SENTINEL BUTTE MUTUAL WATER COMPANY
FLOOD CAPTURE BASIN PROJECT
DRAFT INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

SEPTEMBER 2024

PREPARED FOR:

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TABLE OF CONTENTS

LIST OF APPENDICES

LIST OF FIGURES

LIST OF TABLES

ACRONYMS AND ABBREVIATIONS

AB ..... Assembly Bill
APE ..... Area of Potential Effect
APN ..... Assessor's Parcel Number
ARD ..... Aquatic Resources Delineation Report
BMP ..... Best Management Practices
CalEEMod ..... California Emissions Estimator Modeling (software)
CARB ..... California Air Resources Board
CCAA ..... California Clean Air Act
CDFW ..... California Fish and Wildlife
CEQA ..... California Environmental Quality Act
CGS ..... California Geological Survey
CH_4 ..... Methane
CHRIS ..... California Historical Resources Information System
City ..... City of Woodlake
CNDDB ..... California Natural Diversity Database
CNPS ..... California Native Plant Society
CO ..... Carbone Monoxide
CO_2 ..... Carbon dioxide
County ..... Tulare County
CRHR ..... California Register of Historical Resources
dBA ..... A-weighted decibels
DFIRM ..... Digital Flood Insurance Rate Map
DOC ..... Department of Conservation
DPM ..... Diesel Particulate Matter
DTSC ..... Department of Toxic Substances Control
DWR ..... Department of Water Resources
EIR ..... Environmental Impact Report
EKGSA ..... East Kaweah Groundwater Sustainability Agency
EPA ..... Environmental Protection Agency
ESA ..... Endangered Species Act
FEMA ..... Federal Emergency Management Agency

FMMP ..... Farmland Mapping and Monitoring Program
GHG ..... Greenhouse Gas
GIS ..... Geographic Information System
GSA ..... Groundwater Sustainability Agency
GSP ..... Groundwater Sustainability Plan
GWP ..... Global Warming Potential
HUC ..... Hydrologic Unit Code
IPaC ..... U.S. Fish and Wildlife Service's Information for Planning and Consultation system
IS ..... Initial Study
IS/MND ..... Initial Study/Mitigated Negative Declaration
MBTA ..... Migratory Bird Act
MMRP ..... Mitigation Monitoring and Reporting Program
MND ..... Mitigated Negative Declaration
MRZ ..... Mineral Resource Zones
NAAQS ..... National Ambient Air Quality Standards
NAHC ..... Native American Heritage Commission
ND ..... Negative Declaration
NEPA ..... National Environmental Policy Act
NO_2 ..... Nitrogen Dioxide
NOx ..... Nitrogen Oxides
NRCS ..... Natural Resources Conservation Service
NRHP ..... National Register of Historic Places
O_3 ..... Ozone
Pb ..... Lead
PM_{10} ..... particulate matter 10 microns in size
$PM_{2.5}$ ..... particulate matter 2.5 microns in size
ppb ..... parts per billion
ppm ..... parts per million
Project ..... SBMWC Flood Capture Basin
ROG ..... Reactive Organic Gases
RWQCB ..... Regional Water Quality Control Board
SB ..... Senate Bill
SBMWC ..... Sentinel Butte Mutual Water Company

SGMA.....Sustainable Groundwater Management Act
SJVAB.....San Joaquin Valley Air Basin
SJVAPCD .....San Joaquin Valley Air Pollution Control District
SO_2 .....Sulfur Dioxide
SSJVIC ..... Southern San Joaquin Valley Information Center
SR ..... State Route
SWPPP .....Storm Water Pollution Prevention Plan
SWRCB..... State Water Resources Control Board
TAC .....Toxic Air Contaminants
TPY .....tons per year
USACE..... United States Army Corps of Engineers
USC ..... United States Code
USDA ..... United States Department of Agriculture
USEPA. .....United States Environemntal Protection Agency
USFWS.....United States Fish and Wildlife Service
USGS..... United States Geological Survey
µg/m3.....micrograms per cubic meter
WDR .....Waste Discharge Requirements
WWTF.....Waste Water Tretament Facilty

CHAPTER 1 INTRODUCTION

Provost & Pritchard Consulting Group (Provost & Pritchard) has prepared this Initial Study/Mitigated Negative Declaration (IS/MND) on behalf of Sentinel Butte Mutual Water Company (SBMWC) to address the potential environmental effects of the SBMWC Flood Capture Basin Project (Project). This document has been prepared in accordance with the California Environmental Quality Act (CEQA), Public Resources Code Section 21000 et seq. The East Kaweah Groundwater Sustainability Agency (EKGSA) is the CEQA lead agency for this Project.

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

1.1 REGULATORY INFORMATION

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

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

1.2 DOCUMENT FORMAT

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

than significant level. Chapter 5 Mitigation, Monitoring, and Reporting Program (MMRP), provides the proposed mitigation measures, implementation timelines, and the entity/agency responsible for ensuring implementation. Chapter 6 References details the documents and reports this document relies upon to provide its analysis.

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

CHAPTER 2 PROJECT DESCRIPTION

2.1 PROJECT BACKGROUND

2.1.1 Project Title

Sentinel Butte Mutual Water Company (SBMWC) Flood Capture Basin Project

2.1.2 Lead Agency Name and Address

East Kaweah Groundwater Sustainability Agency (EKGSA)

2.1.3 Contact Person and Phone Number

Lead Agency Contact

Michael Hagman
Executive Director
(559) 303-4150

CEQA Consultant

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

2.1.4 Project Location

The Project site is located in Tulare County outside of the city limits of the City of Woodlake due west of Bravo Lake and adjacent to Wutchumna Ditch and is approximately 197 miles southwest of Sacramento and 71 miles north of Bakersfield (see Figure 2-1 and Figure 2-2). The Project site is approximately 27 acres and is located on Assessor's Parcel Number(s) 060-160-003 and 060-160-058. The centroid of the Project site is 36°24'15.74"N, 119° 6'20.47"W.

2.1.5 Description of Project

Project Background and Purpose

Sentinel Butte Mutual Water Company (SBMWC) has received funding through the Department of Water Resources (DWR) to construct a multi-cell flood capture basin (Project). The funding will allow the SBMWC to construct several basin cells that would allow for approximately 80-acre-feet of storage. This Project would increase the flood water capture/storage capacity for the City of Woodlake which in recent years has suffered heavy damages, the storm season of Winter 2023 being a prime example. Flood hazards in the area are further exacerbated by the lack of a Flood Control District in Woodlake, making this type of Project vital for the city and surrounding area.

Project Description

The Project is located in Woodlake, Tulare County. The Project would entail constructing a new multi-cell flood water capture basin on an approximate 27-acre site and connecting to existing infrastructure. The proposed basin Project would capture high flows during flood periods primarily from the Kaweah River through the Wutchumna Ditch. The Project would consist of the construction of a cells excavated to an approximate depth of 6' below existing grade, and the basins would have the capacity to store approximately 50 acre-feet (AF) of water. The Project will also include a new turnout structure within Wutchumna Ditch to divert water into the proposed basin cells. The turnout structure will connect to a basin inlet structure through 120 LF of piping, equipped with a metered connection and rip rap. The turnout structure will be located northwest of the proposed basin cells along the south bank of the existing ditch. Three interbasin connection structures will also be constructed to connect the proposed cells, each connection will be equipped with two structures, rip rap and approximately 50 LF of piping. A basin outlet connection will also be incorporated through the construction of a basin outlet structure, equipped with approximately 45 LF of piping and rip rap. The basin outlet pipeline will terminate at an existing control box operated by SBMWC. In the future when water is available, SBMWC will set a temporary sump pump in the outlet pipeline to pump into the existing standpipe for delivering the flood water to their existing system.

Construction activities will include excavating to an approximate depth of 6' below existing grade with a basin cut of approximately 90,000 cubic yards. The Project will also include three stockpile locations to store excess dirt on site. Over time, the basin footprint may grow as additional dirt is removed from the stockpiles on site and that area could be utilized for additional storage volume. Once initial excavation is completed the basins will be graded and constructed as per design specifications.

Through these improvements the project is anticipated to capture 30 AF/y of flood waters. This estimate assumes that the basin cells developed will provide 50 AF of volume. During wet years it is assumed the cells will completely fill and empty approximately three (3) times providing for 150 AF in those years. Estimating two (2) wet years in 10 years, the average annual is 30 AF/y.

Construction Schedule

Construction activity for the Project is anticipated to be completed over approximately 4-6 months, beginning in Fall of 2024 (estimated December) and ending by May of 2025. The Project includes mobilization, site preparation, earthwork and structures placement; turnout structures, interbasin and basin outlet structures. After construction completion, performance testing and demobilization would occur.

Equipment

Construction equipment will likely include the following equipment used during construction:

- Excavators,
- Backhoes,
- Graders,
- Skid steers,
- Loaders,
- Hauling trucks,
- Scrapers,

- D9 dozer,
- Large tractor and large discing unit,
- Water trucks supplying water for dust control and conditioning soil for compaction, and
- Large watercannon and hoses.

Post-construction activities will include system testing, commissioning, and site clean-up. Construction will require temporary staging and storage of materials and equipment. Staging areas will be located onsite.

Operation and Maintenance

Operation and maintenance of the stormwater capture basin will be performed by SBMWC existing maintenance staff.

2.1.6 Site and Surrounding Land Uses and Setting

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

Direction from Project Site	Existing Use	General Plan Designation	Zone District
NORTH	Basin	Industrial	PF (Public Facilities)
EAST	Residential	Low Density Residential	R-L (Low Density Res)
SOUTH	Municipal Airport	Public Facilities	PF
WEST	Wastewater Treatment Facility (WWTF)	Public Facilities	PF

2.1.7 Other Public Agencies Whose Approval May Be Required

Approvals and permits that could be required.

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

2.1.8 Consultation with California Native American Tribes

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

The East Kaweah Groundwater Sustainability Agency has not received any written correspondence from a Tribe pursuant to Public Resources Code Section 21080.3.1 requesting notification of proposed Project.

2.1.9 "CEQA–Plus" Assessment

Sentinel Butte Mutual Water Company (SBMWC) has received funding through the Department of Water Resources (DWR) to construct a multi-cell flood capture basin (Project).

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

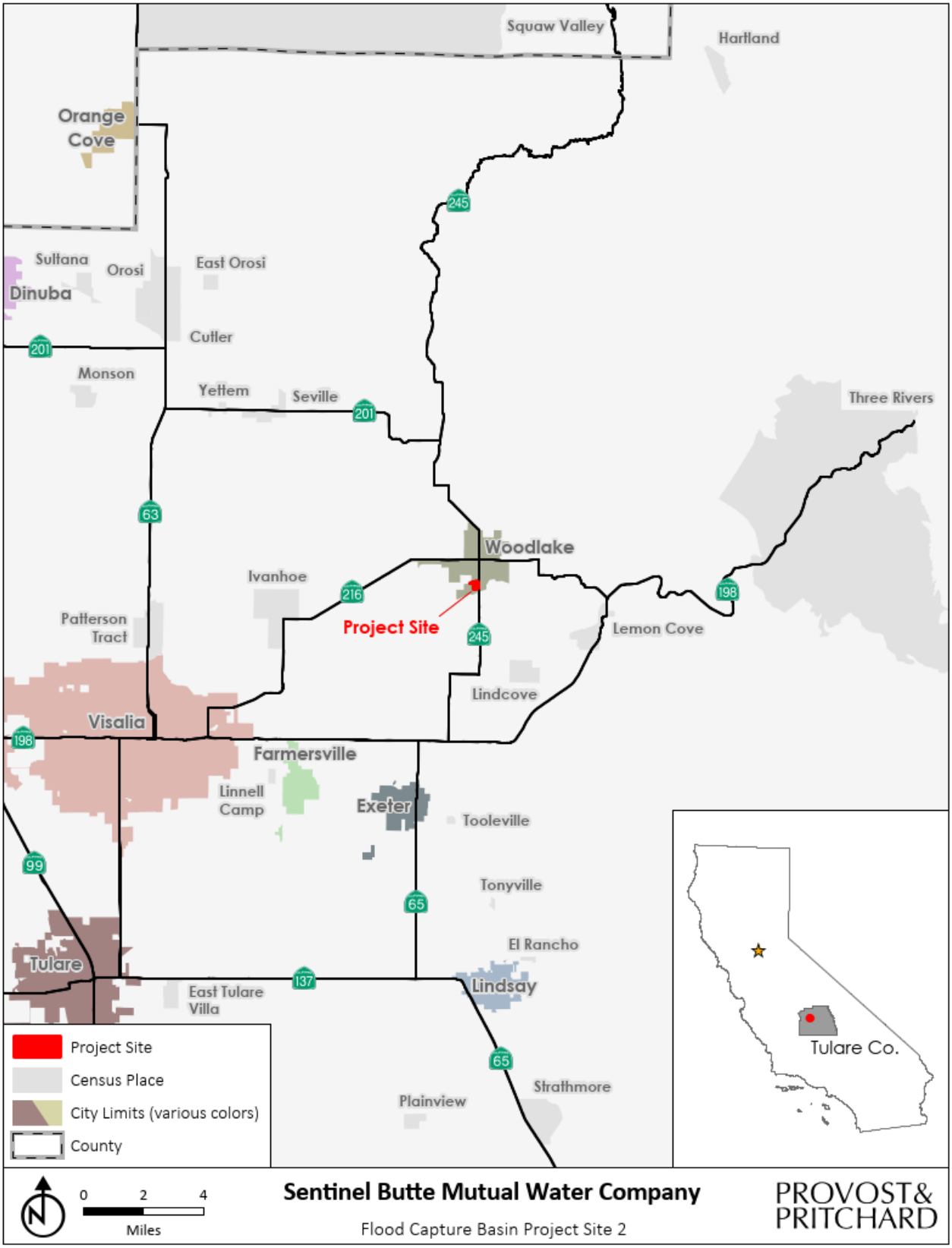

Figure 2-1: Regional Location Map

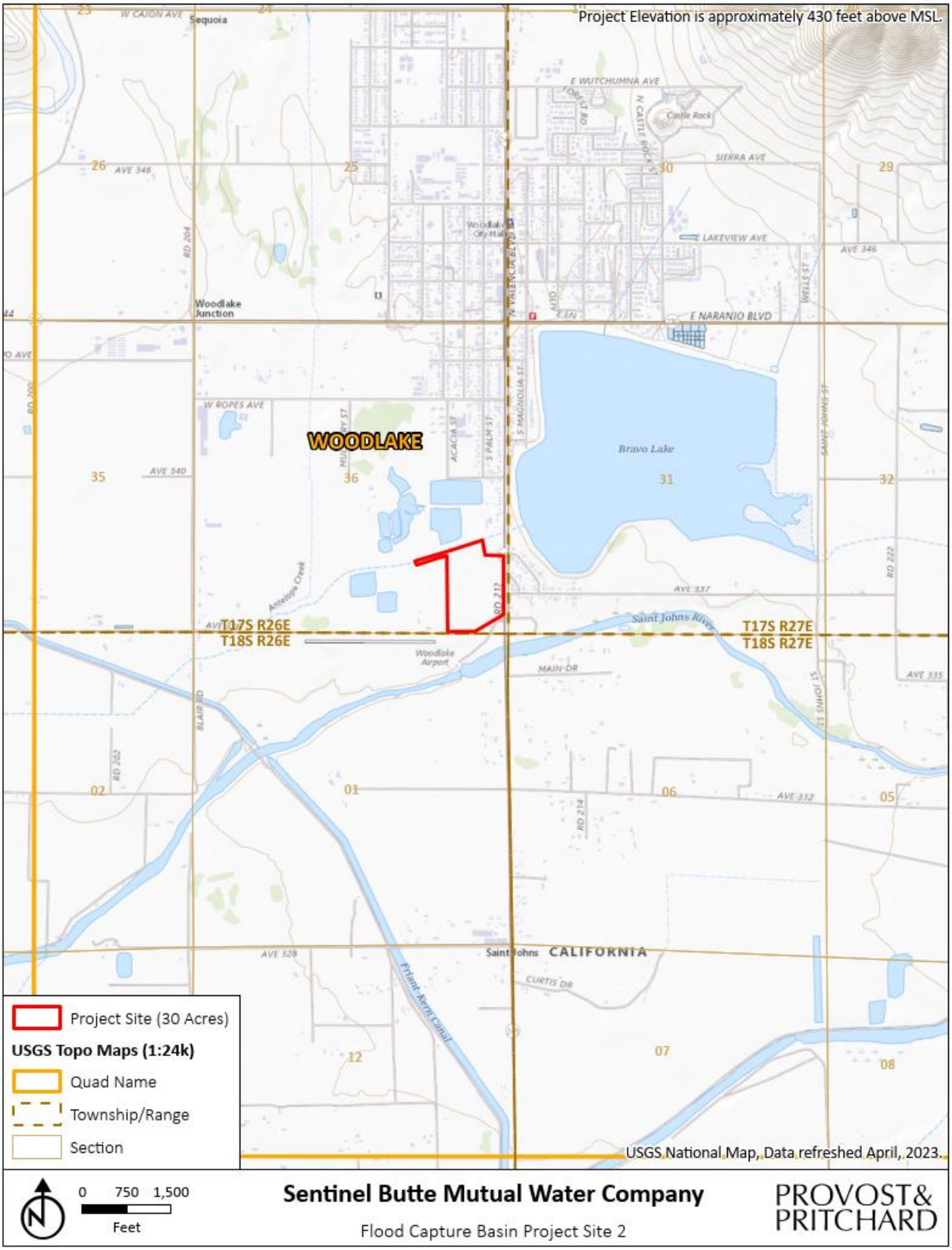

Figure 2-2: Topo Quad Map

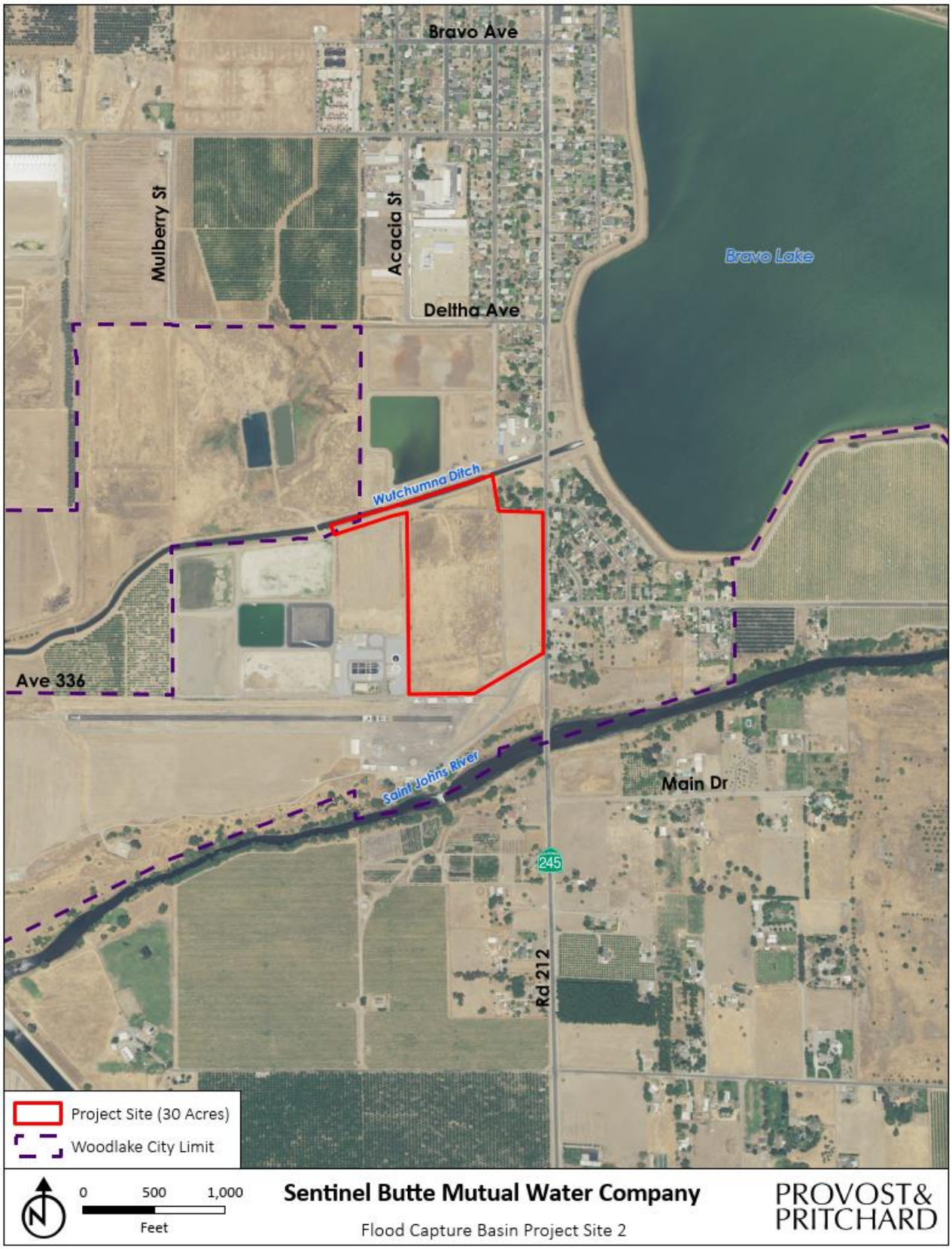

Figure 2-3: Aerial Map

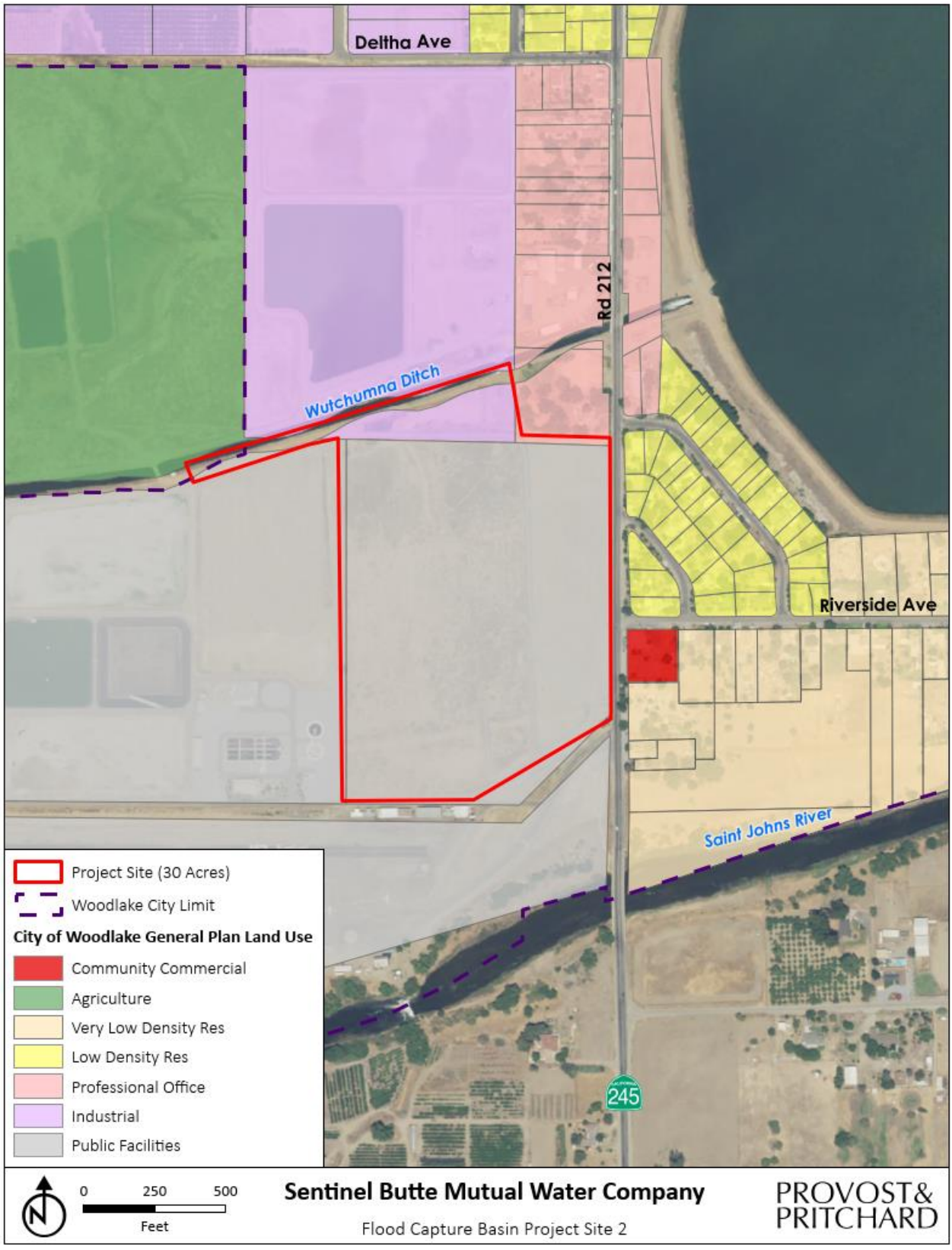

Figure 2-4: General Plan Land Use Designation Map

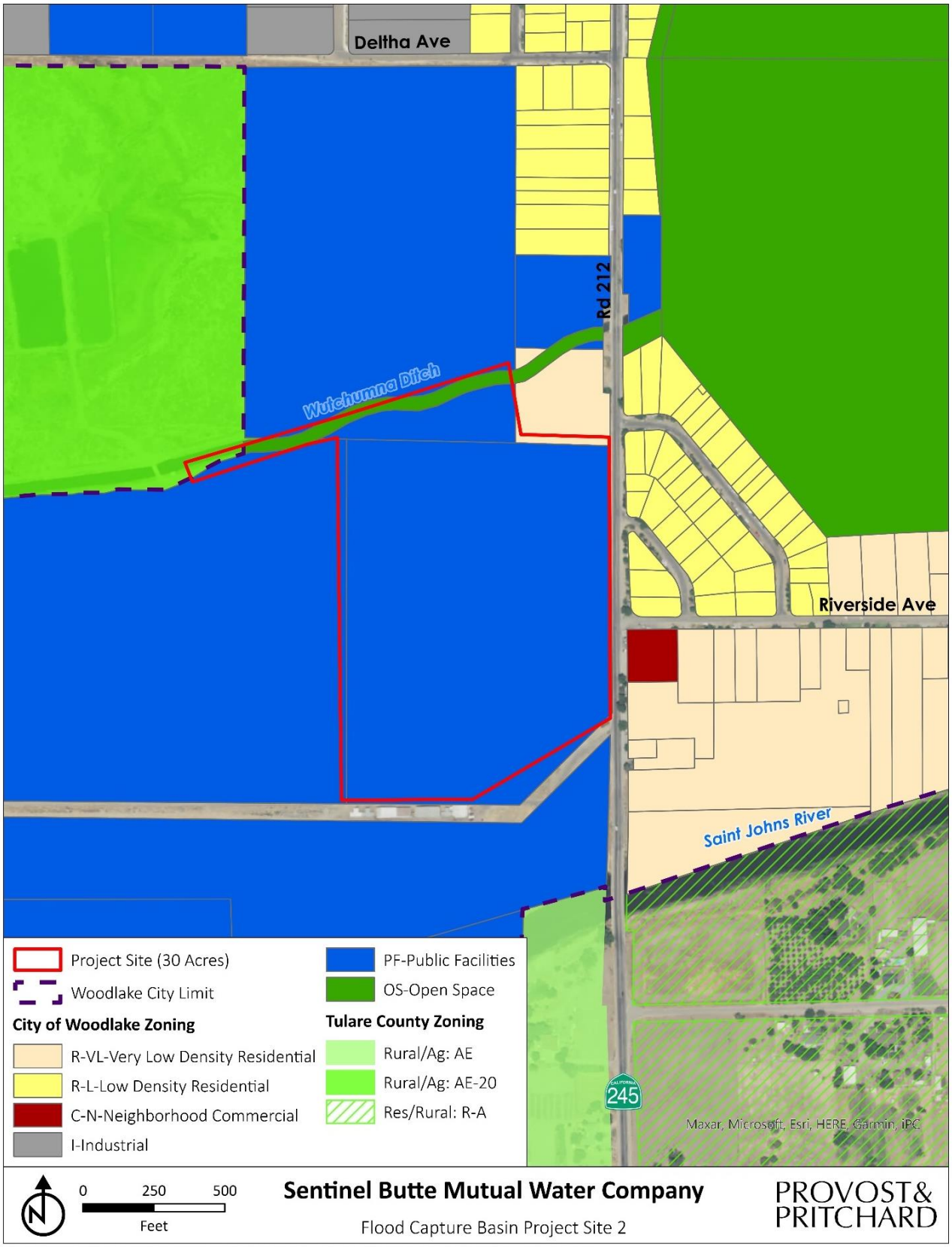

Figure 2-5: Zone District Map

CHAPTER 3 DETERMINATION

3.1 POTENTIAL ENVIRONMENTAL IMPACTS

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

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

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

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

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

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

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

3.2 DETERMINATION

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

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

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

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

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

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

Signature

9.10.2024
Date

MICHAEL D. HAGMAN, EXECUTIVE DIRECTOR
Printed Name/Position

CHAPTER 4 ENVIRONMENTAL IMPACT ANALYSIS

4.1 AESTHETICS

Table 4-1: Aesthetics Impacts

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

4.1.1 Baseline Conditions

The Project is located in Tulare County in the Central San Joaquin Valley. Land in the vicinity consists of irrigated farmland and Public Facilities for the City of Woodlake. Agricultural practices in the vicinity consist of row crops, field crops, and orchard cultivation to the north and west of the Project site. Public Facilities to the south, west, and north consist of the City's Municipal Airport, wastewater treatment facility (WWTF) and ponding basins respectively. The nearest "eligible State Scenic Highway" identified by Caltrans is a portion State Route (SR) 198 east of Highway 99 located approximately 5.10 miles south of the Project site.[1] The proposed basin Project is consistent with the aesthetics of the area.

4.1.2 Impact Analysis

a) Have substantial adverse effect on a scenic vista?

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

[1] (California Department of Transportation 2023)

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

a-c) Less than Significant Impact. The City of Woodlake General Plan does not identify any scenic vistas within the proposed Project area; however, the peaks of the Sierra Nevada mountain range are clearly visible on many days of the year. 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 is consistent with the existing character and uses of the surrounding area, as Public Facilities land are in the neighboring vicinities. As such, Project operations will not degrade the existing visual character of the site. Construction activities may be visible from the adjacent parcels; however, the construction activities will be temporary in nature and will not affect a scenic vista.

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 east of SR 99 as an Eligible State Scenic Highway. This is the closest highway, located approximately 5.4 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 Woodlake's General Plan or Tulare County's General Plan. The Project would not cause damage to rock outcroppings or historic buildings within a State scenic highway corridor. Any impact would be less than significant.

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

No Impact. Current sources of light in the Project area are from the surrounding commercial and agricultural uses and the vehicles traveling along the nearby dirt roads. The Project will not include any new sources of lighting. Accordingly, the Project would not create new sources of light or glare. There would be no impact.

4.1.3 Federal Cross-Cutting Topic

Wild, Scenic, and Recreational Rivers Act

The National Wild and Scenic Rivers Act was established in 1968, to maintain the natural beauty, biology, and wildness of federally designated "wild," "scenic," or "recreational" rivers that may be threatened by construction of dams, diversions, and canals. The act seeks to preserve these designated rivers in their free-flowing condition, and to protect their immediate environments for the benefit and enjoyment of present and future generations. California has approximately 189,454-miles of river, of which approximately 1,999-miles are designated as wild & scenic—1% of the state's river miles.[2] The Saint Johns River is located less than one half mile south of the Project location and is not listed as a "wild" or "scenic" river. There are no "wild" or "scenic" rivers within or proximate to the Project site.

[2] (National Wild and Scenic River System 2022)

4.2 AGRICULTURE AND FORESTRY RESOURCES

Table 4-2: Agriculture and Forest Impacts

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

4.2.1 Baseline Conditions

The Project site is located in the San Joaquin Valley portion of Tulare County, this area is characterized by rich, highly productive farmland. Agriculture is the most important sector in Tulare County's economy, and agriculture and related industries make Tulare County one of the two most productive agricultural counties in the United States, according to Tulare County Farm Bureau statistics. Agricultural lands (crop and commodity production and grazing) also provide Tulare County's most visible source of open space lands. Agriculture is a vital component of the Tulare County's economy and is a significant source of Tulare County's cultural identity. As such, preserving the productivity of agricultural lands is integral to maintaining Tulare County's culture and economic viability.

Tulare County's agricultural strength is based on the diversity of the crops produced. The 2022 *Tulare County Annual Crop and Livestock Report* covers more than 150 different commodities, 41 of which have a gross value in excess of $1,000,000. Although individual commodities may experience difficulties from year to year, Tulare County continues to produce high-quality crops that provide food and fiber to more than 90 countries throughout the world.[3]

[3] (Tulare County Agricultural Commissioner 2023)

4.2.2 Applicable Regulations

Federal

Federal Farmland Protection Policy Act

The Natural Resources Conservation Service (NRCS) oversees the Farmland Protection Policy Act (FPPA) (7 United States Code (USC) Section 4201, et seq.; see also 7 Code of Federal Regulations [CFR] 658). The FPPA (a subtitle of the 1981 Farm Bill) is national legislation designed to protect farmland. The FPPA states its purpose is to "minimize the extent to which federal programs contribute to the unnecessary conversion of farmland to nonagricultural uses." The FPPA applies to projects and programs that are sponsored or financed in whole or in part by the federal government. The FPPA does not apply to private construction projects subject to federal permitting and licensing, projects planned and completed without assistance from a federal agency, federal projects related to national defense during a national emergency, or projects proposed on land already committed to urban development. The FPPA spells out requirements to ensure federal programs to the extent practical are compatible with State, local, and private programs and policies to protect farmland and calls for the use of the Land Evaluation and Site Assessment system to aid in analysis.

State

California Department of Conservation, Division of Land Resource Protection

As part of the Farmland Mapping and Monitoring Program (FMMP), the California Department of Conservation (DOC) applies the NRCS soil classifications to identify agricultural lands, and these agricultural designations are used in planning for the present and future of California's agricultural land resources. These designated agricultural lands are included in the Important Farmland Maps. The FMMP was established in 1982 to assess the location, quality, and quantity of agricultural lands and the conversion of these lands. The FMMP provides analysis of agricultural land use and land use changes throughout California. The DOC has a minimum mapping unit of 10 acres, with parcels that are smaller than 10 acres being absorbed into the surrounding classifications.

The list below provides a comprehensive description of all the categories mapped by the DOC.

- Prime Farmland. Farmland that has the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- Farmland of Statewide Importance. Farmland is similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- Unique Farmland. Farmland of lesser quality soils used for the production of the State's leading agricultural crops. This land is usually irrigated but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.
- Farmland of Local Importance. Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.
- Grazing Land. Land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen Association, University of

California Cooperative Extension, and other groups interested in the extent of grazing activities. The minimum mapping unit for Grazing Land is 40 acres.

- Urban and Built-up Land. Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, institutional, public administrative purposes, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.
- Other Land. Land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines and borrow pits; and water bodies smaller than 40 acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.

