: 36.73235 / -120.20884 **Accuracy:** 80 meters

UTM: Zone-10 N4068814 E749242 **Elevation (ft):** 170

PLSS: T14S, R16E, Sec. 10, NE (M) **Acres:** 0.0

Location: SW CORNER JAMES ROAD AND HWY 180 (WHITES BRIDGE RD).

Detailed Location:

Ecological: SANDY SOIL IN VALLEY SINK SCRUB COMMUNITY. ASSOCIATED WITH ASTRAGALUS LENTIGINOSUS, PECTOCARYA PENICILLATA AND PLAGIOBOTHRYUS.

General:

Owner/Manager: UNKNOWN

Occurrence No.	32	Map Index: 13710	EO Index: 18390	Element Last Seen: 1986-04-07
Occ. Rank:	Good		Presence: Presumed Extant	Site Last Seen: 1986-04-07
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated: 2007-12-19

Quad Summary: Tranquillity (3612063)

County Summary: Fresno

Lat/Long: 36.73109 / -120.29772 **Accuracy:** 80 meters

UTM: Zone-10 N4068447 E741307 **Elevation (ft):** 165

PLSS: T14S, R15E, Sec. 11, NE (M) **Acres:** 0.0

Location: SOUTH OF WHITES BRIDGE ROAD, IN DFG ALKALI SINK ECOLOGICAL RESERVE.

Detailed Location: MAPPED IN NE1/4 OF NE1/4 SEC 11.

Ecological: ALKALI SINK SCRUB DOMINATED BY ALLENROLFEA OCCIDENTALIS AND SUAEDA FRUTICOSA. GOOD MICRORELIEF WITH ERIASTRUM ON MOUND TOPS.

General: ABOUT 30 PLANTS IN 1986.

Owner/Manager: DFG-ALKALI SINK ER



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	33	Map Index: 13708	EO Index: 18387	Element Last Seen:	1986-04-07
Occ. Rank:	Fair		Presence: Presumed Extant	Site Last Seen:	1986-04-07
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2007-12-18
Quad Summary:	Tranquillity (3612063)				
County Summary:	Fresno				
Lat/Long:	36.72544 / -120.29881		Accuracy:	80 meters	
UTM:	Zone-10 N4067817 E741227		Elevation (ft):	160	
PLSS:	T14S, R15E, Sec. 11, SE (M)		Acres:	0.0	
Location:	SOUTH OF WHITES BRIDGE ROAD, 2.5 MI ESE OF TOWN OF WHITES BRIDGE.				
Detailed Location:	MAPPED IN NE1/4 OF SE1/4 SEC 11.				
Ecological:	ALKALI SINK SCRUB WITH ALLENROLFEA OCCIDENTALIS, SUAEDA AND KOCHIA. GOOD MICRORELIEF. PLANTS MOSTLY ON MOUND TOPS.				
General:	ABOUT 50 PLANTS IN 1986.				
Owner/Manager:	DFG-MENDOTA WA				
Occurrence No.	34	Map Index: 13778	EO Index: 18388	Element Last Seen:	1986-04-07
Occ. Rank:	Fair		Presence: Presumed Extant	Site Last Seen:	1986-04-07
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2007-12-18
Quad Summary:	Tranquillity (3612063)				
County Summary:	Fresno				
Lat/Long:	36.72830 / -120.27036		Accuracy:	80 meters	
UTM:	Zone-10 N4068206 E743759		Elevation (ft):	160	
PLSS:	T14S, R16E, Sec. 07, NW (M)		Acres:	0.0	
Location:	SOUTH OF WHITES BRIDGE ROAD, APPROX 4 AIR MI ESE OF TOWN OF WHITES BRIDGE.				
Detailed Location:	MAPPED IN SE1/4 OF NW1/4 SEC 7.				
Ecological:	ALKALI SINK SCRUB WITH ALLENROLFEA, SUAEDA AND KOCHIA. GOOD MICRORELIEF. PLANTS MOSTLY ON MOUND TOPS.				
General:	ABOUT 50 PLANTS IN 1986.				
Owner/Manager:	PVT				
Occurrence No.	42	Map Index: 14299	EO Index: 18380	Element Last Seen:	1955-05-14
Occ. Rank:	None		Presence: Extirpated	Site Last Seen:	1986-XX-XX
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated:	2007-12-19
Quad Summary:	Helm (3612051)				
County Summary:	Fresno				
Lat/Long:	36.60385 / -120.01946		Accuracy:	nonspecific area	
UTM:	Zone-10 N4055064 E766600		Elevation (ft):	200	
PLSS:	T15S, R18E, Sec. 28, N (M)		Acres:	108.0	
Location:	6.3 MI W OF RAISIN CITY ALONG MANNING AVENUE.				
Detailed Location:					
Ecological:					
General:					
Owner/Manager:	PVT				



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



<i>Delphinium recurvatum</i>		Element Code: PDRAN0B1J0	
recurved larkspur			
Listing Status:	Federal: None	CNDDB Element Ranks:	Global: G2?
	State: None		State: S2?
	Other: Rare Plant Rank - 1B.2, BLM_S-Sensitive		
Habitat:	General: CHENOPOD SCRUB, VALLEY AND FOOTHILL GRASSLAND, CISMONTANE WOODLAND.		
	Micro: ON ALKALINE SOILS; OFTEN IN VALLEY SALTBUUSH OR VALLEY CHENOPOD SCRUB. 3-790 M.		

Occurrence No.	6	Map Index:	14250	EO Index:	21627	Element Last Seen:	1982-03-26
Occ. Rank:	None	Presence:	Extirpated	Site Last Seen:		1982-03-26	
Occ. Type:	Natural/Native occurrence	Trend:	Unknown	Record Last Updated:		2016-01-28	

Quad Summary: Helm (3612051)
County Summary: Fresno

Lat/Long:	36.61355 / -120.05988	Accuracy:	1/5 mile
UTM:	Zone-10 N4056029 E762951	Elevation (ft):	195
PLSS:	T15S, R18E, Sec. 19, NW (M)	Acres:	0.0

Location: ALONGSIDE HWY 145, 0.6 MILE NORTH OF ROAD TO SAN JOAQUIN (MANNING AVE).
Detailed Location: EAST OF HIGHWAY.
Ecological: ON SANDY, ALKALINE SOIL IN WINTER WET DEPRESSIONS.
General: 3 PLANTS FOUND IN GRASSY AREA IN 1982. A 1973 SMITH COLLECTION FROM "1 MILE N OF MANNING AVE IN HELM AREA" IS ALSO ATTRIBUTED TO THIS SITE. SITE PRESUMED EXTIRPATED BY AGRICULTURAL CONVERSION.
Owner/Manager: UNKNOWN

Occurrence No.	58	Map Index:	31541	EO Index:	4724	Element Last Seen:	2004-03-26
Occ. Rank:	Fair	Presence:	Presumed Extant	Site Last Seen:		2004-03-26	
Occ. Type:	Natural/Native occurrence	Trend:	Unknown	Record Last Updated:		2011-04-01	

Quad Summary: Jamesan (3612062)
County Summary: Fresno

Lat/Long:	36.73636 / -120.18635	Accuracy:	specific area
UTM:	Zone-10 N4069318 E751237	Elevation (ft):	180
PLSS:	T14S, R16E, Sec. 01, SW (M)	Acres:	18.0

Location: Kerman Ecological Reserve, 7 miles west of Kerman near Highway 180.
Detailed Location: LOCATED ABOUT 33 FEET NORTH OF THE HIGHWAY & 575 FEET WEST OF POST MILE MARKER 35.0. MORE PLANTS LOCATED TO THE WEST, IN Kerman Ecological Reserve. MAPPED BY CNDDDB AS 4 POLYGONS NEAR THE COMMON CORNER OF SECTIONS 1, 2, 11, AND 12.
Ecological: RUDERAL VALLEY SINK. CALIFORNIA ANNUAL GRASSLAND WITH EXOTIC GRASSES. DOMINATED BY BROMUS RUBENS AND ELYMUS TRITICOIDES. ALKALI SOIL ON FLAT TOPOGRAPHY.
General: 1 PLANT OBSERVED IN 1992. 6 PLANTS OBSERVED IN 2004. VAGUE COLLECTIONS FROM "BETWEEN MENDOTA AND Kerman" AND "7 MILES W OF Kerman NEAR HWY 180 AND JAMES RD" ARE ALSO ATTRIBUTED HERE.
Owner/Manager: DFG-Kerman ER



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	80	Map Index:	31286	EO Index:	51933	Element Last Seen:	1937-04-10
Occ. Rank:	None	Presence:	Extirpated	Site Last Seen:		1937-04-10	
Occ. Type:	Natural/Native occurrence	Trend:	Unknown	Record Last Updated:		2016-01-21	
Quad Summary:	Five Points (3612041)						
County Summary:	Fresno						
Lat/Long:	36.42836 / -120.02986			Accuracy:	1 mile		
UTM:	Zone-10 N4035562 E766271			Elevation (ft):			
PLSS:	T17S, R18E, Sec. 28 (M)			Acres:	0.0		
Location:	2 MILES SOUTH OF WHEATVILLE.						
Detailed Location:	EXACT LOCATION UNKNOWN. MAPPED APPROXIMATELY 2 MILES SOUTH OF HISTORIC WHEATVILLE SITE ALONG HOWARD AVENUE IN THE VICINITY OF HAWKINS RANCH.						
Ecological:							
General:	ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1937 COLLECTION BY HOOVER. SITE PRESUMED EXTIRPATED BY AGRICULTURAL CONVERSION.						
Owner/Manager:	UNKNOWN						

Occurrence No.	89	Map Index:	66448	EO Index:	66551	Element Last Seen:	1956-03-02
Occ. Rank:	None	Presence:	Extirpated	Site Last Seen:		1956-03-02	
Occ. Type:	Natural/Native occurrence	Trend:	Unknown	Record Last Updated:		2016-01-22	
Quad Summary:	Kerman (3612061)						
County Summary:	Fresno						
Lat/Long:	36.66274 / -120.09726			Accuracy:	nonspecific area		
UTM:	Zone-10 N4061387 E759442			Elevation (ft):			
PLSS:	T14S, R17E, Sec. 35 (M)			Acres:	39.0		
Location:	200 FEET NORTH OF AMERICA N ROAD, 2 MILES WEST OF MADERA RD, 4 MILES SOUTH OF KERMAN.						
Detailed Location:	COULD NOT LOCATE AMERICA N ROAD; POSSIBLE TYPO. MAPPED AS BEST GUESS NORTH OF AMERICAN AVE.						
Ecological:	ALKALI SINK COMMUNITY IN FULL SUN AND DRY CLAY SOIL.						
General:	1956 O'BERG COLLECTION IS THE ONLY SOURCE FOR THIS OCCURRENCE. SITE PRESUMED EXTIRPATED BY AGRICULTURAL CONVERSION.						
Owner/Manager:	UNKNOWN						

<i>Chloropyron palmatum</i>			Element Code: PDSCROJ0J0	
palmate-bracted salty bird's-beak				
Listing Status:	Federal:	Endangered	CNDDDB Element Ranks:	Global: G1
	State:	Endangered		State: S1
	Other:	Rare Plant Rank - 1B.1, SB_RSABG-Rancho Santa Ana Botanic Garden		
Habitat:	General:	CHENOPOD SCRUB, VALLEY AND FOOTHILL GRASSLAND.		
	Micro:	USUALLY ON PESCADERO SILTY CLAY WHICH IS ALKALINE, WITH DISTICHLIS, FRANKENIA, ETC. 5-155 M.		



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	4	Map Index:	14246	EO Index:	6077	Element Last Seen:	1937-07-29
Occ. Rank:	None	Presence:	Extirpated	Site Last Seen:		1983-07-02	
Occ. Type:	Natural/Native occurrence	Trend:	Unknown	Record Last Updated:		2011-01-20	

Quad Summary: Kerman (3612061)

County Summary: Fresno

Lat/Long:	36.63993 / -120.06182	Accuracy:	1 mile
UTM:	Zone-10 N4058951 E762688	Elevation (ft):	195
PLSS:	T15S, R17E, Sec. 12 (M)	Acres:	0.0

Location: 6 MILES SOUTH OF KERMAN (ON MADERA AVE).