As demonstrated in Figure 4-1, the FMMP for Tulare County designates the Project site as Farmland of Local Importance and Grazing Land.[4]

[4] (California Department of Conservation 2024)

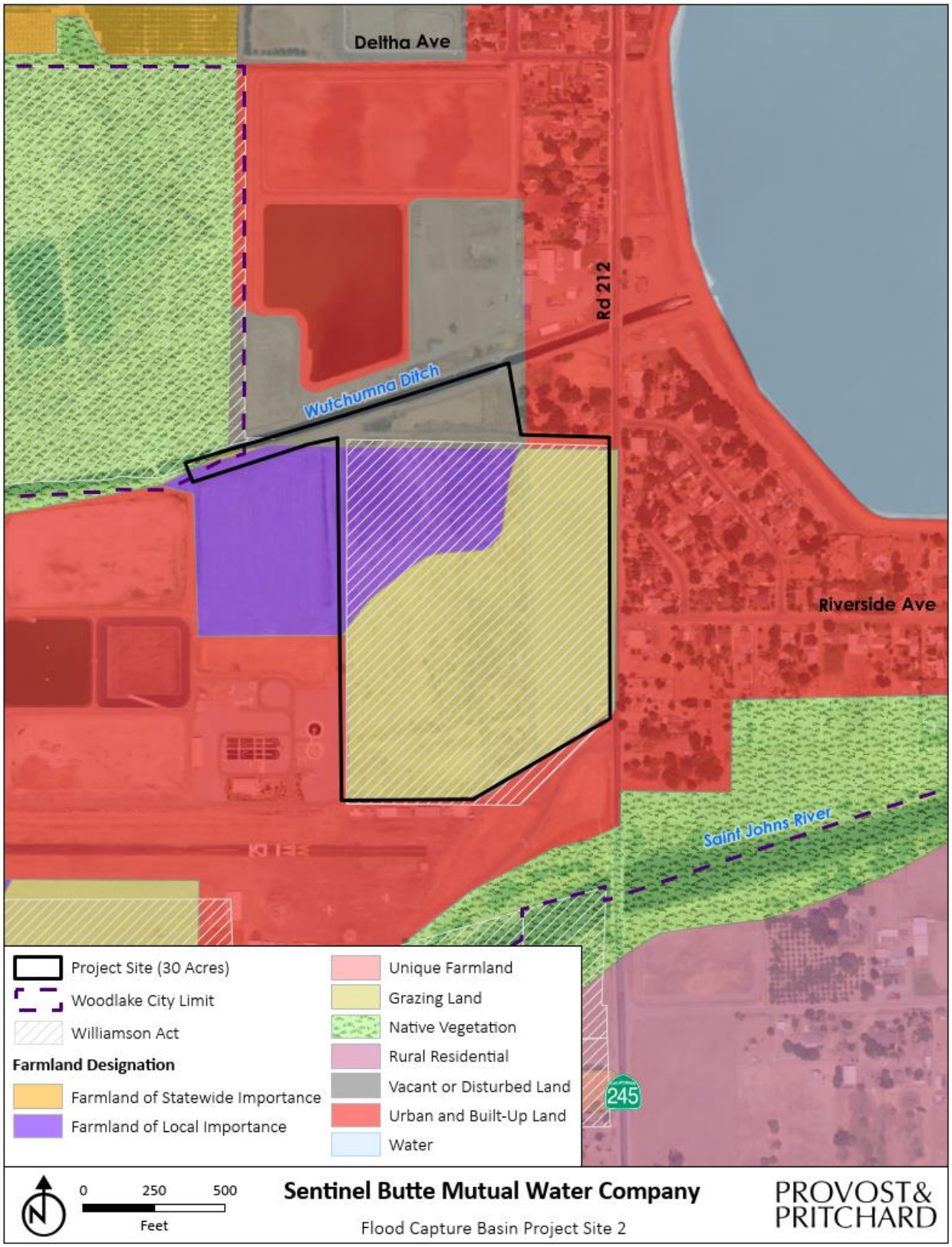

Figure 4-1: FMMP Map

4.2.3 Impact Analysis

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

No Impact. As demonstrated in Figure 4-1, the Project site is designated as Farmland of Local Importance and Grazing Land by the FMMP of Tulare County. The State of California has determined that groundwater recharge basins are a compatible use with agriculture in that they are allowed on lands under Williamson Act Contract. Additionally, the proposed Project would provide a beneficial use to the surrounding agricultural practices by ensuring a more reliable water supply for groundwater pumping. As such, any impacts resulting from farmland conversion would be less than significant.

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

Less than Significant Impact. Chapter 3, Section 9.5 of the Tulare County Zoning Ordinance addresses the AE zone districts. Section 9.5 does not list basins as a permitted use. However, pursuant to Government Code Section 53091(e), location or construction of facilities for the production, generation, storage, treatment, or transmission of water by a special district are not subject to the zoning ordinance of the county in which the Project would be located. No zoning changes would result from construction of the stormwater capture basin. The Project site is currently under Williamson Act contract, but the proposed on-farm flood capture would be consistent with uses allowed under the Williamson Act. Therefore, impacts would be less than significant.

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

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

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

No Impact. There are no forests within the Project site or the surrounding area, therefore the Project would not result in the loss of or conversion of forest land to non-forest use. There would be no impact.

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

Less than Significant Impact. The Project site is designated as Agriculture as per the Tulare County General Plan and zoned AE-20 (Agriculture, 20 acre minimum) under the Tulare County Zoning Ordinance. The Project would not convert the land from its existing agricultural designation to any other land use. The intent of the Project is to expand and improve the storage capability of an existing flood capture basin and by doing so will help support ongoing agricultural endeavors by enhancing water availability. As a result, the Project would result in continued farming on surrounding agricultural lands that might potentially be fallowed due to lack of water. Impacts would be less than significant.

4.2.4 Federal Cross-Cutting Topic

Farmland Protection Act

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

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

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

The Project is located on lands that are classified as " Other Land", specifically Nonagricultural and Native Vegetation. Therefore, the Project would not conflict with the Farmland Protection and Policy Act or adversely affect prime or unique farmland.

4.3 AIR QUALITY

Table 4-3: Air Quality Impacts

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

4.3.1 Baseline Conditions

The Project site is located within the boundaries of the San Joaquin Valley Air Pollution Control District (SJVAPCD) and the San Joaquin Valley Air Basin (SJVAB). The SJVAB is positioned within the San Joaquin Valley of California. The San Joaquin Valley is bounded by the Sierra Nevada Mountain Range to the east and the Coastal Mountain Range to the west. Wind within the SJVAB typically channels south-southwest during the summer months, while wind flows to the north-northwest during the winter months. Wind velocity for the region is considered low for an area of such size.[5] Due to a lack of strong wind and the natural confinement of the mountain ranges surrounding the SJVAB, the region experiences some of the worst air quality in the world.

Regulatory Attainment Designations

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

The United States Environmental Protection Agency (USEPA) designates areas for ozone, CO, and NO_2 as "does not meet the primary standards," "cannot be classified," or "better than national standards." For SO_2, areas are designated as "does not meet the primary standards," "does not meet the secondary

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

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

According to the USEPA the SJVAPCD was not in non-attainment for two pollutant concentrations, with PM-2.5 (2012) being classified as in serious non-attainment, and 8-hour Ozone (2015) classified as being in extreme non-attainment as of June 22nd, 2023.[6]

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

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

[6] (United States Environmental Protection Agency 2023)

Pollutant	Averaging Time	California Standards*		National Standards*	
		Concentration*	Attainment Status	Primary	Attainment Status
		relative humidity is less than 70%.			

** For more information on standards visit: https://ww3.arb.ca.gov/research/aaqs/aaqs2.pdf*
*** No Federal 1-hour standard. Reclassified extreme nonattainment for the Federal 8-hour standard (June 22, 2023).*
****Secondary Standard*
Source: http://www.valleyair.org/aqinfo/attainment.htm. Accessed 2023.

Construction-Generated Emissions

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

Thresholds of Significance

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

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

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

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

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

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

Pollutant	Significance Threshold	
	Construction Emissions (tons/year)	Operational Emissions (tons/year)
$PM_{2.5}$	15	15

Source: SJVAPCD. 2015. Guidance for Assessing and Mitigating Air Quality Impacts. Website: https://www.valleyair.org/transportation/GAMAQI-2015/FINAL-DRAFT-GAMAQI.PDF. Accessed June 22, 2023.

4.3.2 Impact Analysis

Short-Term Construction-Generated Emissions

Estimated construction-generated emissions are summarized in Table 4-6 and Table 4-7. Operational emissions of the proposed Project would be considered negligible due to the type of use proposed on-site. A negligible amount of emissions could result from use of water conveyance infrastructure.

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

Source	Annual Emissions (Tons per Year)					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Maximum Annual Project Construction Emissions	0.0632	0.6392	0.5026	1.1000e-003	0.3860	0.1577
SJVAPCD Threshold	*10*	*10*	*100*	*27*	*15*	*15*
Threshold Exceeded?	No	No	No	No	No	No

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

Source	Daily Emissions Maximum (in pounds)					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Construction – Summer	3.4249	34.5809	28.9854	0.0644	22.7448	11.5009
Construction – Winter	3.4174	34.5922	28.8047	0.0641	9.7837	5.2337
SJVAPCD Threshold	*100*	*100*	*100*	*100*	*100*	*100*
Threshold Exceeded?	No	No	No	No	No	No

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

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

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

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

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

Less than Significant Impact. As discussed above, the proposed Project would not result in significant long-term operational emissions. Constructed related emissions, shown in Table 4-6 and Table 4-7, would be temporary in nature and would cease upon Project construction. Short-term construction activities, however, could result in temporary increases in pollutant concentrations that could impact nearby

sensitive receptors. Sensitive Receptors are groups that would be more affected by air, noise, and light pollution, pesticides, and other toxic chemicals than others. This includes infants, children under 16, elderly over 65, athletes, and people with cardiovascular and respiratory diseases. High concentrations of these groups would include daycares, residential areas, hospitals, elder care facilities, schools and parks. While the Project would be located in an area near sensitive receptors, such as the residential homes to the northeast and southeast, the Project would not exceed the daily emission thresholds set by the SJVAPCD. Additionally, the HARP2 air dispersion model was run for the Project site to show the health risk the Project would have on sensitive receptors in the area. The model run, which can be viewed in Appendix A, indicates that the Project would result in a cancer risk of 3.25 in one million, which is less than the SJVAPCD's threshold of 20 in one million. The Project would also present a chronic risk of 0.006 in one million and an acute risk of 0 in one million, which would be less than the SJVAPCD's threshold of one in one million for both chronic and acute. Therefore, impacts would be less than significant.

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

Less than Significant Impact. During construction activities, construction equipment exhaust and application of asphalt, structural coating and other construction applications would temporarily emit odors. Construction would be completed within the County of Tulare, near the Woodlake city limits, and could have an effect on some residences that would be located near the construction area of the Project. Construction of the Project would be temporary, and odors would not remain after Project completion. Therefore, impacts would be less than significant.

4.3.3 Federal Cross-Cutting Topic

Clean Air Act (CAA)

Under the federal CAA, federal actions conducted in air basins that are not in attainment with the federal ozone standard (such as the SJVAB) must demonstrate conformity with the State Implementation Plan (SIP). Conformity to a SIP is defined in the federal CAA as meaning conformity to a SIP's purpose of eliminating or reducing the severity and number of violations of the national standards and achieving an expeditious attainment of such standards. The SJVAPCD has published Regulation IX, Rule 9110 (referred as the General Conformity Rule) that indicates how most federal agencies can make such a determination.[7]

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

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

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

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

4.4 BIOLOGICAL RESOURCES

Table 4-8: Biological Resources Impacts

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

4.4.1 Baseline Conditions

General

The Project site is located just outside of the city limits of Woodlake, in Tulare County, California, which is within the San Joaquin Valley. The approximately 27-acre Project site is located south of Wutchumna Ditch, southwest of Bravo Lake. The topography of the site is relatively flat with elevations approximately around 430 feet above mean sea level.

Like most of California, the San Joaquin Valley experiences a Mediterranean climate. Warm, dry summers are followed by cool, moist winters. Summer temperatures often reach above 90 degrees Fahrenheit (°F), and the humidity is generally low. Winter temperatures are often below 60 °F during the day and rarely

exceed 70 °F. On average, Woodlake receives approximately 12 inches of precipitation in the form of rainfall yearly, most of which occurs between November and April and the site would be expected to receive similar amounts of precipitation[8]. The Biological Evaluation report prepared for the Project is presented in Appendix B.

Hydrology

A watershed is the topographic region that drains into a stream, river, or lake. Watersheds are made up of many smaller subwatersheds that drain into a particular stream, river, or lake. The project site lies within the Upper Cross Creek watershed; Hydrologic Unit Code (HUC): 1803000711 and the Antelope Creek subwatershed; HUC: 180300071101. The nearest surface water to the Project is a wetland in the east portion of the site, Wutchumna Ditch, which is directly to the south of the Project site, and Antelope Creek, which is located 650 feet to the west of the Project site[9].

The Upper Cross Creek watershed is fed by stormwater or snowmelt runoff from upland areas. Antelope creek begins in the mountains to the north before it flows past to the west of the Project site. Antelope creek flows into the Saint Johns River which connects to Cross Creek which then flows into the Tule River. The Tule River ends in the historic Tulare Lakebed. Wutchumna Ditch receives water from the Kaweah River before it flows past the south boundary of the Project site, and eventually flows into the Saint Johns River.

Soil

Three soil mapping units representing two soil types were identified within the Project site and are listed in Table 4-9 (see Appendix B). The soils are displayed with their core properties in the table below, according to the Major Land Resource Area of California 17 map area. Both soils are primarily used for cropland and livestock grazing

Table 4-9: List of Soils Located Onsite and Their Basic Properties

Soil	Soil Map Unit	Percent of Project Site	Hydric Soil Category	Drainage	Permeability	Runoff
Tujunga	Sand	66.5%	Nonhydric	Somewhat excessively drained	Moderate	Medium to very high runoff
San Joaquin	Loam, 2 to 9 percent slopes	31.1%	Predominantly Nonhydric	Moderately well drained	Very slow permeability	Negligible to low runoff
Water	Water	2.4%	-	-	-	-

Hydric soils are defined as soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions such that under sufficiently wet conditions, hydrophytic vegetation can be supported. None of the major soil mapping units and some of the minor soil mapping units located on the site were identified as hydric. The soils within the site are considered predominantly nonhydric and nonhydric. Water identified in the site is within Wutchumna Ditch.

[8] (Weather US 2023)
[9] (United States Environmental Protection Agency n.d.)

Biotic Habitats

Three biotic habitats were observed within the site and included ruderal/grassland, canal, and seepage habitat. These habitats and their constituent plant and animal species are described in more detail in the following sections. The biotic habitats within the Project site are summarized below and approximate boundaries of these habitats are presented in

Selected photographs of these habitats are presented in Appendix B.

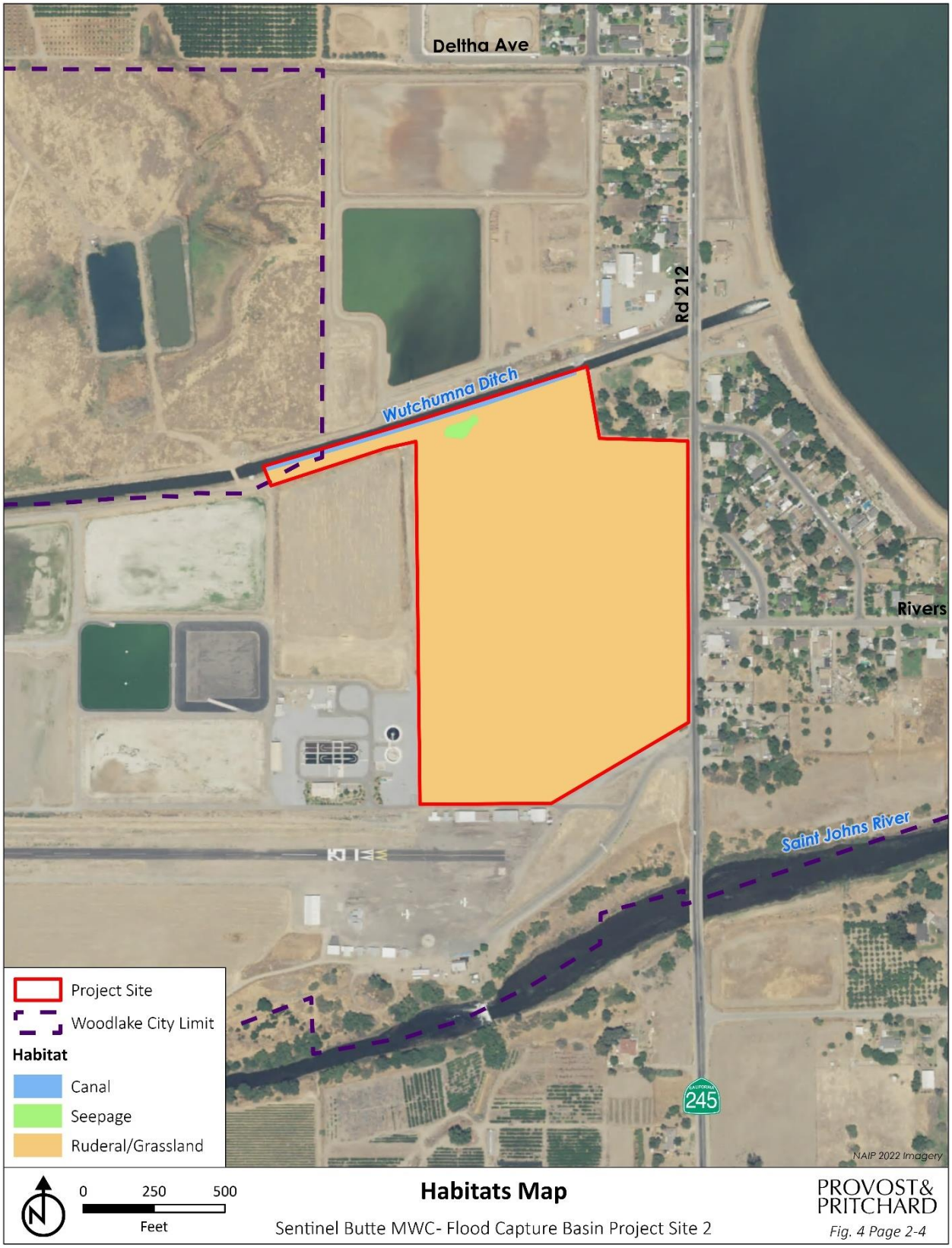

Figure 4-2: Habitats Map

Ruderal/Grassland

The site is dominated by invasive grasses and ruderal habitat. Other vegetation within this habitat included redmaids (Calandrinia ciliata), field mustard (Sinapis arvensis), silver moss (Bryum argenteum), cheeseweed mallow (Malva parviflora), milk thistle (Silybum marianum), silverleaf nightshade (Solanum elaeagnifolium), shepherd's purse (Capsella bursa-pastoris), rough cocklebur (Xanthium strumarium), elderberry (Sambucus sp.), redstem filaree (Erodium cicutarium), common groundsel (Senecio vulgaris), common sowthistle (Sonchus oleraceus), mustard (Brassica spp.), telegraph weed (Heterotheca grandiflora), common bugloss (Anchusa officinalis), and small flowered fiddleneck (Amsinckia menziesii).

The survey of the site resulted in the identification of numerus bird species including black phoebe (Sayornis nigricans), western meadowlark (Sturnella neglecta), white crowned-sparrow (Zonotrichia leucophrys), house finch (Haemorhous mexicanus), common raven (Corvus corax), California scrub-jay (Aphelocoma californica), killdeer (Charadrius vociferus), savannah sparrow (Passerculus sandwichensis), Lincoln's sparrow (Melospiza lincolnii), and yellow-rumped warbler (Setophaga coronata). Common side-blotched lizard (Uta stansburiana), domestic dog (Canis lupus familiaris), and California ground squirrel (Otospermophilus beecheyi) burrows were also observed.

This habitat in the site serves foraging birds, including raptors, during the day, as well as potentially bats, coyotes, and other nocturnal animals at night.

Canal

The canal habitat includes Wutchumna Ditch. Vegetation found within this habitat included invasive grasses, cheeseweed mallow, redstem filaree, common sowthistle, mustard species, and telegraph weed (*Heterotheca grandiflora*).

Seepage

The seepage habitat includes a small seepage area adjacent to Wutchumna Ditch. Vegetation found within this habitat included invasive grasses, elderberry, tree tobacco (*Nicotiana glauca*), stinging nettle (*Urtica dioica*), curly dock (*Rumex crispus*), and white horehound (*Marrubium vulgare*). An American bullfrog (*Lithobates catesbeianus*) was observed in this habitat.

Wildlife and Plant Species

A query of the CNDDB for occurrences of special status animal and plant species was conducted for the *Woodlake* 7.5-minute U.S. Geological Survey (USGS) quadrangle that contains the Project site, and for the eight surrounding USGS quadrangles: *Auckland*, *Chickencoop Canyon*, *Exeter*, *Ivanhoe*, *Kaweah*, *Rocky Hill*, *Stokes Mtn.*, and *Shadequarter Mtn*. These species, and their potential to occur within the Project site, are listed in Table 4-10 and Table 4-11 on the following pages. Other special status species that did not show up in the CNDDB query, but have the potential to occur in the vicinity, are also included in Table 4-10. Species lists obtained from CNDDB and IPaC are available in Appendix B. All relevant sources of information, as discussed in the Study Methodology section of this report, as well as field observations, were used to determine if any special status species are known to be within the Project site.

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

Species	Status*	Habitat	Occurrence within the Project Site
American badger (*Taxidea taxus*)	CSSC	Prefers drier open stages of shrub, forest, and herbaceous habitats with friable soils to burrow, but can be found within numerous habitats throughout California,	**Unlikely.** The ruderal/grassland habitat is disturbed, and no signs of this species were observed during the field survey. The only recorded observation of this

Species	Status*	Habitat	Occurrence within the Project Site
		including the margins of agricultural lands. Needs a sufficient prey base of burrowing rodents..	species within the vicinity was 6.5 miles southwest of the site in 1994.
Bald eagle (*Haliaeetus leucocephalus*)	CE, CFP	Resides in old growth forests as well as lower montane coniferous forests Can also be found in open uplands in the winter. Nests are generally found in large trees within a mile of water. Nests and winters along ocean shores, lake margins, and rivers.	**Unlikely.** The site and surrounding areas lack suitable trees and nesting habitat. It is unlikely this species would forage onsite but would be expected to fly out of the site and not be impacted during construction. The nearest recorded observation of this species within the vicinity was 7 miles east of the site in 2014.
Burrowing owl (*Athene cunicularia*)	CSSC	Resides in open, dry grasslands, deserts, scrublands, and other areas with low growing vegetation. Nests and roosts underground in existing burrows created by mammals, most often ground squirrels, and human-made structures.	**Unlikely.** The ruderal/grassland habitat is disturbed, and no signs of this species were observed during the field survey. The nearest recorded observation of this species within the vicinity was 9 miles northwest of the site in 2006
California condor (*Gymnogyps californianus*)	FE, CE, CFP	Typically nests in cavities in canyon or cliff faces but has also been recorded nesting in giant sequoias in Tulare County. Requires vast expanse of open savannah, grassland, and/or foothill chaparral in mountain ranges of moderate altitude. Forages for carrion up to 100 miles from their roost/nest sites.	**Unlikely.** The site and surrounding areas lack suitable trees and nesting habitat. It is unlikely this species would forage onsite but would be expected to fly out of the site and not be impacted during construction. Critical habitat, the Blue Ridge Condor Area is located 6.5 miles southeast of the site.
California tiger salamander (*Ambystoma californiense*)	FT, CT	Requires vernal pools or seasonal ponds for breeding and small mammal burrows for aestivation. Generally found in grassland and oak savannah plant communities in central California from sea level to 1500 feet in elevation. Can migrate up to 1.3 miles to breed.	**Unlikely.** The site lacks vernal pool habitat. The project site is also near the edge of their range. The nearest recorded observation of this species within the vicinity was 3 miles north of the site in 2011.
Conservancy fairy shrimp (*Branchinecta conservatio*)	FE	Found in large, turbid freshwater vernal pools in the Central Valley, from Tehama County in the north to Merced County in the south, with one outlying population in Ventura County's Interior Coast Ranges.	**Absent.** The site is well south of this species range in the Central Valley.
Crotch bumble bee (*Bombus crotchii*)	CCE	Occurs throughout coastal California, as well as east to the Sierra Nevada-Cascade crest, and south into Mexico. Food plant genera include *Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia*, and *Eriogonum*.	**Unlikely.** The site and surrounding areas lack suitable foraging habitat for this species. The nearest recorded observation of this species within the vicinity was within 1 mile of the site in 1955.
Foothill yellow-legged frog – south Sierra DPS (*Rana boylii*)	FC, CE	Frequents rocky streams and rivers with rocky substrate and open, sunny banks in forests, chaparral, and woodlands. Occasionally found in isolated pools, vegetated backwaters, and deep, shaded, spring-fed pools.	**Absent.** The site and surrounding areas are outside of the range for this species. The nearest recorded observation of this species within the vicinity was 4 miles southeast of the site in 1941 but is listed as extirpated.
Fisher- Southern Sierra Nevada-ESU (*Pekania pannanti*)	FE, CT	Can be found in intermediate to large-tree stages of coniferous forests s with high percent canopy closure, generally within the low-medium elevational areas of the southern Sierra Nevada.	**Absent.** The site and surrounding areas lack forest habitat, and the site is not in the Sierra Nevada. There are no recorded observations of this species on CNDDB within the regional vicinity of the project.
Monarch butterfly (*Danaus plexippus*)	FC	Roosts in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.	**Unlikely.** The site and surrounding areas lack suitable foraging and nesting habitat for this species. There are no recorded

Species	Status*	Habitat	Occurrence within the Project Site
		Larval host plants consist of milkweeds (*Asclepias* sp.). Winter roost sites extend along the Pacific coast from northern Mendocino to Baja California, Mexico.	observations of this species on CNDDB within the regional vicinity of the project.
Northern California legless lizard (*Anniella pulchra*)	CSSC	Found primarily underground, burrowing in loose, sandy soil. Forages in loose soil and leaf litter during the day. Occasionally observed on the surface at dusk and night.	**Unlikely.** The site is surrounded by paved roads, business, and residential houses. The project site lacks suitable soils for this species making it unlikely this species would occur onsite. The nearest recorded observation of this species within the vicinity was 6.5 miles southwest of the site in 2015.
Northern leopard frog (*Lithobates pipiens*)	CSSC	Inhabits grassland, wet meadows, potholes, forests, woodland, brushlands, springs, canals, bogs, marshes, and reservoirs in scattered locations in California. Generally, prefers permanent water with abundant riparian vegetation.	**Absent.** The site and surrounding areas are not within any of the historic or introduced locations. The nearest recorded observation of this species within the vicinity was 11.5 miles northwest of the site in 1958.
Northwestern pond turtle (*Actinemys marmorata*)	FPT, CSSC	An aquatic turtle of ponds, marshes, slow-moving rivers, streams, and irrigation ditches with riparian vegetation. Requires adequate basking sites and sandy banks or grassy open fields to deposit eggs.	**Possible.** The site contains Watchuma Ditch which may be used by this species. The nearest recorded observation of this species within the vicinity was 6 miles east of the site in 1988
Pallid bat (*Antrozous pallidus*)	CSSC	Found in grasslands, chaparral, and woodlands, where it feeds on ground- and vegetation-dwelling arthropods, and occasionally takes insects in flight. Prefers to roost in rock crevices, but may also use tree cavities, caves, bridges, and other man-made structures.	**Unlikely.** The site and surrounding areas lack suitable roosting habitat. This species would not be expected to roost within the site but could forage over the site. The nearest recorded observation of this species within the vicinity was 7 miles southwest of the site in 2004.
San Joaquin kit fox (*Vulpes macrotis mutica*)	FE, CT	Opportunistically forages in a variety of habitats. Dens in burrows within alkali sink, valley grassland, and woodland habitats in valleys and adjacent foothills and in human made structures in cities, rangeland, and agricultural areas.	**Unlikely.** The ruderal/grassland habitat is disturbed, and no signs of this species were observed during the field survey. The nearest recorded observation of this species was within the vicinity of Woodlake in 1990.
Tricolored blackbird (*Agelaius tricolor*)	CT, CSSC	Nests colonially near fresh water in dense cattails or tules, or in thickets of riparian shrubs. Forages in grassland and cropland. Large colonies are often found foraging in dairy farm feed fields.	**Unlikely.** The site and surrounding areas lack suitable nesting habitat. It is unlikely this species would forage onsite but would be expected to fly out of the site and not be impacted during construction. The nearest recorded observation of this species within the vicinity was 4 miles northeast of the site in 2011.
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	FT	Lives in mature elderberry shrubs of the Central Valley and adjacent foothills from Tehama County south through Merced and Mariposa Counties with two scattered populations in Madera and Fresno Counties. Adults are active from March to June.	**Absent.** While there were elderberries onsite, the site and surrounding areas are outside of the range of this species. There was also no evidence of this species on the elderberry..
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	Occupies vernal and seasonal pools, with clear to tea-colored water, in grass or mud-bottomed swales, and basalt depression pools.	**Unlikely.** The site lacks suitable aquatic habitat for this species. The nearest recorded observation of this species within the vicinity was 3 miles southwest of the site in 2011.
Vernal pool tadpole shrimp	FE	Occurs in vernal and seasonal pools, with clear to tea-colored water, in grass or	**Unlikely.** The site lacks suitable aquatic habitat for this species. The nearest recorded observation of this species

Species	Status*	Habitat	Occurrence within the Project Site
(*Lepidurus packardi*)		mud-bottomed swales, and basalt depression pools.	within the vicinity was 9 miles northwest of the site in 2008.
Western mastiff bat (*Eumops perotis californicus*)	CSSC	Found in open, arid to semi-arid habitats, including dry desert washes, flood plains, chaparral, oak woodland, open ponderosa pine forest, grassland, and agricultural areas, where it feeds on insects in flight. Roosts most commonly in crevices in cliff faces but may also use high buildings and tunnels.	**Unlikely.** The site and surrounding areas lack suitable roosting habitat. This species would not be expected to roost within the site but could forage over the site. The nearest recorded observation of this species was within the vicinity of Woodlake in 1990.
Western spadefoot (*Spea hammondii*)	CSSC	The majority of the time this species is terrestrial and occurs in small mammal burrows and soil cracks, sometimes in the bottom of dried pools. Prefers open areas with sandy or gravelly soils, in a variety of habitats including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Vernal or seasonal pools, that hold water for a minimum of three weeks, which do not contain bullfrogs, fish, or crayfish, are necessary for breeding.	**Unlikely.** The site lacks suitable aquatic habitat and minimal terrestrial habitat. The nearest recorded observation of this species within the vicinity was 3 miles north of the site in 2011.
Willow flycatcher (*Empidonax traillii*)	CE	Inhabits extensive thickets of low, dense willows on the edges of wet meadows, ponds, or backwaters at 2,000-8,000 feet in elevation.	**Absent.** The project site is outside of the elevational range required by this species. The nearest recorded observation of this species within the vicinity was 8 miles north of the site in 1988.

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

Species	Status*	Habitat	Occurrence within the Project Site
Alkali-sink goldfields (*Lasthenia chrysantha*)	CNPS 1B	Found in vernal pool and wet saline flat habitats. Occurrences documented in the Central Valley at elevations below 656 feet. Blooms February – April.	**Unlikely.** The site lacks suitable habitat for this species. The nearest recorded observation of this species within the vicinity was 5.5 miles southwest at an unknown date.
American manna grass (*Glyceria grandis*)	CNPS 2B	Found in wet meadows, ditches, streams, and ponds, in valleys and lower elevations in the mountains, at elevations between 200 and 6,800 feet. Blooms June – August.	**Unlikely.** The site is outside of the range of this species. The nearest recorded observation of this species within the vicinity was 16 miles northeast of the site in 1910.
Calico monkeyflower (*Diplacus pictus* / *Mimulus pictus* / *Eunanus pictus*)	CNPS 1B	Found in the Sierra Nevada foothills and the Tehachapi mountains in bare, sunny, shrubby areas, and around granite outcrops within foothill woodland communities at elevations between 450 feet and 4,100 feet. Blooms March – May.	**Unlikely.** The site and surrounding areas are outside of the range of this species. The nearest recorded observation of this species within the vicinity was 4.5 miles southeast of the site in 1935.
Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*)	CNPS 1B	Found on alkaline or saline soils in vernal pools and playas in grassland at elevations below 4,500 feet. Blooms April–May.	**Unlikely.** The site lacks suitable habitat for this species. The nearest recorded observation of this species within the vicinity was 9 miles northwest of the site in 2015.

Species	Status*	Habitat	Occurrence within the Project Site
Earlimart orache (*Atriplex cordulata* var. *erecticaulis*)	CNPS 1B	Found in the San Joaquin Valley in saline or alkaline soils, typically within valley grasslands at elevations below 375 feet. Blooms August–September.	**Unlikely.** The site and surrounding areas are outside of the range of this species. The nearest recorded observation of this species within the vicinity was 9.5 miles northwest of the site in 2010.
Greene's tuctoria (*Tuctoria greenei*)	FE, CNPS 1B	Found in the San Joaquin Valley and other parts of California in vernal pools within valley grassland, wetland, and riparian communities at elevations below 3,500 feet. Blooms May – September.	**Unlikely.** The site lacks suitable habitat for this species. The nearest recorded observation of this species was within the vicinity of Woodlake but is listed as extirpated.
Hoover's spurge (*Euphorbia hooveri*)	FT, CNPS 1B	Found in the Central Valley in vernal pools within valley grassland, freshwater wetland, and riparian communities at elevations below 800 feet. Blooms July – September.	**Unlikely.** The site lacks suitable habitat for this species. The nearest recorded observation of this species within the vicinity was 9 miles northwest of the site in 2022.
Kaweah brodiaea (*Brodiaea insignis*)	CE, CNPS 1B	Found in the Sierra Nevada foothills in foothill woodland and valley grassland communities at elevations between 650 feet and 1,650 feet. Blooms May – June.	**Absent.** The site and surrounding areas are outside of the elevation range for this species. The nearest recorded observation of this species within the vicinity was 5 miles northeast of the site in 1989.
Kaweah monkeyflower (*Erythranthe norrisii*)	CNPS 1B	Found in chaparral and cismontane woodland habitats. Often on marble outcrops, soil pockets, moss-covered ledges, cracks in outcrops, and sometimes on south-facing cliffs at elevations of 1,200-4,000 feet. Blooms March-May.	**Absent.** The site and surrounding areas are outside of the elevation range for this species. The nearest recorded observation of this species within the vicinity was 11 miles east of the site in 1984.
Lesser saltscale (*Atriplex minuscula*)	CNPS 1B	Found in the San Joaquin Valley in sandy, alkaline soils in alkali scrub, valley and foothill grassland, and alkali sink communities at elevations below 750 feet. Blooms April–October.	**Unlikely.** The site and surrounding areas lack suitable soils. The nearest recorded observation of this species within the vicinity was 9.5 miles northwest of the site in 2010.
Madera leptosiphon (*Leptosiphon serrulatus*)	CNPS 1B	Found within openings of foothill woodland, often yellow-pine forest, and chaparral at elevations between 1,000 and 4,300 feet. Blooms April – May.	**Absent.** The site and surrounding areas are outside of the elevational range for this species and lack suitable habitat. The nearest recorded observation of this species within the vicinity was 10.5 miles northeast of the site in 1928.
Mouse buckwheat (*Eriogonum nudum* var. *murinum*)	CNPS 1B	Found in chaparral, cismontane woodland, and valley and foothill grassland. Often on dry sandy loam slopes in the Kaweah River drainage at elevations between 1,200 and 3,700 feet.	**Absent.** The site and surrounding areas are outside of the elevation range for this species. The nearest recorded observation of this species within the vicinity was 11 miles east of the site in 1984.
Recurved larkspur (*Delphinium recurvatum*)	CNPS 1B	Occurs in poorly drained, fine, alkaline soils in grassland and alkali scrub communities at elevations between 100 and 2,600 feet. Blooms March–June.	**Unlikely.** The site and surrounding areas lack suitable soils. The nearest recorded observation of this species within the vicinity was 0.5-mile northwest of the site but is listed as extirpated.
San Joaquin adobe sunburst (*Pseudobahia peirsonii*)	FT, CE, CNPS 1B	Found in the San Joaquin Valley and the Sierra Nevada foothills in bare, dark clay soils in valley and foothill grassland and cismontane woodland communities at elevations between 325 and 2,950 feet. Blooms March–May.	**Unlikely. The site lacks suitable habitat and soils for this species. The nearest recorded observation of this species within the vicinity was 4 miles southeast of the site in 1992.**
San Joaquin Valley Orcutt grass	FT, CE, CNPS 1B	Found in the eastern San Joaquin Valley and the Sierra Nevada foothills in vernal pools within valley grassland, freshwater	**Unlikely.** The site lacks suitable habitat for this species. The nearest recorded observation of this species within the

Species	Status*	Habitat	Occurrence within the Project Site
(*Orcuttia inaequalis*)		wetland, and wetland-riparian communities at elevations below 2,600 feet. Blooms April – September.	vicinity was 4 miles north of the site in 2010.
Sanford's arrowhead (*Sagittaria sanfordii*)	CNPS 1B	Found in the San Joaquin Valley and other parts of California in freshwater marshes, ponds, and ditches at elevations below 1,000 feet. Blooms May–October.	**Possible.** The site and surrounding areas contain suitable basin, wetland/ depression, and ditch habitats. The nearest recorded observation of this species within the vicinity was 4 miles northwest of the site in 2018.
Spiny-sepaled button-celery (*Eryngium spinosepalum*)	CNPS 1B	Found in the Sierra Nevada foothills and the San Joaquin Valley. Occurs in vernal pools, swales, and roadside ditches. Often associated with clay soils in vernal pools within grassland communities. Occurs at elevations between 50 and 4,200 feet. Blooms April–July.	**Unlikely.** The site lacks suitable habitat for this species. The nearest recorded observation of this species was within the vicinity of Woodlake in 1936.
Striped adobe-lily (*Fritillaria striata*)	CT, CNPS 1B	Found in the Sierra Nevada foothills in adobe soil within valley grassland and foothill woodland communities at elevations below 3,300 feet. Blooms February – April.	**Unlikely.** The site and surrounding areas lack suitable adobe soils. The nearest recorded observation of this species within the vicinity was 9.5 miles south of the site but is listed as extirpated.
Vernal pool smallscale (*Atriplex persistens*)	CNPS 1B	Occurs in the Central Valley in alkaline vernal pools at elevations below 375 feet. Blooms June–September.	**Absent**. The site lacks vernal pools and suitable habitat for this species.
Winter's sunflower (*Helianthus winteri*)	CNPS 1B	Found in the Sierra Nevada foothills on steep, south-facing grassy slopes, rock outcrops, and road-cuts at elevations ranging from 600 to 1,500 feet. Blooms year-round.	**Absent.** The site and surrounding areas do not contain suitable habitat for this species.

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

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

STATUS CODES

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

CNPS LISTING

1B	Plants Rare, Threatened, or Endangered in California and elsewhere.	2B	Plants Rare, Threatened, or Endangered in California, but more common elsewhere.

4.4.2 Applicable Regulations

Threatened and Endangered Species

Permits may be required from CDFW and/or USFWS if activities associated with a project have the potential to result in the "take" of a species listed as threatened or endangered under the California Endangered Species Act (CESA) and/or Endangered Species Act (ESA), respectively. Take is defined by CESA as, "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill" (California Fish and Game Code, Section 86). Take is more broadly defined by the ESA to include "harm" (16 USC, Section 1532(19),

50 CFR, Section 17.3). CDFW and USFWS are responsible agencies under CEQA and NEPA. Both agencies review CEQA and NEPA documents in order to determine the adequacy of the treatment of endangered species issues and to make project-specific recommendations for their conservation.

Designated Critical Habitat

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

Migratory Birds

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

Birds of Prey

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

Nesting Birds

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

Wetlands and other "Jurisdictional Waters"

The definition of "waters of the United States" often changes from one presidential administration to the next. The current definition, established under the new rule that became effective on March 20, 2023, has established measurable distances for qualifying jurisdictional waters that no administration has set before. Traditional navigable waters, territorial seas, and interstate waters remain covered under the new rule. Natural drainage channels and adjacent wetlands may be considered "waters of the United States" or "jurisdictional waters" subject to the jurisdiction of the USACE. The extent of jurisdiction has been defined in the Code of Federal Regulations but has also been subject to interpretation of the federal courts. Jurisdictional waters generally include the following categories:

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

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

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

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

The USACE regulates the filling or grading of waters of the United States. under the authority of Section 404 of the CWA. The extent of jurisdiction within drainage channels is defined by "ordinary high-water marks" on opposing channel banks. All activities that involve the discharge of dredge or fill material into Waters of the United States are subject to the permit requirements of the USACE. Such permits are typically issued on the condition that the applicant agrees to provide mitigation that results in no net loss of wetland

functions or values. No permit can be issued until the RWQCB issues a Section 401 Water Quality Certification (or waiver of such certification) verifying that the proposed activity will meet state water quality standards.

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

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

Tulare County General Plan

The Tulare County General Plan Document[10] contains the following goals and policies, related to the project:

Biological Resources

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

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

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

[10] (Tulare County 2012)

ERM-1.4 Protect Riparian Areas. The County shall protect riparian areas through habitat preservation, designation as open space or recreational land uses, bank stabilization, and development controls.

ERM-1.6 Management of Wetlands. The County shall support the preservation and management of wetland and riparian plant communities for passive recreation, groundwater recharge, and wildlife habitats.

ERM-1.16 Cooperate with Wildlife Agencies. The County shall cooperate with State and federal wildlife agencies to address linkages between habitat areas.

ERM-1.17 Conservation Plan Coordination. The County shall coordinate with local, state, and federal habitat conservation planning efforts to protect critical habitat areas that support endangered species and other special-status species.

Water Resources

Water Resources (WR)-1: To provide for the current and long-range water needs of the County and for the protection of the quality and quantity of surface and groundwater resources.

WR-1.8 Groundwater Basin Management. The County shall take an active role in cooperating in the management of the County's groundwater resources.

WR-1.10 Channel Modification. Channel modification shall be discouraged in streams and rivers where it increases the rate of flow, rate of sediment transport, erosive capacity, have adverse effect on aquatic life or modify necessary groundwater recharge.

Water Quality

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

WR-2.1: Protect Water Quality. All major land use and development plans shall be evaluated as to their potential to create surface and groundwater contamination hazards from point and non-point sources. The County shall confer with other appropriate agencies, as necessary, to assure adequate water quality review to prevent soil erosion; direct discharge of potentially harmful substances; ground leaching from storage of raw materials, petroleum products, or wastes; floating debris; and runoff from the site.

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

WR-2.4: Construction Site Sediment Control. The County shall continue to enforce provisions to control erosion and sediment from construction sites.

WR-2.5 Major Drainage Management. The County shall continue to promote protection of each individual drainage basin within the County based on the basins unique hydrologic and use characteristics.

4.4.3 Impact Analysis

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

Less than Significant Impact with Mitigation Incorporated. Of the 22 regionally occurring special status animal species, 21 are considered absent from or unlikely to occur within the Project site due to the absence of suitable habitat and/or the Project site is outside of the known range for these species. These species include American badger, bald eagle, burrowing owl, California condor, California tiger salamander, conservancy fairy shrimp, Crotch's bumble bee, foothill yellow-legged frog, fisher, monarch butterfly, northern California legless lizard, northern leopard frog, pallid bat, San Joaquin kit fox, tricolored blackbird, valley elderberry longhorn beetle, vernal pool fairy shrimp, vernal pool tadpole shrimp, western mastiff bat, western spadefoot, and willow flycatcher. Since it is unlikely that these species would occur onsite, implementation of the Project should have no impact on these 21 special status species through construction mortality, disturbance, or loss of habitat. Mitigation measures are not warranted.

Of the 20 regionally occurring special status plant species, 19 are considered absent from or unlikely to occur within the Project site due to the absence of suitable habitat and/or the elevation or location of the site. These species include: alkali-sink goldfields, American manna grass, calico monkeyflower, Coulter's goldfields, Earlimart orache, Greene's tuctoria, Hoover's spurge, Kaweah brodiaea, Kaweah monkeyflower, lesser saltscale, Madera leptosiphon, mouse buckwheat, recurved larkspur, San Joaquin adobe sunburst, San Joaquin Valley Orcutt grass, spiny-sepaled button-celery, striped adobe-lily, vernal pool smallscale, and Winter's sunflower.

Since it is unlikely that these species would occur onsite, implementation of the Project should have no impact on these 19 special status plant species through construction mortality, disturbance, or loss of habitat. Mitigation measures are not warranted.

Species that were identified as candidate, sensitive, or special status species by CDFW, USFWS, that have the potential to be impacted by Project include: Northwestern Pond Turtle, and the Sanford's arrowhead flowering plant. Discussion and corresponding mitigation measures are provided below.

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

The Project site contained canal habitat that could be used for northwestern pond turtle dispersal or basking and foraging. Noise, vegetation removal, movement of workers, construction, and ground disturbance as a result of Project activities have the potential to significantly impact northwestern pond turtle. Without appropriate avoidance and minimization measures for northwestern pond turtle, potentially significant impacts associated with Project activities could include inadvertent entrapment and direct mortality. Project activities that impact northwestern pond turtles would be considered a potentially significant impact under CEQA and NEPA.

Mitigation measures are warranted and are identified in Section 4.4.5 below. Implementation of mitigation measures BIO-1, BIO-2, BIO-3, BIO-4, and BIO-5 will reduce potential impacts to Northwestern Pond Turtles to a less than significant level under CEQA and NEPA.

Project-Related Mortality and/or Disturbance to Western Spadefoot

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

implementation of mitigation measures BIO-1, BIO-2, BIO-6, BIO-7, and BIO-8 will reduce potential impacts to western spadefoot to a less than significant level under CEQA and NEPA.

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

The Project site contains suitable nesting and/or foraging habitat for a variety of protected bird species, such as migratory birds, and raptors. Bald eagle, California condor, and tricolored blackbird are not expected to nest onsite but could forage onsite and would be expected to fly offsite and not be impacted during construction. Protected birds located within or adjacent to the Project site during construction have the potential to be injured or killed by Project-related activities. In addition to the direct "take" of protected birds within the Project site or adjacent areas, these birds nesting in these areas could be disturbed by Project-related activities resulting in nest abandonment. Projects that adversely affect the nesting success of protected birds or result in the mortality of these birds would be a violation of state and federal laws and considered a potentially significant impact under CEQA and NEPA.

While foraging habitat for protected birds is present on the site, suitable foraging habitat is located adjacent to the site and within the vicinity of the site and these species would be able to continue foraging on the site after Project completion. Loss of the foraging habitat from implementation of the Project is not considered a significant impact.

Mitigation measures are warranted and are identified in Section 4.4.5 below. Implementation of mitigation measures BIO-1, BIO-2, BIO-9, BIO-10, and BIO-11 will reduce potential impacts to protected nesting birds to a less than significant level under CEQA and NEPA and ensure compliance with state and federal laws protecting these bird species.

Project-Related Impacts to Special Status Plant Species

Sanford's arrowhead was identified to potentially occur within or adjacent to the Project site. The canal habitat provides suitable aquatic habitat for this species. Projects that adversely affect special status plants or result in the mortality of special status plants would be considered a violation of state and federal laws for listed species and considered a potentially significant impact under CEQA and NEPA.

Mitigation measures are warranted and are identified in Section 4.4.5 below. Implementation of mitigation measures BIO-1, BIO-12, BIO-13, and BIO-14 will reduce potential impacts to special status plants to a less than significant level under CEQA and NEPA and will ensure compliance with state and federal laws protecting the listed plant species.

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

Less than Significant Impact. Riparian habitat is present on the Project site within the canal and seepage habitats. Since this is not naturally occurring habitat, no permits would be required. There are no CNDDB-designated "natural communities of special concern" recorded within the Project site or surrounding lands.

The USFWS often designates areas of "Critical Habitat" when it lists species as threatened or endangered. Critical habitat is a specific geographic area that contains features essential for the conservation of a threatened or endangered species, which may require special management and protection. According to the CNDDB and IPaC, designated critical habitat is absent within the Project site and no mitigation measures are warranted. As such any impact would be considered less than significant.

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

No Impact. Wetlands, vernal pools, and other protected waters were absent from the site. There are no designated wild and scenic rivers within the Project site; therefore, the Project would also not result in direct impacts to wild and scenic rivers. Mitigation measures are not warranted as Project implementation would have no impact on federally protected wetlands as defined by Section 404 of the Clean Water Act.

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

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

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

Rivers and ditches can function as wildlife movement corridors through highly disturbed areas within the San Joaquin Valley and they can be sensitive resources for various species. Anthropogenic activities would deter wildlife from using these corridors during the day, though these deterrents are absent at night. Most of the Project site does not contain features that would be likely to function as wildlife movement corridors. The Project site does contain suitable features, Wutchumna Ditch, that could act as a wildlife movement corridor and runs along the northern boundary of the site. Any impacts would be temporary and minimal, and wildlife may be able to continue using it during construction and would be able to continue utilizing it after construction activities are completed.

Although impacts would be temporary in nature mitigation measures are warranted and are identified in Section 4.4.5 below. Implementation of mitigation measure BIO-15, BIO-16, and BIO-17 will reduce

potential impacts to native wildlife nursery sites to a less than significant level under CEQA and NEPA and will ensure compliance with state and federal laws protecting this habitat.

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

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

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

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

4.4.4 Federal Cross-Cutting Topic

Federal Endangered Species Act

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

Appendix B presents a Biological Evaluation Report intended to provide the basis for compliance with Section 7 of the ESA. Appendix B summarizes the Project effect determinations for Federally Listed Species found on the USFWS IPaC list generated on May 1, 2023, in accordance with Section 7 of the Endangered Species Act.

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

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

See discussion under checklist item a above.

4.4.5 Mitigation

General Project-Related Impacts:

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

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

i. Vehicles will observe a 15-mph speed limit while on unpaved access routes.

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

Northwestern Pond Turtles

BIO-3 **(*Pre-construction Survey and Avoidance Buffers*):** Within seven (7) days prior to the start of construction, a qualified biologist will conduct a pre-construction survey for northwestern pond turtle within the Project site and within surrounding areas up to 330 feet. Pre-construction surveys will be conducted in accordance with the draft Western Pond Turtle (Emys marmorata) Visual Survey Protocol for the Southcoast Ecoregion (United States Geological Survey 2006). If no northwestern pond turtles are observed during the pre-construction survey, then construction activities may begin. If construction is delayed or halted for more than seven (7) days, another pre-construction survey for northwestern pond turtle will be conducted. If the surveys result in the identification of a northwestern pond turtle or an individual is found on the site during construction activities, it will be allowed to leave the site on its own and the qualified

biologist shall determine appropriate buffers to be implemented to avoid impacts to the individual(s).

BIO-4 (*Monitor*): If northwestern pond turtles are observed on the project site, a qualified biologist will conduct a pre-activity clearance survey each day and remain onsite to oversee all vegetation clearing and ground disturbing activities.

BIO-5 (*Formal Consultation*): If northwestern pond turtles within the site cannot be avoided, the project proponent will initiate protection plans and/or relocation plans in consultation with CDFW and/or USFWS.

Western Spadefoot

BIO-6 (*Pre-construction Survey and Avoidance Buffers*): Within seven (7) days prior to the start of construction, a qualified biologist (someone familiar with this species and their habitats) will conduct a pre-construction survey for western spadefoot within the Project site and surrounding areas up to 50 feet. If no western spadefoot individuals are observed during the pre-construction survey, then construction activities may begin. If construction is delayed or halted for more than seven (7) days, another pre-construction survey for western spadefoot will be conducted. If the surveys result in the identification of a western spadefoot or an individual is found on the site during construction activities, it will be allowed to leave the site on its own and the qualified biologist shall determine appropriate buffers to be implemented to avoid impacts to the individual(s).

BIO-7 (*Monitor*): If western spadefoot individuals are observed on the Project site, a qualified biologist will conduct a pre-activity clearance survey each day and remain onsite to oversee all vegetation clearing and ground disturbing activities until the individual(s) have left the site.

BIO-8 (*Formal Consultation*): If western spadefoots within the site cannot be avoided, the Project proponent will initiate protection plans and/or relocation plans in consultation with CDFW and/or USFWS

Nesting Migratory Raptors and Birds

BIO-9 (*Avoidance*): The Project's construction activities will occur, if feasible, between August 15 and January 31 (outside of the nesting bird season) to avoid impacts to nesting birds.

BIO-10 (*Pre-construction Surveys*): If activities must occur within the nesting bird season (February 1 to August 14), a qualified biologist will conduct a pre-construction survey for active nests within five (5) calendar days prior to the start of construction. It will be completed within the Project site, and up to 100 feet outside of the Project site for nesting migratory birds and up to 500 feet outside of the Project site for nesting raptors. Raptor nests are considered "active" upon the nest-building stage. If no active nests are observed, no further mitigation is required.

BIO-11 (*Avoidance Buffers*): On discovery of any active nests or breeding colonies near work areas, a qualified biologist will determine appropriate avoidance buffer distances based on applicable CDFW and/or USFWS guidelines, the biology of the species, conditions of the nest(s), and the level of Project disturbance. If necessary, avoidance buffers will be

identified with flagging, fencing, or other easily visible means, and will be maintained until the biologist has determined that the nestlings have fledged.

Special Status Plant Species

BIO-12 (*Focused Botanical Surveys*): A qualified botanist/biologist will conduct focused botanical surveys during the appropriate blooming season (May – October) for Sanford's arrowhead, according to CDFW's Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities (2018) within the canal habitat prior to the start of construction.

BIO-13 (*Avoidance*): If Sanford's arrowhead individuals are identified during the focused botanical surveys, an avoidance buffer and, if necessary, use of exclusion fencing, will be placed around the areas to not disturb the plants or its root system.

BIO-14 (*Formal Consultation*): If Sanford's arrowhead individuals are detected within Project work areas during the focused botanical surveys, and the plants cannot be avoided, the Project proponent will initiate consultation with CNPS and/or CDFW to determine next steps for relocation.

Wildlife Movement Corridors & Native Wildlife Nursery Sites

BIO-15 (*Operational Hours*): Construction activities will be limited to a half hour after sunrise through a half hour before sunset to reduce potential impacts to wildlife movement corridors.

BIO-16 (*Wildlife Access*): Access will not be blocked outside of construction hours or during overnight hours or weekends. If construction must block both sides of a wildlife access route, an alternative route through the construction area should be identified by a qualified biologist and maintained throughout the construction schedule timeframe.

BIO-17 (*Cover Excavation*): Pipeline/culvert/siphon excavations and vertical pipes will be covered each night to prevent wildlife from falling in and becoming trapped or injured during migratory or dispersal movements.

4.5 CULTURAL RESOURCES

Table 4-12: Cultural Resources Impacts

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

4.5.1 Baseline Conditions

Many of the historic resources in Woodlake, which date back to the days of its founding in the late 1800s, are located near Downtown. The City's historic era buildings reflect its changing role through time as a center of agriculture and commercial activities.

Woodlake was established by Gilbert F. Stevenson, a southern California developer, in 1912, through his "Woodlake Townsite Company." He had optioned 13,000-acres in the immediate area, hoping to establish citrus orchards and, through active marketing, a town. He also donated three miles of right-of-way to the Visalia Electric Railway, connecting the townsite to Visalia to the west. Stevenson built levees around the Bravo Lake (also sometimes called Wood Lake) along with recreational facilities to help attract new residents. Stevenson lost his fortune during the Depression, but Woodlake continued to grow. It was incorporated in 1940 and continues to be primarily an agricultural community. (Appendix C)

Records Search

A records search from the Southern San Joaquin Valley Information Center (SSJVIC) of the California Historical Resources Information System (CHRIS), located at California State University, Bakersfield was conducted in July 2023. The SSJVIC records search includes a review of all recorded archaeological and built-environment resources as well as a review of cultural resource reports on file. In addition, the California Points of Historical Interest, the California Historical Landmarks, the California Register of Historical Resources, the National Register of Historic Places, and the California State Built Environment Resources Directory listings were reviewed for the above referenced APE and an additional ¼-mile radius. Due to the sensitive nature of cultural resources, archaeological site locations are not released. (Appendix C).

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

Native American Outreach

The Native American Heritage Commission (NAHC) in Sacramento was also contacted in July 2023. They were provided with 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 APE. The NAHC identifies, catalogs, and protects Native American cultural resources -- ancient places of special religious or social significance to Native Americans and known ancient graves and cemeteries of Native Americans on private and public lands in California. The NAHC is also charged with ensuring California Native American tribes' accessibility to ancient Native American cultural resources on public lands, overseeing the treatment and disposition of inadvertently discovered Native American human remains and burial items, and administering the California Native American Graves Protection and Repatriation Act, among many other powers and duties. NAHC provide a current list of Native American Tribal contacts to notify of the Project. The ten tribal representatives identified by NAHC were contacted in writing via United States Postal Service in a letter mailed July 25, 2023, informing each Tribe of the Project. The North Fork Mono Tribe responded with no comment on the Project. No additional responses were received. (Appendix C)

1. Big Sandy Rancheria of Western Mono Indians, Elizabeth Kipp, Chairperson
2. Big Sandy Rancheria of Western Mono Indians, Tom Zizzo, Tribal Administrator
3. Big Sandy Rancheria of Western Mono Indians, Joel Marvin, Vice Chairperson
4. North Fork Mono Tribe, Jesse Valdez, Council Member - Archaeological Dir.
5. North Fork Mono Tribe, Ron Goode, Chairperson
6. North Fork Mono Tribe, Anna Phipps, Tribal Secretary
7. Santa Rosa Rancheria Tachi Yokut Tribe, Leo Sisco, Chairperson
8. Tule River Indian Tribe, Neil Peyron, Chairperson
9. Tule River Indian Tribe, Kerri Vera, Environmental Department
10. Wuksache Indian Tribe/Eshom Valley Band, Kenneth Woodrow, Chairperson

Pedestrian Survey

An intensive Class III inventory/Phase I survey of the Project APE was conducted by ASM Affiliates archaeological staff on April 18, 2024. The Class III inventory/Phase I survey included a review of the Project APE for the presence of built environment features. The field methods employed also included intensive pedestrian examination of the ground surface for evidence of archaeological sites in the form of artifacts, surface features (such as bedrock mortars, historical mining equipment), and archaeological indicators (e.g., organically enriched midden soil, burnt animal bone). One previously recorded historical resource was identified within the Project APE and the site record updated. Had any previously unknown resources been observed during the survey, they would have been recorded following the California Office of Historic Preservation Instructions for Recording Historic Resources using California Department of Parks and Recreation series 523 forms. This would have included tabulation and recording of surface diagnostic artifacts, site sketch mapping, and preliminary evaluation of site integrity. Parallel survey transects spaced at maximum intervals of 15 meters apart were employed for pedestrian survey of the 29 acres Project APE. (Appendix C)

4.5.2 Impact Analysis

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

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

Less than Significant Impact with Mitigation Incorporated. A CHRIS records search, from the SSJVIC, was conducted in July 2023. The search confirmed there has been one previous cultural resource studies conducted within the Project area and nine previous cultural resource studies conducted within the one-

half mile radius. The search also confirmed the absence of identified cultural resources within the Project area. The search indicated that there are five cultural resources within a half-mile radius. These resources are in the form of historic era structures, objects, and sites. (Appendix C)

It is unlikely that the Project has the potential to result in significant impacts or adverse effects to cultural or historical resources, such as archaeological remains, artifacts or historic properties. However, in the improbable event that cultural resources are encountered during Project construction, implementation of mitigation measure **CUL-1** outlined below would reduce impacts to less than significant.

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

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

4.5.3 Mitigation

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

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

4.6 ENERGY

Table 4-13: Energy Impacts

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

4.6.1 Baseline Conditions

The proposed Project would be located within Tulare County, outside of the City of Woodlake. The Project area is served by Southern California Edison for its energy needs, while Southern California Gas Company is the natural gas provider for the area.

4.6.2 Impact Analysis

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

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

Construction is estimated to consume a total of 12,643.20 gallons of diesel fuel and 736.19 gallons of gasoline fuel (See Appendix A). California Code of Regulations Title 13, Motor Vehicles, Section 2449(d)(2), Idling, limits idling times of construction vehicles to no more than 5 minutes, thereby precluding unnecessary and wasteful consumption of fuel because of unproductive idling of construction equipment. In addition, the energy consumption for construction activities would not be ongoing as they would be limited to the duration of Project construction.

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

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

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

4.7 GEOLOGY AND SOILS

Table 4-14: Geology and Soils Impacts

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

4.7.1 Baseline Conditions

Geology and Soils

Three soil mapping units representing two soil types were identified within the Project site and are listed in Table 4-9. The soils are displayed with their core properties, according to the Major Land Resource Area of California 17 map area. All three soils are primarily used for cropland and livestock grazing.

Faults and Seismicity

The Project site is not located within an Alquist-Priolo Earthquake Fault Zone and no known faults cut through the soil at the site. The nearest major fault is the San Andreas Fault, located approximately 80 miles

southwest of the Project site. The San Andreas Fault is the dominant active tectonic feature of the Coast Ranges and represents the boundary of the North American and Pacific plates. A smaller fault zone, the Kern Canyon Fault, is approximately 38 miles east of the site. [11]

Liquefaction

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

Soil Subsidence

Soil subsidence is an issue within the San Joaquin Valley. The excessive pumping of groundwater for agricultural development has lowered the water table and resulted in a large area of soil subsidence in the Central Valley according to the United States Geological Survey[12].

Subsidence occurs when a large land area settles due to over-saturation or extensive withdrawal of ground water, oil, or natural gas. These areas are typically composed of open-textured soils that become saturated, high in silt or clay content. As per the USGS the Project site is located in an area with low occurrence of recorded subsidence both historically and current.[13]

Dam and Levee Failure

The closest dam inundation area is Bravo Lake Reservoir and is approximately .3 miles east of the Project. site. DWR Dam Breach Inundation Map[14] indicated that Bravo Lake Reservoir is a High Hazard Potential Classification.

4.7.2 Impact Analysis

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

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

ii. Seismic-related ground failure, including liquefaction?

iii. Seismic-related ground failure, including liquefaction?

iv. Landslides?

[11] (California Department of Conservation 2023)
[12] (United States Geological Survey 2023)
[13] (United States Geological Survey 2023)
[14] (California Department of Water Resources 2023)

Less than Significant Impact. The Project site is not located in an earthquake fault zone as delineated by the 1972 Alquist-Priolo Earthquake Fault Zoning Map Act. The nearest known fault is the Kern Canyon Fault, located approximately 38 miles east of the site. No active faults have been mapped within the project boundaries, so there is no potential for fault rupture. It is anticipated that the Project site would be subject to some ground acceleration and ground shaking associated with seismic activity during its design life. The Project site would be engineered and constructed in strict accordance with the earthquake resistant design requirements contained in the latest edition of the California Building Code for seismic zone III, as well as Title 24 of the California Administrative Code, and therefore would avoid potential seismically induced hazards on planned structures. The impact of seismic hazards on the Project would be less than significant.

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

Less than Significant Impact. The Project construct a multi-cell flood capture basin. The topography of the site includes small hills near the north side of the site which slope down towards the east and south sides of the site. Elevations are approximately 430 feet above mean sea level. Project features would result in loss of topsoil, as the depth of the basin must be excavated, and soil removed. Excavated soil will be kept on site and will be placed along the outer perimeter to create the embankments and roadways to impound the water for recharge operations. Therefore, the impact would be less than significant.

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

Less than Significant Impact. While the Project site is not known to have significant subsidence, the potential for subsidence would have to be monitored closely and the Project would be required to follow the applicable Groundwater Sustainability Agency (GSA) and SGMA guidelines governing soil subsidence. The Project would not directly cause a reduction of groundwater supplies but would enable nearby landowners to have access to more water than in the past and as a result could indirectly decrease their groundwater consumption.

Most of the Project site and the surrounding area do not have any substantial grade changes to the point where the proposed basins would expose people or structures to potential substantial adverse effects on- or offsite such as landslides, lateral spreading, subsidence, liquefaction, or collapse. Subsidence and liquefaction risk are low to moderate at the site.[15] Any impact would be less than significant.

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

Less than Significant Impact. The soil at the Project site is predominantly San Joaquin loam soil. Permeability is moderately slow. The Project will not contain any facilities that could be affected by expansive soils, nor would substantial grading change the topography such that the Project would generate substantial risks to life or property. The Project will be consistent with the California Building Standards Code; therefore, impacts would be less than significant.

[15] (United States Geological Survey 2023)

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

No Impact. The Project does not include the installation of a septic system. Therefore, there would be no impact.

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

Less than Significant Impact. No known paleontological resources have been identified at the Project site or known to occur there historically.

4.8 GREENHOUSE GAS EMISSIONS

Table 4-15: Greenhouse Gas Emissions Impacts

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

4.8.1 Baseline Conditions

Commonly identified Green House Gas (GHG) emissions and sources include the following:

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

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

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

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

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

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

Chlorofluorocarbons (CFCs) are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). CFCs were first synthesized in 1928 for use as

refrigerants, aerosol propellants, and cleaning solvents. CFCs destroy stratospheric ozone; therefore, their production was stopped as required by the Montreal Protocol in 1987.

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

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

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

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

Emissions of GHGs contributing to global climate change are largely attributable to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. About three-quarters of human emissions of CO_2 to the global atmosphere during the past 20 years are due to fossil fuel burning. Atmospheric concentrations of CO_2, CH_4, and N_2O have increased by at least 40 percent, 150 percent, and 20 percent respectively since the year 1750. GHG emissions are typically expressed in carbon dioxide-equivalents (CO_2e), based on the GHG's Global Warming Potential (GWP). The GWP is dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. For example, one ton of CH_4 has the same contribution to the greenhouse effect as approximately 25 tons of CO_2. Therefore, CH_4 is a much more potent GHG than CO_2. In accordance with SJVAPCD's *CEQA Greenhouse Gas Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects*[16], proposed projects complying with Best Performance Standards (BPS) would be determined to have a less-than-significant impact. Projects not complying with BPS would be considered less than significant if operational GHG emissions would be reduced or mitigated by a minimum of 29 percent, in comparison to business-as-usual (year 2004) conditions. In addition, project-generated emissions complying with an approved plan or mitigation program would also be determined to have a less-than-significant impact.

4.8.2 Impact Analysis

Project Related Emissions

Short-term construction emissions associated with the Project were calculated using CalEEMod, Version 2020.4.0. The emissions modeling includes emissions generated by off-road equipment, haul trucks, and worker commute trips. Emissions were quantified based on an anticipated construction schedule of approximately three to four months. Remaining assumptions were based on the default parameters

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

contained in the model. Modeling assumptions and output files are included in Appendix A. Estimated construction-generated emissions are summarized in Table 4-16. GHGs impact the environment over time as they increase and contribute to climate change. As discussed in Section 4.3, the amount of operational related emissions generated would be considered negligible.

Table 4-16: Short Term Construction Related GHG Emissions

	Emissions (MT CO2e) in Tons per Year
Maximum Annual Construction CO2e Emissions	97.7971
AB 32 Consistency Threshold for Land-Use Development Projects*	1,1OO
AB 32 Consistency Threshold for Stationary Source Projects*	10,000
Threshold Exceeded?	No

* As published in the Bay Area Air Quality Management District's CEQA Air Quality Guidelines. Available online at http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en Accessed 6/26/23.

Construction related generation of GHGs would be a maximum of 97.7971 Metric Tons of Carbon Dioxide Equivalent (MT CO2e) per year. While some operational emissions could result from the proposed Project, this quantity would be negligible. The Project would not exceed the AB 32 consistency threshold for land use projects for both short term construction emissions and long-term operational emissions as a result.

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

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

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

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

4.9 HAZARDS AND HAZARDOUS MATERIALS

Table 4-17: Hazards and Hazardous Materials Impacts

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

4.9.1 Baseline Conditions

Hazardous Materials

The Hazardous Waste and Substances Sites (Cortese) List is a planning document used by the State, local agencies, and developers to comply with CEQA requirements in providing information about the location of hazardous materials release sites. Government Code Section 65962.5 requires the California Environmental Protection Agency to develop at least annually an updated Cortese List. The Department of Toxic Substances Control (DTSC) is responsible for a portion of the information contained in the Cortese List. Other State and local government agencies are required to provide additional hazardous material release information for the Cortese List. DTSC's EnviroStor database provides DTSC's component of Cortese List data (DTSC, 2010). In addition to the EnviroStor database, the State Water Resources Control Board

(SWRCB) GeoTracker database provides information on regulated hazardous waste facilities in California, including underground storage tank (UST) cases and non-UST cleanup programs, including Spills-Leaks-Investigations-Cleanups sites, Department of Defense (DOD)sites, and Land Disposal program. A search of the DTSC EnviroStor database and the SWRCB GeoTracker performed on April 25, 2024, determined that there are no known active hazardous waste generators or hazardous material spill sites within the Project site.[17] [18]

Airports

The Woodlake Municipal Airport is located immediately south of the Project site. The Fresno-Yosemite International Airport is located approximately 42 miles northwest of the Project site.

Emergency Response Plan

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

Sensitive Receptors

Sensitive Receptors are groups that would be more affected by air, noise, and light pollution, pesticides, and other toxic chemicals than others. This includes infants, children under 16, elderly over 65, athletes, and people with cardiovascular and respiratory diseases. High concentrations of these groups would include daycares, residential areas, hospitals, elder care facilities, schools, and parks. The Project site is located within an agricultural and rural setting, there would not be sensitive receptor areas near the basin sites.

4.9.2 Impact Analysis

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

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

a) and b) Less than Significant Impact. There are no designated hazardous materials transportation routes in the vicinity of the Project sites. Additionally, there would be no transport, use, or disposal of hazardous materials associated with the construction, with the exception of diesel fuel for construction equipment. Any potential accidental hazardous materials spills during Project construction are the responsibility of the contractor to remediate in accordance with industry best management practices and State and County regulations. Any impacts would therefore be less than significant.