Detailed Location:

Ecological:

General: SITE BASED ON A 1937 HOOVER COLLECTION. SITE VISITED IN 1965 AND 1983 AND PLANTS NOT OBSERVED. HABITAT LOSS DUE TO SOIL RECLAMATION AND AREA UNDER CULTIVATION.

Owner/Manager: UNKNOWN

Occurrence No.	5	Map Index:	13711	EO Index:	6911	Element Last Seen:	1997-XX-XX
Occ. Rank:	Fair	Presence:	Presumed Extant	Site Last Seen:		1997-XX-XX	
Occ. Type:	Transplant Outside of Native Hab./Range	Trend:	Unknown	Record Last Updated:		2011-01-20	

Quad Summary: Tranquillity (3612063)

County Summary: Fresno

Lat/Long:	36.71958 / -120.29962	Accuracy:	80 meters
UTM:	Zone-10 N4067165 E741174	Elevation (ft):	160
PLSS:	T14S, R15E, Sec. 11, SE (M)	Acres:	0.0

Location: MENDOTA WILDLIFE AREA.

Detailed Location: SOUTH OF RAILROAD TRACKS. TRANSPLANT SITE; PLANTS CAME FROM SEEDLINGS GROWN IN CULTIVATION, SEEDS ORIGINALLY FROM OCCURRENCE #6.

Ecological: IN SALINE-ALKALI SOIL ASSOCIATED WITH ALLENROLFEA, SALICORNIA AND DISTICHLIS. GROWING IN ISOLATED POCKET IN LARGER UPLAND AREA.

General: 10 PLANTS TRANSPLANTED HERE IN 1973; 1 SURVIVED. 10 PLANTS IN 1975, 20 IN 1982 OVER A 3 SQ MI AREA, <50 IN 1983, 0 IN 1987, 10 IN 1993, STILL PRESENT IN 1997. AREA FLOODED & SPECIES COMPOSITION CHANGED 1987 & 1997.

Owner/Manager: DFG-MENDOTA WA



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	6	Map Index:	13784	EO Index:	17811	Element Last Seen:	1964-10-08
Occ. Rank:	None	Presence:	Extirpated	Site Last Seen:		1987-06-16	
Occ. Type:	Natural/Native occurrence	Trend:	Unknown	Record Last Updated:		2011-01-20	

Quad Summary: Tranquillity (3612063)

County Summary: Fresno

Lat/Long:	36.73382 / -120.27017	Accuracy:	1/5 mile
UTM:	Zone-10 N4068819 E743759	Elevation (ft):	165
PLSS:	T14S, R16E, Sec. 07, N (M)	Acres:	0.0

Location: ALONG CALIFORNIA 180 (HWY 180), 7 MI ESE OF MENDOTA, 2.4 MI E OF SAN MATEO ROAD.

Detailed Location:

Ecological: ALKALI FLAT WITH SALICORNIA AND DISTICHLIS PRESENT.

General: SEED FROM THIS POPULATION GROWN AND TRANSPLANTED TO MENDOTA WILDLIFE AREA (EO #5). POPULATION IN AREA ~20 BY 50 FEET WAS SEEN IN 1964. SITE VISITED BUT NO PLANTS OBSERVED IN 1965, 1971, 1983, OR 1987. SITE EXTIRPATED DUE TO AGRICULTURE.

Owner/Manager: UNKNOWN

Occurrence No.	11	Map Index:	13716	EO Index:	5752	Element Last Seen:	2011-08-11
Occ. Rank:	Good	Presence:	Presumed Extant	Site Last Seen:		2011-08-11	
Occ. Type:	Natural/Native occurrence	Trend:	Fluctuating	Record Last Updated:		2013-07-16	

Quad Summary: Tranquillity (3612063)

County Summary: Fresno

Lat/Long:	36.72984 / -120.29601	Accuracy:	specific area
UTM:	Zone-10 N4068312 E741464	Elevation (ft):	160
PLSS:	T14S, R15E, Sec. 12, W (M)	Acres:	46.8

Location: DFG ALKALI SINK ECOLOGICAL RESERVE AND MENDOTA WILDLIFE MANAGEMENT AREA, SOUTH OF HWY 180 (WHITESBRIDGE ROAD).

Detailed Location: E 1/2 OF SECTION 11 & W 1/2 OF SECTION 12. SOUTH-MOST POLYGON MAY BE A TRANSPLANT OR MAY BE A MIS-REPRESENTATION OF EO #5 FURTHER TO THE SOUTH.

Ecological: VALLEY SINK SCRUB. C. PALMATUS MOSTLY PARASITIZING SUAEDA FRUTICOSA & FRANKENIA. SITE MORE OR LESS FLAT WITH SOME HUMMOCKS. ALSO ASSOCIATED WITH ATRIPLEX SPP., SUAEDA MOSQUINII, KOCHIA CALIFORNICA, HEMIZONIA PUNGENS, CUSCUTA, & NITROPHILA.

General: 800 IN 1987, 40 IN 1988, ~450 IN 1992 (INCOMPLETE SEARCH), 300 IN 1993, 620 IN 1996, ~1870 IN JULY 1998, 1646 IN NOV 1998, 1652 IN 2000, ~500 IN 2002, ~530 IN 2004. 25 IN SMALL PORTION IN 2009, UNK # SEEN IN 2011. INCL FRMR EOS #15 & 16.

Owner/Manager: DFG-ALKALI SINK/MENDOTA



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



<i>Sagittaria sanfordii</i>		Element Code: PMALI040Q0	
Sanford's arrowhead			
Listing Status:	Federal: None	CNDDB Element Ranks:	Global: G3
	State: None		State: S3
	Other: Rare Plant Rank - 1B.2, BLM_S-Sensitive		
Habitat:	General: MARSHES AND SWAMPS.		
	Micro: IN STANDING OR SLOW-MOVING FRESHWATER PONDS, MARSHES, AND DITCHES. 0-650 M.		

Occurrence No.	11	Map Index:	24431	EO Index:	6902	Element Last Seen:	1941-07-29
Occ. Rank:	Unknown	Presence:	Presumed Extant	Site Last Seen:		1980-XX-XX	
Occ. Type:	Natural/Native occurrence	Trend:	Unknown	Record Last Updated:		1993-11-15	

Quad Summary: Jamesan (3612062), Tranquillity (3612063)
County Summary: Fresno

Lat/Long:	36.73450 / -120.24153	Accuracy:	1 mile
UTM:	Zone-10 N4068968 E746315	Elevation (ft):	185
PLSS:	T14S, R16E, Sec. 09 (M)	Acres:	0.0

Location: 2 MILES WEST OF TRANQUILLITY JUNCTION.
Detailed Location: MAPPED ALONG HWY 180 2 MILES WEST OF JAMES ROAD, APPROX. 6 AIR MILES NORTH OF TRANQUILLITY. INFORMATION INSUFFICIENT TO DETERMINE IF "TRANQUILLITY JUNCTION" REFERS TO RAILROAD JUNCTION OR ROAD JUNCTION. MAPPED AS IF ROAD JUNCTION.
Ecological: GROWING IN ALKALINE POOLS.
General: AREA SEARCHED BY C. TURNER IN 1980 BUT NO PLANTS WERE FOUND. SITE KNOWN FROM A SINGLE COLLECTION BY BACIGALUPI, WIGGINS, AND FERRIS IN 1941 (CAS, UC).
Owner/Manager: UNKNOWN

<i>Puccinellia simplex</i>		Element Code: PMPOA53110	
California alkali grass			
Listing Status:	Federal: None	CNDDB Element Ranks:	Global: G3
	State: None		State: S2
	Other: Rare Plant Rank - 1B.2		
Habitat:	General: MEADOWS AND SEEPS, CHENOPOD SCRUB, VALLEY AND FOOTHILL GRASSLANDS, VERNAL POOLS.		
	Micro: ALKALINE, VERNALLY MESIC. SINKS, FLATS, AND LAKE MARGINS. 1-915 M.		



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	18	Map Index: 14241	EO Index: 100169	Element Last Seen: 1964-05-18
Occ. Rank:	None		Presence: Extirpated	Site Last Seen: 1964-05-18
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated: 2016-01-22

Quad Summary: Helm (3612051)
County Summary: Fresno

Lat/Long:	36.58967 / -120.06293	Accuracy:	3/5 mile
UTM:	Zone-10 N4053371 E762760	Elevation (ft):	190
PLSS:	T15S, R17E, Sec. 36 (M)	Acres:	0.0

Location: 9 MILES SOUTH OF KERMAN ON MADERA AVE.
Detailed Location: EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS BY CNDDDB AROUND JUNCTION OF MADERA AVE AND MCMULLIN GRADE, AROUND 9 ROAD MILES SOUTH OF KERMAN.
Ecological: ALKALI.
General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1964 CRAMPTON COLLECTION. THERE DOES NOT APPEAR TO BE ANY REMAINING NATURAL HABITAT IN THIS AREA BASED ON 2015 AERIAL PHOTOS; PRESUMED EXTIRPATED.
Owner/Manager: UNKNOWN

Occurrence No.	19	Map Index: 14249	EO Index: 100170	Element Last Seen: 1963-05-06
Occ. Rank:	None		Presence: Extirpated	Site Last Seen: 1963-05-06
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated: 2016-01-22

Quad Summary: Kerman (3612061)
County Summary: Fresno

Lat/Long:	36.65398 / -120.06106	Accuracy:	nonspecific area
UTM:	Zone-10 N4060512 E762708	Elevation (ft):	200
PLSS:	T15S, R17E, Sec. 01, E (M)	Acres:	69.0

Location: 4.8 MILES SOUTH OF KERMAN, MADERA ROAD.
Detailed Location: EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS BY CNDDDB ALONG MADERA AVE AROUND 4.8 ROAD MILES SOUTH OF KERMAN.
Ecological: SANDY ALKALINE FLAT, VALLEY GRASSLAND.
General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1963 CRAMPTON COLLECTION. THERE DOES NOT APPEAR TO BE ANY REMAINING NATURAL HABITAT IN THIS AREA BASED ON 2015 AERIAL PHOTOS; PRESUMED EXTIRPATED.
Owner/Manager: UNKNOWN



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	20	Map Index: 98707	EO Index: 100171	Element Last Seen: 1936-04-XX
Occ. Rank:	None		Presence: Possibly Extirpated	Site Last Seen: 1936-04-XX
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated: 2016-01-22

Quad Summary: Kerman (3612061)

County Summary: Fresno

Lat/Long:	36.72641 / -120.06028	Accuracy:	1 mile
UTM:	Zone-10 N4068553 E762532	Elevation (ft):	220
PLSS:	T14S, R17E, Sec. 12 (M)	Acres:	1987.0

Location: KERMAN.

Detailed Location: EXACT LOCATION UNKNOWN, MAPPED IN GENERAL VICINITY OF KERMAN.

Ecological:

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1936 HOOVER COLLECTION CITED IN HIS 1937 DISSERTATION. ANY REMAINING NATURAL HABITAT IN THIS AREA SHOULD BE SEARCHED.

Owner/Manager: UNKNOWN

Occurrence No.	21	Map Index: 98709	EO Index: 100172	Element Last Seen: 2003-03-25
Occ. Rank:	Unknown		Presence: Presumed Extant	Site Last Seen: 2003-03-25
Occ. Type:	Natural/Native occurrence		Trend: Unknown	Record Last Updated: 2016-01-06

Quad Summary: Jamesan (3612062)

County Summary: Fresno

Lat/Long:	36.73201 / -120.18487	Accuracy:	specific area
UTM:	Zone-10 N4068839 E751384	Elevation (ft):	185
PLSS:	T14S, R16E, Sec. 12, NW (M)	Acres:	32.0

Location: KERMAN ECOLOGICAL RESERVE, ABOUT 7 MILES WEST OF KERMAN.

Detailed Location: 4 POLYGONS MAPPED IN THE SOUTH 1/2 OF THE SW 1/4 OF SECTION 1 AND THE WEST 1/2 OF THE NW 1/4 OF SECTION 12.

Ecological: VERNAL POOLS.

General: LOW COVER VALUES (<1% OR TRACE) SEEN IN 7 DIFFERENT VERNAL POOLS IN 2003.

Owner/Manager: DFG-KERMAN ER



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No.	22	Map Index:	98710	EO Index:	100174	Element Last Seen:	1976-04-02
Occ. Rank:	Unknown	Presence:	Presumed Extant	Site Last Seen:		1976-04-02	
Occ. Type:	Natural/Native occurrence	Trend:	Unknown	Record Last Updated:		2016-01-06	

Quad Summary: Jamesan (3612062)

County Summary: Fresno

Lat/Long: 36.73569 / -120.20379 **Accuracy:** 1/5 mile

UTM: Zone-10 N4069199 E749683 **Elevation (ft):** 180

PLSS: T14S, R16E, Sec. 2, SW (M) **Acres:** 70.0

Location: NORTH OF WHITES BRIDGE ROAD, 8 MILES WEST OF KERMAN, AT THE JUNCTION OF JAMES ROAD.

Detailed Location: MAPPED AS BEST GUESS BY CNDDb NORTHEAST OF THE JUNCTION OF WHITES BRIDGE ROAD AND JAMES ROAD BASED ON GIVEN TRS: T13S [PROBABLY T14S] R16E SECTION 2.

Ecological: ON MOIST HESPERIA COARSE SANDY LOAM ALONG A VERNAL STREAM ON ALKALI SOIL; W/ LASTHENIA CHRYSANTHA, PSILOCARPUS OREGONUS, AND DESCHAMPSIA DANTHONIOIDES.

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1976 HOLLAND COLLECTION, PLANTS NOTED AS "COMMON" IN 1976. NEEDS FIELDWORK.

Owner/Manager: DFG-KERMAN ER?

Appendix C

Cultural Resources Inventory

Cultural Resource Inventory for the City of San Joaquin Well No. 3 and Well No. 5 Manganese Removal System Project, Fresno County, California

Mary Baloian and Josh Tibbet

Prepared By



Applied EarthWorks, Inc.
1391 W. Shaw Ave., Suite C
Fresno, CA 93711

Prepared For

Crawford & Bowen Planning, Inc.
113 N. Church Street, Suite 302
Visalia, CA 93291

April 2017
draft

4 acres surveyed (4-acre APE)
San Joaquin, CA 7.5 min. quad
Keywords: Negative Survey

MANAGEMENT SUMMARY

The City of San Joaquin (City) plans to construct a consolidated treatment system as part of its Well No. 3 and Well No. 5 Manganese Removal System Project (Project). Because a portion of the Project will be funded by a Community Development Block Grant from the U.S. Department of Housing and Urban Development, it is subject to Section 106 of the National Historic Preservation Act of 1966, as amended. As a municipality, the City also is subject to the California Environmental Act (CEQA). Both Section 106 and CEQA require local public agencies to identify adverse effects/impacts to important cultural resources and identify alternatives and/or mitigation/treatment measures that will reduce or eliminate significant impacts to the resource.

At the request of Crawford and Bowen Planning, Inc., Applied EarthWorks, Inc. (Æ) completed a cultural resource inventory of the Project's Area of Potential Effects (APE), totaling approximately 4 acres. The inventory included a records search at the Southern San Joaquin Valley Information Center of the California Historical Resources Information System to identify previously recorded cultural resources and prior studies in the Project area, historical research, a search of the Native American Heritage Commission's Sacred Lands File and communication with Native American tribes and individuals from the area, and a pedestrian survey of the Project APE.

The records search revealed that two cultural resource studies had been previously conducted within the Project APE, while six studies occurred within 0.5 miles of the Project area. Two cultural resources were discovered within the 0.5-mile study area as a result of these previous studies; neither of which occur within the Project APE. Æ's pedestrian survey, Native American outreach, and historical research of the project area resulted in no cultural resources.

Consistent with state and federal statutes, Æ advises that if archaeological remains are encountered at any time during development or ground-moving activities within any portion of the APE, all work in the vicinity of the find should be halted until a qualified archaeologist can assess the discovery. In addition, if human remains are uncovered during construction, the Fresno County Coroner is to be notified to arrange their proper treatment and disposition.

A copy of this report will be transmitted to the Southern San Joaquin Valley Information Center at California State University, Bakersfield for inclusion in the California Historical Resources Information System. Field notes and photographs are on file at Æ's office in Fresno, California.

CONTENTS

1	INTRODUCTION	1
2	PROJECT SETTING	7
2.1	ENVIRONMENTAL SETTING	7
2.2	PREHISTORY AND ARCHAEOLOGY	8
2.3	ETHNOGRAPHY.....	9
2.4	HISTORY	10
3	METHODS	13
3.1	NATIVE AMERICAN CONSULTATION	13
3.2	RECORDS SEARCH AND SITE-SPECIFIC RESEARCH.....	13
3.3	PEDESTRIAN SURVEY	13
4	FINDINGS	15
4.1	NATIVE AMERICAN CONSULTATION	15
4.2	RECORDS SEARCH AND SITE-SPECIFIC RESEARCH.....	16
4.3	PEDESTRIAN SURVEY	16
5	CONCLUSIONS AND RECOMMENDATIONS	21
6	REFERENCES	23

APPENDICES

- A Personnel Qualification**
- B Native American Outreach**
- C Records Search Results**

FIGURES

1-1	Project vicinity in Fresno County, California	2
1-2	Project location on the USGS San Joaquin, CA 7.5-minute quadrangle	3
1-3	Aerial view of the Area of Potential Effects showing proposed Project components	4
4-1	Aerial view showing survey coverage within the Area of Potential Effects	17
4-2	Overview of S. Colusa Avenue, north of Manning Avenue; view to the north	18
4-3	Overview of the basin and thick ground cover at the southern end of the APE; view to the north.....	18
4-4	Overview of Railroad Avenue at the north end of the APE; view to the southeast.....	19

1 INTRODUCTION

The City of San Joaquin (City) plans to construct a consolidated treatment system as part of its Well No. 3 and Well No. 5 Manganese Removal System project (Project). The City of San Joaquin lies approximately 25 miles southwest of Fresno (Figure 1-1). The proposed Project site is located in Sections 24 and 25 of Township 15 South, Range 16 East, as shown on the U.S. Geological Survey (USGS) 1961 San Joaquin, CA 7.5-minute quadrangle (Figure 1-2). The City's community water system is served by three active wells: 3, 4, and 5. Currently, the drinking water produced by these wells has an unsafe level of manganese. The City proposes to construct a system to treat raw water from Well Nos. 3 and 5. The treatment system will be built at Well No. 5 at 21926 West Cherry Lane and will include a 0.75 MG storage tank and booster pump station. A 10-inch water pipeline approximately 2,700 feet long will be installed at the site of Well No. 3 and run east along Railroad Street and turn south along S. Colusa Avenue to the site of Well No. 5. Approximately 1,100 feet of 4-inch sewer pipe to dispose of backwash sludge and other on-site wastewater will be connected to the existing sewer system near the intersection of South Colusa Avenue and Karin Avenue.

The Project will be funded by a Community Development Block Grant from the U.S. Department of Housing and Urban Development. As such, it is subject to Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended. As a municipality, the City also is subject to the California Environmental Quality Act (CEQA). Both Section 106 and CEQA require local public agencies to identify adverse effects/impacts to important cultural resources and identify alternatives and/or mitigation/treatment measures that will reduce or eliminate significant impacts to the resource.

For the purposes of this report, a cultural resource is defined as a prehistoric or historical archaeological site or a built-environment resource (i.e., a historical building, structure, or object). Consistent with 36 Code of Federal Regulations [CFR] Section 60.4, the term "historical" applies to archaeological artifacts and features as well as standing buildings, structures, or objects that are 50 years old or older. The importance or significance of a cultural resource depends on whether it qualifies (at the federal level) for inclusion in the National Register of Historic Places (NRHP) or (at the state level) for inclusion in the California Register of Historical Resources (CRHR). Cultural resources determined eligible for the federal register are termed "historic properties" (36 CFR 800.16[1]), whereas those eligible for the state register are called "historical resources" (California Code of Regulations [CCR] 15064.5). In order to be considered a historic property or historical resource, a cultural resource must possess both historical significance and integrity, according to the criteria defined in the implementing regulations of the two statutes (36 CFR 60.4; CCR 15064.5[3]).

Under contract to Crawford & Bowen Planning, Inc., Æ performed a cultural resources inventory of the Project area to determine potential effects to historical resources/ historic properties.

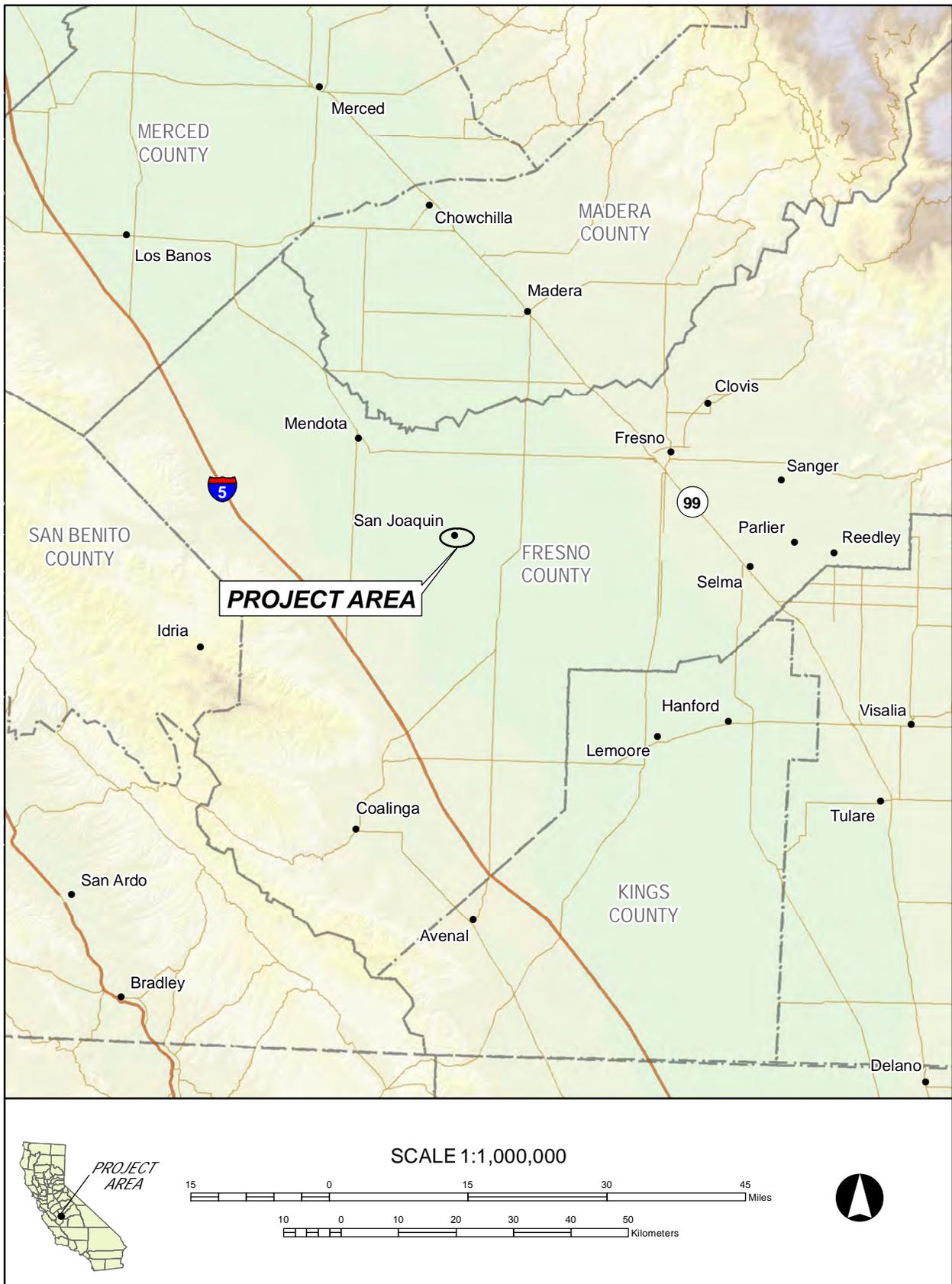


Figure 1-1 Project vicinity in Fresno County, California.