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

Less than Significant Impact. The Project would not emit hazardous emissions or involve the transport or handling of any hazardous materials, with the exception of diesel for construction equipment. At its nearest

[17] (State Water Resources Control Board 2024)
[18] (Department of Toxic Substances Control 2024)

point the closest school to the Project site is Woodlake High School located approximately .89 miles north of the site. Any impact would be considered less than significant.

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

No Impact. The Project does not involve land that is listed as an active hazardous materials site pursuant to Government Code Section 65962.5 and is not included on a list compiled by DTSC. Both the SWQCB's GeoTracker and DTSC's EnviroStor websites were queried on May 30, 2023, for contaminated groundwater or sites in the area with negative findings. Operation of the stormwater basins would not involve the transport, use, or disposal of hazardous materials and the parcel proposed for the basin has not been identified as active hazardous waste generator or hazardous material spill site. Prior to the start of construction, methodologies for unidentified hazards will be addressed within the construction bid package and based on current construction standards. Therefore, no impact would occur.

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

Less than Significant Impact. There are no private airstrips in the Project vicinity. The Woodlake Municipal Airport is located immediately south of the site. The Project site is located inside the Airport Land Use Plan's Safety Zone 6 (Traffic Pattern Zone).[19] However, the Project does not include residential development, which would require adherence to restrictive development policies provided by the Airport Land Use Commission. The Tulare County Airport Land Use Compatibility Matrix identifies "Public Utility Facilities", under the Institutional, Public and Quasi-Public land use category, as compatible land uses within Safety Zone 6. Furthermore, the proposed land use would not substantially contribute to the severity of an aircraft accident nor result in a substantial safety hazard for people residing or working in the Project area. Thus, any impacts would be less than significant.

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

No Impact. The Project does not involve any physical barriers or interfere with any roadways in such a way that would impede emergency or hazards response; therefore, the Project would not interfere with implementation of an emergency response plan or evacuation plan. There would be no impact.

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

Less than Significant Impact. The Project does not include any residential components, nor would it require any employees to be stationed permanently at the site on a daily basis. Any impacts from directly or indirectly exposing people or structures to injury or death involving a wildland fire would be considered less than significant.

[19] (Tulare County Airport Land Use Commission 2012)

4.10 HYDROLOGY AND WATER QUALITY

Table 4-18: Hydrology and Water Quality Impacts

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

4.10.1 Baseline Conditions

The Project is located within the East Kaweah Groundwater Sustainability Agency (EKGSA) service area, which lies within the Kaweah Subbasin of the San Joaquin Valley Basin. Additionally, The Project site lies within the Upper Cross Creek watershed and the Antelope Creek subwatershed. The nearest surface waters to the Project is the Wutchumna Ditch on site, Antelope Creek is located west of the Project site, and Bravo Lake located east of the Project site.

The Upper Cross Creek watershed is fed by stormwater or snowmelt runoff from upland areas. Antelope creek begins in the mountains to the north before it flows past to the west of the Project site. Antelope creek flows into the Saint Johns River which connects to Cross Creek which then flows into the Tule River.

The Tule River ends in the historic Tulare Lakebed. Wutchumna Ditch receives water from the Kaweah River before it flows past the south boundary of the Project site, and eventually flows into the Saint Johns River.

The Project site, as well as surrounding parcels contain known flood zones as per FEMA's National Flood Hazard Layer Viewer.[20] The City of Woodlake also contain portions of flood zones that suffered heavy damages during the storm season of winter 2023. Flood hazards in the area are further exacerbated by the lack of a Flood Control District in Woodlake.

4.10.2 Impact Analysis

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

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

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

Less than Significant Impact. Project demands for groundwater resources would not substantially deplete groundwater supplies and/or otherwise interfere with groundwater recharge efforts being implemented by Tulare County; rather it would increase the ability of the County to increase groundwater recharge activity. Any impacts would be less than significant.

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

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

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

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

[20] (Federal Emergency Management Agency 2023)

iv. impede or redirect flood flows?

Less than Significant Impact. The proposed improvements, including the new basins, would allow for improved flood water management. The Project would consist of excavating to a uniform depth for the purpose of stormwater capture. In order to minimize erosion and run-off during construction activities, a SWPPP may be implemented, and the contractor would comply with all Cal/OSHA regulations regarding regular maintenance and inspection of equipment, spill prevention, and spill remediation in order to reduce the potential for incidental release of pollutants or hazardous substances onsite. Any impact would be less than significant.

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

Less than Significant Impacts. The Project will develop additional stormwater basins to better capture high flows during flood periods primarily from the Kaweah River through the Wutchumna Ditch. Part of the Project includes improvements and supporting infrastructure associated with connecting the basin cells to Wutchumna Ditch and other local delivery facilities. As previously stated, the City of Woodlake does not currently have a Flood Control District, as such this Project will help in providing much needed flood control measures to the immediate vicinity and the City of Woodlake. Additionally, the Project area is not at risk of tsunami or within a seiche zone. Impacts would be less than significant.

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

Less than Significant Impact. The Project would improve groundwater storage and prevent exceedances of storm water drainage systems or additional polluted runoff by providing a depressional space for surface water. The Project would not substantially alter the course of the flow of a stream or river in which substantial erosion or siltation could occur. Therefore, impacts would be less than significant.

4.10.3 Federal Cross-Cutting Topic

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

The Federal Emergency Management Agency (FEMA) designates flood hazard and frequency for cities and counties on its Flood Insurance Rate Maps. A portion Project site area is within a designated 100-year floodplain, on a floodplain map, or otherwise designated by FEMA.

Rivers and Harbors Act

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

Safe Drinking Water Act, Sole Source Aquifer Protection

The Safe Drinking Water Act (SOWA) required USEPA to establish criteria through which an aquifer may be declared a critical aquifer protection area. Since 1977, it has been used by communities to help prevent contamination of groundwater from federally funded projects. These aquifers are defined as "sole source

aquifers." EPA's Sole Source Aquifer (SSA) Program was established under Section 1424(e) of the SOWA. These are, essentially, aquifers that are the only drinking water supply for the population of a region.

SSA designation protects an area's groundwater resources by requiring USEPA to review all proposed projects within the designated area that will receive federal financial assistance. The SSA Program states that if USEPA determines an area to have an aquifer which is the sole or principal drinking water source for the area, that if contaminated would create a significant hazard to public health, a notice of that determination needs to be published in the Federal Register. After publication of any such notice, no commitment for federal financial aid may be applied for any project that the Administrator determines may contaminate the aquifer through a recharge zone, so as to create a significant hazard to public health.[21]

Pursuant to Section 1424(e), the USEPA has designated six (6) aquifers in Region IX which are the sole or principal source of drinking water for all municipal and private water systems in that watershed, and that if contaminated, would create a significant hazard to public health.

The Project site is not located in within a Sole Source Aquifer area in Region IX.[22]

[21] (US Enviornmental Protection Agency 2022)
[22] (US Environmental Protection Agency 2023)

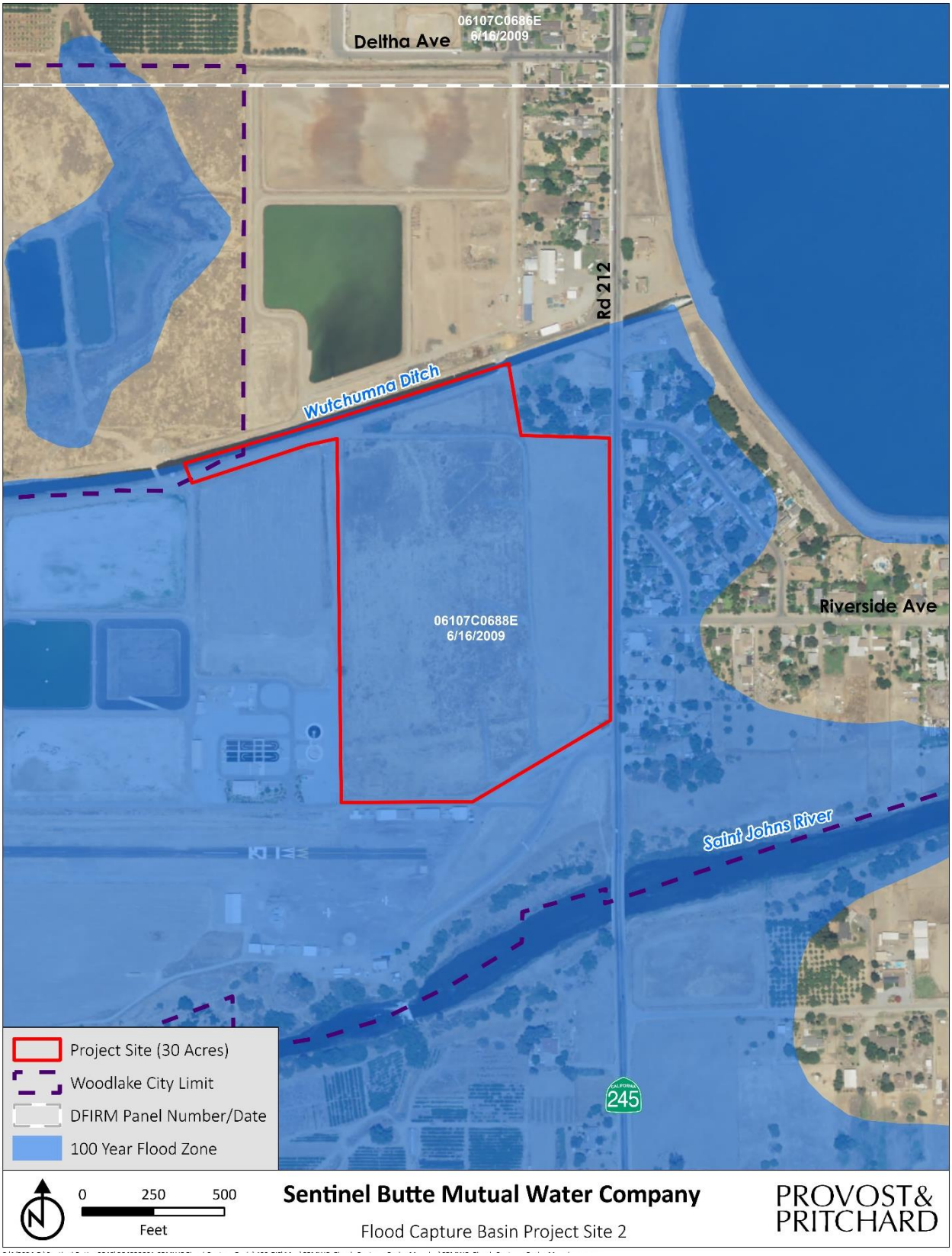

Figure 4-3: FEMA Flood Map

4.11 LAND USE AND PLANNING

Table 4-19: Land Use and Planning Impacts

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

4.11.1 Baseline Conditions

The Project site is designated as Public Facilities by the City of Woodlake General Plan (Refer to Figure 2-4: General Plan Land Use Designation Map) and has a zone district designation of PF (Public Facilities) (Refer to Figure 2-5). Properties to the west of the Project site are currently in use as residential and are designated Low Density Residential by the City of Woodlake and zoned R-L (Low Density Residential). Properties to the south and east have a land use designation of Public Facilities with a zone district of PF (Public Facilities) under the Woodlake Zoning Ordinance. The property to the north is designated as Industrial by the Woodlake General Plan and has a zone district designation of PF (Public Facilities). [23] [24]

4.11.2 Impact Analysis

a) Would the project physically divide an established community?

No Impact. The Project consists of the construction of stormwater capture basins on a site within the city limits of the City of Woodlake. The site is surrounded by properties zoned for and used as public facilities to north, west, and south. The adjacent property to the north is used for retention basins, the City's WWTF is located west of the Project site, and the Woodlake Municipal airport is located to the south. The east there is an existing residential community, however this community is separated from the Project site by State Route 245.

The Project would not physically divide any established community, in fact Project implementation would contribute flood control benefits to the City of Woodlake. The Project would provide improved flood control to the City of Woodlake which currently does not have a Flood Protection District. The need for improved flood control measures were made evident during the storm impact of winter 2023 where the City suffered substantial flooding. Therefore, there would be no impact on the established community of Woodlake.

[23] (Tulare County 2030 General Plan Update 2010)
[24] (City of Woodlake 2023)

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

No Impact. The Project site is zoned PF (Public Facilities). Construction of the Project would not develop new sources of water that would support any new housing or new permanent population growth that would exceed regional or local population projections in the service area. One of the goals of the Project is to recharge stormwater water that will strengthen (both in quantity and quality) the upper unconfined groundwater aquifer in the vicinity of Woodlake. Therefore, no impacts to land use are anticipated. Additionally, the construction and operation of a stormwater basin and supporting infrastructure is consistent with the land use within the vicinity. Therefore, the Project would not conflict with any applicable plans, policies, or regulations. There would be no impact.

4.11.3 Federal Cross-Cutting Topic

Coastal Zone Management Act

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

4.12 MINERAL RESOURCES

Table 4-20: Mineral Resources Impacts

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

4.12.1 Baseline Conditions

The bulk of Tulare County's mineral extraction activities focus on aggregate (sand, gravel, and crushed stone), which is primarily used in building materials. Historically, the Kaweah River, Lewis Creek, and the Tule River have provided the main sources of high-quality sand and gravel in Tulare County. The highest quality deposits are located at the Kaweah and Tule Rivers. According to the Tulare County General Plan Background Report, all of the known potential mineral resource locations are mapped within the foothills and/or along major watercourses.[25] Similarly, the only active oil and gas fields are located in the foothills along Deer Creek.

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

4.12.2 Impact Analysis

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

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

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

[25] (Tulare County 2010)

4.13 NOISE

Table 4-21: Noise Impacts

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

4.13.1 Baseline Conditions

The Project site is situated within a region dominated by agricultural uses, operations which may require diesel-powered equipment or other relatively loud machinery. Rural traffic is also a source of noise in the Project's vicinity with State Route 245 located immediately east of the Project Site. While much of unincorporated Tulare County is composed of discrete small communities and remote rural residences, major noise generators include SR 99, located approximately 20 miles west of the Project site, and other highways, airports, and industrial operations. Maximum noise levels generated by farm-related tractors typically range from 77 to 85 dB at a distance of 50 feet from a tractor, depending on the horsepower of the tractor and the operating conditions. Due to the seasonal nature of the agricultural industry, there are often extended periods of time when little to no noise is generated at the Project site, followed by short-term periods of intensive mechanical equipment usage and corresponding noise generation.

4.13.2 Impact Analysis

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

Less than Significant Impact. The construction phase of the Project would involve temporary noise sources, predominately from off-road equipment, such as excavators, backhoe/loader, drilling rigs, concrete truck, and concrete pumper for approximately six months at each basin site. The Project is located adjacent to agricultural and public facility lands, accustomed to noises associated with farm equipment and public facilities such as the municipal airport and wastewater treatment facility. In addition, construction activities would not occur between the hours of 10:00 PM and 7:00 AM, in accordance with Woodlake Municipal Code Section 8.24.020.

Operational maintenance activities would be on an as-needed basis with routine monitoring performed and would not generate significant new noise. Any impacts would be mild and temporary and therefore, less than significant.

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

Less than Significant Impact. The City of Woodlake has not adopted specific policies pertaining to vibration levels. Typically, substantial ground borne vibration and noise levels occur as a result of blasting, tunneling through rock, pile driving, geotechnical exploration, and passing trains. None of these methods are proposed as part of construction or operation. Additionally, soils in the area are deep and loamy, and are not conducive to transmission of vibration or ground borne noise.

Construction of the Project would require the use of heavy equipment that would temporarily increase ground borne noise and ground vibration levels at properties near the work area. Ground borne vibration or ground borne noise impacts may be produced by construction equipment and by large trucks and would be limited to the construction phase of the Project. Construction activity ground borne noise levels at and near the Project areas would fluctuate, depending on the particular type, number, and duration of uses of various pieces of construction equipment. These impacts would be temporary. The Project will not require jackhammers or pile driving equipment, which further reduces the potential for ground borne vibrations. Project operations would not generate noticeable ground borne vibration or ground borne noise, nor would they exceed FTA thresholds for vibration at the nearest residences. This impact will be less than significant.

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

No Impact. According to the Tulare County Comprehensive Airport Land Use Plan the Project site is located within the Woodlake Airport Land Use Plan but is located outside of the CNEL noise contours.[26] As such the Project would not expose people residing or working in the area to excessive noise. There would be no impact.

[26] (Tulare County Airport Land Use Commission 2012)

4.14 POPULATION AND HOUSING

Table 4-22: Population and Housing Impacts

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

4.14.1 Baseline Conditions

Properties within the immediate vicinity of the Project site and located within Tulare County boundaries are designated and zoned Exclusive Agricultural, while surrounding properties within the city limits of Woodlake are designated as Public Facilities and Industrial and zoned PF (Public Facilities).

According to 2020 Census data, Tulare County's population was 473,117 with an estimated percent change from 2010 to 2020 of 6.9%. The City of Woodlake had a population of 7,419 as of the 2020 Census with a 1.8% change from 2010. As of 2022, there were 154,192 housing units in Tulare County with an average of 3.33 persons per household. The City of Woodlake was listed at 2,273 housing units and 3.68 persons per household[27]

4.14.2 Impact Analysis

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

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

a) and b) Less than Significant Impact. The goal of the Project is not to induce population growth. The Project would construct basins in an effort to capture and use stormwater and flood flows. The Project would not encourage population growth directly or indirectly. No residential structures would be built and the Project would not displace any number of people. Any impacts would be less than significant.

[27] (United States Census Bureau 2022)

4.14.3 Federal Cross-Cutting Topic

Environmental Justice Executive Order 12898

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

USEPA has developed a mapping and screening tool called EJSCREEN that uses nationally consistent data to identify minority or low-income communities. According to EJSCREEN, the proposed Project site is not in an environmental justice community. In addition, the purpose of the Project would be to provide the immediate area and the city of Woodlake with additional flood control measures which are currently lacking. Because the proposed Project would directly benefit the local community only, no disproportional health or environmental effect would be imposed on minority or low-income populations. The proposed Project would not conflict with the purpose and objectives of EO 12898.

4.15 PUBLIC SERVICES

Table 4-23: Public Services

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

4.15.1 Baseline Conditions

Fire Protection: The Project area would be served by the Tulare County Fire Department. The closest fire station is Tulare County Fire Station 25, approximately 8.5 miles east-southeast of the Project.

Police Protection: Police protection is provided by the Tulare County Sheriff. The main Sheriff's Office is located at 2404 W. Burrel Avenue in Visalia, about nine miles northeast of the Project site.

Schools: Pleasant Elementary School, the closest school to the Project site, is located approximately five miles southwest of the Project site.

Parks: The closest to the Project site is Bender Park, approximately five miles to the east of the Project site.

Landfills: The nearest landfill to the Project site is the Resource Management Agency-Visalia Landfill, located approximately 15 miles west of the Project site.

4.15.2 Impact Analysis

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

i. Fire Protection:

ii. Police Protection:

iii. Schools:

iv. Parks:

v. Other public facilities:

a -i-v) No Impacts. The Project would not require new or altered governmental facilities in order to maintain acceptable service ratios, response times, or other performance objectives for public services. The Project involves the construction and operation of stormwater basins and supporting infrastructure so it would have no impact on the listed public services.

4.16 RECREATION

Table 4-24: Recreation Impacts

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

4.16.1 Baseline Conditions

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

The City of Woodlake currently has two developed park sites and one privately owned park site, located in Olivewood Estates. Willow Court Park, containing 3.9 acres, contains a baseball field, playground equipment and a low elevation area designated for storm water detention. Miller-Brown Park, containing 6.7 acres, houses playground equipment, picnic arbors, a skate park feature, and a basketball court. A small watercourse traverses the area. In addition to the city's parks, the athletic fields on the campuses of Woodlake's two school districts provide recreational opportunities after school hours.

4.16.2 Impact Analysis

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

No Impact. The Project would expand an existing recharge facility and supporting infrastructure. The Project would not increase the use of existing neighborhood and regional parks or other recreational facilities. There would be no impact.

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

No Impact. The Project would not include recreational facilities or require the construction or expansion of recreational facilities. The Project would construct stormwater basins and supporting infrastructure to increase the availability of wet-year recharge capacity and to provide water quality benefits to the residents of Woodlake. There would be no impact.

4.17 TRANSPORTATION

Table 4-25: Transportation Impacts

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

4.17.1 Baseline Conditions

The Project site is mostly surrounded by agricultural operations with very little close urban development. There are no State or interstate highways in the immediate vicinity. The Woodlake Municipal Airport is located approximately .4 miles south of the Project site and the Fresno-Yosemite International Airport is located approximately 42 miles northwest of the Project site. The site is currently accessed by Road 212 to the east, and this is not expected to change.

4.17.2 Impact Analysis

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

No Impact. The Project would construct stormwater basins and supporting infrastructure to increase the availability of wet-year recharge capacity and to provide water quality benefits to the residents of Tulare County. No additional roads would be constructed as a result of the Project. The Project would not affect a plan, ordinance, or policy addressing the circulation system, therefore it would not conflict with a plan, ordinance, or policy addressing the circulation system. There would be no impact.

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

Less than Significant Impact. Less than Significant Impact. Construction traffic associated with the Project would be temporary for excavation of soil, grading, site preparation, and construction of the basins. Operational traffic would consist of as-needed maintenance trips. Due to the nature of the Project, the Project would not significantly conflict or be inconsistent with CEQA Guidelines section 15064.3 subdivision (b). Impacts would be less than significant.

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

No Impact. The Project does not involve geometric roadway features or propose incompatible uses. No additional roads would be constructed as a result of the Project. There would be no impact.

d) Would the project result in inadequate emergency access?

No Impact. The Project would have no lasting impact on existing roads or emergency access routes as it involves the expansion of an existing flood capture basin. There would be no impact.

4.18 TRIBAL CULTURAL RESOURCES

Table 4-26: Tribal Cultural Resources Impacts

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

4.18.1 Baseline Conditions

Tulare County is an archaeologically and culturally significant area and has one of the densest Native American populations in North America. Archaeological sites associated with the Santa Rosa Rancheria Tachi Yokut exists throughout the County, particularly adjacent to existing and former natural water and food sources. Many Yokut sites have been located, and the potential for remaining undiscovered sites within the County is high.

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

Public Resources Code Section 21080.3.1, et seq. (codification of AB 52, 2013-14) requires that a lead agency, within 14 days of determining that it would undertake a project, must notify in writing any California Native American Tribe traditionally and culturally affiliated with the geographic area of the project if that Tribe has previously requested notification about projects in that geographic area. The notice must briefly describe the project and inquire whether the Tribe wishes to initiate request formal consultation. Tribes have 30 days from receipt of notification to request formal consultation. The lead agency then has 30 days to initiate the consultation, which then continues until the parties come to an

agreement regarding necessary mitigation or agree that no mitigation is needed, or one or both parties determine that negotiation occurred in good faith, but no agreement would be made.

EKGSA, as a lead agency, has not received any written correspondence from any tribes , pursuant to PRC Section 21080.3.1 requesting notification of proposed Project.

Native American Outreach

The NAHC was contacted in July 2023, and they were provided with a brief description of the Project and a map showing its location and requested a search of the Sacred Lands File to determine if any Native American resources have been recorded in the immediate APE. The NAHC identifies, catalogs, and protects Native American cultural resources -- ancient places of special religious or social significance to Native Americans and known ancient graves and cemeteries of Native Americans on private and public lands in California. The NAHC is also charged with ensuring California Native American tribes' accessibility to ancient Native American cultural resources on public lands, overseeing the treatment and disposition of inadvertently discovered Native American human remains and burial items, and administering the California Native American Graves Protection and Repatriation Act, among many other powers and duties. NAHC provide a current list of Native American Tribal contacts to notify of the Project. The ten tribal representatives identified by NAHC were contacted in writing via United States Postal Service in a letter mailed July 25, 2023, informing each Tribal contact of the Project.

4.18.2 Impact Assessment

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

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

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

a-i through a- Less than Significant Impact with Mitigation Incorporated. A search of the NAHC Sacred Lands File was completed for the Project APE. No tribal cultural resources were identified. Additionally, a historical records search was conducted at the SSJVIC, California State University, Bakersfield. This search also determined that there are no historical resources that have been recorded present on-site.

There is little chance the Project would cause a substantial adverse change to the significance of a tribal cultural resource as defined. Mitigation Measures **CUL-1 and CUL-2,** described in Section 4.5.3 are recommended in the event cultural materials or human remains are unearthed during excavation or construction. Implementation of mitigation measures outlined above would reduce impacts to tribal cultural resources to less than significant impacts. (see Appendix C)

4.18.3 Mitigation

See **CUL-1** and **CUL-2** outlined above in Section 4.5.3

4.19 UTILITIES AND SERVICE SYSTEMS

Table 4-27: Utilities and Service Systems Impacts

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

4.19.1 Baseline Conditions

Water Supply

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

Wastewater Collection and Treatment

The City of Woodlake owns and operates their WWTF located in southwest portion of the City, just north of the airport. This is the closest wastewater facility to Project site, located less than one half-mile southeast of the site. However, no wastewater would be generated during Project construction or operation.

Landfills

The closest landfill to the Project site is Resource Management Agency-Visalia Landfill which is approximately 15 miles west of the Project site; however, no significant solid waste would be generated during Project construction or operation.

4.19.2 Impact Analysis

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

No Impact. The Project would not require construction of new or relocation or expansion of existing facilities for water, wastewater treatment, storm water drainage, electric power, natural gas, or telecommunications. There would be no impact.

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

No Impact. The Project consists of the expansion of an existing flood capture basins and the construction of new basin cells, on approximately 27 acres total. The stormwater would be used in the efforts to achieve groundwater sustainability. Project operation is passive and would not reduce the area's available water supply under any scenario. There would be no impact.

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

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

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

No Impact. The Project would generate some solid waste during construction; however, it would be temporary and properly disposed of during construction and upon completion. Any impacts with regards to solid waste would be less than significant.

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

No Impact. The proposed Project would continue to comply with any federal, State, and local regulations related to solid waste. There would be no impact.

4.20 WILDFIRE

Table 4-28: Wildfire Impacts

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

4.20.1 Baseline Conditions

The Project site is located approximately 1.8-miles southwest of the nearest State Responsibility Area and approximately 10.5 miles southwest of the nearest Very High Fire Hazard Severity Area according to CalFIRE.[28] The Project site is not located in an area that is known for wildfires and would not face any potentially impacts due to wildfire.

4.20.2 Impact Analysis

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

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

c) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project require the installation or maintenance of associated infrastructure (such as roads, fuel

[28] (CAL FIRE 2022)

breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

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

a-d) No Impact. The Project site is not located in or near a State Responsibility Areas nor located on lands classified as very high fire hazard severity zones. The nearest SRA Fire Hazard Zone is located northeast of the Project site. Expansion of the existing basins and construction of the new basin cells would not impede any existing or future emergency response plans. The Project site and the surrounding lands consist of agricultural and related infrastructure on relatively flat and open land. Additionally, the Project does not include the construction of any residential components or structures of any kind, nor would it require any employees to be stationed permanently at the site. There would be no impact.

4.21 CEQA MANDATORY FINDINGS OF SIGNIFICANCE

Table 4-29: CEQA Mandatory Findings of Significance

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

4.21.1 Statement of Findings

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

Less than Significant Impacts with Mitigation Incorporated. The analysis conducted in this IS/MND results in a determination that the Project, with incorporation of mitigation measures, will have a less than significant effect on the environment. The potential for impacts to biological resources, cultural resources, and tribal cultural resources from the construction and operation of the Project will be less than significant with the incorporation of the mitigation measures discussed in Table 5-1. Accordingly, the Project will involve no potential for significant impacts through the degradation of the quality of the environment, the reduction in the habitat or population of fish or wildlife, including endangered plants or animals, the elimination of a plant or animal community or example of a major period of California history or prehistory.

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

Less than Significant Impact. CEQA Guidelines Section 15064(i) States that a Lead Agency shall consider whether the cumulative impact of a project is significant and whether the effects of the project are cumulatively considerable. The assessment of the significance of the cumulative effects of a project must, therefore, be conducted in connection with the effects of past projects, other current projects, and probable future projects. The Project would include the construction of stormwater basins and supporting infrastructure. No additional roads would be constructed as a result of the Project, nor would any additional public services be required. The Project is not expected to result in direct or indirect population growth. Therefore, implementation of the Project would not result in significant cumulative impacts and all potential impacts would be reduced to less than significant through the implementation of mitigation measures and basic regulatory requirements incorporated into future Project design.

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

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

CHAPTER 5 MITIGATION, MONITORING, AND REPORTING PROGRAM

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

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

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

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

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

Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**Frequency of Monitoring**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
the individual will either be allowed to leave of its own volition or will be captured by the qualified biologist (must possess appropriate collecting/handling permits) and relocated out of harm's way to the nearest suitable habitat beyond the influence of the Project work area. "Take" of a state or federal special status (rare, California Species of Special Concern, threatened, or endangered) species is prohibited.					
Northwestern Pond Turtles					
BIO – 3 (Pre-construction Survey)					
Within seven (7) days prior to the start of construction, a qualified biologist will conduct a pre-construction survey for northwestern pond turtle within the Project site and within surrounding areas up to 330 feet. Pre-construction surveys will be conducted in accordance with the draft Western Pond Turtle (Emys marmorata) Visual Survey Protocol for the Southcoast Ecoregion (United States Geological Survey 2006). If no northwestern pond turtles are observed during the pre-construction survey, then construction activities may begin. If construction is delayed or halted for more than seven (7) days, another pre-construction survey for northwestern pond turtle will be conducted. If the surveys result in the identification of a northwestern pond turtle or an individual is found on the site during construction activities, it will be allowed to leave the site on its own and the qualified biologist shall determine appropriate buffers to be implemented to avoid impacts to the individual(s).	7 days Prior to construction	Once, Prior to the start of construction	SBMWC		
BIO - 4 (Monitor)					
If northwestern pond turtles are observed on the Project site, a qualified biologist will conduct a pre-activity clearance survey each day and remain onsite to oversee all vegetation clearing and ground disturbing activities	During construction activities	Daily, During construction activities	SBMWC		
BIO-5 (Formal Consultation)					
If northwestern pond turtles within the site cannot be avoided, the Project proponent will initiate protection plans and/or relocation plans in consultation with CDFW and/or USFWS	Prior to construction activities	Once, Prior to construction activities	SBMWC		

Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**Frequency of Monitoring**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
Project-Related Mortality and/or Nest Abandonment of Migratory Birds, Raptors, and Special Status Birds					
BIO-6 (Pre-construction Survey and Avoidance Buffers)					
Within seven (7) days prior to the start of construction, a qualified biologist (someone familiar with this species and their habitats) will conduct a pre-construction survey for western spadefoot within the Project site and surrounding areas up to 50 feet. If no western spadefoot individuals are observed during the pre-construction survey, then construction activities may begin. If construction is delayed or halted for more than seven (7) days, another pre-construction survey for western spadefoot will be conducted. If the surveys result in the identification of a western spadefoot or an individual is found on the site during construction activities, it will be allowed to leave the site on its own and the qualified biologist shall determine appropriate buffers to be implemented to avoid impacts to the individual(s)	7 days Prior to construction	Once, Prior to the start of construction	SBMWC		
BIO-7 (Monitor)					
If western spadefoot individuals are observed on the Project site, a qualified biologist will conduct a pre-activity clearance survey each day and remain onsite to oversee all vegetation clearing and ground disturbing activities until the individual(s) have left the site	During construction activities	Daily, During construction activities	SBMWC		
BIO-8 (Formal Consultation)					
If western spadefoots within the site cannot be avoided, the Project proponent will initiate protection plans and/or relocation plans in consultation with CDFW and/or USFWS	Prior to construction activities	Once, Prior to construction activities	SBMWC		
Project-Related Mortality and/or Nest Abandonment of Migratory Birds, Raptors, and Special Status Birds					
BIO – 9 (Avoidance)					
The Project's construction activities will occur, if feasible, between August 15 and January 31 (outside of the nesting bird season) to avoid impacts to nesting birds.	August 15-January 31	During construction	SBMWC		
BIO – 10 (Pre-construction Survey)					
If activities must occur within the nesting bird season (February 1 to August 14), a qualified biologist will conduct a pre-construction survey for active nests within five (5) calendar days prior to the start of construction. It will be completed within the Project site, and up to 100	During active nesting season February 1-August 14	Once prior to initiating any ground disturbances	SBMWC		

Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**Frequency of Monitoring**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
feet outside of the Project site for nesting migratory birds and up to 500 feet outside of the project site for nesting raptors. Raptor nests are considered "active" upon the nest-building stage. If no active nests are observed, no further mitigation is required.					
BIO – 11 (Avoidance Buffers)					
On discovery of any active nests or breeding colonies near work areas, a qualified biologist will determine appropriate avoidance buffer distances based on applicable CDFW and/or USFWS guidelines, the biology of the species, conditions of the nest(s), and the level of Project disturbance. If necessary, avoidance buffers will be identified with flagging, fencing, or other easily visible means, and will be maintained until the biologist has determined that the nestlings have fledged	During active nesting season February 1-August 14	As determined needed by qualified biologist during construction activities	SBMWC		
Special Status Plant Species					
BIO-12 (Focused Botanical Survey)					
A qualified botanist/biologist will conduct focused botanical surveys during the appropriate blooming seasons for alkali-sink goldfields, Coulter's goldfields, Greene's tuctoria, Hoover's spurge, San Joaquin adobe sunburst, San Joaquin Valley Orcutt grass, Sanford's arrowhead, and spiny-sepaled button-celery, according to CDFW's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (2018) for areas where ground disturbance will occur and prior to the start of construction. Reference sites for these plants will be visited prior to completing surveys within the Project site.	Prior to construction activities	Once, Prior to construction activities	SBMWC		
BIO-13 (Avoidance)					
If Sanford's arrowhead individuals are identified during the focused botanical surveys, an avoidance buffer and, if necessary, use of exclusion fencing, will be placed around the area as to not disturb the plants or its root system..	During construction activities	As determined needed by qualified biologist during construction activities	SBMWC		

Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**Frequency of Monitoring**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
BIO-14 (Formal Consultation)					
If Sanford's arrowhead individuals are detected within Project work areas during the focused botanical surveys, and the plants cannot be avoided, the Project proponent will initiate consultation with CNPS and/or CDFW to determine next steps for relocation.	Prior to construction activities	Once, Prior to construction activities	SBMWC		
Project-Related Impacts to Wildlife Movement Corridors and Native Wildlife Nursery Sites					
BIO-15 (Wildlife Access)					
Construction activities will be limited to a half hour after sunrise through a half hour before sunset to reduce potential impacts to wildlife movement corridors.	During construction activities	During construction activities	SBMWC		
BIO-16 (Pre-Construction Survey)					
If the wetlands and depressions or the 50-foot buffer must be impacted when the wetlands or depressions are inundated, a preconstruction survey will be completed within five days prior to disturbance. It will include a qualified biologist using a seine, dip-net, or other net to look for amphibian eggs or larvae. If no eggs or larvae are observed, the Project may proceed.	5 days prior to construction activities	Once, Prior to construction activities	SBMWC		
BIO-17 (Avoidance Buffer)					
Should any amphibian eggs or larvae be observed during the pre-construction survey, a 50-foot buffer will be placed around the wetland/depression habitat that contains the eggs or larvae and will remain in place until a qualified biologist has determined that the young have dispersed, or the wetlands or depressions are no longer inundated.	Prior to Construction activities	Once, Prior to construction activities	SBMWC		
Cultural Resources					
CUL – 1 (Archaeological Remains)					
Should archaeological remains or artifacts be unearthed during any stage of project activities, work in the area of discovery shall cease until the area is evaluated by a qualified archaeologist. If mitigation is warranted, the Project proponent shall abide by recommendations of the archaeologist.	During Construction Activities	During Construction	SBMWC		

Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**Frequency of Monitoring**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
CUL – 2 (Human Remains)					
In the event that any human remains are discovered on the Project site, the Tulare County Coroner must be notified of the discovery (California Health and Safety Code, Section 7050.5) and all activities in the immediate area of the find or in any nearby area reasonably suspected to overlie adjacent human remains must cease until appropriate and lawful measures have been implemented. If the Coroner determines that the remains are not recent, but rather of Native American origin, the Coroner shall notify the Native American Heritage Commission (NAHC) in Sacramento within 24 hours to permit the NAHC to determine the Most Likely Descendent of the deceased Native American.	During Construction Activities	During Construction	SBMWC		
Tribal Cultural Resources					
See **CUL-1** and **CUL-2** above					

CHAPTER 6 REFERENCES

CAL FIRE. 2022. *Cal FIRE. Fire Hazard Severity Zones Maps.* Accessed May 2023. https://osfm.fire.ca.gov/divisions/community-wildfire-preparedness-and-mitigation/wildland-hazards-building-codes/fire-hazard-severity-zones-maps/.