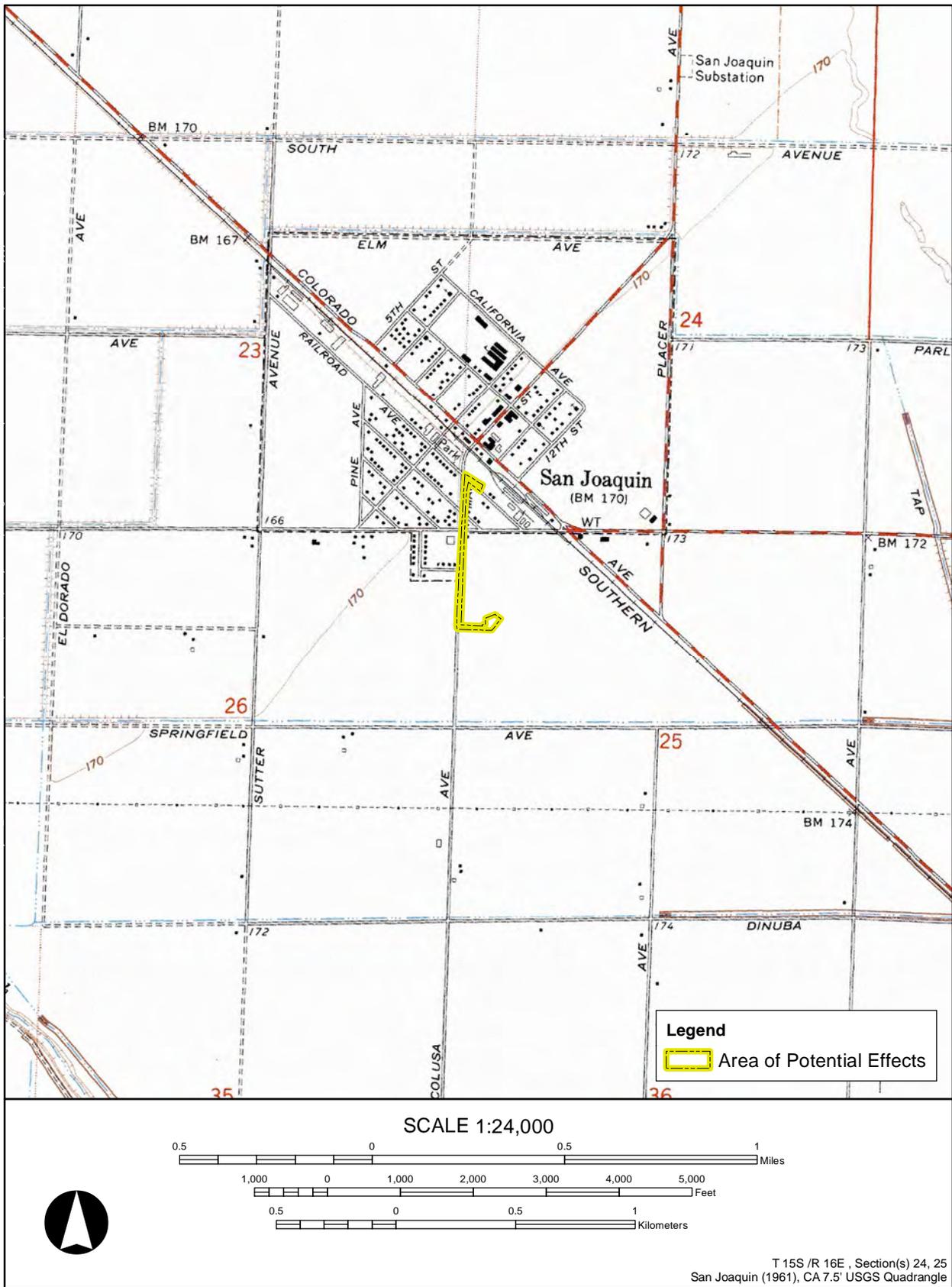


Figure 1-2 Project location on the USGS San Joaquin, CA 7.5-minute quadrangle.



Figure 1-3 Aerial view of the Area of Potential Effects showing proposed project components.

The inventory included a records search at the Southern San Joaquin Valley Information Center (SSJVIC) of the California Historical Resources Information System (CHRIS) to identify previously recorded cultural resources and prior studies in the Project area, historical research, a search of the Native American Heritage Commission's Sacred Lands File and communication with Native American tribes and individuals from the area, and a pedestrian survey of the Project area.

Æ Principal Archaeologist Mary Baloian (Ph.D.), a Registered Professional Archaeologist (RPA), served as Project Manager for this investigation, providing technical oversight and guidance for all aspects of the Project. Æ Staff Archaeologists Jessica Jones (B.A.) and Josh Tibbet (B.A.) conducted an intensive pedestrian survey. Jones and Tibbet also assisted in the preparation of this report. Personnel qualifications are provided in Appendix A.

2 PROJECT SETTING

2.1 ENVIRONMENTAL SETTING

The Project is in the San Joaquin Valley, the southern half of an elongated trough called the Great Valley. The Great Valley is a 50-mile-wide lowland that extends approximately 500 miles south from the Cascade Range to the Tehachapi Mountains (Norris and Webb 1990:412). The Great Valley is divided by two prominent hydrologic features, the Sacramento and San Joaquin Rivers, which drain into San Francisco Bay. Between the Mesozoic and Cenozoic eras, the Great Valley served as a shallow marine embayment containing numerous lakes, primarily within the San Joaquin Valley (Norris and Webb 1990:412). As a result, the upper levels of the Great Valley floor are composed of alluvium and flood materials. Below these strata are layers of marine and nonmarine rocks, including claystone, sandstone, shale, basalt, andesite, and serpentine. Waters began to diminish about 10 million years ago, eventually dwindling to the drainages, tributaries, and small lakes that exist today (Hill 1984:28).

The San Joaquin Valley makes up the Great Valley's lower half. It is bounded by the Sacramento/San Joaquin River Delta to the north, the mountains of the Sierra Nevada to the east, the Coast Ranges to the west, and the Tehachapi Mountains to the south. The San Joaquin Valley comprises two distinct hydrologic subbasins: the San Joaquin and the Tulare. The San Joaquin Subbasin is drained by the San Joaquin River. The Tulare Subbasin has no regular surface outlet; it was formed by the merging of alluvial fans from the Kings River to the east and the Los Gatos Creek to the west (Cone 1911). The Tulare Subbasin rivers—the Kings, Kaweah, Tule, and Kern—flowed into the subbasin forming large inland lakes. The Tulare Lake basin lies approximately 30 miles south of the Project. This seasonal lake was extremely shallow and expanded horizontally across the flat landscape as it filled with winter and spring runoff. Its broad but shallow dimensions resulted in wide fluctuations of the lake's shoreline during both prehistoric and historical times. As it filled beyond its natural alluvial barriers, water was channeled down the Fresno Slough into the San Joaquin River. Tulare Lake was the largest naturally occurring lake in California as recently as 1920 (Norris and Webb 1990:433). The size of the lake was gradually reduced by historic development of irrigation systems and reclamation of waters draining from the Kings River and other sources. Today the lake only exists in times of flooding, and the deep reserve of groundwater is tapped for private and public use.

The Fresno Slough is approximately 4 miles east of the project area. Historically, it served as the northern flood outlet of Tulare Lake and the Kings River. The Fresno Slough was also a flooded backwater swamp of the San Joaquin River. Prior to agricultural development and the control of the natural waterways, the area between Tulare Lake and the San Joaquin River was a vast swampland. A historical account written by George Derby, who circa 1850 had aspired to travel up the slough that connected the San Joaquin with Tulare Lake reports:

the ground between the lake and the San Joaquin entirely cut up by small sloughs which had overflowed in every direction making the country a perfect swamp, which I found it a matter of great difficulty to cross [Yogi 1996:11].

Agriculture also spurred the replacement of native plants and animals with domesticated species. Common native plants include white, blue, and live oaks as well as walnut, cottonwood, willow, and tule. Also prominent is bulrush and cattail, various grasses, flowers, and saltbrush. The previously swampy valley floor once provided a lush habitat for a variety of animals. Large mammals include mule deer, tule elk, pronghorn, grizzly and black bears, and mountain lions (Preston 1981:245–247). Other mammals noted are the gray wolf, valley coyote, bobcat, gray and kit foxes, and rabbits. Birds in the area include American osprey, redwing blackbird, marsh hawk, willow and Nuttall woodpeckers, western meadowlark, and quail. The lakes, rivers, and streams throughout the vicinity provide habitat for anadromous and freshwater fish, including Chinook salmon, white sturgeon, Sacramento perch, rainbow trout, thick-tailed chub, and Sacramento sucker (Preston 1981:249).

2.2 PREHISTORY AND ARCHAEOLOGY

No major investigations have occurred in the study vicinity, and much of the archaeological work in the southern part of the San Joaquin Valley has taken place around ancient lakes. The first large-scale excavations of the southern San Joaquin Valley were conducted near Tulare and Kern lakes by Gifford and Schenck (1926) who unearthed flexed burials, pottery, obsidian arrow points, milling stones and mortars, and intricately fashioned steatite artifacts. Later archaeological investigations revealed that occupation occurred possibly as early as 11,000 years ago (Fredrickson and Grossman 1977; Sampson 1991). The Witt Site (CA-KIN-32) on the southwest shore of Tulare Lake contains fluted projectile points as well as later types, suggesting continual occupation of the basin until historical contact (Fenenga 1993; Moratto 1984:81–82). Riddell and Olsen (1969:121) proposed that the contour at 192 feet above mean sea level (amsl) marked the Late Pleistocene shoreline of Tulare Lake. The significance of that level was confirmed by Fenenga (1993), who recovered Clovis materials at or near the 190 foot elevation.

Over the past 40 years, a basic prehistoric sequence has emerged from numerous studies conducted in central California (Moratto 1984:154). Excavation of CA-KER-116, a prehistoric site at Buena Vista Lake, found a deeply buried component ascribed to the Western Pluvial Lakes Tradition and dating to the Pleistocene-Holocene transition (circa 11,500–7500 before present [B.P.]) (Fredrickson and Grossman 1977; Grossman 1968; Moratto 1984). Population density was low at that time, with a few settlements focused around the shores of ancient lakes, marshes or along old stream channels. The tradition is characterized by a dependence on hunting mammals and birds and marked by a well-developed flaked stone industry including percussion-flaked foliate knives, Silver Lake and Lake Mojave points, lanceolate bifaces, crescents, large flake scrapers, drills, and graters (Riddell and Olsen 1969). During the Early Holocene (between 8000 and 4000 B.P.), the prehistoric economy centered on hunting and fishing, although mortars and pestles as well as ornamental *Olivella* and *Haliotis* shells appear occasionally in assemblages (Sutton 1997).

At the beginning of the Middle Holocene about 4000 B.P., the subsistence base expanded to include seed processing as a supplement to foraging for fish and fowl. Intensive occupation of the region may not have occurred until around 4500 B.P. Sites dating to this period contain assemblages comparable to the Early Horizon components of the Delta region, suggesting that older traditions sometimes survive into later periods (Moratto 1984; Riddell 1951; Walker 1947; Wedel 1941). It is difficult to clearly determine the ancestry of these early peoples, although

artifact assemblages associated with occupations postdating 3000 B.P. may be linked to the ancestors of the ethnographic Yokuts. Material from the Late Holocene (1500 B.P. to historic contact) indicates a greater reliance on acorns and other plant foods as well as trade with the Central Coast region and Southern California interior (Moratto 1984:183, 188).

2.3 ETHNOGRAPHY

The Project lies within the homeland of the Southern Valley Yokuts. At the time of first contact with the Spanish missionaries, the Yokuts people, which also includes northern valley and foothill groups, collectively inhabited the San Joaquin Valley as well as the eastern foothills of the Sierra Nevada from the Fresno River southward to the Kern River (Kroeber 1976). The Yokuts language belongs to the broader Penutian family, which subsumes a relatively diverse assemblage of languages including Miwok, Costanoan, Maiduan, and Wintuan (Silverstein 1978). Compared to other Penutian languages, however, Yokuts shows considerable internal linguistic homogeneity, especially given the extent of its geographic distribution. Dialects differ minimally and were mutually intelligible, at least among speakers of contiguous groups. This relative lack of linguistic differentiation suggests that ancestors of the Yokuts entered California after the arrival and subsequent radiation of the more linguistically diverse Penutian groups such as the Miwok and Costanoan (Moratto 1984:554).

The Tulare Lake basin and the Fresno and Fish sloughs offered a rich and varied array of resources to the several Southern Valley Yokuts tribes occupying its environs. These tribes, referred collectively as the Lake People by ethnographer Frank Latta, include the Apichi, Nutunutu, Tache, Halaumne, Chunut, Wowol, Tulumne, Tuhoumne, and Yowlumne (Latta 1977:248). In prehistoric times and even as late as the 1880s, the lake lay only about 30 miles from the study vicinity. Most of the Yokuts ethnographic villages were located east of the lake, although the Tachi occupied the northwestern shores of Tulare Lake and the area around Fish Slough. The Project lies in territory claimed by the Apichi. They were few in number and resided along Murphy Slough. The Apiche village of *Wohue* was on the north bank of Murphy Slough, south of the Project in the vicinity of Burrel (Latta 1977:163). Other ethnographic villages not far from the project area include the Wimilche village of *Ugona*, north of the Kings River and 7 miles down from Laton (Latta 1977:163) and Tachian villages of *Udjiu* and *Golon* (near Huron) (Kroeber 1976: Plate 47). The Apiche, along with the other lake tribes, relied on the plentiful supply of lacustrine resources, including clams, fish, raccoon, otter, waterfowl, elk, antelope, jack rabbits, small seeds, grass nuts, and tule seed and roots. Wild seeds and acorns were harvested in the early summer and fall, respectively, and stored for use throughout the year. Burning was used to enhance the productivity of vegetable foods (Latta 1977).

Differences in resource availability and abundance within the home range of each tribe formed the basis for exchange among the Yokuts. For instance, Kroeber (1976:523) pointed out that the rarity of oaks in the areas occupied by southern Yokuts perhaps explains “the permanent association and commingling of the majority of these tribes with their foothill neighbors.” Similarly, ecological differentiation underlay the economic reciprocity that existed among the tribes of the Tulare Lake basin. lake-dwelling Yokuts such as the Tachi possessed an abundant and perennial stock of fish and other lake resources but often lacked a sufficient supply of seeds and acorns. To the east where oaks and grasses are more plentiful, marsh- and channel-dwelling Yokuts, such as the Apiche, enjoyed a predictable supply of acorns and seeds, but the availability

of fish was limited to the windfall of salmon that was harvested during the spawning season (Wallace 1978:450). The exchange of resources between lake- and channel-dwelling tribes was accomplished not only via trade but through the sharing of home ranges among adjacent groups (Kroeber 1976:484).

The Apiche, like other lake tribes, had few permanent dwellings except those that were elevated above the highest flood levels. They resided in temporary oblong houses made of poles and covered with tule mats. Tules were used to manufacture a wide variety of items, including baskets, floor mats, sun shades, curtains, boats, baby cradles, and even women's skirts (Latta 1977).

At the broader interregional level, the villages of Tulare Lake profited from the east–west trade of goods that flowed between the Pacific Coast, Central Valley, Sierra Nevada, and Great Basin (Davis 1961). In particular, the village of *Bubal*, located on a dune causeway that provided access across the swamps of the southern lakeshore, served as a natural intermediary along the trade routes (Gifford and Schenck 1926). Latta (1977:141–143) states that to some extent the village of *Udjiu*, which marked the trailhead for the route west toward the coast, also served as a trading center. The southern Yokuts no doubt used their local staples (e.g., freshwater fish, acorns, and tule reeds) to barter for such goods as Olivella beads and other shell material from the west as well as obsidian from the east. Along with locally produced soapstone bowls and ground stone implements, beads and pendants made from Pacific Coast seashells are found at CA-FRE-49, the site of *Udjiu* (Latta 1977).

The basic unit of Yokuts society was the nuclear family, which was identified with a totem symbol specific to the paternal line. Among the tribes of the Tulare Lake basin, these symbols generally represented a mammal or bird. Within each tribe, lineage totems were further grouped into one of two moieties, designated by the overarching symbols of the eagle and coyote (Wallace 1978:453). The basic political unit was the tribe or tribelet, which encompassed a single village or several settlements. In most Yokuts tribes, two chiefs, one representing each moiety, governed the tribe. Although they were expected to rule the tribe cooperatively, the leader of the eagle moiety was afforded a certain precedence (Kroeber 1976:496).

The serial incursion of Spanish, Mexican, and finally northern European settlers irrevocably changed the lifeways of the Yokuts and ultimately led to the complete displacement of native peoples from the valley. With the founding of Mission San Juan Bautista in 1797, Indians inhabiting the western portion of the San Joaquin Valley were forcibly recruited to serve at the mission. It appears that natives taken from *Udjiu* were replaced by Spanish settlers. The village was renamed Poza Chana, which combined the Spanish word for pool (poza) with the supposed name of its indigenous inhabitants (the Chana Indians) (Latta 1977:143). Latta (1999) writes that virtually all Yokuts living west of the San Joaquin River had been taken to the Spanish missions and that those remaining Indians who survived into the Mexican Period (1821–1846) perished in an 1833 epidemic.

2.4 HISTORY

The Spaniards were the first non-Indians to encounter the Southern Valley Yokuts when Pedro Fages led a group of soldiers through Tejon Pass into the San Joaquin Valley in 1772 (Wallace 1978:459). Four years later Francisco Garces also explored the region. Other Europeans did not

follow until Lieutenant Gabriel Moraga led a group of Spanish explorers into the valley in 1806 (Clough and Secrest 1984:25–27). This party intended to locate new lands for missions, find and return runaway Indians, and relocate stolen livestock. Moraga is credited with naming both the Kings and San Joaquin rivers. Mexico's independence from Spain ended expansion of the missions in California by the early 1820s (Clough and Secrest 1984:26), and fur trappers began their forays into the California interior. Jedediah S. Smith may have been the first to enter the area during a fur trapping expedition in 1827. Smith's adventures included friendly encounters with the southern Yokuts near the Kings River, and trapping and camping along the San Joaquin River (Clough and Secrest 1984:27). After Smith's initial visit, other trappers followed until about 1837, by which time fur-bearing animals had been nearly exterminated in the valley. Other trappers included Kit Carson, Peter Skene Ogden of the Hudson's Bay Company, and Joseph Reddeford Walker.

During the mid to late 1840s settlers began to claim rights to former Mexican land grants in the area. Struggles ensued with the Indians as the claims were made and the settlers waited to be recognized legally by the U.S. government during a period of conflict and confusion over the ownership of these lands (Clough and Secrest 1984:34). Several government expeditions to the southern San Joaquin Valley during the mid to late 1840s resulted in recommendations for the development of agricultural settlements that would permanently alter the area (Preston 1981:62). After discovery of gold at Coloma in 1848, miners began entering the San Joaquin Valley. Mining claims were established along the San Joaquin River and various other localities throughout the foothills, and the mining boom spurred the establishment of other businesses as well. Ferries were established on the major rivers, hotels and trading posts were constructed, and stage lines began carrying mail and passengers. During the 1850s, the valley experienced an influx of Chinese immigrants seeking to establish themselves as miners or businessmen and profit from the gold rush (Clough and Secrest 1984:62). The miners' needs for food and supplies subsequently facilitated the development of ranching in the area (Preston 1981:72). In 1853, a project to develop irrigations systems near Visalia was implemented as rich alluvial fans created by flooding of the Kaweah and Kings rivers created highly desirable agricultural lands. By the beginning of the twentieth century, large tracts of land in the Project vicinity were under irrigation. This, combined with the availability of federally surveyed lands for purchase and the establishment of transportation routes, increased the rate of settlement throughout the basin (Preston 1981).

The earliest non-Indian settlements on the west side of the valley rose in 1858 along the Butterfield Overland Mail Company stage route, which connected the Kings River Ferry at Kingston to the Firebaugh Ferry on the San Joaquin (Clough and Secrest 1984:253). The success of these two stage stops, Fresno City (just south of Mendota) and Elkhorn Station (near present-day Burrel), was dependent on transportation flow. The vitality of both towns was quickly extinguished due to changes in the transportation emphasis. For Fresno City, the switch from steamboat to stage spelled demise and the town folded up by the early 1860s. Elkhorn Station prospered as a stage stop until 1872 when the stage line could not compete with the Central Pacific Railroad through Fresno County (Clough and Secrest 1984:257).

At about the same time, Jefferson James, a successful pioneer stock raiser, settled along the Fresno Slough. He initially purchased 640 acres of Fresno Slough swampland from the state at \$1 per acre (Bancroft 1892:470). He built his first home in 1860 near Fresno City and by 1873

had bought up 57,000 acres of ranchland along both sides of the Fresno Slough. He was a shrewd businessman, and during drought years when many stockmen panicked and undersold their herds, James had the courage to buy. He made a healthy profit by selling during subsequent increases in prices (Bancroft 1892:471). In 1867 he owned more than 72,000 acres, and by 1890 he had amassed 180,000 acres. In 1908 he sold part of his ranch to colonists and appointed his son-in-law, Walker Coleman Graves Sr., general manager of his company. Graves Sr. named the new colony Tranquility (Clough and Secrest 1984:106).

The twentieth century witnessed the growth of other small towns in the western part of Fresno County. The town of Riverdale was established in 1902 with the opening of a skimming station that served the growing number of local dairies. Swiss immigrants settled the area and were joined by others from Portugal and the Azores, who also participated in the growth of the local dairy industry. The Southern Pacific Railroad came to Burrell in 1911, which subsequently became large enough to justify moving the post office from Wheatville to Burrell in 1912 (Clough 1986:111). Five Points was founded in the 1920s at the intersection of Lassen Avenue, Mount Whitney Avenue, and the Fresno-Coalinga Road (Clough 1986:111–114).

Agricultural concerns continued to prosper in the lake basin, resulting in the intensification of local farming until the 1930s when individual farmers emerging from the Great Depression no longer found agriculture to be a lucrative endeavor. Since that time, farmland has increasingly been developed for other commercial purposes (Preston 1981).

Petroleum was identified in the San Joaquin Valley in 1864 on the eastern slope of the southern Coast Ranges. The first company to organize was the San Joaquin Petroleum Company of Fresno County in 1865. Most early oil companies achieved little success because efficient techniques for drilling, transporting, and refining had not been developed. Technological advances by the 1890s resulted in better drilling methods and commercial refineries. Oil industry development in Fresno County is centered around the Coalinga Oil Field, which witnessed its first boom in 1897 with Chanslor and Caulfield's Blue Goose Well (Clough and Secrest 1984:126, 268–272). Additional oil fields eventually were discovered near the communities of Burrell, Helm, Riverdale, and Five Points (Clough and Secrest 1984:124).

The southwestern San Joaquin Valley has seen further developments since the 1960s, including the construction of the California Aqueduct and several major highways.

3 METHODS

3.1 NATIVE AMERICAN CONSULTATION

Pursuant to California PRC 5097.9, state and local agencies cooperate with and assist the Native American Heritage Commission (NAHC) in its efforts to preserve and protect locations of sacred, or special cultural and spiritual significance to Native Americans. On January 20, 2017, Æ sent a request to the NAHC for a search of the Sacred Lands File. The NAHC responded with their findings, and attached a list of Native American tribes and individuals culturally affiliated with the Project area.

Æ sent a letter describing the project and its location to the contacts provided by the NAHC. A log of all responses and copies of the documentation are included in Appendix B.

3.2 RECORDS SEARCH AND SITE-SPECIFIC RESEARCH

On January 20, 2017, Æ requested a Project area search of the CHRIS from the SSJVIC at California State University, Bakersfield. Site record files, maps, and other materials were examined to identify previously recorded resources and prior surveys undertaken within the Project APE as well as within a 0.5-mile radius of the APE. Sources included the Office of Historic Preservation's Historic Property Directory, Caltrans Bridge Survey, ethnographic information, historical literature, historical maps, and GLO and/or Rancho Plat maps (Appendix C).

Prior to the survey, Æ consulted archival topographic maps from the USGS historical map collection, historical aerial photographs using the Map and Aerial Locator Tool (MALT) of the Henry Madden Library at California State University, Fresno, and modern aerial photographs using Google Earth to document the history of land use in the Project area.

3.3 PEDESTRIAN SURVEY

Æ Staff Archaeologists Jessica Jones and Josh Tibbet performed a pedestrian survey of the Project APE on February 24, 2017. Jones and Tibbet surveyed the area using parallel transects spaced 15–20 meters apart. A Trimble Global Positioning System unit was used to maintain transect spacing. Tibbet photographed the project area conditions with an Iphone 6 and recorded observations on a Survey Field Records form. All field records and photographs are archived at Æ's office in Fresno, California.