—. 2022. *Fire Hazard Severity Zones in State Responisbility Area.* Accessed April 2023. https://calfire-forestry.maps.arcgis.com/apps/webappviewer/index.html?id=4466cf1d2b9947bea1d4269997e86553.

California Department of Conservation. 2024. *California Important Farmland Finder.* Accessed March 2024. https://maps.conservation.ca.gov/DLRP/CIFF/.

—. 2023. *Fault Activity Map of California.* Accessed March 2024. https://maps.conservation.ca.gov/cgs/fam/.

California Department of Transportation. 2023. *California State Scenic Highways.* Accessed March 2024. https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aacaa.

California Department of Water Resources . 2023. *Dam Breach Inundation Map* . Accessed May 2023. https://fmds.water.ca.gov/webgis/?appid=dam_prototype_v2.

City of Woodlake . 2023. *Planning Documents- Zoning Ordinance* . Accessed June 2023. https://cityofwoodlake.com/departments/planning/.

Department of Toxic Substances Control. 2024. *EnviroStor.* Accessed April 2024. https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=Woodlake%2C+CA+.

Federal Emergency Management Agency. 2023. *FEMA National Flood Hazard Layer (NFHL)* . Accessed July 2023. https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd.

Federal Transit Administration. n.d. *Transit Noise and Vibration Impact Assessment Maual.* https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123 0.pdf.

National Wild and Scenic River System. 2022. *National Wild and Scenic River System-California.* Accessed July 2023. https://www.rivers.gov/california.php.

San Joaquin Valley Air Pollution Control District. 2012. *Air Quality Attainment Plans.* Accessed June 22, 2023. http://valleyair.org/Air_Quality_Plans/air-quality-plans.htm.

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

State Water Resources Control Board. 2024. *GeoTracker.* Accessed April 2024. https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=woodlake+.

Tulare County . 2010. "Tulare County General Plan 2030 Update Background Report." Accessed May 2023. http://generalplan.co.tulare.ca.us/documents/GeneralPlan2010/BackgroundReport.pdf.

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

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

Tulare County Agricultural Commissioner. 2023. *Tulare County Crop and Livestock Report .* Accessed January 2024. https://agcomm.co.tulare.ca.us/pest-exclusion-standardization/crop-reports1/crop-reports-2021-2030/crop-and-livestock-report-2022/.

Tulare County Airport Land Use Commission . 2012. "Tulare County Comprehensive Airport Land Use Plan ." Accessed May 2023. https://tularecounty.ca.gov/rma/rma-documents/planning-documents/tulare-county-comprehensive-airport-land-use-plan/.

Tulare County. 2012. "Tulare County General Plan 2030 Update." Accessed March 2023. http://generalplan.co.tulare.ca.us/documents/GP/001Adopted%20Tulare%20County%20General%20Plan%20Materials/000General%20Plan%202030%20Part%20I%20and%20Part%20II/GENERAL%20PLAN%202012.pdf.

United States Census Bureau. 2022. *Quick Facts-Woodlake city, California; Tulare County, California.* Accessed May 2023. https://www.census.gov/quickfacts/fact/table/woodlakecitycalifornia,tularecountycalifornia/PST045223.

United States Department of Transportation. Federal Highway Administration. 2019. *United States Department of Transportation. Federal Highway Administration.* https://www.fhwa.dot.gov/byways/states/CA/maps.

United States Environmental Protection Agency. 2023. *Current Nonattainment Counties for All Criteria Pollutants.* Accessed June 22, 2023. https://www3.epa.gov/airquality/greenbook/ancl.html.

—. n.d. *United States Environmental Protection Agency WATERS GeoViewer.* https://www.epa.gov/waterdata/waters-geoviewer.

United States Geological Survey. 2023. *Areas of Land Subsidence in California.* Accessed May 2023. https://ca.water.usgs.gov/land_subsidence/california-subsidence-areas.html.

United States Geological Survey Science Explorer. 2020. *United States Geological Survey Science Explorer.* https://www.usgs.gov/science-explorer-results?es=Liquefaction+Susceptibility.

United States Geological Survey. 2006. *United States Geological Survey Western Pond Turtle (Emys marmorata) Visual Survey Protocol for the Southcoast Ecoregion.* Accessed May 2023. https://sdmmp.com/upload/SDMMP_Repository/0/4fnpv18xm0sqtw29j7d3rz56bkychg.pdf.

US Enviornmental Protection Agency . 2022. *Overview of the Drinking Water Sole Source Aquifer Program.* Accessed July 2023. https://www.epa.gov/dwssa/overview-drinking-water-sole-source-aquifer-program.

US Environmental Protection Agency . 2023. *Map of Sole Source Aquifer Locations.* Accessed July 2023. https://www.epa.gov/dwssa/map-sole-source-aquifer-locations.

Weather US. 2023. "Climate and monthly weather forecast Woodlake, CA." Accessed May 2023. https://www.weather-us.com/en/california-usa/woodlake-climate#temperature.

Appendix A: CalEEMod Output Files

SBMWC - Tulare County, Annual

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

SBMWC

Tulare County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	44.03	Acre	44.03	1,917,946.80	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	51
Climate Zone	3			**Operational Year**	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Construction Schedule

Grading - acres graded

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	75.00	45.00
tblConstructionPhase	NumDays	30.00	15.00
tblConstructionPhase	PhaseEndDate	6/7/2024	1/26/2024
tblConstructionPhase	PhaseEndDate	2/23/2024	11/24/2023
tblConstructionPhase	PhaseStartDate	2/24/2024	11/25/2023

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

tblConstructionPhase	PhaseStartDate	1/13/2024	11/6/2023
tblGrading	AcresOfGrading	135.00	225.00
tblGrading	AcresOfGrading	22.50	45.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

2.0 Emissions Summary

SBMWC - Tulare County, Annual

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

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0632	0.6392	0.5026	1.1000e-003	0.3587	0.0273	0.3860	0.1326	0.0251	0.1577	0.0000	97.0078	97.0078	0.0303	1.1000e-004	97.7972
2024	0.0330	0.3244	0.2844	6.4000e-004	0.1820	0.0134	0.1954	0.0466	0.0123	0.0589	0.0000	56.4014	56.4014	0.0177	5.0000e-005	56.8589
Maximum	**0.0632**	**0.6392**	**0.5026**	**1.1000e-003**	**0.3587**	**0.0273**	**0.3860**	**0.1326**	**0.0251**	**0.1577**	**0.0000**	**97.0078**	**97.0078**	**0.0303**	**1.1000e-004**	**97.7972**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0632	0.6392	0.5026	1.1000e-003	0.1428	0.0273	0.1701	0.0525	0.0251	0.0776	0.0000	97.0077	97.0077	0.0303	1.1000e-004	97.7971
2024	0.0330	0.3244	0.2844	6.4000e-004	0.0725	0.0134	0.0859	0.0186	0.0123	0.0309	0.0000	56.4013	56.4013	0.0177	5.0000e-005	56.8589
Maximum	**0.0632**	**0.6392**	**0.5026**	**1.1000e-003**	**0.1428**	**0.0273**	**0.1701**	**0.0525**	**0.0251**	**0.0776**	**0.0000**	**97.0077**	**97.0077**	**0.0303**	**1.1000e-004**	**97.7971**

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**60.18**	**0.00**	**55.97**	**60.34**	**0.00**	**49.92**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**11-6-2023**	**2-5-2024**	1.0401	1.0401
		Highest	1.0401	1.0401

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1640	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.9000e-004	7.9000e-004	0.0000	0.0000	8.4000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1640**	**0.0000**	**4.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**7.9000e-004**	**7.9000e-004**	**0.0000**	**0.0000**	**8.4000e-004**

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

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1640	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.9000e-004	7.9000e-004	0.0000	0.0000	8.4000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1640**	**0.0000**	**4.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**7.9000e-004**	**7.9000e-004**	**0.0000**	**0.0000**	**8.4000e-004**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/6/2023	11/24/2023	5	15	
2	Grading	Grading	11/25/2023	1/26/2024	5	45	

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

Acres of Grading (Site Preparation Phase): 45

Acres of Grading (Grading Phase): 225

Acres of Paving: 44.03

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	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	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
Site Preparation	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

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

3.2 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1594	0.0000	0.1594	0.0771	0.0000	0.0771	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0200	0.2064	0.1368	2.9000e-004		9.5000e-003	9.5000e-003		8.7400e-003	8.7400e-003	0.0000	25.0880	25.0880	8.1100e-003	0.0000	25.2909
Total	**0.0200**	**0.2064**	**0.1368**	**2.9000e-004**	**0.1594**	**9.5000e-003**	**0.1689**	**0.0771**	**8.7400e-003**	**0.0858**	**0.0000**	**25.0880**	**25.0880**	**8.1100e-003**	**0.0000**	**25.2909**

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	6.2000e-004	4.7000e-004	5.3000e-003	1.0000e-005	1.6700e-003	1.0000e-005	1.6800e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.3152	1.3152	4.0000e-005	4.0000e-005	1.3276
Total	**6.2000e-004**	**4.7000e-004**	**5.3000e-003**	**1.0000e-005**	**1.6700e-003**	**1.0000e-005**	**1.6800e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.3152**	**1.3152**	**4.0000e-005**	**4.0000e-005**	**1.3276**

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

3.2 Site Preparation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0622	0.0000	0.0622	0.0301	0.0000	0.0301	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0200	0.2064	0.1368	2.9000e-004		9.5000e-003	9.5000e-003		8.7400e-003	8.7400e-003	0.0000	25.0880	25.0880	8.1100e-003	0.0000	25.2908
Total	**0.0200**	**0.2064**	**0.1368**	**2.9000e-004**	**0.0622**	**9.5000e-003**	**0.0717**	**0.0301**	**8.7400e-003**	**0.0388**	**0.0000**	**25.0880**	**25.0880**	**8.1100e-003**	**0.0000**	**25.2908**

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	6.2000e-004	4.7000e-004	5.3000e-003	1.0000e-005	1.6700e-003	1.0000e-005	1.6800e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.3152	1.3152	4.0000e-005	4.0000e-005	1.3276
Total	**6.2000e-004**	**4.7000e-004**	**5.3000e-003**	**1.0000e-005**	**1.6700e-003**	**1.0000e-005**	**1.6800e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.3152**	**1.3152**	**4.0000e-005**	**4.0000e-005**	**1.3276**

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

3.3 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1946	0.0000	0.1946	0.0543	0.0000	0.0543	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0415	0.4314	0.3506	7.8000e-004		0.0178	0.0178		0.0164	0.0164	0.0000	68.1690	68.1690	0.0221	0.0000	68.7202
Total	**0.0415**	**0.4314**	**0.3506**	**7.8000e-004**	**0.1946**	**0.0178**	**0.2124**	**0.0543**	**0.0164**	**0.0706**	**0.0000**	**68.1690**	**68.1690**	**0.0221**	**0.0000**	**68.7202**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1400e-003	8.8000e-004	9.8200e-003	3.0000e-005	3.1000e-003	2.0000e-005	3.1100e-003	8.2000e-004	1.0000e-005	8.4000e-004	0.0000	2.4356	2.4356	7.0000e-005	7.0000e-005	2.4585
Total	**1.1400e-003**	**8.8000e-004**	**9.8200e-003**	**3.0000e-005**	**3.1000e-003**	**2.0000e-005**	**3.1100e-003**	**8.2000e-004**	**1.0000e-005**	**8.4000e-004**	**0.0000**	**2.4356**	**2.4356**	**7.0000e-005**	**7.0000e-005**	**2.4585**

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

3.3 Grading - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0759	0.0000	0.0759	0.0212	0.0000	0.0212	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0415	0.4314	0.3506	7.8000e-004		0.0178	0.0178		0.0164	0.0164	0.0000	68.1689	68.1689	0.0221	0.0000	68.7201
Total	**0.0415**	**0.4314**	**0.3506**	**7.8000e-004**	**0.0759**	**0.0178**	**0.0937**	**0.0212**	**0.0164**	**0.0375**	**0.0000**	**68.1689**	**68.1689**	**0.0221**	**0.0000**	**68.7201**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1400e-003	8.8000e-004	9.8200e-003	3.0000e-005	3.1000e-003	2.0000e-005	3.1100e-003	8.2000e-004	1.0000e-005	8.4000e-004	0.0000	2.4356	2.4356	7.0000e-005	7.0000e-005	2.4585
Total	**1.1400e-003**	**8.8000e-004**	**9.8200e-003**	**3.0000e-005**	**3.1000e-003**	**2.0000e-005**	**3.1100e-003**	**8.2000e-004**	**1.0000e-005**	**8.4000e-004**	**0.0000**	**2.4356**	**2.4356**	**7.0000e-005**	**7.0000e-005**	**2.4585**

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

3.3 Grading - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1795	0.0000	0.1795	0.0460	0.0000	0.0460	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0322	0.3238	0.2772	6.2000e-004		0.0134	0.0134		0.0123	0.0123	0.0000	54.5195	54.5195	0.0176	0.0000	54.9603
Total	**0.0322**	**0.3238**	**0.2772**	**6.2000e-004**	**0.1795**	**0.0134**	**0.1929**	**0.0460**	**0.0123**	**0.0583**	**0.0000**	**54.5195**	**54.5195**	**0.0176**	**0.0000**	**54.9603**

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	8.4000e-004	6.1000e-004	7.1900e-003	2.0000e-005	2.4800e-003	1.0000e-005	2.4900e-003	6.6000e-004	1.0000e-005	6.7000e-004	0.0000	1.8818	1.8818	5.0000e-005	5.0000e-005	1.8986
Total	**8.4000e-004**	**6.1000e-004**	**7.1900e-003**	**2.0000e-005**	**2.4800e-003**	**1.0000e-005**	**2.4900e-003**	**6.6000e-004**	**1.0000e-005**	**6.7000e-004**	**0.0000**	**1.8818**	**1.8818**	**5.0000e-005**	**5.0000e-005**	**1.8986**

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

3.3 Grading - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0700	0.0000	0.0700	0.0179	0.0000	0.0179	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0322	0.3238	0.2772	6.2000e-004		0.0134	0.0134		0.0123	0.0123	0.0000	54.5195	54.5195	0.0176	0.0000	54.9603
Total	**0.0322**	**0.3238**	**0.2772**	**6.2000e-004**	**0.0700**	**0.0134**	**0.0834**	**0.0179**	**0.0123**	**0.0302**	**0.0000**	**54.5195**	**54.5195**	**0.0176**	**0.0000**	**54.9603**

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	8.4000e-004	6.1000e-004	7.1900e-003	2.0000e-005	2.4800e-003	1.0000e-005	2.4900e-003	6.6000e-004	1.0000e-005	6.7000e-004	0.0000	1.8818	1.8818	5.0000e-005	5.0000e-005	1.8986
Total	**8.4000e-004**	**6.1000e-004**	**7.1900e-003**	**2.0000e-005**	**2.4800e-003**	**1.0000e-005**	**2.4900e-003**	**6.6000e-004**	**1.0000e-005**	**6.7000e-004**	**0.0000**	**1.8818**	**1.8818**	**5.0000e-005**	**5.0000e-005**	**1.8986**

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

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

4.3 Trip Type Information

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

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.509869	0.051139	0.167106	0.174849	0.031609	0.007996	0.012006	0.015707	0.000636	0.000471	0.023554	0.001465	0.003592

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

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

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

Mitigated

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

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

5.3 Energy by Land Use - Electricity

Unmitigated

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

Mitigated

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

6.0 Area Detail

6.1 Mitigation Measures Area

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1640	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.9000e-004	7.9000e-004	0.0000	0.0000	8.4000e-004
Unmitigated	0.1640	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.9000e-004	7.9000e-004	0.0000	0.0000	8.4000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0400					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1240					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.9000e-004	7.9000e-004	0.0000	0.0000	8.4000e-004
Total	**0.1640**	**0.0000**	**4.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**7.9000e-004**	**7.9000e-004**	**0.0000**	**0.0000**	**8.4000e-004**

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

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0400					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1240					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.9000e-004	7.9000e-004	0.0000	0.0000	8.4000e-004
Total	**0.1640**	**0.0000**	**4.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**7.9000e-004**	**7.9000e-004**	**0.0000**	**0.0000**	**8.4000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

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

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

7.2 Water by Land Use

Unmitigated

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

7.2 Water by Land Use

Mitigated

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

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

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

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

8.2 Waste by Land Use

Unmitigated

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

Mitigated

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

9.0 Operational Offroad

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

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

SBMWC - Tulare County, Summer

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

SBMWC

Tulare County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	44.03	Acre	44.03	1,917,946.80	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	51
Climate Zone	3			**Operational Year**	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Construction Schedule

Grading - acres graded

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	75.00	45.00
tblConstructionPhase	NumDays	30.00	15.00
tblConstructionPhase	PhaseEndDate	6/7/2024	1/26/2024
tblConstructionPhase	PhaseEndDate	2/23/2024	11/24/2023
tblConstructionPhase	PhaseStartDate	2/24/2024	11/25/2023

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

tblConstructionPhase	PhaseStartDate	1/13/2024	11/6/2023
tblGrading	AcresOfGrading	135.00	225.00
tblGrading	AcresOfGrading	22.50	45.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

2.0 Emissions Summary

SBMWC - Tulare County, Summer

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

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	3.4249	34.5809	28.9854	0.0644	21.4777	1.4257	22.7448	10.3352	1.3117	11.5009	0.0000	6,245.4080	6,245.4080	1.9501	6.0200e-003	6,295.9548
2024	3.3127	32.4341	28.5762	0.0643	11.5801	1.3366	12.9166	3.9505	1.2296	5.1802	0.0000	6,235.6202	6,235.6202	1.9489	5.5100e-003	6,285.9843
Maximum	**3.4249**	**34.5809**	**28.9854**	**0.0644**	**21.4777**	**1.4257**	**22.7448**	**10.3352**	**1.3117**	**11.5009**	**0.0000**	**6,245.4080**	**6,245.4080**	**1.9501**	**6.0200e-003**	**6,295.9548**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	3.4249	34.5809	28.9854	0.0644	8.5165	1.4257	9.7837	4.0679	1.3117	5.2337	0.0000	6,245.4080	6,245.4080	1.9501	6.0200e-003	6,295.9548
2024	3.3127	32.4341	28.5762	0.0643	4.6721	1.3366	6.0086	1.5820	1.2296	2.8117	0.0000	6,235.6202	6,235.6202	1.9489	5.5100e-003	6,285.9843
Maximum	**3.4249**	**34.5809**	**28.9854**	**0.0644**	**8.5165**	**1.4257**	**9.7837**	**4.0679**	**1.3117**	**5.2337**	**0.0000**	**6,245.4080**	**6,245.4080**	**1.9501**	**6.0200e-003**	**6,295.9548**

SBMWC - Tulare County, Summer

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	60.10	0.00	55.72	60.45	0.00	51.77	0.00	0.00	0.00	0.00	0.00	0.00

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.8990	4.0000e-005	4.4900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.6400e-003	9.6400e-003	3.0000e-005		0.0103
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.8990**	**4.0000e-005**	**4.4900e-003**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**2.0000e-005**		**9.6400e-003**	**9.6400e-003**	**3.0000e-005**	**0.0000**	**0.0103**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.8990	4.0000e-005	4.4900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.6400e-003	9.6400e-003	3.0000e-005		0.0103
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.8990**	**4.0000e-005**	**4.4900e-003**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**2.0000e-005**		**9.6400e-003**	**9.6400e-003**	**3.0000e-005**	**0.0000**	**0.0103**

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

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/6/2023	11/24/2023	5	15	
2	Grading	Grading	11/25/2023	1/26/2024	5	45	

Acres of Grading (Site Preparation Phase): 45

Acres of Grading (Grading Phase): 225

Acres of Paving: 44.03

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	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

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

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					21.2478	0.0000	21.2478	10.2742	0.0000	10.2742			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647		3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**21.2478**	**1.2660**	**22.5138**	**10.2742**	**1.1647**	**11.4390**		**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

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

3.2 Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0929	0.0588	0.8408	2.0800e-003	0.2299	1.1100e-003	0.2310	0.0610	1.0200e-003	0.0620		210.5373	210.5373	5.2600e-003	5.4200e-003	212.2841
Total	**0.0929**	**0.0588**	**0.8408**	**2.0800e-003**	**0.2299**	**1.1100e-003**	**0.2310**	**0.0610**	**1.0200e-003**	**0.0620**		**210.5373**	**210.5373**	**5.2600e-003**	**5.4200e-003**	**212.2841**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.2866	0.0000	8.2866	4.0069	0.0000	4.0069			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647	0.0000	3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**8.2866**	**1.2660**	**9.5527**	**4.0069**	**1.1647**	**5.1717**	**0.0000**	**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

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

3.2 Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0929	0.0588	0.8408	2.0800e-003	0.2299	1.1100e-003	0.2310	0.0610	1.0200e-003	0.0620		210.5373	210.5373	5.2600e-003	5.4200e-003	212.2841
Total	**0.0929**	**0.0588**	**0.8408**	**2.0800e-003**	**0.2299**	**1.1100e-003**	**0.2310**	**0.0610**	**1.0200e-003**	**0.0620**		**210.5373**	**210.5373**	**5.2600e-003**	**5.4200e-003**	**212.2841**

3.3 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					11.3246	0.0000	11.3246	3.8828	0.0000	3.8828			0.0000			0.0000
Off-Road	3.3217	34.5156	28.0512	0.0621		1.4245	1.4245		1.3105	1.3105		6,011.4777	6,011.4777	1.9442		6,060.0836
Total	**3.3217**	**34.5156**	**28.0512**	**0.0621**	**11.3246**	**1.4245**	**12.7491**	**3.8828**	**1.3105**	**5.1933**		**6,011.4777**	**6,011.4777**	**1.9442**		**6,060.0836**

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

3.3 Grading - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1032	0.0653	0.9342	2.3100e-003	0.2555	1.2300e-003	0.2567	0.0678	1.1300e-003	0.0689		233.9303	233.9303	5.8500e-003	6.0200e-003	235.8713
Total	**0.1032**	**0.0653**	**0.9342**	**2.3100e-003**	**0.2555**	**1.2300e-003**	**0.2567**	**0.0678**	**1.1300e-003**	**0.0689**		**233.9303**	**233.9303**	**5.8500e-003**	**6.0200e-003**	**235.8713**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.4166	0.0000	4.4166	1.5143	0.0000	1.5143			0.0000			0.0000
Off-Road	3.3217	34.5156	28.0512	0.0621		1.4245	1.4245		1.3105	1.3105	0.0000	6,011.4777	6,011.4777	1.9442		6,060.0836
Total	**3.3217**	**34.5156**	**28.0512**	**0.0621**	**4.4166**	**1.4245**	**5.8411**	**1.5143**	**1.3105**	**2.8248**	**0.0000**	**6,011.4777**	**6,011.4777**	**1.9442**		**6,060.0836**

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

3.3 Grading - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1032	0.0653	0.9342	2.3100e-003	0.2555	1.2300e-003	0.2567	0.0678	1.1300e-003	0.0689		233.9303	233.9303	5.8500e-003	6.0200e-003	235.8713
Total	**0.1032**	**0.0653**	**0.9342**	**2.3100e-003**	**0.2555**	**1.2300e-003**	**0.2567**	**0.0678**	**1.1300e-003**	**0.0689**		**233.9303**	**233.9303**	**5.8500e-003**	**6.0200e-003**	**235.8713**

3.3 Grading - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					11.3246	0.0000	11.3246	3.8828	0.0000	3.8828			0.0000			0.0000
Off-Road	3.2181	32.3770	27.7228	0.0621		1.3354	1.3354		1.2286	1.2286		6,009.7487	6,009.7487	1.9437		6,058.3405
Total	**3.2181**	**32.3770**	**27.7228**	**0.0621**	**11.3246**	**1.3354**	**12.6600**	**3.8828**	**1.2286**	**5.1113**		**6,009.7487**	**6,009.7487**	**1.9437**		**6,058.3405**

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

3.3 Grading - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0946	0.0571	0.8534	2.2300e-003	0.2555	1.1600e-003	0.2566	0.0678	1.0700e-003	0.0688		225.8715	225.8715	5.1900e-003	5.5100e-003	227.6438
Total	**0.0946**	**0.0571**	**0.8534**	**2.2300e-003**	**0.2555**	**1.1600e-003**	**0.2566**	**0.0678**	**1.0700e-003**	**0.0688**		**225.8715**	**225.8715**	**5.1900e-003**	**5.5100e-003**	**227.6438**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.4166	0.0000	4.4166	1.5143	0.0000	1.5143			0.0000			0.0000
Off-Road	3.2181	32.3770	27.7228	0.0621		1.3354	1.3354		1.2286	1.2286	0.0000	6,009.7487	6,009.7487	1.9437		6,058.3405
Total	**3.2181**	**32.3770**	**27.7228**	**0.0621**	**4.4166**	**1.3354**	**5.7520**	**1.5143**	**1.2286**	**2.7429**	**0.0000**	**6,009.7487**	**6,009.7487**	**1.9437**		**6,058.3405**

SBMWC - Tulare County, Summer

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

3.3 Grading - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0946	0.0571	0.8534	2.2300e-003	0.2555	1.1600e-003	0.2566	0.0678	1.0700e-003	0.0688		225.8715	225.8715	5.1900e-003	5.5100e-003	227.6438
Total	**0.0946**	**0.0571**	**0.8534**	**2.2300e-003**	**0.2555**	**1.1600e-003**	**0.2566**	**0.0678**	**1.0700e-003**	**0.0688**		**225.8715**	**225.8715**	**5.1900e-003**	**5.5100e-003**	**227.6438**

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

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

4.3 Trip Type Information

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

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.509869	0.051139	0.167106	0.174849	0.031609	0.007996	0.012006	0.015707	0.000636	0.000471	0.023554	0.001465	0.003592

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

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

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

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

5.2 Energy by Land Use - NaturalGas

Mitigated

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

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.8990	4.0000e-005	4.4900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.6400e-003	9.6400e-003	3.0000e-005		0.0103
Unmitigated	0.8990	4.0000e-005	4.4900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.6400e-003	9.6400e-003	3.0000e-005		0.0103

SBMWC - Tulare County, Summer

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

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2192					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.6793					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.1000e-004	4.0000e-005	4.4900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.6400e-003	9.6400e-003	3.0000e-005		0.0103
Total	**0.8990**	**4.0000e-005**	**4.4900e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.6400e-003**	**9.6400e-003**	**3.0000e-005**		**0.0103**

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

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2192					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.6793					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.1000e-004	4.0000e-005	4.4900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.6400e-003	9.6400e-003	3.0000e-005		0.0103
Total	**0.8990**	**4.0000e-005**	**4.4900e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.6400e-003**	**9.6400e-003**	**3.0000e-005**		**0.0103**

7.0 Water Detail

7.1 Mitigation Measures Water

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

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

**HARP - Air Dispersion Modeling and Risk Tool v22118																		
**6/29/2023																		
**Exported Risk Results																		
REC	GRP	NET ID	X	Y	RISK_SUM	SCENARIO	INHAL_RISK	SOIL_RISK	DERMAL_RISK	MMILK_RISK	WATER_RISK	FISH_RISK	CROP_RISK	BEEF_RISK	DAIRY_RISK	PIG_RISK	CHICKEN_RISK	EGG_RISK
3	SENSITIV		311332	4031513	1.5179E-06	0.5YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.5179E-06	0	0	0	0	0	0	0	0	0	0	0
4	SENSITIV		310964	4031537	1.7239E-06	0.5YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.7239E-06	0	0	0	0	0	0	0	0	0	0	0

1	SENSITIV		311652	4031107	1.9615E-06	0.5YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.9615E-06	0	0	0	0	0	0	0	0	0	0
2	SENSITIV		311704	4030900	3.0893E-06	0.5YrCancerDerived_InhSoilDermMMilk_FAH16to70	3.0893E-06	0	0	0	0	0	0	0	0	0	0

**HARP - Air Dispersion Modeling and Risk Tool v22118																				
**6/29/2023																				
**Exported Risk Results																				
REC	GRP	NETID	X	Y	SCENARIO	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEVEL	RESP	SKIN	EYE	BONE/TEETH	ENDO	BLOOD	ODOR	GENERAL	MAXHI
1	SENSITIV		311652	4031107	NonCancerChronicDerived_InhSoilDermMMilk	0	0	0	0	0	0	0.000409 82	0	0	0	0	0	0	0	0.000409 82
2	SENSITIV		311704	4030900	NonCancerChronicDerived_InhSoilDermMMilk	0	0	0	0	0	0	0.000645 46	0	0	0	0	0	0	0	0.000645 46

3	SENSITIV		311332	4031513	NonCancerChronicDerived_InhSoilDermMMilk	0	0	0	0	0	0	0.00031714	0	0	0	0	0	0	0	0.00031714
4	SENSITIV		310964	4031537	NonCancerChronicDerived_InhSoilDermMMilk	0	0	0	0	0	0	0.00036019	0	0	0	0	0	0	0	0.00036019

**HARP - Air Dispersion Modeling and Risk Tool v22118																				
**6/29/2023																				
**Exported Risk Results																				
REC	GRP	NETID	X	Y	SCENARIO	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEVEL	RESP	SKIN	EYE	BONE/TEETH	ENDO	BLOOD	ODOR	GENERAL	MAXHI
1	SENSITIV		311652	4031107	NonCancerAcute	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	SENSITIV		311704	4030900	NonCancerAcute	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	SENSITIV		311332	4031513	NonCancerAcute	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	SENSITIV		310964	4031537	NonCancerAcute	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

HARP Project Summary Report 6/29/2023 9:53:52 AM

PROJECT INFORMATION
HARP Version: 22118
Project Name: SBMWC
Project Output Directory: G:\Sentinel Butte_2848\284823001-SBMWC Flood Capture Basin\200 Technical\215 Env Planning\Appendices\App A -Air Quality\
SBMWC HARP Database: NA

FACILITY INFORMATION
Origin
X (m):310993
Y (m):4031101
Zone:11
No. of Sources:1
No. of Buildings:0

EMISSION INVENTORY
No. of Pollutants:1
No. of Background Pollutants:0

Emissions
ScrID StkID ProID PolID PolAbbrev Multi Annual Ems MaxHr Ems MWAF
(lbs/yr) (lbs/hr)
_____
_____ PJTArea 0 0
9901 DieselExhPM 1 573.6 0.1782125 1

Background
PolID PolAbbrev Conc (ug/m^3) MWAF
_____

Ground level concentration files (\glc\)
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9901MAXHR.txt
9901PER.txt

POLLUTANT HEALTH INFORMATION
Health Database: C:\HARP2\Tables\HEALTH17320.mdb
Health Table Version: HEALTH22013
Official: True

PolID PolAbbrev InhCancer OralCancer AcuteREL InhChronicREL OralChronicREL InhChronic8HRREL
_____
_____
9901 DieselExhPM 1.1 5

AIR DISPERSION MODELING INFORMATION Versions used in HARP. All executables were obtained from USEPA's Support Center for Regulatory Atmospheric Modeling website (http://www.epa.gov/scram001/) AERMOD: 18081
AERMAP: 18081
BPIPPRM: 04274
AERPLOT: 13329

METEOROLOGICAL INFORMATION
Version: 18081
Surface File: G:\Sentinel Butte_2848\284823001-SBMWC Flood Capture Basin\200 Technical\215 Env Planning\Appendices\App A -Air Quality\SBMWC\Visalia_2007-2010.SFC Profile File: G:\Sentinel Butte_2848\284823001-SBMWC Flood Capture Basin\200 Technical\215 Env Planning\Appendices\App A -Air Quality\SBMWC\Visalia_2007-2010.PFL Surface Station: 93144
Upper Station: 23230
On-Site Station: 0
Start Date & Time: 7 1 1 1
End Date & Time: 10 12 31 24
Hours Processed: 35064
Calm Hours: 9717
Missing Hours: 1213

LIST OF AIR DISPERSION FILES
AERMOD Input File: \SBMWC_AERMOD.inp
AERMOD Output File: \SBMWC_AERMOD.out
AERMOD Error File: \SBMWC_AERMOD.ERR
Plotfile list
_____
MAX1HRPJTArea.PLT
PERIODPJTArea.PLT
 LIST OF RISK ASSESSMENT FILES
Health risk analysis files (\hra\)
_____
Con_CancerRisk.csv
Con_CancerRiskSumByRec.csv
Con_GLCList.csv
Con_HRAInput.hra
Con_NCAcuteRisk.csv
Con_NCAcuteRiskSumByRec.csv
Con_NCChronicRisk.csv
Con_NCChronicRiskSumByRec.csv
Con_Output.txt
Con_PathwayRec.csv
Con_PolDB.csv

Spatial averaging files (\sa\)
_____

Appendix B: Biological Evaluation

SENTINEL BUTTE MUTUAL WATER COMPANY

FLOOD CAPTURE BASIN PROJECT BIOLOGICAL EVALUATION

TULARE COUNTY
JUNE 2024

PREPARED FOR:
Sentinel Butte Mutual Water Company
Tulare County

PREPARED BY:
PROVOST & PRITCHARD CONSULTING GROUP
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Report Prepared by:

Provost & Pritchard Consulting Group
Preparer: Shaylea Stark, Biologist
Project Manager: Briza Sholars, Environmental Project Manager
QA/QC: Geoff Cline, Principal Biologist
Other personnel involved in report preparation: Ben Toews, GIS Specialist, and Jackie Lancaster, Project Administrator

Contact:

Briza Sholars, Environmental Project Manager
(559) 449-2700

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

ACRONYMS AND ABBREVIATIONS

BMP ..... Best Management Practices
CDFW..... California Department of Fish and Wildlife
CEQA ..... California Environmental Quality Act
CNDDB..... California Natural Diversity Database
CNPS..... California Native Plant Society
County ..... Tulare County
EFH ..... Essential Fish Habitat
°F..... degrees Fahrenheit
IPaC ..... U.S. Fish and Wildlife Service's Information for Planning and Consultation system
MBTA..... Migratory Bird Treaty Act
NEPA..... National Environmental Policy Act
project ..... Flood Capture Basin Project
Provost & Pritchard..... Provost & Pritchard Consulting Group
RWQCB..... Regional Water Quality Control Board
SBMWC ..... Sentinel Butte Mutual Water Company
SWPPP ..... Storm Water Pollution Prevention Plan
SWRCB..... State Water Resources Control Board
USACE..... United States Army Corps of Engineers
USC ..... United States Code
USFWS..... United States Fish and Wildlife Service
USGS..... United States Geological Survey

1 INTRODUCTION

This Biological Evaluation, prepared by Provost & Pritchard Consulting Group (Provost & Pritchard) in compliance with the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA), includes descriptions of the biological resources present or with potential to occur within the Sentinel Butte Mutual Water Company's (SBMWC) proposed Flood Capture Basin Project (project), potential project-related impacts or effects to those resources, and mitigation measures to reduce these impacts and effects to a less-than-significant level under CEQA and NEPA.