4 FINDINGS

4.1 NATIVE AMERICAN CONSULTATION

In a letter dated January 26, 2017, the NAHC replied that a search of the Sacred Lands File failed to indicate the presence of Native American cultural resources in the immediate Project area. However, the NAHC cautioned that the absence of specific site information in their file does not indicate the absence of cultural resources in the Project area. The NAHC suggested contacting other sources who might have specific knowledge regarding Native American use of the Project areas and provided contact information for seven Native American individuals, representing four organizations (Appendix B).

On February 10, 2017, Æ sent a letter describing the Project and its location to each of the following;

- Delia Dominguez, Chairperson, Kitanemuk & Yowlumne Tejon Indians;
- Katherine Erolinda Perez, Chairperson, North Valley Yokuts Tribe;
- Rueben Barrios, Chairperson, Santa Rosa Rancheria Tachi Yokut Tribe;
- Lois Martin, Chairperson, Southern Sierra Miwuk Nation;
- Leanne Walker-Grant, Chairperson, Table Mountain Rancheria of California;
- Bob Pennell, Cultural Resources Director, Table Mountain Rancheria of California;
- Kerri Vera, Environmental Department, Tule River Indian Tribe;
- Neil Peyron, Chairperson, Tule River Indian Tribe;
- Joey Garfield, Tribal Archaeologist, Tule River Indian Tribe;

Æ received responses from two of the organizations. Bob Pennell, Table Mountain Rancheria's Cultural Resources Director, responded with a letter on February 22, 2017, declining the Tribe's participation at this time, but would appreciate being notified of any identified cultural resources. In a March 8, 2017 e-mail, Felix Christman, on behalf of Kerri Vera, stated that the Project area is in close proximity to the Table Mountain Rancheria and would defer communication, unless Table Mountain Rancheria could not be reached. On March 31, 2017, Æ followed up with an email or phone call to those individuals for which no response was received. In a April 9, 2017 email, Chairperson Katherine Perez of the North Valley Yokuts Tribe responded that there is no known sensitivity in the Project area. The full text of all responses received are contained in Appendix B. Æ will forward any additional responses received to the City of San Joaquin.

4.2 RECORDS SEARCH AND SITE-SPECIFIC RESEARCH

On February 8, 2017, the SSJVIC responded with a letter detailing the records search results. The records search revealed two reports (FR-02354 and FR-02532) on file pertaining to previous studies within the Project APE, as well as six reports documenting investigations (FR-00116, -00511, -00631, -00632, -01857, -02416) within a half mile of the Project APE. The studies that occurred within the APE include a cultural resources investigation for a water storage tank and a sensitivity study for the Carvalo Solar PV Project Gen-Tie lines. No resources were recorded as a result of these earlier studies.

There are two known cultural resources recorded as a result of investigations that occurred within a half-mile radius of the Project area. The first is P-10-006614, a segment of the Panoche-Kearney 230 kV transmission line, and the second is P-10-006632, the James Irrigation District Lateral R Canal. Both were recorded as part of a cultural resources inventory for the Central Valley Power Connect Project cited in report number FR-02769 (Asselin et al. 2016). The SSJVIC records search results are detailed in Appendix C.

4.3 PEDESTRIAN SURVEY

Æ Staff Archaeologists Jessica Jones and Josh Tibbet performed a pedestrian survey of the Project APE on February 24, 2017. The 4-acre APE includes the site of Well No. 5 in the southern end of the Project, east of S. Colusa Avenue; Well No. 3 in the northern part of the Project, north of Railroad Street; the pipeline routes connecting each well to S. Colusa Avenue, and both shoulders of S. Colusa Avenue for the installation of the raw water pipeline (Figures 1-3 and 4-1). The project lies in a developed area of the city and much of the APE along S. Colusa Avenue is covered by paved roads, sidewalks, and landscaped vegetation (Figure 4-2). At the southern end of the Project APE, where the new water line will connect into Well No. 5, there is a dirt road that leads to a basin currently filled with water. Thick grass and weeds covers the ground adjacent to the dirt road obscuring all visibility of the native surface (Figure 4-3). At the intersection of Railroad Street and S. Colusa Avenue, the APE turns southwest down Railroad Street. Houses line the south side of the road and industrial developments border the north side, leaving little visibility of the natural ground surface (Figure 4-4).

Æ's archaeologists observed modern trash consisting of broken glass, plastic bottles, soda cans, and various metal and plastic debris strewn along S. Colusa Avenue and the dirt road to the basin. The Project falls within the boundary of the James Irrigation District; however, no irrigation ditches, laterals, or features associated with the district lie within the APE. Æ did not observe any archaeological sites, isolated artifacts, features, historic built environment resources or other cultural resources in the APE.



Figure 4-1 Aerial view showing survey coverage within the Area of Potential Effects.



Figure 4-2 Overview of S. Colusa Avenue, north of Manning Avenue; view to the north.



Figure 4-3 Overview of the basin and thick ground cover at the southern end of the APE; view to the north.



Figure 4-4 Overview of Railroad Avenue at the north end of the APE; view to the southeast.

5 CONCLUSIONS AND RECOMMENDATIONS

The City of San Joaquin plans to construct a consolidated treatment system as part of its Well No. 3 and Well No. 5 Manganese Removal System Project. The treatment system will treat raw water from Well Nos. 3 and 5 to remove unsafe levels of manganese. It will be built at the location of Well No. 5 and include a 0.75 MG storage tank and booster pump station. A 10-inch water pipeline approximately 2,700 feet long will be installed from the site of Well No. 3 and run along Railroad Street and south along South Colusa Avenue to the site of Well No. 5. Approximately 1,100 feet of 4-inch sewer pipe to dispose of backwash sludge and other on-site wastewater will be connected to the existing sewer system near the intersection of South Colusa Avenue and Karin Avenue. The total Project area measures approximately 4 acres.

To comply with both Section 106 of the NHPA and CEQA, Æ conducted a cultural resources inventory to determine if the Project has the potential to impact cultural resources. Æ's inventory included a review of archival material and records search results from the SSJVIC, correspondence with the NAHC and local Native American tribes and individuals familiar with the Project area, and an intensive pedestrian survey of the Project APE. Æ's inventory efforts did not identify any cultural resources within the Project area.

In the unlikely event that buried archaeological deposits are encountered during ground-disturbing work, Æ recommends that work be halted in that area until a qualified archaeologist can assess the significance of the find.

If human remains are uncovered, or in any other case where human remains are discovered, the Fresno County Coroner is to be notified to identify the remains. If the remains are identified—on the basis of archaeological context, age, cultural associations, or biological traits—as those of a Native American, then the NAHC is to be immediately notified so the remains can be treated pursuant to the Native American Graves Protection and Repatriation Act.

Finally, if the Project design and/or APE is altered, additional archaeological survey may be needed if Project limits are extended beyond the present APE.

6 REFERENCES

Asselin, Katie, Randy Baloian, Aubrie Morlet, Michael Mirro, Jenn Whiteman, Josh Tibbet, and Mary Baloian

- 2016 *Cultural Resource Inventory and Evaluation for the Central Valley Power Connect Project, Fresno, Kings, and Madera Counties, California*. Applied EarthWorks, Inc., Fresno, California. Prepared for Pacific Gas and Electric Company, San Francisco, California.

Bancroft, Hubert Howe

- 1892 *Chronicles of the Builders of the Commonwealth: Historical Character Study*. History Company, San Francisco.

Clough, Charles W.

- 1986 The West Side's Twentieth Century Towns. In *Fresno County in the 20th Century: From 1900 to the 1980s*, edited by Bobbye Sisk Temple, pp. 111–138. Panorama West Books, Fresno, California.

Clough, Charles W., and William B. Secrest, Jr.

- 1984 *Fresno County, The Pioneer Days*. Panorama West Books, Fresno, California.

Cone, Victor M.

- 1911 *Irrigation in the San Joaquin Valley, California*. USDA Office of Experiment Stations Bulletin 239. Government Printing Office, Washington, D.C.

Davis, James T.

- 1961 Trade Routes and Economic Exchange among the Indians of California. *Reports of the University of California Archaeological Survey* 54:1–71. Berkeley.

Fenenga, Gerrit L.

- 1993 Test Excavations at the Witt Site (CA-KIN-32). In *Contributions to Tulare Lake Archaeology II, Finding the Evidence: The Quest for Tulare Lake's Archaeological Past*, edited by William J. Wallace and Francis A. Riddell, pp. 25–38. Tulare Lake Archaeological Research Group, Redondo Beach, California.

Fredrickson, David A., and Joel W. Grossman

- 1977 A San Dieguito Component at Buena Vista Lake, California. *Journal of California Anthropology* 4(2):173–190.

Gifford, Edward W., and W. Egbert Schenck

- 1926 Archaeology of the Southern San Joaquin Valley, California. *University of California Publications in American Archaeology and Ethnology* 23(1):1–122.

- Grossman, Joel W.
1968 *Early Cultural Remains at Buena Vista Lake, California: Report on the 1965 Season of Field Investigations*. California Department of Parks and Recreation, Sacramento.
- Hill, Mary
1984 *California Landscape*. California Natural History Guide 48. University of California Press, Berkeley.
- James Irrigation District
2010 *Water Management Plant 2010*. San Joaquin, California. Prepared for the U.S. Bureau of Reclamation, Mid Pacific Region.
- Kroeber, Alfred L.
1976 *Handbook of the Indians of California*. Reprinted. Dover Publications, New York
Originally published 1925, Bureau of American Ethnology Bulletin 78, Smithsonian Institution, Washington, D.C.
- Latta, Frank F.
1977 *Handbook of Yokuts Indians*. 2nd ed. Bear State Books, Santa Cruz, California.

1999 *California Indian Folklore*. Brewers Historical Press, Exeter, California, and Coyote Press, Salinas, California. Originally published 1936, F. F. Latta, Shafter, California.
- Moratto, Michael J.
1984 *California Archaeology*. Academic Press, Orlando and London.
- Norris, Robert M., and Robert W. Webb
1990 *Geology of California*. 2nd ed. John Wiley and Sons, New York.
- Preston, William L.
1981 *Vanishing Landscapes*. University of California Press, Berkeley.
- Riddell, Francis A.
1951 The Archaeology of Site KER-74. *Reports of the University of California Archaeological Survey* 10:1–28. Berkeley.
- Riddell, Francis A., and William H. Olsen
1969 An Early Man Site in the San Joaquin Valley, California. *American Antiquity* 34:121–130.
- Sampson, Michael
1991 A Distinctive Flaked-Stone Tool Type from Tulare Lake Basin. In *Contributions to Tulare Lake Archaeology I: Background to a Study of Tulare Lake's Archaeological Past*, edited by William J. Wallace and Francis A. Riddell, pp. 53–60. Tulare Lake Archaeological Research Group, Redondo Beach, California.

Silverstein, Michael

- 1978 Yokuts: Introduction. In *California*, edited by Robert F. Heizer, pp. 446–447. Handbook of North American Indians, Vol. 8, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Sutton, Mark Q.

- 1997 A Background for Archaeological Investigations at Buena Vista Lake, Southern San Joaquin Valley, California. *Kern County Archaeological Society Journal* 8:3–21.

Wallace, William J.

- 1978 Northern Valley Yokuts. In *California*, edited by Robert F. Heizer, pp. 462–470. Handbook of North American Indians, Vol. 8, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Walker, Edwin F.

- 1947 *Excavation of a Yokuts Indian Cemetery*. Kern County Historical Society, Bakersfield, California.

Wedel, Waldo R.

- 1941 *Archaeological Investigations at Buena Vista Lake, Kern County, California*. Bureau of American Ethnology Bulletin 130. Washington, D.C.

Yogi, Stan

- 1996 *Highway 99: A Literary Journey through California's Great Central Valley*. Heyday Books, Berkeley.