1.1 PROJECT DESCRIPTION

The project site (or "site") is located just outside of the limits of the City of Woodlake, in Tulare County (County), California, which is within the San Joaquin Valley (see Figure 1). Specifically, the approximately 29-acre project is located south of Wutchumna Ditch, southwest of Bravo Lake, west of State Route 245, and north of the Saint (St.) Johns River (see Figure 2). The project would consist of the construction of multi-cell flood capture basin project and connection to Wutchumna Ditch, and a minimum of 300 feet of 24-inch piping associated and other local delivery facilities.

Storage basin construction activities will include excavating approximately 5' deep that would have the capacity to store approximately 80 acre-feet of water Additionally, the project will include construction of a new diversion structure within Wutchumna Ditch to divert water into the new basin. The new basin will also have a connection to Sentinel Butte's existing 24" line on site to return water into existing basins located on the north side of Wutchumna Ditch.

1.2 REPORT OBJECTIVES

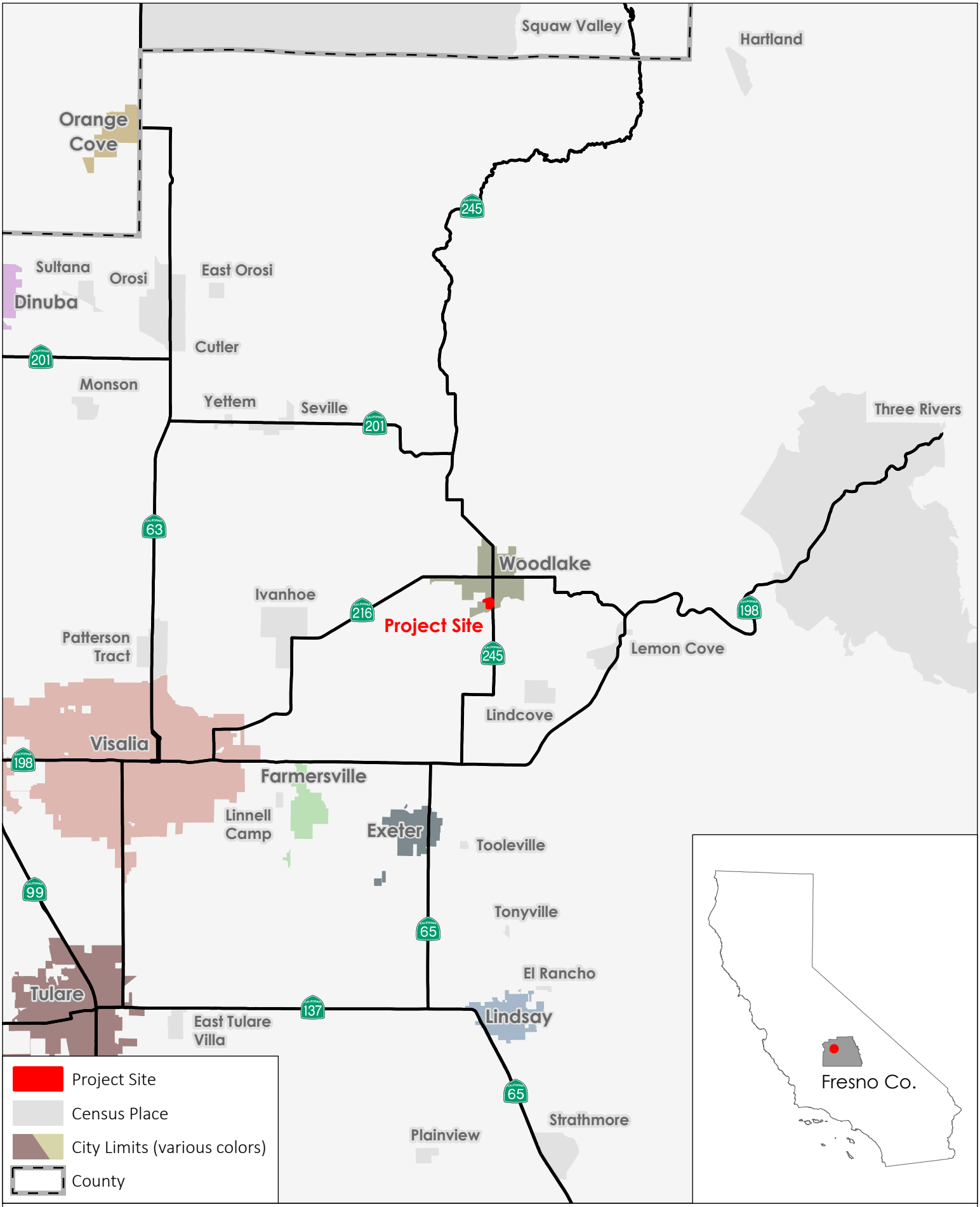
Construction activities such as those proposed by the project could potentially change biological resources or habitats that are critical for sensitive plant and wildlife species. In cases such as these, development may be regulated by state or federal agencies, and/or addressed by local regulatory agencies.

This report addresses issues related to the following:

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

Therefore, the objectives of this report are to:

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

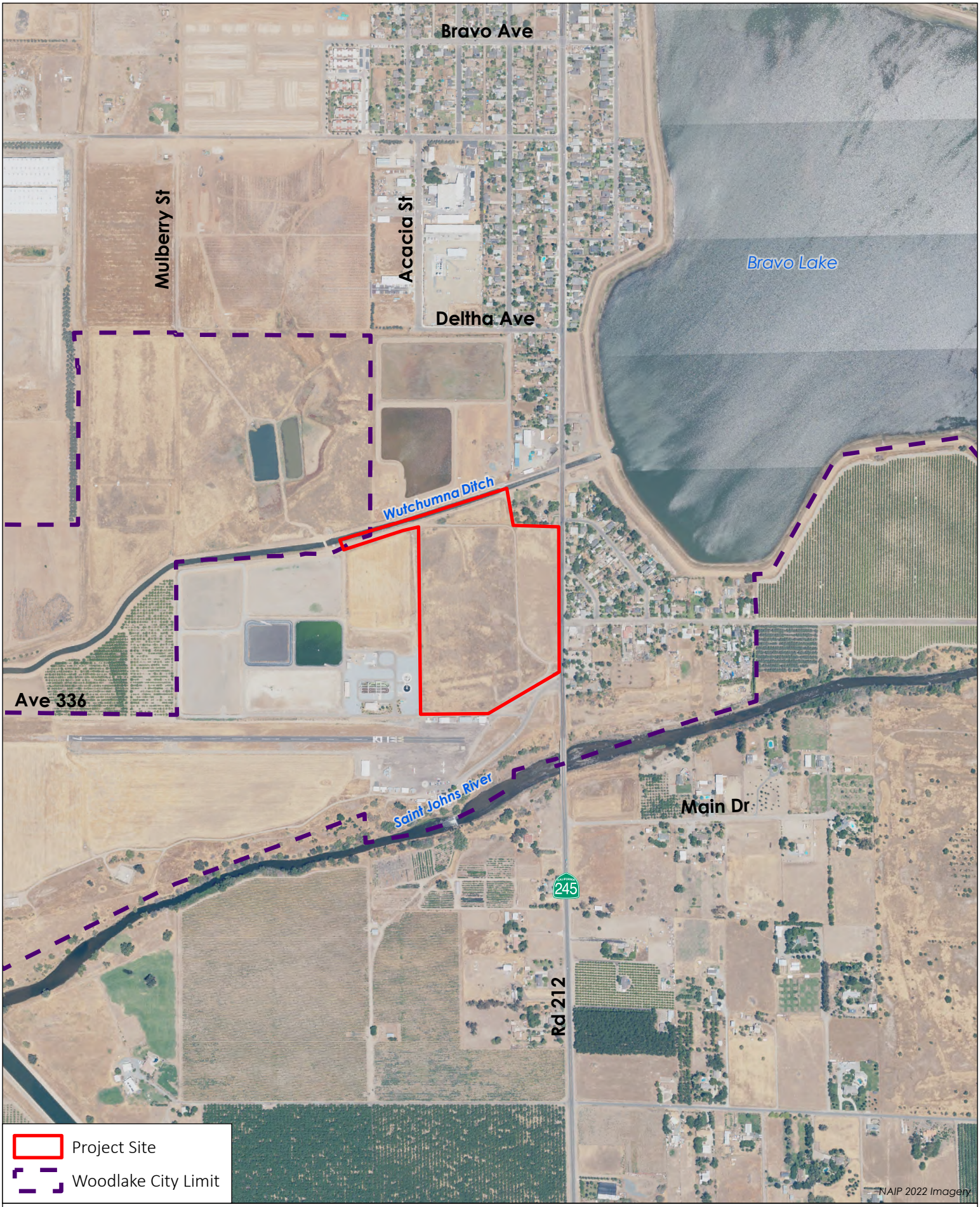


Regional Vicinity Map

Sentinel Butte MWC- Flood Capture Basin Project Site 2

PROVOST& PRITCHARD

Fig. 1 Page 1-2



0 500 1,000
Feet

Aerial Map

Sentinel Butte MWC- Flood Capture Basin Project Site 2

PROVOST& PRITCHARD

Fig. 2 Page 1-3

1.3 STUDY METHODOLOGY

A reconnaissance-level field survey of the project site was conducted on February 22, 2024, by Provost & Pritchard biologist, Shaylea Stark. The survey consisted of walking throughout the site while identifying and noting land uses, biological habitats and communities, and plant and animal species encountered. Habitats were also assessed to help with determining if they could be suitable for various rare or protected plant and animal species. Representative photographs of the site were taken and are presented in Appendix A.

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

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

2 EXISTING CONDITIONS

2.1 REGIONAL SETTINGS

2.1.1 TOPOGRAPHY

The site is located in the *Woodlake* U.S. Geological Survey (USGS) 7.5-minute quadrangle, within the southeast corner of Section 36, Township 17 South, Range 26 East. The topography of the site is relatively flat with elevations of approximately 430 feet above mean sea level (see Figure 3).

2.1.2 CLIMATE

Like most of California, the San Joaquin Valley experiences a Mediterranean climate. Warm, dry summers are followed by cool, moist winters. Summer temperatures often exceed 90 degrees Fahrenheit (°F), and the humidity is generally low. Winter temperatures are often below 60 °F during the day and rarely exceed 70 °F. On average, Woodlake receives approximately 12 inches of precipitation in the form of rainfall yearly, most of which occurs between November and April and the site would be expected to receive similar amounts of precipitation. (Weather US 2024).

2.1.3 HYDROLOGY

The nearest surface water to the project is Wutchumna Ditch, which is located directly to the north of the project site, and the St. Johns River, which is located approximately 500 feet to the south of the project site. Wutchumna Ditch receives water from the Kaweah River before it flows past the north boundary of the project site, and eventually flows into the St. Johns River.

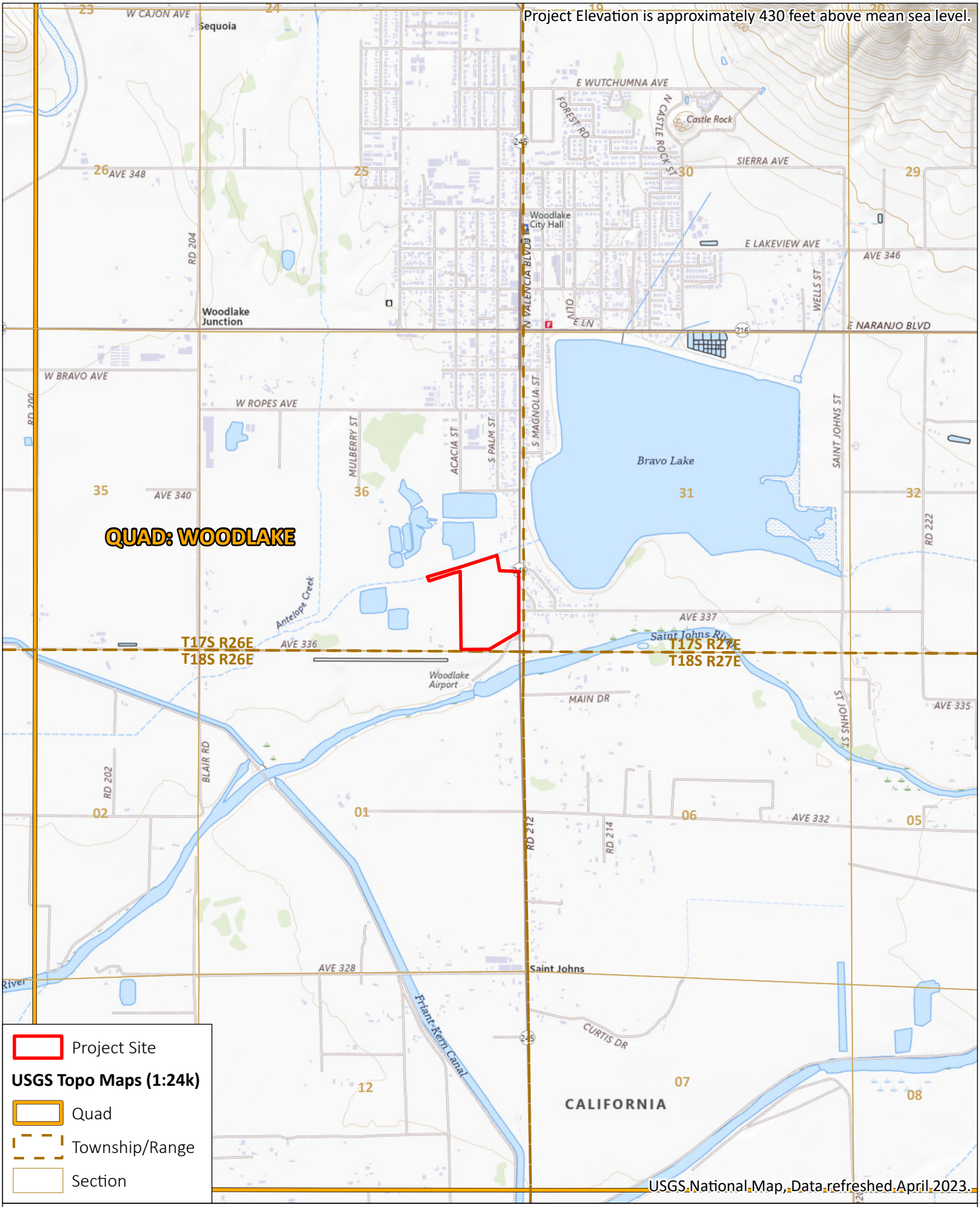
2.1.4 SOILS

Three soil mapping units representing two soil types were identified within the site and are listed in Table 1 (see Appendix D for the Web Soil Survey Report). The soils are displayed with their core properties in the table below, according to the Major Land Resource Area of California. Both soils are primarily used for cropland and livestock grazing.

Table 1: List of Soils Located Onsite and Their Basic Properties

Soil	Soil Map Unit	Percent of Site	Hydric Soil Category	Drainage	Permeability	Runoff
San Joaquin	Loam, 2 to 9 percent slopes	31.1%	Predominantly Nonhydric	Moderately well drained	Very slow permeability	Medium to very high runoff
Tujunga	Sand	66.5%	Nonhydric	Somewhat excessively drained	Moderate	Negligible to low runoff
Water	Water	2.4%	-	-	-	-

Hydric soils are defined as soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions such that under sufficiently wet conditions, hydrophytic vegetation can be supported. None of the major soil mapping units and some of the minor soil mapping units located on the site were identified as hydric. The soils within the site are considered predominantly nonhydric and nonhydric. Water identified in the site is within Wutchumna Ditch.



Topographic Map

Sentinel Butte MWC- Flood Capture Basin Project Site 2

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Fig. 3 Page 2-2

2.2 BIOTIC HABITATS

Three biotic habitats were observed within the site and included ruderal/grassland, canal, and seepage habitats (see Figure 4). These habitats and their constituent plant and animal species are described in more detail in the following sections.

2.2.1 RUDERAL/GRASSLAND

The site was dominated by invasive grasses and ruderal habitat. Other vegetation within this habitat included redmaids (*Calandrinia ciliata*), field mustard (*Sinapis arvensis*), silver moss (*Bryum argenteum*), cheeseweed mallow (*Malva parviflora*), milk thistle (*Silybum marianum*), silverleaf nightshade (*Solanum elaeagnifolium*), shepherd's purse (*Capsella bursa-pastoris*), rough cocklebur (*Xanthium strumarium*), elderberry (*Sambucus* sp.), redstem filaree (*Erodium cicutarium*), common groundsel (*Senecio vulgaris*), common sowthistle (*Sonchus oleraceus*), mustard (*Brassica* spp.), telegraph weed (*Heterotheca grandiflora*), common bugloss (*Anchusa officinalis*), and small flowered fiddleneck (*Amsinckia menziesii*).

The survey of the site resulted in the identification of numerus bird species including black phoebe (*Sayornis nigricans*), western meadowlark (*Sturnella neglecta*), white crowned-sparrow (*Zonotrichia leucophrys*), house finch (*Haemorhous mexicanus*), common raven (*Corvus corax*), California scrub-jay (*Aphelocoma californica*), killdeer (*Charadrius vociferus*), savannah sparrow (*Passerculus sandwichensis*), Lincoln's sparrow (*Melospiza lincolnii*), and yellow-rumped warbler (*Setophaga coronata*). Common side-blotched lizard (*Uta stansburiana*), domestic dog (*Canis lupus familiaris*), and California ground squirrel (*Otospermophilus beecheyi*) burrows were also observed.

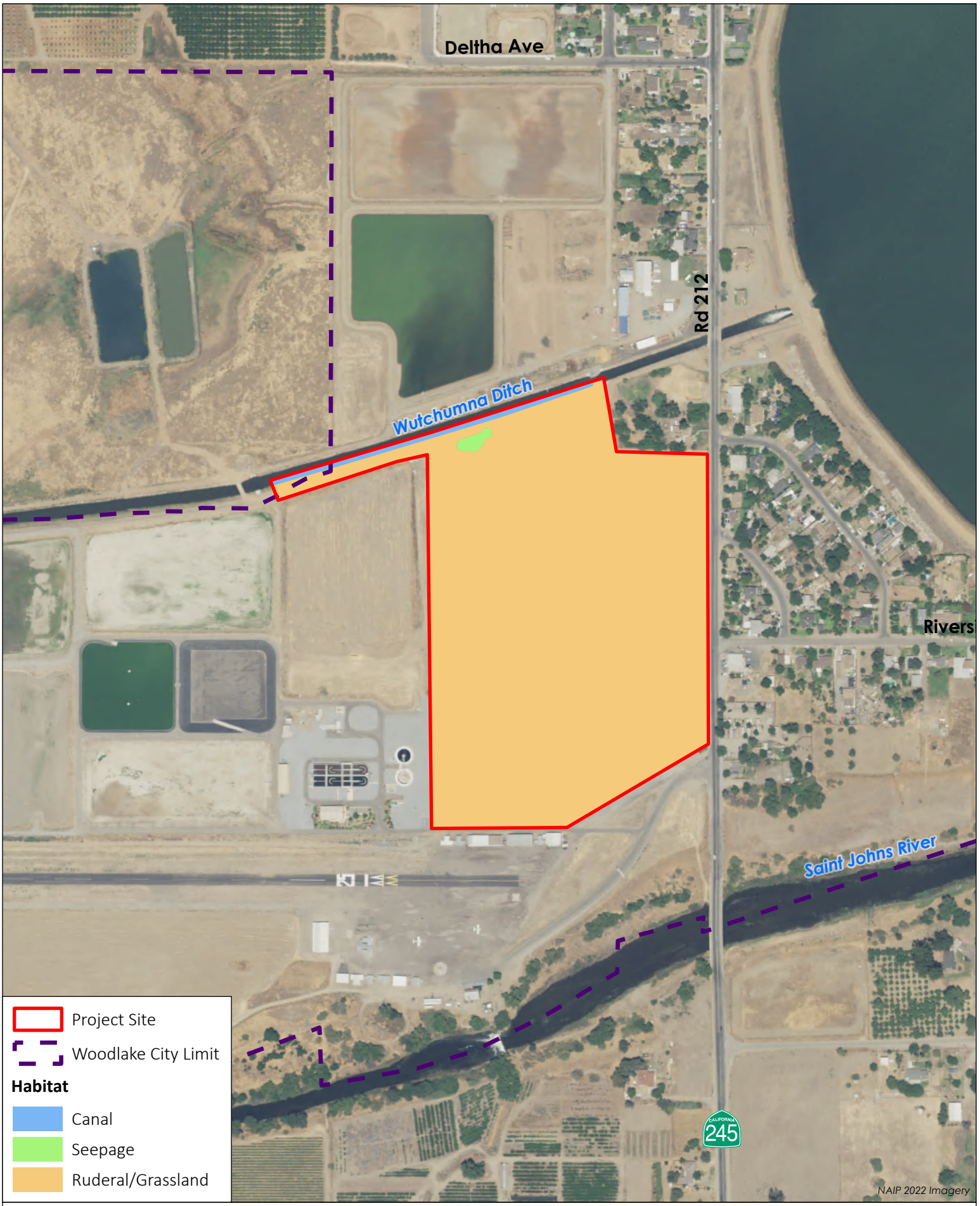
This habitat provides foraging areas for birds, including raptors, during the day, as well as potentially for bats, coyotes, and other nocturnal animals.

2.2.2 CANAL

The canal habitat included Wutchumna Ditch, which was inundated during the field survey. Vegetation found within this habitat included invasive grasses, cheeseweed mallow, redstem filaree, common sowthistle, mustard, and telegraph weed (*Heterotheca grandiflora*). Wutchumna Ditch does not contain special status fish; therefore, they are not considered present or likely to occur within the project site.

2.2.3 SEEPAGE

The seepage habitat included a small seepage area adjacent to Wutchumna Ditch. This area receives water from a leaking pipe that connects to the Wutchumna Ditch. Minimal riparian habitat was observed during the field survey, vegetation found within this habitat included invasive grasses, elderberry, tree tobacco (*Nicotiana glauca*), stinging nettle (*Urtica dioica*), curly dock (*Rumex crispus*), and white horehound (*Marrubium vulgare*). An invasive American bullfrog (*Lithobates catesbeianus*) was observed in this habitat.



Habitats Map

Sentinel Butte MWC- Flood Capture Basin Project Site 2

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Fig. 4 Page 2-4

2.3 NATURAL COMMUNITIES OF SPECIAL CONCERN AND RIPARIAN HABITAT

Natural communities of special concern are those that are of limited distribution, distinguished by significant biological diversity, or home to special status species. CDFW has classified and mapped all natural communities in California. Just as the special status plant and animal species, these natural communities of special concern can be found within the CNDDB. According to the CNDDB and the field survey, no natural communities of special concern were present within the project site.

Riparian habitat is composed of plant communities that occur along the banks, and sometimes over the banks, of most waterways and is an important habitat for numerous wildlife species. CDFW has jurisdiction over most riparian habitat in California. The nearest surface water to the project is Wutchumna Ditch, which is directly to the north of the project site, and the St. Johns River, which is located approximately 500 feet to the south of the project site. No natural waterways were observed within the site, but the seepage habitat contained minimal riparian habitat during the field survey.

2.4 DESIGNATED CRITICAL HABITAT

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

2.5 WILDLIFE MOVEMENT CORRIDORS AND NATIVE WILDLIFE NURSERY SITES

Wildlife movement corridors are routes that animals regularly and predictably follow during seasonal migration, dispersal from native ranges, daily travel within home ranges, and inter-population movements. Movement corridors in California are typically associated with valleys, ridgelines, and rivers and creeks supporting riparian vegetation. The project site does contain suitable features, in the form of Wutchumna Ditch, which could act as a wildlife movement corridor and runs along the northern boundary of the site. Anthropogenic activities would deter wildlife from using these potential wildlife movement corridors during the day, though these deterrents are absent at night, which is when wildlife are more likely to move through this corridor.

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

2.6 SPECIAL STATUS PLANTS AND ANIMALS

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

A query of the CNDDB for occurrences of special status animal and plant species was conducted for the *Woodlake* 7.5-minute USGS quadrangle that contains the project site, and for the eight surrounding USGS quadrangles: *Auckland*, *Chickencoop Canyon*, *Exeter*, *Ivanhoe*, *Kaweah*, *Rocky Hill*, *Stokes Mountain*, and *Shadequarter Mountain*. A query of the IPaC was also completed for the project site. These species, and their potential to occur within the site, are listed in Table 2 and Table 3, below. Other special status species that did not show up in the CNDDB query, but have the potential to occur in the vicinity, are also included in Table 3. Species lists obtained from CNDDB and IPaC are available in Appendix B and Appendix C, respectively. All relevant sources of information, as discussed in the Study Methodology section of this report, as well as field observations, were used to determine if any special status species have the potential to occur within the site.

Table 2: List of Special Status Plants with Potential to Occur Onsite and/or in the Vicinity

Species	Status*	Habitat	Occurrence within the Site
Alkali-sink goldfields (*Lasthenia chrysantha*)	CNPS 1B	Found in vernal pool and wet saline flat habitats in the San Joaquin Valley region at elevations below 700 feet. Blooms February – April.	**Unlikely.** The site lacks suitable habitat for this species. The nearest recorded observation of this species within the vicinity was approximately 5.5 miles southwest of the site at an unknown date.
American manna grass (*Glyceria grandis*)	CNPS 2B	Found in wet meadows, ditches, streams lake margins, and ponds at elevations between 200 and 6,800 feet. Blooms June – August.	**Unlikely.** The site lacked suitable aquatic habitat for this species. The nearest recorded observation of this species within the vicinity was 15.5 miles northeast of the site in 1910.
Calico monkeyflower (*Diplacus pictus*)	CNPS 1B	Found in the Sierra Nevada foothills and the Tehachapi mountains in bare, sunny, shrubby areas, around granite outcrops within foothill woodland communities at elevations between 450 and 4,100 feet. Blooms March – May.	**Unlikely.** The site lacked suitable habitats for this species. The nearest recorded observation of this species within the vicinity was 4.5 miles southeast of the site in 1935.
Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*)	CNPS 1B	Found on alkaline and saline soils in vernal pools and playas in grassland habitat at elevations below 4,500 feet. Blooms April – May.	**Unlikely.** The site lacks suitable habitats for this species. The nearest recorded observation of this species within the vicinity was 9 miles northwest of the site in 2015.
Earlimart orache (*Atriplex cordulata* var. *erecticaulis*)	CNPS 1B	Found in the San Joaquin Valley in saline and alkaline soils, typically within valley grasslands at elevations below 400 feet. Blooms August – September.	**Unlikely.** The site lacks suitable habitat and soils required by this species. The nearest recorded observation of this species within the vicinity was 9.5 miles northwest of the site in 2010.
Greene's tuctoria (*Tuctoria greenei*)	FE, CNPS 1B	Found in the San Joaquin Valley and other parts of California in vernal pools within valley grassland, wetland, and riparian communities at elevations below 3,500 feet. Blooms May – September.	**Unlikely.** The site lacks suitable habitats for this species. The nearest recorded observation of this species was within the vicinity of Woodlake but is listed as extirpated.

Species	Status*	Habitat	Occurrence within the Site
Hoover's spurge (*Euphorbia hooveri*)	FT, CNPS 1B	Found in vernal pools within valley grassland, freshwater wetland, and riparian communities at elevations below 800 feet. Blooms July – September.	**Unlikely.** The site lacks suitable habitat for this species. The nearest recorded observation of this species within the vicinity was 9 miles northwest of the site in 2022.
Kaweah brodiaea (*Brodiaea insignis*)	CE, CNPS 1B	Found in the Sierra Nevada foothills in foothill woodland and valley grassland communities at elevations between 650 and 1,700 feet. Blooms May – June.	**Absent.** The site and surrounding areas are outside of the elevational range for this species.
Kaweah monkeyflower (*Erythranthe norrisii*)	CNPS 1B	Found in chaparral and cismontane woodland habitats, often on marble outcrops, soil pockets, moss-covered ledges, cracks in outcrops, and sometimes on south-facing cliffs at elevations between 1,200 and 4,000 feet. Blooms March – May.	**Absent.** The site and surrounding areas are outside of the elevational range for this species.
Lesser saltscale (*Atriplex minuscula*)	CNPS 1B	Found in the San Joaquin Valley in sandy, alkaline soils in alkali scrub, valley and foothill grassland, and alkali sink communities at elevations below 750 feet. Blooms April – October.	**Unlikely.** The site lacks suitable habitat for this species. The nearest recorded observation of this species within the vicinity was 9.5 miles northwest of the site in 2010.
Lassics lupine (*Lupinus constancei*)	FE, CE, CNPS 1B	Occurs in lower montane coniferous forests. Often on serpentine barrens at elevations between 5,530 and 5,700 feet. Blooms in July.	**Absent.** The site and surrounding areas are outside of the elevational range for this species and lack suitable habitat.
Madera leptosiphon (*Leptosiphon serrulatus*)	CNPS 1B	Found within openings of foothill woodland, often yellow-pine forest, and chaparral at elevations between 1,000 and 4,300 feet. Blooms April – May.	**Absent.** The site and surrounding areas are outside of the elevational range for this species and lack suitable habitat.
Mouse buckwheat (*Eriogonum nudum* var. *murinum*)	CNPS 1B	Found in chaparral, cismontane woodland, and valley and foothill grassland communities, often on dry sandy loam slopes in the Kaweah River drainage at elevations between 1,200 and 3,700 feet. Blooms May – October.	**Absent.** The site and surrounding areas are outside of the elevational range for this species.
Recurved larkspur (*Delphinium recurvatum*)	CNPS 1B	Occurs in chenopod scrub, cismontane woodland, and grassland habitats on poorly drained, fine, alkaline soils; often in valley saltbush or valley chenopod scrub communities at elevations between 100 and	**Unlikely.** The site and surrounding areas lack suitable soils. The nearest recorded observation of this species within the vicinity was 0.8-miles northwest of the site but is listed as extirpated.

Species	Status*	Habitat	Occurrence within the Site
		2,600 feet. Blooms March – June.	
San Joaquin adobe sunburst (*Pseudobahia peirsonii*)	FT, CE, CNPS 1B	Found in the San Joaquin Valley and the Sierra Nevada foothills in bare, dark clay soils in valley and foothill grassland and cismontane woodland communities at elevations between 300 and 3,000 feet. Blooms March – May.	**Unlikely.** The site lacks suitable habitat and soils for this species. The nearest recorded observation of this species within the vicinity was 4 miles southeast of the site in 1992.
San Joaquin Valley Orcutt grass (*Orcuttia inaequalis*)	FT, CE, CNPS 1B	Found in the eastern San Joaquin Valley and the Sierra Nevada foothills in vernal pools within valley grassland, freshwater wetland, and wetland-riparian communities at elevations below 2,600 feet. Blooms April – September.	**Unlikely.** The site lacks suitable habitat for this species. The nearest recorded observation of this species within the vicinity was 4 miles north of the site in 2010.
Sanford's arrowhead (*Sagittaria sanfordii*)	CNPS 1B	This species is an aquatic plant and is found in the San Joaquin Valley and other parts of California in freshwater marshes, ponds, canals, and ditches at elevations below 1,000 feet. Blooms May – October.	**Possible.** This species could occur in the canal habitat. The nearest recorded observation of this species within the vicinity was approximately 4 miles northwest of the site in 2018.
Spiny-sepaled button-celery (*Eryngium spinosepalum*)	CNPS 1B	Found in the Sierra Nevada foothills and the San Joaquin Valley in vernal pools, swales, and roadside ditches. Often associated with clay soils in vernal pools within grassland communities. Occurs at elevations between 50 and 4,200 feet. Blooms April – July.	**Unlikely.** The site lacks suitable habitat for this species. The nearest recorded observation of this species was within the vicinity of Woodlake in 1936.
Striped adobe-lily (*Fritillaria striata*)	CT, CNPS 1B	Found in the Sierra Nevada foothills in adobe soil within valley grassland and foothill woodland communities at elevations below 3,300 feet. Blooms February – April.	**Unlikely.** The site lacks suitable adobe soils. The nearest recorded observation of this species within the vicinity was 9.5 miles south of the site but is listed as extirpated.
Vernal pool smallscale (*Atriplex persistens*)	CNPS 1B	Occurs in the Central Valley in alkaline vernal pools at elevations below 400 feet. Blooms June – September.	**Absent.** The site lacks vernal pools and suitable habitat for this species.
Winter's sunflower (*Helianthus winteri*)	CNPS 1B	Found in the Sierra Nevada foothills on steep, south-facing grassy slopes, rock outcrops, and road-cuts at elevations ranging from 600 to 1,500 feet. Blooms year-round.	**Absent.** The site lacks suitable habitat for this species.

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

Species	Status*	Habitat	Occurrence within the Site
American badger (*Taxidea taxus*)	CSSC	Prefers drier open stages of shrub, forest, and herbaceous habitats with friable soils to burrow, but can be found within numerous habitats throughout California, including the margins of agricultural lands. Needs a sufficient prey base of burrowing rodents.	**Unlikely.** The ruderal/grassland habitat is disturbed, and no signs of this species were observed during the field survey. The only recorded observation of this species within the vicinity was 6.5 miles southwest of the site in 1994.
Bald eagle (*Haliaeetus leucocephalus*)	CE, CFP	Resides in old growth forests as well as lower montane coniferous forests. Can also be found in open uplands in the winter. Nests are generally found in large trees within a mile of water. Nests and winters along ocean shores, lake margins, and rivers.	**Unlikely.** The site and surrounding areas lack suitable trees and nesting habitat. It is unlikely this species would forage onsite. The nearest recorded observation of this species within the vicinity was 7 miles east of the site in 2014.
Burrowing owl (*Athene cunicularia*)	CSSC	Resides in open, dry grasslands, deserts, scrublands, and other areas with low growing vegetation. Nests and roosts underground in existing burrows created by mammals, most often by ground squirrels, and human-made structures.	**Unlikely.** The ruderal/grassland habitat is disturbed, and no signs of this species were observed during the field survey. The nearest recorded observation of this species within the vicinity was 9 miles northwest of the site in 2006.
California condor (*Gymnogyps californianus*)	FE, CE, CFP	Typically nests in cavities in canyon or cliff faces but has also been recorded nesting in giant sequoias in Tulare County. Requires vast expanses of open savannah, grassland, and/or foothill chaparral in mountain ranges of moderate altitude. Forages for carrion up to 100 miles from their roost/nest sites.	**Unlikely.** The site and surrounding areas lack suitable trees and nesting habitat. It is unlikely this species would forage onsite.
California tiger salamander (*Ambystoma californiense*)	FT, CT	Requires vernal pools or seasonal ponds for breeding and small mammal burrows for aestivation. Generally found in grassland and oak savannah plant communities in central California from sea level to around 1,500 feet in elevation. Can migrate up to 1.3 miles to breed.	**Unlikely.** The site lacked vernal pool habitat. The project site is also near the edge of their range and barriers such as Wutchumna Ditch separate the site from suitable habitat. The nearest recorded observation of this species within the vicinity was 3 miles north of the site in 2011.
Conservancy fairy shrimp	FE	Found in large, turbid freshwater vernal pools in the Central Valley, from Tehama County in	**Absent.** The site is well south of this species range in the Central Valley.