APPENDIX A

Personnel Qualifications

Areas of Expertise

- Cultural resource management
- Prehistoric archaeology
- Project management

Years of Experience

- 26

Education

Ph.D., Anthropology, Southern Methodist University, 2003

M.A., Anthropology, Southern Methodist University, 1995

B.A., Anthropology, University of California, Davis, 1989

Registrations/Certifications

- Register of Professional Archaeologists (2004)

Permits/Licensure

- Principal Investigator, California BLM Statewide Cultural Resources Use Permit CA-15-29
- Crew Chief, Nevada BLM Statewide Cultural Resources Use Permit N-85878

Professional Affiliations

- Society for American Archaeology
- Society for California Archaeology

Professional Experience

- 2000– President (2015–), Regional Manager (2012–2014), Assistant Division Manager (2010–2011), Senior Archaeologist (2000–), Applied EarthWorks, Inc., Fresno, California
- 1998–2001 Adjunct Faculty Member, Fresno City College, Fresno, California
- 1995–1996 Staff Archaeologist, Applied EarthWorks, Inc., Fresno, California
- 1994–1995 Staff Archaeologist, INFOTEC Research, Inc., Fresno, California
- 1992–1994 Teaching Assistant, Southern Methodist University, Dallas, Texas
- 1989–1991 Archaeological Project Leader, California Department of Transportation, Sacramento

Technical Qualifications

Dr. Clark Baloian has been involved in archaeology in California and the western United States since 1987. Her areas of expertise include the prehistory of the San Joaquin Valley, Sierra Nevada, Great Basin, central California coast, and the Iron Age of West Africa. Dr. Baloian has served as Project Manager, Field Supervisor, Crew Chief, or Field Technician for projects throughout California, Oregon, Nevada, New Mexico, Texas, Hawaii, and West Africa. Her experience in cultural resources management includes research design, data acquisition, laboratory analysis, and preparation of technical reports and compliance documents; she also has completed the Advisory Council on Historic Preservation course in National Historic Preservation Act Section 106 compliance policies and procedures. Her analytic skills include lithic and ceramic analyses as well as settlement pattern studies and spatial analysis, which were the foci of her doctoral research. As a Senior Archaeologist for Applied EarthWorks, Dr. Baloian directs professional staff and subcontractors and provides quality assurance for all project work. She has directed numerous surveys, testing and data recovery excavations as well as prepared dozens of technical reports and compliance documents. She administers both large, complex, multiyear, multiphase projects as well as smaller.

Areas of Expertise

- California archaeology
- Survey, excavation, and construction monitoring
- Project administration support

Years of Experience

- 4

Education

B.A., Anthropology, California State University, Fresno, 2010

Registrations/Certifications

- A.C.I. Concrete Technician Level 1 Certification, Technicon Engineering Services
- Forklift Certification, Graylift

Professional Experience

- 2015– Staff Archaeologist, Applied EarthWorks, Inc., Fresno, California.
- 2014–2015 Construction Materials Lab/Field Testing Technician, BSK & Associates, Fresno, California.
- 2011–2014 Archaeological Field Technician, Applied EarthWorks, Inc., Fresno, California.
- 2010–2011 Laboratory Technician (volunteer), Applied EarthWorks, Inc., Fresno, California

Technical Qualifications

Mr. Tibbet's project experience includes survey, excavation, and documentation of both prehistoric and historic resources in the Central Valley, Sierra Nevada, and Central Coast regions of California. In addition to participating as an archaeological field technician and as an archaeological and paleontological laboratory technician on projects throughout California, he also has contributed to technical reports and prepared site documentation. In the field, Mr. Tibbet has performed in a variety of work environments, such as residential and commercial developments, landfills and quarries, solar farms, and transmission lines as well as oil and gas lines. His experience processing archaeological and paleontological collections in the laboratory includes washing, sorting, bagging, and labeling artifacts and fossils as well as catalog data entry. His employment in the construction materials lab and as a field testing technician has provided him with valuable skills regarding soil composition and description as well as a better understanding of proper construction site etiquette and increased awareness of safety issues.

APPENDIX B

Native American Outreach



Native American Outreach Log

City of San Joaquin

Organization	Name	Position	Letter	E-mail	Phone	Summary of Contact
Native American Heritage Commission	Gayle Totton	Associate Governmental Program Analyst		01/20/17		Email reponse dated 01/26/17 stated that no Sacred Lands were identified within the APE and to contact tribal officials in the area. Nine contacts were provided
Kitanemuk & Yowlumne Tejon Indians	Delia Dominguez	Chairperson	02/10/17	03/31/17		Outreach letter sent 02/10/17; Follow-up email sent 3/31/2017
North Valley Yokuts Tribe	Katherine Erolinda Perez	Chairperson	02/10/17	3/31/17, 4/9/17		Outreach letter sent 02/10/17; Follow-up email sent 3/31/2017; Response received via email 4/9/17 stating there is no known sensitivity in the Project area.
Santa Rosa Rancheria Tachi Yokut Tribe	Rueben Barrios	Chairperson	02/10/17	03/31/17		Outreach letter sent 02/10/17; Follow up email sent to Hector Lalo Franco and Shana Powers 03/31/2017
Southern Sierra Miwuk Nation	Lois Martin	Chairperson	02/10/17		03/31/17	Outreach letter sent 02/10/17; Follow-up phone call placed on 3/31/2017 - left a voice message.
Table Mountain Rancheria	Leanne Walker-Grant	Chairperson	02/10/17			Outreach letter sent 02/10/17; See Pennell Response below.
Table Mountain Rancheria	Bob Pennell	Cultural Resource Director	02/10/17			Outreach letter sent 02/10/17. Response from Pennell received via certified mail 2/22/2017 stating that the Tribe declines to participate but would appreciate being notified in the unlikely event that cultural resources are identified.
Tule River Indian Tribe	Kerri Vera	Environmental Department	02/10/17			Outreach letter sent 02/10/17. Reponse received via email from Felix Christman on behalf of Ms. Vera that states the Tule River Tribe will defer to Table Mt. Rancheria because the project area is closer to that tribe and within their immediate area of interest.
Tule River Indian Tribe	Neil Peyron	Chairperson	02/10/17			Outreach letter sent 02/10/17 (see Vera response above)
Tule River Indian Tribe	Joey Garfield	Tribal Archaeologist	02/10/17			Outreach letter sent 02/10/17 (see Vera response above)

NATIVE AMERICAN HERITAGE COMMISSION

1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710
Fax (916) 373-5471



January 26, 2017

Mary Baloian
Applied EarthWorks, Inc.

Sent by E-mail: mbaloian@appliedearthworks.com

RE: Proposed City of San Joaquin Manganese Removal Project, Cultural Resources Survey,
City of San Joaquin; San Joaquin USGS Quadrangle, Fresno County, California

Dear Ms. Baloian:

A record search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed for the area of potential project effect (APE) referenced above with negative results. Please note that the absence of specific site information in the *Sacred Lands File* does not indicate the absence of Native American cultural resources in any APE.

Attached is a list of tribes culturally affiliated to the project area. I suggest you contact all of the listed Tribes. If they cannot supply information, they might recommend others with specific knowledge. The list should provide a starting place to locate areas of potential adverse impact within the APE. By contacting all those on the list, your organization will be better able to respond to claims of failure to consult. If a response has not been received within two weeks of notification, the NAHC requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact via email: gayle.totton@nahc.ca.gov.

Sincerely,

A handwritten signature in blue ink that reads "Gayle Totton".

Gayle Totton, M.A., PhD.
Associate Governmental Program Analyst

**Native American Heritage Commission
Tribal Contact List
Fresno County
1/26/2017**

***Kitanemuk & Yowlumne Tejon
Indians***

Delia Dominguez, Chairperson
115 Radio Street
Bakersfield, CA, 93305
Phone: (626)339-6785
deedominguez@juno.com

Kitanemuk
Southern Valley
Yokut

Tule River Indian Tribe

Kerri Vera, Environmental
Department
P. O. Box 589
Porterville, CA, 93258
Phone: (559) 783 - 8892
Fax: (559) 783-8932
kerri.vera@tulerivertribe-nsn.gov

Yokut

North Valley Yokuts Tribe

Katherine Erolinda Perez,
Chairperson
P.O. Box 717
Linden, CA, 95236
Phone: (209)887-3415
canutes@verizon.net

Costanoan
Northern Valley
Yokut

Tule River Indian Tribe

Neil Peyron, Chairperson
P.O. Box 589
Porterville, CA, 93258
Phone: (559) 781 - 4271
Fax: (559) 781-4610
neil.peyron@tulerivertribe-nsn.gov

Yokut

***Santa Rosa Rancheria Tachi
Yokut Tribe***

Rueben Barrios, Chairperson
P.O. Box 8
Lemoore, CA, 93245
Phone: (559)924-1278
Fax: (559)924-3583

Southern Valley
Yokut

Tule River Indian Tribe

Joey Gartfield, Tribal Archaeologist
P. O. Box 589
Porterville, CA, 93258
Phone: (559) 783 - 8892
Fax: (559) 783-8932
joey.gartfield@tulerivertribe-
nsn.gov

Yokut

Southern Sierra Miwuk Nation

Lois Martin, Chairperson
P.O. Box 186
Mariposa, CA, 95338
Phone: (209)742-6867

Miwok
Northern Valley
Yokut
Paiute

Table Mountain Rancheria

Leanne Walker-Grant,
Chairperson
P.O. Box 410
Friant, CA, 93626
Phone: (559)822-2587
Fax: (559)822-2693

Yokut

Table Mountain Rancheria

Bob Pennell, Cultural Resource
Director
P.O. Box 410
Friant, CA, 93626
Phone: (559) 325 - 0351
Fax: (559) 325-0394
rpennell@tmr.org

Yokut

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.84 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed City of San Joaquin Manganese Removal Project, Fresno County.

February 10, 2017

Delia Dominguez, Chairperson
Kitanemuk and Yowlumne Tejon Indians
115 Radio Street
Bakersfield, CA 93305

RE: City of San Joaquin Manganese Removal System Project, Fresno County, California

Ms. Delia Dominguez,

Applied EarthWorks, Inc. (Æ), under contract to Crawford and Bowen Planning, is providing cultural resources services in support of the City of San Joaquin (City) Manganese Removal System Project (Project). Project work includes the installation of a new water treatment system, water lines, storage, and a booster pump station. Because a portion of the project will be funded by a Community Development Block Grant from the US Department of Housing and Urban Development, it is subject to Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and the California Environmental Act (CEQA). As a municipality, the City is subject to the California Environmental Act (CEQA). Nevertheless, Æ will conduct the inventory to satisfy both state and federal regulations.

The Project's Area of Potential Effects (APE) lies within Township 15 South, Range 16 East, Sections 24 and 25 of the San Joaquin, CA 7.5-minute USGS quadrangle (see attached map). A search of the Native American Heritage Commission (NAHC) Sacred Lands File failed to indicate the presence of Native American cultural resources in the immediate project area. Applied EarthWorks, Inc. also requested a records search of the California Historic Resources Information System at the Southern San Joaquin Valley Information Center in Bakersfield. The results of this search are pending.