Species	Status*	Habitat	Occurrence within the Site
(*Branchinecta conservatio*)		the north to Merced County in the south, with one outlying population in Ventura County's Interior Coast Ranges.	
Crotch's bumble bee (*Bombus crotchii*)	CCE	Occurs throughout coastal California, as well as east to the Sierra Nevada-Cascade crest, and south into Mexico. Food plant genera include snapdragons, scorpionweeds, primroses, poppies, and buckwheats.	**Unlikely.** The site lacks suitable foraging habitat for this species. The nearest recorded observation of this species within the vicinity was within 1 mile of the site in 1955.
Foothill yellow-legged frog – south Sierra Distinct Population Segment (*Rana boylii*)	FC, CE	Frequents rocky streams and rivers with rocky substrate and open, sunny banks in forests, chaparral, and woodlands. Occasionally found in isolated pools, vegetated backwaters, and deep, shaded, spring-fed pools.	**Unlikely.** The site lacks suitable streams and suitable habitat for this species. The nearest recorded observation of this species within the vicinity was 4 miles southeast of the site in 1941 but is listed as extirpated.
Fisher- Southern Sierra Nevada-ESU (*Pekania pannanti*)	FE, CT	Can be found in intermediate to large-tree stages of coniferous forests with high percent canopy closure, generally within the low-medium elevational areas of the southern Sierra Nevada.	**Absent.** The site and surrounding areas lack forest habitat, and the site is not in the Sierra Nevada.
Monarch butterfly (*Danaus plexippus*)	FC	Roosts in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby. Larval host plants consist of milkweeds. Winter roost sites extend along the Pacific coast from northern Mendocino to Baja California, Mexico.	**Unlikely.** The site and surrounding areas lack suitable foraging and roosting habitat for this species. There are no recorded observations of this species within the vicinity of the project site.
Northern California legless lizard (*Anniella pulchra*)	CSSC	Found primarily underground, burrowing in loose, sandy soil. Forages in loose soil and leaf litter during the day. Occasionally observed on the surface at dusk and night.	**Unlikely.** The project site is disturbed, and it is unlikely this species would occur onsite. The nearest recorded observation of this species within the vicinity was 6.5 miles southwest of the site in 2015.
Northern leopard frog (*Lithobates pipiens*)	CSSC	Inhabits grassland, wet meadows, potholes, forests, woodland, brushlands, springs, canals, bogs, marshes, and reservoirs in scattered locations in California. Generally, prefers permanent water with abundant riparian vegetation.	**Unlikely.** The site and surrounding areas are not within any of the historic or introduced locations. The site also lacked suitable aquatic habitat for this species.
Northwestern pond turtle	FPT, CSSC	An aquatic turtle of ponds, marshes, slow-moving rivers, streams, and irrigation ditches	**Possible.** The site contains Watchuma Ditch which may be used by this species. The nearest

Species	Status*	Habitat	Occurrence within the Site
(*Actinemys marmorata*)		with riparian vegetation. Requires adequate basking sites and sandy banks or grassy open fields to deposit eggs.	recorded observation of this species within the vicinity was 6 miles east of the site in 1988.
Pallid bat (*Antrozous pallidus*)	CSSC	Found in grasslands, chaparral, and woodlands, where it feeds on ground- and vegetation-dwelling arthropods, and occasionally takes insects in flight. Prefers to roost in rock crevices, but may also use tree cavities, caves, bridges, and other human-made structures.	**Unlikely.** The site and surrounding areas lack suitable roosting habitat. This species would not be expected to roost within the site but could forage over the site. The nearest recorded observation of this species within the vicinity was 7 miles southwest of the site in 2004.
San Joaquin kit fox (*Vulpes macrotis mutica*)	FE, CT	Opportunistically forages in a variety of habitats. Dens in burrows within alkali sink, valley grassland, and woodland habitats in valleys and adjacent foothills and in human-made structures in cities, rangeland, and agricultural areas.	**Unlikely.** The ruderal/grassland habitat is disturbed, and no signs of this species or burrows suitable for this species were observed during the field survey. The nearest recorded observation of this species was within the vicinity of Woodlake in 1990.
Tricolored blackbird (*Agelaius tricolor*)	CT, CSSC	Nests colonially near fresh water in dense cattails or tules, or in thickets of riparian shrubs. Forages in grassland and cropland. Large colonies are often found foraging in dairy farm feed fields.	**Unlikely.** The site and surrounding areas lack suitable nesting habitat, and it is unlikely this species would forage onsite. The nearest recorded observation of this species within the vicinity was 4 miles northeast of the site in 2011.
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	FT	Lives in mature elderberry shrubs in the Central Valley and adjacent foothills from Tehama County south through Merced and Mariposa Counties with two scattered populations in Madera and Fresno Counties. Adults are active from March to June.	**Absent.** While there were elderberry shrubs onsite, the site and surrounding areas are outside of the range of this species. There was also no evidence of this species on the elderberry shrubs.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	Occupies vernal and seasonal pools, with clear to tea-colored water, in grass or mud-bottomed swales, and basalt depression pools.	**Unlikely.** The site lacks suitable aquatic habitat for this species. The nearest recorded observation of this species within the vicinity was 3 miles southwest of the site in 2011.
Vernal pool tadpole shrimp (*Lepidurus packardi*)	FE	Occurs in vernal pools, clear to tea-colored water, in grass or mud-bottomed swales, and basalt depression pools.	**Unlikely.** The site lacks suitable aquatic habitat for this species. The nearest recorded observation of this species within the vicinity was 9 miles northwest of the site in 2008.
Western mastiff bat (*Eumops perotis californicus*)	CSSC	Found in open, arid to semi-arid habitats, including dry desert washes, flood plains, chaparral, oak woodland, open ponderosa pine forest, grassland, and agricultural areas, where it feeds	**Unlikely.** The site and surrounding areas lack suitable roosting habitat. This species would not be expected to roost within the site but could forage over the site. The nearest recorded observation of this species

Species	Status*	Habitat	Occurrence within the Site
		on insects in flight. Roosts most commonly in crevices in cliff faces but may also use high buildings and tunnels.	was within the vicinity of Woodlake in 1990.
Western spadefoot (*Spea hammondii*)	FPT, CSSC	The majority of the time this species is terrestrial and occurs in small mammal burrows and soil cracks, sometimes in the bottom of dried pools. Prefers open areas with sandy or gravelly soils, in a variety of habitats including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Vernal or seasonal pools, that hold water for a minimum of three weeks, are necessary for breeding.	**Possible.** While the site lacks suitable aquatic breeding habitat, this habitat is present in the surrounding areas and terrestrial habitat where this species could aestivate was located onsite. The nearest recorded observation of this species within the vicinity was 3 miles north of the site in 2011.
Willow flycatcher (*Empidonax traillii*)	CE	Inhabits extensive thickets of low, dense willows on the edges of wet meadows, ponds, or backwaters at 2,000-8,000 feet in elevation.	**Absent.** The project site is outside of the elevational range required by this species.

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

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

STATUS CODES

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

CNPS LISTING

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

3 IMPACTS AND MITIGATION

3.1 SIGNIFICANCE CRITERIA

3.1.1 CEQA

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

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

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

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

3.1.2 NEPA

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

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

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

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

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

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

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

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

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

3.2 RELEVANT GOALS, POLICIES, AND LAWS

3.2.1 TULARE COUNTY GENERAL PLAN

The Tulare County General Plan (Tulare County 2012) contains the following goals and policies related to the project:

3.2.1.1.1 BIOLOGICAL RESOURCES

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

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

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

ERM-1.4: Protect Riparian Areas. The County shall protect riparian areas through habitat preservation, designation as open space or recreational land uses, bank stabilization, and development controls.

ERM-1.6: Management of Wetlands. The County shall support the preservation and management of wetland and riparian plant communities for passive recreation, groundwater recharge, and wildlife habitats.

ERM-1.16: Cooperate with Wildlife Agencies. The County shall cooperate with State and federal wildlife agencies to address linkages between habitat areas.

ERM-1.17: Conservation Plan Coordination. The County shall coordinate with local, state, and federal habitat conservation planning efforts to protect critical habitat areas that support endangered species and other special-status species.

3.2.1.1.2 WATER RESOURCES

Water Resources (WR)-1: To provide for the current and long-range water needs of the County and for the protection of the quality and quantity of surface and groundwater resources.

WR-1.8: Groundwater Basin Management. The County shall take an active role in cooperating in the management of the County's groundwater resources.

WR-1.10: Channel Modification. Channel modification shall be discouraged in streams and rivers where it increases the rate of flow, rate of sediment transport, erosive capacity, have adverse effect on aquatic life or modify necessary groundwater recharge.

3.2.1.1.3 WATER QUALITY

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

WR-2.1: Protect Water Quality. All major land use and development plans shall be evaluated as to their potential to create surface and groundwater contamination hazards from point and non-point sources. The County shall confer with other appropriate agencies, as necessary, to assure adequate water quality review to prevent soil erosion; direct discharge of potentially harmful substances; ground leaching from storage of raw materials, petroleum products, or wastes; floating debris; and runoff from the site.

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

WR-2.4: Construction Site Sediment Control. The County shall continue to enforce provisions to control erosion and sediment from construction sites.

WR-2.5: Major Drainage Management. The County shall continue to promote protection of each individual drainage basin within the County based on the basin's unique hydrologic and use characteristics.

3.2.2 THREATENED AND ENDANGERED SPECIES

Permits may be required from CDFW and/or USFWS if activities associated with a project have the potential to result in the "take" of a species listed as threatened or endangered under the California Endangered Species Act (CESA) and/or Endangered Species Act (ESA), respectively. Take is defined by CESA as, "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill" (California Fish and Game Code, Section 86). Take is more broadly defined by the ESA to include "harm" (16 United States Code (USC),

Section 1532(19), 50 CFR, Section 17.3). CDFW and USFWS are responsible agencies under CEQA and NEPA. Both agencies review CEQA and NEPA documents in order to determine the adequacy of the treatment of endangered species issues and to make project-specific recommendations for their conservation.

3.2.3 DESIGNATED CRITICAL HABITAT

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

3.2.4 MIGRATORY BIRDS

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

3.2.5 BIRDS OF PREY

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

3.2.6 NESTING BIRDS

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

3.2.7 WETLANDS AND OTHER "JURISDICTIONAL WATERS"

The definition of "waters of the United States" (WOTUS) often changes from one presidential administration to the next. The current definition, established under the Biden Administration that became effective on March 20, 2023 (i.e., "new rule"), has adopted much of the same WOTUS designations as the pre-2015 rules, but has incorporated the most recent science and court case rulings. Traditional navigable waters, territorial seas, and interstate waters remain covered under the new rule. Natural drainage channels and adjacent wetlands may be considered "waters of the United States" or "jurisdictional waters" subject to the jurisdiction of the USACE based on the "relatively permanent standard," which is defined in the new rule as "relatively permanent, standing or continuously flowing waters connected to paragraph Traditional Navigable Waters, and waters with a continuous surface connection to such relatively permanent waters or to Traditional Navigable Waters. The extent of jurisdiction has been defined in the Code of Federal Regulations but is also subject to interpretation by the federal courts. Jurisdictional waters generally include the following categories:

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

Exclusions under the new definition include the following:

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

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

jurisdictional waters cannot be considered jurisdictional on the basis of their use, hypothetical or observed, by migratory birds.

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

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

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

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

3.3 POTENTIALLY SIGNIFICANT PROJECT-RELATED IMPACTS AND MITIGATION

Species protected by California Fish and Game Code, CDFW, USFWS, CEQA, or NEPA that have the potential to be impacted by project activities include: Sanford's arrowhead, nesting migratory birds and raptors,

northwestern pond turtle, and western spadefoot. Other sensitive resources that have the potential to be impacted by the project include wildlife movement corridors. Corresponding mitigation measures can be found below.

3.3.1 GENERAL PROJECT-RELATED IMPACTS

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

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

3.3.2 PROJECT-RELATED IMPACTS TO SPECIAL STATUS PLANT SPECIES

Sanford's arrowhead was identified to potentially occur within or adjacent to the project site. The canal habitat provides suitable aquatic habitat for this species. Projects that adversely affect this species or result in the mortality of this species would be considered a potentially significant impact under CEQA and NEPA.

Implementation of the following measures will reduce potential impacts to Sanford's arrowhead to a less than significant level under CEQA and NEPA.

Mitigation Measure BIO-2a (*Focused Botanical Surveys*): A qualified botanist/biologist will conduct focused botanical surveys during the appropriate blooming season (May – October) for Sanford's arrowhead, according to CDFW's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (2018) within the canal habitat prior to the start of construction.

Mitigation Measure BIO-2b (*Avoidance*): If Sanford's arrowhead individuals are identified during the focused botanical surveys, an avoidance buffer and, if necessary, use of exclusion fencing, will be placed around the area as to not disturb the plants or its root system.

Mitigation Measure BIO-2c (*Consultation*): If Sanford's arrowhead individuals are detected within project work areas during the focused botanical surveys, and the plants cannot be avoided, the project proponent will initiate consultation with CNPS to determine next steps.

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

The project site contains suitable nesting and/or foraging habitat for a variety of protected bird species, such as migratory birds, and raptors. Protected birds nesting within or adjacent to the project site during construction have the potential to be injured or killed by project-related activities. In addition to the direct "take" of protected birds within the project site or adjacent areas, these birds nesting in these areas could be disturbed by project-related activities resulting in nest abandonment. Projects that adversely affect the nesting success of protected birds or result in the mortality of these birds would be a violation of state and federal laws and considered a potentially significant impact under CEQA and NEPA.

While foraging habitat for protected birds is present on the site, suitable foraging habitat is located adjacent to the site and within the vicinity of the site and these species would be able to continue foraging on the site after project completion. Loss of the foraging habitat from implementation of the project is not considered a significant impact.

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

Mitigation Measure BIO-3a (*Avoidance*): The project's construction activities will occur, if feasible, between August 15 and January 31 (outside of the nesting bird season) to avoid impacts to nesting birds.

Mitigation Measure BIO-3b (*Pre-construction Surveys*): If activities must occur within the nesting bird season (February 1 to August 14), a qualified biologist (someone with experience with bird species in the vicinity of the project site) will conduct a pre-construction survey for active nests within five (5) calendar days prior to the start of construction. It will be completed within the project site, and up to 100 feet outside of the project site for nesting migratory birds and up to 500 feet outside of the project site for nesting raptors. Raptor nests will be considered "active" upon the nest-building stage. If no active nests are observed, no further mitigation is required.

Mitigation Measure BIO-3c (*Avoidance Buffers*): On discovery of any active nests or breeding colonies near work areas, the qualified biologist will determine appropriate avoidance buffer distances based on applicable CDFW and/or USFWS guidelines, the biology of the species, conditions of the nest(s), and the level of project disturbance. If necessary, avoidance buffers will

be identified with flagging, fencing, or other easily visible means, and will be maintained until the biologist has determined that the nestlings have fledged.

3.3.4 PROJECT-RELATED MORTALITY AND/OR DISTURBANCE TO NORTHWESTERN POND TURTLES

The project site contained canal habitat that could be used for northwestern pond turtle dispersal, basking, and foraging. Noise, vegetation removal, construction, and ground disturbance from project activities have the potential to significantly impact northwestern pond turtle. Without appropriate avoidance and minimization measures for northwestern pond turtle, potentially significant impacts associated with project activities could include inadvertent entrapment and direct mortality. Project activities that impact northwestern pond turtles would be considered a potentially significant impact under CEQA and NEPA.

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

Mitigation Measure BIO-4a (*Pre-construction Survey and Avoidance Buffers*): Within seven (7) days prior to the start of construction, a qualified biologist will conduct a pre-construction survey for northwestern pond turtle within the project site and within surrounding areas up to 330 feet. Pre-construction surveys will be conducted in accordance with the draft *Western Pond Turtle (Emys marmorata) Visual Survey Protocol for the Southcoast Ecoregion* (United States Geological Survey 2006). If no northwestern pond turtles are observed during the pre-construction survey, then construction activities may begin. If construction is delayed or halted for more than seven (7) days, another pre-construction survey for northwestern pond turtle will be conducted. If the surveys result in the identification of a northwestern pond turtle or an individual is found on the site during construction activities, it will be allowed to leave the site on its own and the qualified biologist shall determine appropriate buffers to be implemented to avoid impacts to the individual(s).

Mitigation Measure BIO-4b (*Monitor*): If northwestern pond turtles are observed on the project site, a qualified biologist will conduct a pre-activity clearance survey each day and remain onsite to oversee all vegetation clearing and ground disturbing activities until the individual(s) have left the site.

Mitigation Measure BIO-4c (*Formal Consultation*): If northwestern pond turtles within the site cannot be avoided, the project proponent will initiate protection plans and/or relocation plans in consultation with CDFW and/or USFWS.

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

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

implementation of the following measures will reduce potential impacts to western spadefoot to a less than significant level under CEQA and NEPA.

Mitigation Measure BIO-5a (*Pre-construction Survey and Avoidance Buffers*): Within seven (7) days prior to the start of construction, a qualified biologist (someone familiar with this species and their

habitats) will conduct a pre-construction survey for western spadefoot within the project site and surrounding areas up to 50 feet. If no western spadefoot individuals are observed during the pre-construction survey, then construction activities may begin. If construction is delayed or halted for more than seven (7) days, another pre-construction survey for western spadefoot will be conducted. If the surveys result in the identification of a western spadefoot or an individual is found on the site during construction activities, it will be allowed to leave the site on its own and the qualified biologist shall determine appropriate buffers to be implemented to avoid impacts to the individual(s).

Mitigation Measure BIO-5b (*Monitor*): If western spadefoot individuals are observed on the project site, a qualified biologist will conduct a pre-activity clearance survey each day and remain onsite to oversee all vegetation clearing and ground disturbing activities until the individual(s) have left the site.

Mitigation Measure BIO-5c (*Formal Consultation*): If western spadefoots within the site cannot be avoided, the project proponent will initiate protection plans and/or relocation plans in consultation with CDFW and/or USFWS.

3.3.6 PROJECT-RELATED IMPACTS TO WILDLIFE MOVEMENT CORRIDORS

Most of the project site does not contain features that would be likely to function as wildlife movement corridors. The canal habitat could be used as a wildlife movement corridor, but impacts would be temporary and minimal, and wildlife may be able to continue using it during construction and would be able to continue utilizing it after construction activities are completed. However, any impacts to wildlife movement corridors as a result of project activities would be considered a potentially significant impact under CEQA and NEPA.

Implementation of the following mitigation measures will reduce impacts to wildlife movement corridors to a less than significant level under CEQA and NEPA.

Mitigation Measure BIO-6a (*Operational Hours*): Construction activities will be limited to a half hour after sunrise through a half hour before sunset to reduce potential impacts to wildlife movement corridors.

Mitigation Measure BIO-6b (*Wildlife Access*): Access will not be blocked outside of construction hours or during overnight hours or weekends. If construction must block both sides of a wildlife access route, an alternative route through the construction area should be identified by a qualified biologist and maintained throughout the construction schedule timeframe.

Mitigation Measure BIO-6c (*Cover Excavations*): Pipeline/culvert/siphon excavations and vertical pipes will be covered each night to prevent wildlife from falling in and becoming trapped or injured during migratory or dispersal movements.

3.4 SECTION 7 DETERMINATIONS

In addition to the effects analysis performed in Table 2 and Table 3 of this document, Table 4 summarizes project effect determinations for federally-listed and -proposed species found on the CNDDB list generated

on February 13, 2023, and the USFWS IPaC list generated on May 9, 2024 (see Appendix B and Appendix C, respectively), in accordance with Section 7 of the Endangered Species Act.

Table 4: Section 7 Determinations

Species	Determination	Rationale for Determination
California condor *(Gymnogyps californianus)*	No effect	**Nesting habitat absent.** The site and surrounding areas lack suitable trees and nesting habitat. It is unlikely this species would forage.
California tiger salamander *(Ambystoma californiense)*	No effect	**Habitat absent.** The site lacked vernal pool habitat. The project site is also near the edge of their range and barriers such as Wutchumna Ditch separate the site from suitable habitat.
Conservancy fairy shrimp *(Branchinecta conservatio)*	No effect	**Out of range.** The site and surrounding areas are well south of the known range for this species.
Foothill yellow-legged frog – south Sierra DPS (*Rana boylii*)	No effect	**Habitat absent and out of range.** The site and surrounding areas are outside of the range for this species.
Fisher (*Pekania pennanti*)	No effect	**Habitat absent and out of range.** The site and surrounding areas lacked suitable forest habitat required by this species and the site is outside of the known range for this species.
Greene's tuctoria *(Tuctoria greenei)*	No effect	**Habitat absent.** The site lacks suitable habitat for this species.
Hoover's spurge (*Euphorbia hooveri*)	No effect	**Habitat absent.** The site lacks suitable habitat for this species.
Lassics lupine (*Lupinus constancei*)	No effect	**Habitat absent and out of range.** The site and surrounding areas lacked suitable forest habitat required by this species and the site is outside of the known range for this species.
Monarch butterfly (*Danaus plexippus*)	No effect	**Habitat absent.** The site and surrounding areas lacked suitable foraging and roosting habitat for this species.
Northwestern pond turtle (*Actinemys marmorata*)	May affect, but not likely to adversely affect	**Habitat present**. The site contains Wutchumna Ditch which may be used by this species. Implementation of mitigation measure **BIO-4** would reduce affects to not likely to adversely affect.
San Joaquin adobe sunburst *(Pseudobahia peirsonii)*	No effect	**Habitat absent.** The site lacks suitable habitat for this species.
San Joaquin kit fox (*Vulpes macrotis mutica*)	No effect	**Habitat disturbed.** The ruderal/grassland habitat is disturbed, and no signs of this species or burrows of suitable size were observed during the field survey.
San Joaquin Valley Orcutt grass *(Orcuttia inaequalis)*	No effect	**Habitat absent.** The site lacks suitable habitat for this species.

Species	Determination	Rationale for Determination
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	No effect	**Out of range.** While there were elderberry shrubs onsite, the site and surrounding areas are outside of the range of this species.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	No effect	**Habitat absent**. Vernal pool habitat was absent within the site.
Vernal pool tadpole shrimp (*Lepidurus packardi*)	No effect	**Habitat absent**. Vernal pool habitat was absent within the site.
Western spadefoot (*Spea hammondii*)	May affect, but not likely to adversely affect	**Habitat present**. The site contained terrestrial habitat where this species could aestivate. Implementation of mitigation measure **BIO-5** would reduce affects to not likely to adversely affect.

3.5 LESS THAN SIGNIFICANT PROJECT-RELATED IMPACTS

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

Of the 21 regionally occurring special status plant species, 20 are considered absent from or unlikely to occur within the project site due to the absence of suitable habitat and/or the site being outside of the current known range of the species. These species include: alkali-sink goldfields, American manna grass, calico monkeyflower, Coulter's goldfields, Earlimart orache, Greene's tuctoria, Hoover's spurge, Kaweah brodiaea, Kaweah monkeyflower, lesser saltscale, Lassics lupine, Madera leptosiphon, mouse buckwheat, recurved larkspur, San Joaquin adobe sunburst, San Joaquin Valley Orcutt grass, spiny-sepaled button-celery, striped adobe-lily, vernal pool smallscale, and Winter's sunflower.

Since it is unlikely that these species would occur onsite, implementation of the project should have no impact on these 20 special status plant species through construction mortality, disturbance, or loss of habitat. Mitigation measures are not warranted.

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

Of the 22 regionally occurring special status animal species, 20 are considered absent from or unlikely to occur within the project site due to the absence of suitable habitat and/or the project site is outside of the known range for these species. These species include American badger, bald eagle, burrowing owl, California condor, California tiger salamander, conservancy fairy shrimp, Crotch's bumble bee, foothill yellow-legged frog, fisher, monarch butterfly, northern California legless lizard, northern leopard frog, pallid bat, San Joaquin kit fox, tricolored blackbird, valley elderberry longhorn beetle, vernal pool fairy shrimp, vernal pool tadpole shrimp, western mastiff bat, and willow flycatcher.

Since it is unlikely that these species would occur onsite, implementation of the project should have no impact on these 21 special status species through construction mortality, disturbance, or loss of habitat. Mitigation measures are not warranted.

3.5.3 PROJECT-RELATED IMPACTS TO RIPARIAN HABITAT AND NATURAL COMMUNITIES OF SPECIAL CONCERN

Riparian habitat is present on the project site within the canal and seepage habitats. Since this is not naturally occurring habitat, no permits would be required. There are no CNDDB-designated "natural communities of special concern" recorded within the project site or surrounding lands. Mitigation measures are not warranted.

3.5.4 PROJECT-RELATED IMPACTS TO NATIVE WILDLIFE NURSERY SITES

The project site does not contain features that would function as native wildlife nursery sites. Therefore, no mitigation measures are warranted.

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

Typical wetlands, vernal pools, and other waters were absent from the site. Wutchumna Ditch and the St. Johns River are outside of the project site and would not be impacted by project activities. There are no designated wild and scenic rivers within the project site; therefore, the project would not result in direct impacts to wild and scenic rivers. Mitigation measures are not warranted.

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

3.5.6 PROJECT-RELATED IMPACTS TO CRITICAL HABITAT

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

3.5.7 LOCAL POLICIES OR HABITAT CONSERVATION PLANS

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

3.5.8 COASTAL ZONE AND COASTAL BARRIERS RESOURCES ACT

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

3.5.9 PROJECT-RELATED IMPACT TO ESSENTIAL FISH HABITAT

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

4 REFERENCES

Calflora. 2024. Accessed 2024 January. http://www.calflora.org/.

California Department of Fish and Wildlife . 2018. "Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensative Natural Communities." March. Accessed January 2024. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959&inline.

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

California Department of Fish and Wildlife. 2015. "Staff Guidance Regarding Avoidance of Impacts to Tricolored Blackbird Breeding Colonies on Agricultural Fields." Accessed January 2024.

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

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

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

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

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

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

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

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

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

Tulare County. 2012. "Tulare County General Plan 2030 Update." Accessed March 2023. http://generalplan.co.tulare.ca.us/documents/GP/001Adopted%20Tulare%20County%20General%20Plan%20Materials/000General%20Plan%202030%20Part%20I%20and%20Part%20II/GENERAL%20PLAN%202012.pdf.

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

United States Department of Agriculture Natural Resource Conservation Service. 2024. *Soil Survey Area.* Accessed January 2024.

https://www.nrcs.usda.gov/publications/Lists%20of%20Hydric%20Soils%20-%20Query%20by%20Soil%20Survey%20Area%20Map%20Unit%20Rating.html.

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

United States Fish and Wildlife Service . 1998. "Recovery Plan for Upland Species of the San Joaquin Valley, California." Accessed January 2024.

United States Fish and Wildlife Service . 2017. "Recovery Plan for the Giant Garter Snake (Thamnophis gigas)." Accessed January 2024.

United States Fish and Wildlife Service . 2024a. *National Wetlands Inventory.* Accessed January 2024. https://www.fws.gov/wetlands/data/mapper.html.

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

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

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

United States Geological Survey. 2006. *United States Geological Survey Western Pond Turtle (Emys marmorata) Visual Survey Protocol for the Southcoast Ecoregion.* Accessed May 2023. https://sdmmp.com/upload/SDMMP_Repository/0/4fnpv18xm0sqtw29j7d3rz56bkychg.pdf.

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

Weather US. 2024. "Climate and monthly weather forecast Woodlake, CA." Accessed February 2024. https://www.weather-us.com/en/california-usa/woodlake-climate#temperature.

APPENDIX A: REPRESENTATIVE PHOTOS OF THE PROJECT SITE

Photograph 1

Overview of the ruderal/ grassland habitat.

Photograph 2

Another overview of the ruderal/grassland habitat.

Photograph 3

Another overview of the ruderal/grassland habitat.

Photograph 4

Another overview of the ruderal/grassland habitat.

Photograph 5

Another overview of the ruderal/grassland habitat.

Photograph 6

Overview of California ground squirrel burrows within the site.

Photograph 7

Overview of the canal habitat that includes Wutchumna Ditch approximately where the connection will be located.

Photograph 8

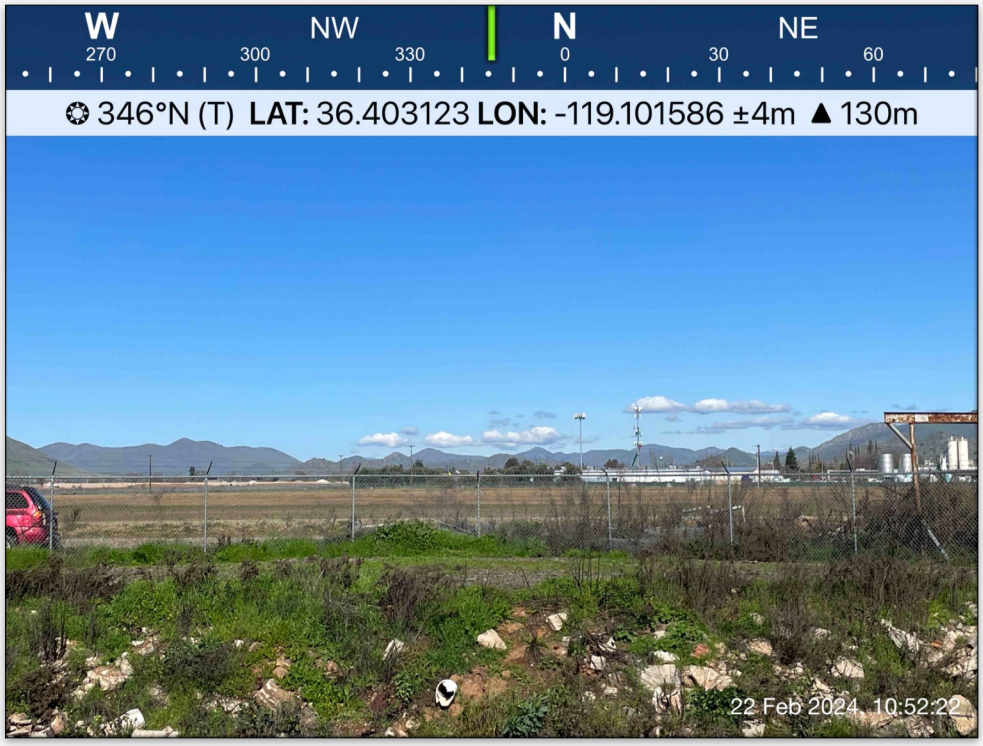
Overview of the seepage habitat adjacent to the canal habitat.

Photograph 9

Surrounding area to the south of the site includes a small airport.

Photograph 10

Surrounding area to the east of the site includes residential apartments.



Photograph 11

Surrounding area to the north of the site includes a residential house and basins across from Wutchumna Ditch.

Photograph 12

Surrounding area to the west of the site includes a facility and a ruderal field.