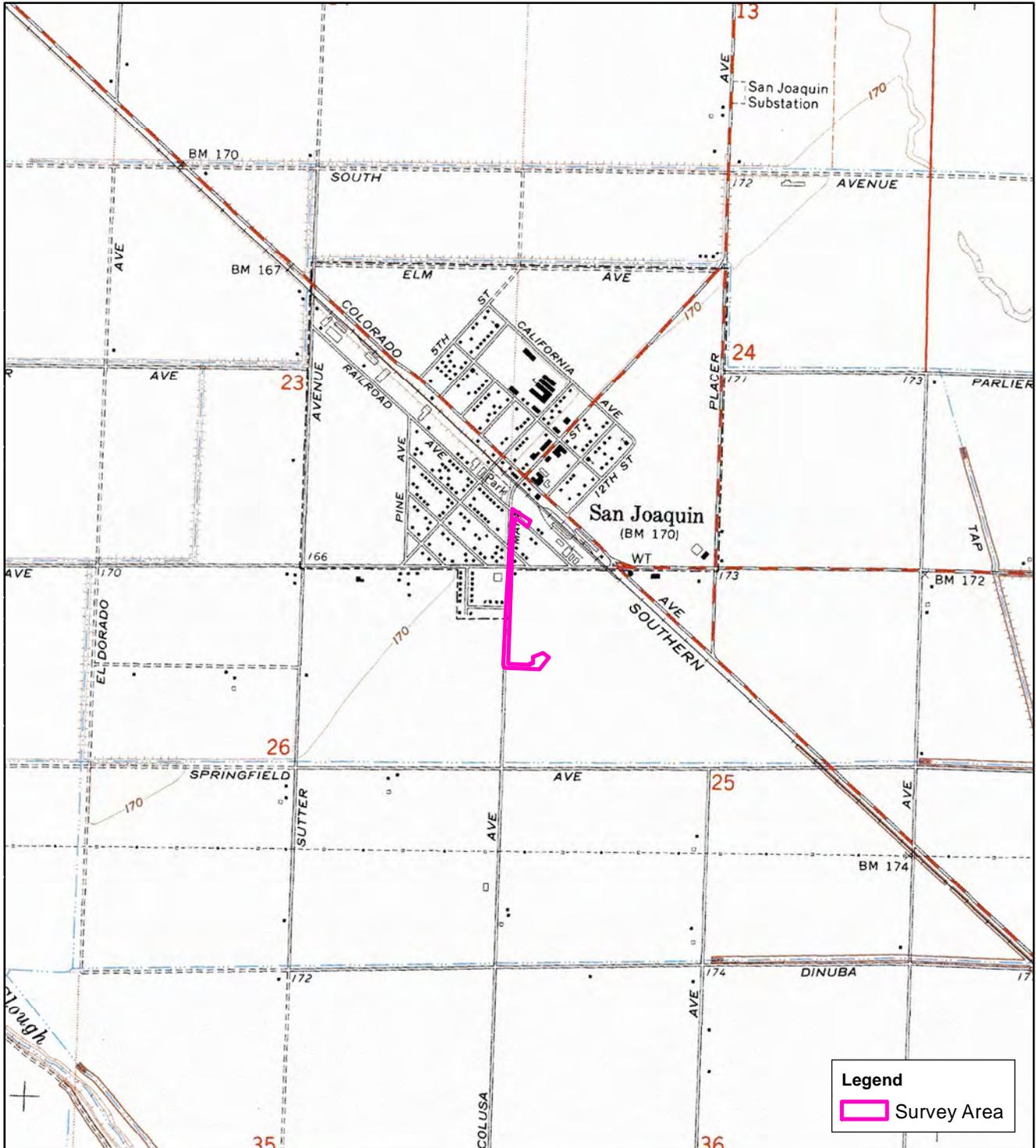
Applied EarthWorks, Inc. will conduct a pedestrian survey of the Project area to identify and record cultural resources present. The NAHC provided your name and address as someone who might have information regarding sacred sites, tribal cultural resources, or other resources of importance in the project area. If you have any information that you wish to share, have questions, or would like more information about the project, please do not hesitate to contact me by phone (559) 229-1856 x 11, email (mbaloian@appliedearthworks.com), or send a letter to my attention. I would appreciate any information you might provide to assist us with our inventory efforts. Be assured that any locations of archaeological sites, cemeteries, or sacred places will be treated confidentially, as required by law, and not disclosed in any document available to the general public.

Sincerely,

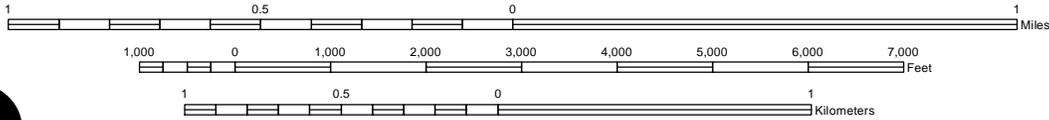


Mary Baloian
Principle Archaeologist

encl.: Project Location Map



SCALE 1:24,000



T 15S / R 16E , Section(s) 24, 25
 San Joaquin (1961), CA 7.5' USGS Quadrangle

NAHC location map for the City of San Joaquin Manganese Removal Project - AE3631.



TABLE MOUNTAIN RANCHERIA

TRIBAL GOVERNMENT OFFICE

CERTIFIED 7522 9968

February 22, 2017

Mary Baloian, Principle Archaeologist
Applied Earth Works, Inc.
1391 W. Shaw Ave., Suite C
Fresno, Ca. 93711

RE: City of San Joaquin Manganese Removal System Project, Fresno
County, California

Dear: Mary Baloian

This is in response to your letter dated, February 10, 2017, regarding, City of San Joaquin Manganese Removal System Project, Fresno County, California. Thank you for notifying us of the potential development and the request for consultation.

We decline participation at this time but would appreciate being notified in the unlikely event that cultural resources are identified.

Sincerely,

A handwritten signature in blue ink, appearing to read "Robert Pennell".

Robert Pennell
Tribal Cultural Resources Director
rpennell@tmr.org
559.325.0351

Leanne Walker-Grant
Tribal Chairperson

Beverly J. Hunter
Tribal Vice-Chairperson

Craig Martinez
Tribal Secretary/Treasurer

Matthew W. Jones
Tribal Council Member

Richard L. Jones
Tribal Council Member

23736
Sky Harbour Road
Post Office
Box 410
Friant
California
93626
(559) 822-2587
Fax
(559) 822-2693

From: [christman felix](#)
To: mbaloian@appliedearthworks.com
Cc: [Kerri Vera](#)
Subject: City of San Joaquin Manganese Removal System Project
Date: Wednesday, March 08, 2017 10:53:17 AM

Dear Mary Baloian; Applied EarthWorks Inc.

I'm writing on behalf of Kerr Vera, Director of the Tule River Tribe's Department of Environmental Protection. Thank you for your letter regarding the Proposed City of San Joaquin Manganese Removal System Project in Fresno County.

The area in which the project is located, is in close proximity to the Table Mt. Rancheria and is within their immediate area of interest. As such, we will defer communication and consult them for matters pertaining to this project.

If, however, at any time you are unable to communicate or receive necessary consult from the Table Mt. Rancheria, Please reach to us once again.

Again, thank you for your communication efforts.

Respectfully,

--

Felix Christman

Tule River Tribe

Email: tuleriverarchmon1@gmail.com

Office# (559)783-9984

Mobile#(559)306-2963

The information contained in this message may be privileged and confidential and protected from disclosure. If the reader of this message is not the intended recipient, or an employee or agent responsible for delivering this message to the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by replying to the message and deleting it from your computer



From: [canutes](#)
To: [Mary Baloian](#)
Subject: Re: Outreach - City of San Joaquin Manganese Removal System Project
Date: Saturday, April 08, 2017 7:31:15 AM

We are unaware of any sensitivity in the area of your project.

Thank you for the opportunity to commit.

Katherine Perez

Sent from my iPad

On Mar 31, 2017, at 9:46 AM, Mary Baloian <mbaloian@appliedearthworks.com> wrote:

Dear Chairperson Perez:

I am following up on a letter I sent to you regarding a cultural resources inventory that we are conducting for the City of San Joaquin Manganese Removal System Project. The City plans to install a new water treatment system, water lines, storage, and a booster pump station within the City of San Joaquin. The Project's Area of Potential Effects (APE) lies within Township 15 South, Range 16 East, Sections 24 and 25 of the San Joaquin, CA 7.5-minute USGS quadrangle (see attached map). A search of the Native American Heritage Commission (NAHC) Sacred Lands File failed to indicate the presence of Native American cultural resources in the immediate project area. Applied EarthWorks, Inc. also requested a records search of the California Historic Resources Information System at the Southern San Joaquin Valley Information Center in Bakersfield. The results of this search indicated no cultural resources within the project area, and only two known historic-era resources---a transmission line and an irrigation canal have been recorded within the 0.5 mile radius of the Project.

Applied EarthWorks conducted a pedestrian survey of the project area and did not observe any archaeological sites or isolated artifacts. The NAHC provided your name and address as someone who might have information on sacred sites, tribal cultural resources, or other resources of importance in the project area. If you have any information that you wish to share, have questions, or would like more information about the project, please do not hesitate to contact me by phone [559\) 229-1856 x 11](tel:5592291856), email (mbaloian@appliedearthworks.com), or send a letter to my attention. I would appreciate any information you might provide to assist us with our inventory efforts. Be assured that any locations of archaeological sites, cemeteries, or sacred places will be treated confidentially, as required by law, and not disclosed in any document available to the general public.

Best,

Mary Baloian | Applied EarthWorks, Inc.
President / Senior Archaeologist

APPENDIX C

Records Search Results



2/8/2017

Mary Baloian
Applied EarthWorks, Inc.
1391 W. Shaw Ave., Suite C
Fresno, CA 93711

Re: City of San Joaquin Manganese Removal
Records Search File No.: 17-034

The Southern San Joaquin Valley Information Center received your record search request for the project area referenced above, located on the San Joaquin USGS 7.5' quad. The following reflects the results of the records search for the project area and the 0.5 mile radius:

As indicated on the data request form, the locations of resources and report are provided in the following format:

custom GIS maps shapefiles hand-drawn maps

Resources within project area:	None
Resources within 0.5 mile radius:	P-10-006614, 006632
Reports within project area:	FR-02354, 02532
Reports within 0.5 mile radius:	FR-00116, 00511, 00631, 00632, 01857, 02416

Resource Database Printout (list): enclosed not requested nothing listed

Resource Database Printout (details): enclosed not requested nothing listed

Resource Digital Database Records: enclosed not requested nothing listed

Report Database Printout (list): enclosed not requested nothing listed

Report Database Printout (details): enclosed not requested nothing listed

Report Digital Database Records: enclosed not requested nothing listed

Resource Record Copies: enclosed not requested nothing listed

Report Copies: enclosed not requested nothing listed

OHP Historic Properties Directory: enclosed not requested nothing listed

Archaeological Determinations of Eligibility: enclosed not requested nothing listed

CA Inventory of Historic Resources (1976): enclosed not requested nothing listed

Caltrans Bridge Survey: Not available at SSJVIC; please see
<http://www.dot.ca.gov/hq/structur/strmaint/historic.htm>

Ethnographic Information: Not available at SSJVIC

Historical Literature: Not available at SSJVIC

Historical Maps: Not available at SSJVIC; please see
<http://historicalmaps.arcgis.com/usgs/>

Local Inventories: Not available at SSJVIC

GLO and/or Rancho Plat Maps: Not available at SSJVIC

Shipwreck Inventory: Not available at SSJVIC; please see
http://shipwrecks.sl.ca.gov/ShipwrecksDatabase/Shipwrecks_Database.asp

Soil Survey Maps: Not available at SSJVIC; please see
<http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Invoices for Information Center services will be sent under separate cover from the California State University, Bakersfield Accounting Office.

Thank you for using the California Historical Resources Information System (CHRIS).

Sincerely,


Celeste M. Thomson
Coordinator

Report List

SSJVIC Record Search 17-034

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
FR-00116	NADB-R - 1141388	1991	Bissonnette, Linda Dick	Helm Elementary School District Proposed School Site Cultural Resources Survey	Michael Paoli and Associates	
FR-00511		1995	Kus, James S. and Mader, Claudia A.	Archaeological Survey Report for a proposed farm laborhousing project located in Section 23, T15S, R16E, MDBM	CSU Fresno	
FR-00631		1988	Unknown	Cultural Resource Assessment of the San Joaquin Family Apartment Complex, Fresno County, California	Peak & Associates, Inc.	
FR-00632		1988	Unknown	Cultural Resource Assessment of the San Joaquin Senior Apartment Complex, Fresno County, California	Peak & Associates, Inc.	
FR-01857		2001	Billat, Lorna Beth	Nextel Communications Wireless Telecommunications Service Facilities Located in Counties Covered by the Southern San Joaquin Valley Information Center	EarthTouch, LLC.	
FR-02354		2010	Varner, Dudley M.	A Cultural Resource Study for the Water Storage Tank No. 1 Project in the City of San Joaquin, Fresno County, California	Varner Associates	
FR-02416		2010	Kaijankoski, Philip	Fresno Reliability Transmission Project	Far Western Anthropological Research Group, Inc.	10-000559
FR-02532		2010	Kaijankowski, Philip	Cultural Resource Sensitivity Study for San Joaquin - Carvalo Solar PV Project Gen-Tie Lines	Far Western Anthropological Research Group, Inc.	

Resource List

SSJVIC Record Search 17-034

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-10-006614	CA-FRE-003772H	Resource Name - AE-3043-BE-013; Other - Panoche-Kearney 230 kV transmission line	Structure	Historic	HP11 (Engineering structure) - transmission line	2015 (Randy Baloian, Applied EarthWorks, Inc.)	FR-02769
P-10-006632	CA-FRE-003774H	Resource Name - James Irrigation District Lateral R Canal	Structure	Historic	HP20 (Canal/aqueduct)	2015 (Randy Baloian, Applied EarthWorks); 2015 (Randy Baloian, Applied EarthWorks)	FR-02769