APPENDIX B: CNDDB 9-QUAD SPECIES LIST

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Stokes Mtn. (3611952) OR Auckland (3611951) OR Shadequarter Mtn. (3611858) OR Kaweah (3611848) OR Woodlake (3611941) OR Ivanhoe (3611942) OR Exeter (3611932) OR Rocky Hill (3611931) OR Chickencoop Canyon (3611838))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
alkali-sink goldfields *Lasthenia chrysantha*	PDAST5L030	None	None	G2	S2	1B.1
American badger *Taxidea taxus*	AMAJF04010	None	None	G5	S3	SSC
American manna grass *Glyceria grandis*	PMPOA2Y080	None	None	G5	S3	2B.3
bald eagle *Haliaeetus leucocephalus*	ABNKC10010	Delisted	Endangered	G5	S3	FP
burrowing owl *Athene cunicularia*	ABNSB10010	None	None	G4	S2	SSC
calico monkeyflower *Diplacus pictus*	PDSCR1B240	None	None	G2	S2	1B.2
California condor *Gymnogyps californianus*	ABNKA03010	Endangered	Endangered	G1	S2	FP
California linderiella *Linderiella occidentalis*	ICBRA06010	None	None	G2G3	S2S3	
California tiger salamander - central California DPS *Ambystoma californiense pop. 1*	AAAAA01181	Threatened	Threatened	G2G3T3	S3	WL
Central Valley Drainage Hardhead/Squawfish Stream *Central Valley Drainage Hardhead/Squawfish Stream*	CARA2443CA	None	None	GNR	SNR	
Coulter's goldfields *Lasthenia glabrata ssp. coulteri*	PDAST5L0A1	None	None	G4T2	S2	1B.1
Crotch bumble bee *Bombus crotchii*	IIHYM24480	None	Candidate Endangered	G2	S2	
Earlimart orache *Atriplex cordulata var. erecticaulis*	PDCHE042V0	None	None	G3T1	S1	1B.2
foothill yellow-legged frog - south Sierra DPS *Rana boylii pop. 5*	AAABH01055	Endangered	Endangered	G3T2	S2	
great blue heron *Ardea herodias*	ABNGA04010	None	None	G5	S4	
Great Valley Valley Oak Riparian Forest *Great Valley Valley Oak Riparian Forest*	CTT61430CA	None	None	G1	S1.1	
Greene's tuctoria *Tuctoria greenei*	PMPOA6N010	Endangered	Rare	G1	S1	1B.1
Hoover's spurge *Euphorbia hooveri*	PDEUP0D150	Threatened	None	G1	S1	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Kaweah brodiaea *Brodiaea insignis*	PMLIL0C060	None	Endangered	G1	S1	1B.2
Kaweah monkeyflower *Erythranthe norrisii*	PDSCR1B2Y0	None	None	G2	S2	1B.3
Kings River slender salamander *Batrachoseps regius*	AAAAD02140	None	None	G2G3	S2S3	
lesser saltscale *Atriplex minuscula*	PDCHE042M0	None	None	G2	S2	1B.1
Madera leptosiphon *Leptosiphon serrulatus*	PDPLM09130	None	None	G3	S3	1B.2
moestan blister beetle *Lytta moesta*	IICOL4C020	None	None	G2	S2	
Moody's gnaphosid spider *Talanites moodyae*	ILARA98020	None	None	G2G3	S2S3	
Morrison's blister beetle *Lytta morrisoni*	IICOL4C040	None	None	G1G2	S2	
mouse buckwheat *Eriogonum nudum var. murinum*	PDPGN08495	None	None	G5T2	S2	1B.2
Northern California legless lizard *Anniella pulchra*	ARACC01020	None	None	G3	S2S3	SSC
Northern Claypan Vernal Pool *Northern Claypan Vernal Pool*	CTT44120CA	None	None	G1	S1.1	
Northern Hardpan Vernal Pool *Northern Hardpan Vernal Pool*	CTT44110CA	None	None	G3	S3.1	
northern leopard frog *Lithobates pipiens*	AAABH01170	None	None	G5	S2	SSC
pallid bat *Antrozous pallidus*	AMACC10010	None	None	G4	S3	SSC
recurved larkspur *Delphinium recurvatum*	PDRAN0B1J0	None	None	G2?	S2?	1B.2
San Joaquin adobe sunburst *Pseudobahia peirsonii*	PDAST7P030	Threatened	Endangered	G1	S1	1B.1
San Joaquin kit fox *Vulpes macrotis mutica*	AMAJA03041	Endangered	Threatened	G4T2	S3	
San Joaquin Valley Orcutt grass *Orcuttia inaequalis*	PMPOA4G060	Threatened	Endangered	G1	S1	1B.1
Sanford's arrowhead *Sagittaria sanfordii*	PMALI040Q0	None	None	G3	S3	1B.2
spiny-sepaled button-celery *Eryngium spinosepalum*	PDAPI0Z0Y0	None	None	G2	S2	1B.2
striped adobe-lily *Fritillaria striata*	PMLIL0V0K0	None	Threatened	G1	S1	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Sycamore Alluvial Woodland *Sycamore Alluvial Woodland*	CTT62100CA	None	None	G1	S1.1	
tricolored blackbird *Agelaius tricolor*	ABPBXB0020	None	Threatened	G1G2	S2	SSC
Tulare cuckoo wasp *Chrysis tularensis*	IIHYM72010	None	None	G1G2	S2	
valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	IICOL48011	Threatened	None	G3T3	S3	
Valley Sacaton Grassland *Valley Sacaton Grassland*	CTT42120CA	None	None	G1	S1.1	
vernal pool fairy shrimp *Branchinecta lynchi*	ICBRA03030	Threatened	None	G3	S3	
vernal pool smallscale *Atriplex persistens*	PDCHE042P0	None	None	G2	S2	1B.2
vernal pool tadpole shrimp *Lepidurus packardi*	ICBRA10010	Endangered	None	G3	S3	
western mastiff bat *Eumops perotis californicus*	AMACD02011	None	None	G4G5T4	S3S4	SSC
western pond turtle *Emys marmorata*	ARAAD02030	Proposed Threatened	None	G3G4	S3	SSC
western spadefoot *Spea hammondii*	AAABF02020	Proposed Threatened	None	G2G3	S3S4	SSC
willow flycatcher *Empidonax traillii*	ABPAE33040	None	Endangered	G5	S3	
Winter's sunflower *Helianthus winteri*	PDAST4N260	None	None	G2?	S2?	1B.2

Record Count: 52

APPENDIX C: IPAC SPECIES LIST

United States Department of the Interior

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

In Reply Refer To: 05/09/2024 15:57:27 UTC
Project Code: 2023-0076371
Project Name: Sentinel Butte Mutual Water Company Flood Capture Basin

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

To Whom It May Concern:

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

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

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

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

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

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

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

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

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

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

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

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

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

This species list is provided by:

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

PROJECT SUMMARY

Project Code: 2023-0076371
Project Name: Sentinel Butte Mutual Water Company Flood Capture Basin
Project Type: Water Supply Facility - New Constr
Project Description: The Project is located in Woodlake, Tulare County. SBMWC proposes to build a flood capture basin.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@36.40145015,-119.10061072071653,14z

Counties: Tulare County, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 12 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Fisher *Pekania pennanti* Population: SSN DPS There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3651	Endangered
San Joaquin Kit Fox *Vulpes macrotis mutica* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2873	Endangered

BIRDS

NAME	STATUS
California Condor *Gymnogyps californianus* Population: U.S.A. only, except where listed as an experimental population There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8193	Endangered

REPTILES

NAME	STATUS
Northwestern Pond Turtle *Actinemys marmorata* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1111	Proposed Threatened

AMPHIBIANS

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

INSECTS

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

CRUSTACEANS

NAME	STATUS
Conservancy Fairy Shrimp *Branchinecta conservatio* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8246	Endangered

FLOWERING PLANTS

NAME	STATUS
Greene's Tuctoria *Tuctoria greenei* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1573	Endangered
Lassics Lupine *Lupinus constancei* Population: There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7976	Endangered
San Joaquin Adobe Sunburst *Pseudobahia peirsonii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2931	Threatened
San Joaquin Valley Orcutt Grass *Orcuttia inaequalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5506	Threatened

CRITICAL HABITATS

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

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

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Shaylea Stark
Address: 455 W Fir Ave
City: Clovis
State: CA
Zip: 93612
Email sstark@ppeng.com
Phone: 5594492700

APPENDIX D: NRCS WEB SOIL SURVEY REPORT

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

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

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

SBMWC Flood Capture Basin

March 1, 2024

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

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

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:3,540 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 150 300 600 900

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

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

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

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

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

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

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

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

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
155	San Joaquin loam, 2 to 9 percent slopes	9.2	31.1%
164	Tujunga sand	19.8	66.5%
W	Water	0.7	2.4%
Totals for Area of Interest		**29.7**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the

development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Tulare County, California, Central Part

155—San Joaquin loam, 2 to 9 percent slopes

Map Unit Setting

National map unit symbol: hkfh
Elevation: 20 to 500 feet
Mean annual precipitation: 10 to 22 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 250 to 300 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

San joaquin and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of San Joaquin

Setting

Landform: Terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from acid igneous rock

Typical profile

Ap - 0 to 13 inches: loam
B - 13 to 20 inches: sandy clay loam
Bt - 20 to 25 inches: clay
Cqm - 25 to 56 inches: duripan
C - 56 to 78 inches: stratified sandy loam to loam

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: More than 80 inches; 20 to 40 inches to duripan
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.2 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: R017XE061CA - Loamy Fan Remnant 8-10" P.Z.
Hydric soil rating: No

Minor Components

Exeter

Percent of map unit: 7 percent

Hydric soil rating: No

Unnamed, brown subsoil

Percent of map unit: 6 percent
Hydric soil rating: No

Wyman

Percent of map unit: 6 percent
Hydric soil rating: No

Unnamed, ponded

Percent of map unit: 1 percent
Landform: Depressions
Hydric soil rating: Yes

164—Tujunga sand

Map Unit Setting

National map unit symbol: hkfs
Elevation: 10 to 2,500 feet
Mean annual precipitation: 10 to 25 inches
Mean annual air temperature: 59 to 64 degrees F
Frost-free period: 280 to 350 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Tujunga

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granitoid

Typical profile

A - 0 to 16 inches: sand
C - 16 to 60 inches: loamy sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None

Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Ecological site: R017XE080CA - SANDY
Hydric soil rating: No

Minor Components

Honcut

Percent of map unit: 4 percent
Hydric soil rating: No

Unnamed, calcareous

Percent of map unit: 3 percent
Hydric soil rating: No

San emigdio

Percent of map unit: 3 percent
Hydric soil rating: No

W—Water

Map Unit Composition

Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

References

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

APPENDIX E: NMFS EFH MAPPER

EFH Mapper Report

EFH Data Notice

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

West Coast Regional Office

Query Results

Degrees, Minutes, Seconds: Latitude = 36º 24' 4" N, Longitude = 120º 53' 56" W
Decimal Degrees: Latitude = 36.401, Longitude = -119.101

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

EFH

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

Pacific Salmon EFH

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

Atlantic Salmon

No Atlantic Salmon were identified at the report location.

HAPCs

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

EFH Areas Protected from Fishing

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

Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data.
****For links to all EFH text descriptions see the complete data inventory: open data inventory -->**

Pacific Coastal Pelagic Species,
Jack Mackerel,
Pacific (Chub) Mackerel,
Pacific Sardine,
Northern Anchovy - Central Subpopulation,
Northern Anchovy - Northern Subpopulation,
Pacific Highly Migratory Species,
Bigeye Thresher Shark - North Pacific,
Bluefin Tuna - Pacific,
Dolphinfish (Dorado or Mahimahi) - Pacific,

Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data. ****For links to all EFH text descriptions see the complete data inventory: open data inventory -->**
Pelagic Thresher Shark - North Pacific, Swordfish - North Pacific

Appendix C: Class III Inventory/Phase I Survey

CLASS III INVENTORY/PHASE I SURVEY, SENTINEL BUTTE MUTUAL WATER COMPANY BASIN PROJECT, TULARE COUNTY, CALIFORNIA

Prepared for:

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Prepared by:

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And

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August 2024
PN 36510.42

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

MANAGEMENT SUMMARY

ASM Affiliates (ASM) was retained by the Provost and Pritchard Consulting Group to conduct an intensive Class III inventory/Phase I survey for the Sentinel Butte Mutual Water Company (SBMWC) Basin Project (Project), located in Tulare County outside of the city limits of the City of Woodlake due west of Bravo Lake and adjacent to Wutchumna Canal/Ditch. It is approximately 197 miles (mi.) southwest of Sacramento and 71 mi. north of Bakersfield. This places the Project on the open flats of the San Joaquin Valley. Specifically, the Project is within Section 36, Township 17 South, Range 26 East (T17S/R26E), Mount Diablo Base and Meridian (MDBM), as depicted on the Woodlake USGS 7.5-minute topographical map. The proposed Project site consists of agricultural fields and unpaved roads. Elevations within the Project area, which is mostly flat, range from 425 feet (ft.) above mean sea level (amsl) to 430 ft. amsl. The horizontal Area of Potential Effect (APE) is approximately 29.25 acres (ac.). This includes all construction staging and access areas needed for construction equipment. The vertical APE, defined as the maximum depth of excavation for the basins, is 10 ft.

ASM Affiliates (ASM) conducted this study, with Director Peter A. Carey, M.A., RPA, serving as principal investigator. Senior Archaeologist Dustin Merrick, M.A., RPA was a contributing author of this report. The study was undertaken to assist with compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and the California Environmental Quality Act (CEQA).

In order to determine whether the Project APE had been previously surveyed for cultural resources, and/or whether any such resources were known to exist within or near to it, an archival records search was conducted by the staff of the Southern San Joaquin Valley Information Center (SSJVIC) on June 26, 2023. According to the SSJVIC, two previous studies (TU-01196 and TU-01392) have been conducted within the Project APE, and eight previous studies were identified within the 0.5 mi. buffer (Table 1). The SSJVIC results identified a single built environment resource adjacent to the APE, consisting of the Wutchumna Canal/Ditch (P-54-004875). An additional three built environment resources were identified within the 0.5 mi. buffer, with the nearest located approximately 0.2 mi. from the Project APE.

As part of the CEQA process, the Native American Heritage Commission (NAHC) was contacted to request a search of the Sacred Lands File (SLF) as well as a list of Tribes traditionally and culturally affiliated with the Project APE. On July 17, 2023, the NAHC responded with negative SLF results and 14 Tribal contacts from seven Tribes. Outreach letters were mailed to all listed Tribes on July 25, 2023, and follow-up emails were sent on April 30, 2024. As of the date of this report, no responses have been received.

An intensive Class III inventory/Phase I survey was conducted on April 18, 2024, with parallel transects spaced at a maximum 15-meter (m.) intervals walked throughout the Project APE. Much of the Project APE appears to have been previously disturbed by agriculture and the development of an access road. Ground surface visibility within the APE varied from fair (approximately 50 percent) in the eastern portion of the APE to poor (less than 10 percent) in the western portion for the Class III inventory/Phase I survey. Non-native vegetation inhibited visibility in both the

western and eastern portions of the APE. Within the western area of poorest visibility, four test pits that had been mechanically excavated to between 4 ft. and 5 ft. deep allowed visibility of surficial and subsurface soils. Soils consisted of tan to brown sandy loam throughout the Project APE. No archaeological resources were identified within the Project APE.

The Wutchumna Canal/Ditch has not been previously evaluated for eligibility for listing in the NRHP or CRHR. ASM considered the potential eligibility of the segment of the Wutchumna Canal/Ditch within the Project APE for listing in the NRHP/CRHR under Criteria A/1, B/2, C/3, and D/4. ASM recommends the recorded segment of the Wutchumna Canal/Ditch eligible for listing in the NRHP/ CRHR under Criterion A/1.

Based on the above analyses and findings, the proposed Project will not result in adverse impacts or effects to historic properties or historical resources, and a determination of ***no adverse effect*** under Section 106 and ***less than significant impact*** under CEQA is recommended. It is further recommended that, in the unlikely event that previously unrecorded cultural resources are identified during Project construction, work be halted within a 100 ft. radius of the find and a qualified archaeologist be contacted to evaluate the newly discovered resource.

1. INTRODUCTION AND REGULATORY CONTEXT

ASM Affiliates (ASM) was retained by the Provost and Pritchard Consulting Group to conduct an intensive Class III inventory/Phase I survey for the Sentinel Butte Mutual Water Company (SBMWC) Basin Project (Project), located in Tulare County outside of the city limits of the City of Woodlake due west of Bravo Lake and adjacent to Wutchumna Canal/Ditch (Figure 1). It is approximately 197 miles (mi.) southwest of Sacramento and 71 mi. north of Bakersfield. The study was undertaken to assist with compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and the California Environmental Quality Act (CEQA). The investigation was conducted, specifically, to ensure that significant impacts or adverse effects to historic properties or historical resources do not occur as a result of Project construction.

This current study included:

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

Director Peter A. Carey, M.A., RPA, served as principal investigator, and ASM Assistant Archaeologists Maria Silva, B.A., Daniel Ware, B.A., and Margarita Medina Lemus, B.A., conducted the fieldwork. Senior Archaeologist Dustin Merrick, M.A., RPA, was a contributing author of this report.

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

1.1 PROJECT LOCATION

The Project site is located in Tulare County outside of the city limits of the City of Woodlake, due southwest of Bravo Lake, and adjacent to Wutchumna Canal/Ditch. As mentioned about, it is approximately 197 mi. southwest of Sacramento and 71 mi. north of Bakersfield. The Project is on Assessor's Parcel Numbers 060-160-003 and 060-160-058. This places the Project on the open flats of the San Joaquin Valley. Specifically, the Project is within Section 36, Township 17 South, Range 26 East (T17S/R26E), Mount Diablo Base and Meridian (MDBM), as depicted on the Woodlake USGS 7.5-minute topographical map. The proposed Project site consists of water conveyance features and agricultural fields, and unpaved roads. Elevations within the Project area, which is mostly flat, range from 425 feet (ft.) above mean sea level (amsl) to 430 ft. amsl.

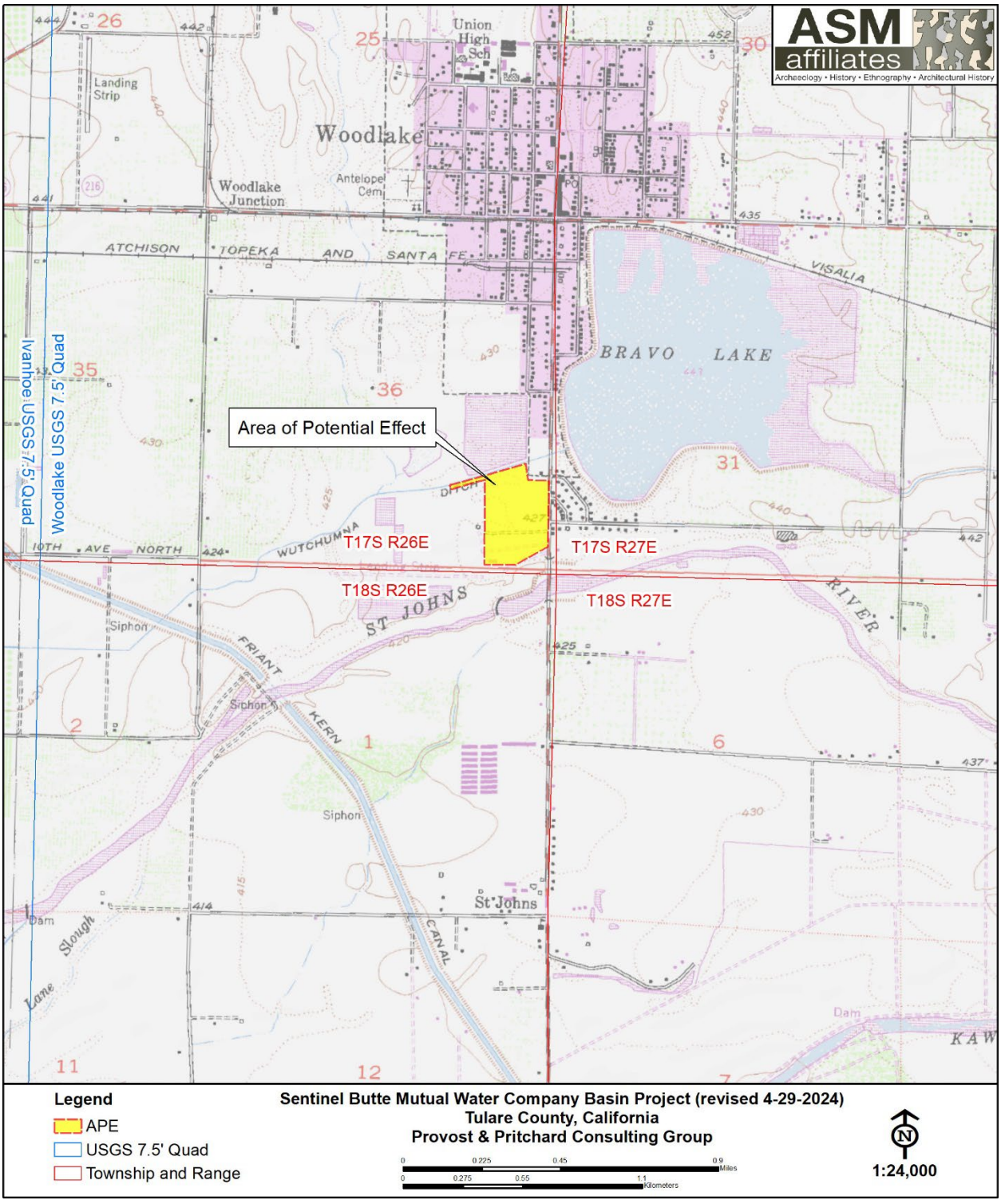


Figure 1. Location of the Sentinel Butte Mutual Water Company Basin Project, Tulare County, California.

1.2 PROJECT DESCRIPTION AND AREA OF POTENTIAL EFFECT

Project Background and Purpose

SBMWC has received funding through the Department of Water Resources (DWR) to regrade, expand, and improve the storage capability of an existing flood capture basin (Project). The funding will allow the SBMWC to expand the existing storage capacity and maximize the area of the property, approximately 29 acres (ac.), (APNs 060-160-003 and 060-160-058) into flood recharge basins and will allow for improvements to supporting control facilities.

Project Description

The Project is located in Woodlake, Tulare County. The Project would entail constructing a new flood capture basin on site and connecting to existing infrastructure. The Project would help develop additional layoff basins to better capture high flows during flood periods primarily from the Kaweah River through the Wutchumna Canal/Ditch. The Project would consist of construction of multiple cells with cut/excavation used for levees/berms within the basin area, connection to existing infrastructure, and a minimum of 300 ft. of 24 inch (in.) piping associated with connecting the basin cells to Wutchumna Canal/Ditch and other local delivery facilities.

Construction activities will include excavating approximately 5 ft. to 10 ft. of material to create the storage space and placement of the excavated material along the outer perimeter to create the embankments and roadways to impound the water for recharge operations and grading basins to the designs and specifications. Additionally, the Project will include a new diversion structure within Wutchumna Canal/Ditch to divert water into the proposed basin(s). The diversion structure will be located adjacent to the proposed basin(s) along the south bank of the existing canal/ditch. The basin(s) will also have a connection to SBMWC's existing 24 in. line on site to return water into the existing basins located on the north side of the canal/ditch.

Through these improvements the Project is anticipated to capture 75 acre-feet per year (af/y) of flood waters. This estimate assumes that the basin(s) developed will provide 175-200 acre-feet (af) of volume. During wet years it is assumed the basin(s) will completely fill and empty two times providing for 350-400 af/y. Estimating two wet years in ten years, the average annual is 75 af/y.

The horizontal Area of Potential Effect (APE) is approximately 29 ac. This includes all construction staging and access areas needed for construction equipment. The vertical APE, defined as the maximum depth of excavation for the basins, is 10 ft.

1.3 REGULATORY CONTEXT

1.3.1 National Historic Preservation Act Section 106

NHPA Section 106 is applicable to federal undertakings, including Projects financed or permitted by federal agencies regardless of whether the activities occur on federally managed or privately-owned land. Its purpose is to determine whether adverse effects will occur to significant cultural

resources, defined as "historical properties" that are listed in or determined eligible for listing in the National Register of Historic Places (NRHP). The criteria for NRHP eligibility are defined at 36 CFR § 60.4 as follows:

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

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

> Ordinarily cemeteries, birthplaces, or graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, properties primarily commemorative in nature, and properties that have achieved significance within the past 50 years shall not be considered eligible for the NRHP. However, such properties will qualify if they are integral parts of districts that do meet the criteria or if they fall within the following categories:
>
> (a) A religious property deriving primary significance from architectural or artistic distinction or historical importance; or
>
> (b) A building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event; or
>
> (c) A birthplace or grave of a historical figure of outstanding importance if there is no appropriate site or building directly associated with his productive life.
>
> (d) A cemetery which derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events; or
>
> (e) A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived; or
>
> (f) A property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or

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

1.3.2 National Register Criteria for Evaluation

The criteria for evaluation of NRHP eligibility are outlined at 36 CFR Part 60.4. A district, site, building, structure, or object must generally be at least 50 years old to be eligible for consideration as a historic property. That district, site, building, structure, or object must retain integrity of location, design, setting, materials, workmanship, feelings, and association as well as meet one of the following criteria to demonstrate its significance in American history, architecture, archeology, engineering, and culture. A district, site, building, structure, or object must:

> (A) be associated with events that have made a significant contribution to the broad patterns of history; or,
>
> (B) be associated with the lives of people significant in our past; or,
>
> (C) embody the distinct characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction; or,
>
> (D) have yielded, or may be likely to yield, information important in prehistory or history.

A site must have integrity and meet one of the four criteria of eligibility to demonstrate its historic associations in order to convey its significance. A property must be associated with one or more events important in history or prehistory in order to be considered for listing under Criterion A. Additionally, the specific association of the property itself must also be considered significant. Criterion B applies to properties associated with individuals whose specific contributions to the history can be identified and documented. Properties significant for their physical design or construction under Criterion C must have features with characteristics that exemplify such elements as architecture, landscape architecture, engineering, and artwork. Criterion D most commonly applies to properties that have the potential to answer, in whole or in part, important research questions about human history that can only be answered by the actual physical materials of cultural resources. A property eligible under Criterion D must demonstrate the potential to contain information relevant to the prehistory and history (*National Register Bulletin* 15).

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

1.3.3 California Environmental Quality Act

CEQA is applicable to discretionary actions by state or local lead agencies. Under CEQA, lead agencies must analyze impacts to cultural resources. Significant impacts under CEQA occur when "historically significant" or "unique" cultural resources are adversely affected, which occurs when

such resources could be altered or destroyed through Project implementation. Historically significant cultural resources are defined by eligibility for or by listing in the California Register of Historical Resources (CRHR). In practice, the federal NRHP criteria (below) for significance applied under Section 106 are generally (although not entirely) consistent with CRHR criteria (see PRC § 5024.1, Title 14 CCR, Section 4852 and § 15064.5(a)(3)).

Significant cultural resources are those archaeological resources and historical properties that:

(1) Are associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

(2) Are associated with the lives of persons important in our past;

(3) Embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of an important creative individual, or possess high artistic values; or

(4) Have yielded, or may be likely to yield, information important in prehistory or history.

Unique resources under CEQA, in slight contrast, are those that represent:

> An archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:
>
> (1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
>
> (2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.
>
> (3) Is directly associated with a scientifically recognized important prehistoric or historic event or person (PRC § 21083.2(g)).

Preservation in place is the preferred approach under CEQA to mitigating adverse impacts to significant or unique cultural resources.

2. ENVIRONMENTAL AND CULTURAL BACKGROUND

2.1 ENVIRONMENTAL BACKGROUND AND GEOARCHAEOLOGICAL SENSITIVITY

As noted above, the Project is at an average elevation of approximately 425 ft. amsl, approximately 1.2 mi. south of the City of Woodlake on the open flats of the San Joaquin Valley. According to Menafee and Dodge (1913:81), Euro-American settlement of the City of Tulare and immediate environs occurred slightly later than other parts of Tulare County because of the lack of significant surface water, and hence its relatively limited agricultural potential prior to the development of irrigation systems. Before the appearance of agriculture, this location would have been prairie grasslands, grading into tree savannas in the foothills to the east (Preston 1981). The APE and immediate surroundings have been farmed and grazed for many years and no native vegetation is present, with the APE now consisting largely of access roads and undeveloped lands. Perennial bunchgrasses such as purple needlegrass and nodding needlegrass most likely would have been the dominant plant cover in the region prior to cultivation.

The Project APE is within the northern extent of the Kaweah Delta. A Caltrans geoarchaeological study (Meyer et al. 2010) that included the APE was consulted in order to identify the potential for buried archaeological sites in the vicinity of the Project area. This study involved first determining the location and ages of late Pleistocene (>25,000 years old) landforms in the southern San Joaquin Valley. These were identified by combining a synthesis of 2,400 published paleontological, soils and archaeological chronometric dates with geoarchaeological field testing. The ages of surface landforms were then mapped to provide an assessment for the potential for buried archaeological deposits. These ages were derived primarily from the Soil Survey Geographic Database (SSURGO) and the State Soils Geographic (STATSGO) database. A series of maps were created from this information that ranked locations in seven ordinal classes for sensitivity for buried soils, from Very Low to Very High.

According to the geoarchaeological model developed by Meyer et al. (2010), the southern half has a Moderate potential for buried archaeological deposits, while the northern half has a Low potential for buried archaeological deposits. Additionally, the Project APE is within existing roads and has been disturbed from agricultural use as far back as 1969 (NETR Online 2024). Buried sites and cultural resources are therefore considered unlikely within the Project APE.

2.2 ETHNOGRAPHIC BACKGROUND

Penutian-speaking Yokuts tribal groups occupied the southern San Joaquin Valley region and much of the nearby Sierra Nevada. Ethnographic information about the Yokuts was collected primarily by Powers (1971, 1976 [originally 1877]), Kroeber (1925), Gayton (1930, 1948), Driver (1937), and Harrington (n.d.). For a variety of historical reasons, existing research information emphasizes the central Yokuts tribes who occupied both the valley and particularly the foothills of the Sierra Nevada. The northernmost tribes suffered from the influx of Euro Americans during the

Gold Rush and their populations were in substantial decline by the time ethnographic studies began in the early twentieth century. In contrast, the southernmost tribes were partially removed by the Spanish to missions and eventually absorbed into multi-tribal communities on the Sebastian Indian Reservation (on Tejon Ranch), and later the Tule River Reservation and Santa Rosa Rancheria to the north. The result is a scarcity of ethnographic detail on southern Valley tribes, especially in relation to the rich information collected from the central foothills tribes where native speakers of the Yokuts dialects are still found. Regardless, the general details of indigenous lifeways were similar across the broad expanse of Yokuts territory, particularly in terms of environmentally influenced subsistence and adaptation and with regard to religion and belief, which were similar everywhere.

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

The Yokuts settlement pattern was largely consistent, regardless of specific tribe involved. Winter villages were typically located along lakeshores and major stream courses (as these existed circa AD 1800), with dispersal phase family camps at elevated spots on the valley floor and near gathering areas in the foothills.

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

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

Shamanism is a religious system common to most Native American tribes. It involves a direct and personal relationship between the individual and the supernatural world enacted by entering a trance or hallucinatory state (usually through the ingestion of psychotropic plants, such as jimsonweed or more typically native tobacco). Shamans were considered individuals with an unusual degree of supernatural power, serving as healers or curers, diviners, and controllers of natural phenomena (such as rain or thunder). Shamans also produced the rock art of this region, depicting the visions they experienced in vision quests believed to represent their spirit helpers and events in the supernatural realm (Whitley 1992, 2000).

The centrality of shamanism to the religious and spiritual life of the Yokuts was demonstrated by the role of shamans in the yearly ceremonial round. The ritual round, performed the same way each year, started in the spring with the jimsonweed ceremony, followed by rattlesnake dance and (where appropriate) first salmon ceremony. After returning from seed camps, fall rituals began in

the late summer with the mourning ceremony, followed by first seed and acorn rites, and then bear dance (Gayton 1930:379). In each case, shamans served as ceremonial officials responsible for specific dances involving a display of their supernatural powers (Kroeber 1925).

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

Although population estimates vary and population size was greatly affected by the introduction of Euro-American diseases and social disruption, the Yokuts were one of the largest, most successful groups in Native California. Cook (1978) estimates that the Yokuts region contained 27 percent of the aboriginal population in the state at the time of contact; other estimates are even higher. Many Yokuts people continue to reside in the southern San Joaquin Valley today.

2.3 PRE-CONTACT ARCHAEOLOGICAL BACKGROUND

The southern San Joaquin Valley region has received minimal archaeological attention compared to other areas of the state. In part, this is because the majority of California archaeological work has been concentrated in the Sacramento Delta, Santa Barbara Channel, and central Mojave Desert areas (see Moratto 1984). Although knowledge of the region's prehistory is limited, enough is known to determine that the archaeological record is broadly similar to south-central California as a whole (see Gifford and Schenk 1926; Hewes 1941; Wedel 1941; Fenenga 1952; Elsasser 1962; Fredrickson and Grossman 1977; Schiffman and Garfinkel 1981). Based on these sources, the general prehistory of the region can be outlined as follows.

Initial occupation of the region occurred at least as early as the *Paleoindian Period*, or prior to about 10,000 years before present (YBP). Evidence of early use of the region is indicated by characteristic fluted and stemmed points found around the margin of Tulare Lake, in the foothills of the Sierra, and in the Mojave Desert proper.

Both fluted and stemmed points are particularly common around lake margins, suggesting a terminal Pleistocene/early Holocene lakeshore adaptation similar to that found throughout the far west at the same time; little else is known about these earliest peoples. More than 250 fluted points have been recovered from the Witt Site (CA-KIN-32), located along the western shoreline of ancient Tulare Lake, west of the Project APE, demonstrating the importance of this early occupation in the San Joaquin Valley (see Fenenga 1993). Additional finds consist of a Clovis-like Projectile point discovered in a flash-flood cut-bank near White Oak Lodge in 1953 on Tejon Ranch (Glennan 1987a, 1987b). More recently, a similar fluted point was found near Bakersfield (Zimmerman et al. 1989), and a number are known from the Edwards Air Force Base and Boron area of the western Mojave Desert. Although human occupation of the state is well-established during the Late Pleistocene, relatively little can be inferred about the nature and distribution of this

occupation with a few exceptions. First, little evidence exists to support the idea that people at that time were big-game hunters, similar to those found on the Great Plains. Second, the western Mojave Desert evidence suggests small, very mobile populations that left a minimal archaeological signature. The evidence from the ancient Tulare Lake shore, in contrast, suggests much more substantial population and settlements which, instead of relying on big game hunting, were tied to the lacustrine lake edge. Variability in subsistence and settlement patterns is thus apparent in California, in contrast to the Great Plains.

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

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

Evidence for Middle Horizon occupation of interior south-central California is substantial. For example, in northern Los Angeles County along the upper Santa Clara River, to the south of the San Joaquin Valley, the Agua Dulce village complex indicates occupation extending back to the Intermediate Period, when the population of the village may have been 50 or more people (King et al. n.d.). Similarly, inhabitation of the Hathaway Ranch region, near Lake Piru, and the Newhall Ranch, near Valencia, appears to date to the Intermediate Period (W&S Consultants 1994). To the west, little or no evidence exists for pre-Middle Horizon occupation in the upper Sisquoc and Cuyama River drainages; populations first appear there at roughly 3500 YBP (Horne 1981). The Carrizo Plain, the valley immediately west of the San Joaquin, experienced a major population expansion during the Middle Horizon (W&S Consultants 2004; Whitley et al. 2007), and recently

collected data indicates the Tehachapi Mountains region was first significantly occupied during the Middle Horizon (W&S Consultants 2006). A parallel can be drawn to the inland Ventura County region where a similar pattern has been identified (Whitley and Beaudry 1991), as well as the western Mojave Desert (Sutton 1988a, 1988b), the southern Sierra Nevada (W&S Consultants 1999), and the Coso Range region (Whitley et al. 1988). In all of these areas a major expansion in settlement, the establishment of large site complexes and an increase in the range of environments exploited appear to have occurred sometime roughly around 4,000 YBP. Although most efforts to explain this expansion have focused on local circumstances and events, it is increasingly apparent this was a major southern California-wide occurrence, and any explanation must be sought at a larger level of analysis (Whitley 2000). Additionally, evidence from the Carrizo Plain suggests the origins of the tribelet level of political organization developed during this period (W&S Consultants 2004; Whitley et al. 2007). Whether this same demographic process holds for the southern San Joaquin Valley, including the current Project APE, is yet to be determined.

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

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

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

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

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

2.4 HISTORICAL BACKGROUND

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

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

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

With the increase of ranching in the southern San Joaquin Valley came the dramatic change in the landscape, as non-native grasses more beneficial for grazing and pasture replaced native flora (Preston 1981). After the passing of the Arkansas Act in 1850, efforts were made to reclaim small tracts of land in order to create more usable spaces for ranching. Eventually, as farming supplanted ranching as a more profitable enterprise, large tracts of land began to be reclaimed for agricultural use, aided in part by the extension of the railroad in the 1870s (Pacific Legacy 2006).

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

The City of Tulare was then established by the Southern Pacific Railroad in 1872, with plats aligned parallel to the tracks. As a rail diversion point, a series of rail company workshops, including a roundhouse, were constructed. The work force for these facilities attracted additional development and settlement. In addition to the rail yards, by 1876 the town had a general store, drugstore, hardware shop, two blacksmiths, two carpentry shops, a wheelwright, lumberyard and a flour mill (Preston 1981).

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

Three competing partnerships developed during this period which had a great impact on control of water, land reclamation and ultimately agricultural development in the San Joaquin Valley: Livermore and Chester, Haggin and Carr, and Miller and Lux, perhaps the most famous of the enterprises. Livermore and Chester were responsible, among other things, for developing the large Hollister plow (3 ft. wide by 2 ft. deep), pulled by a 40-mule team, which was used for ditch digging. Haggin and Carr were largely responsible for reclaiming the beds of the Buena Vista and Kern lakes, and for creating the Calloway Canal, which drained through the Rosedale area in Bakersfield to Goose Lake (Morgan 1914). Miller and Lux ultimately became one of the biggest private property holders in the country, controlling the rights to over 22,000 square mi. Miller and Lux's impact extended far beyond Kern County, however. They recognized early on that control of water would have important economic implications, and they played a major role in the water development of the state. They controlled, for example, more than 100 mi. of the San Joaquin River with the San Joaquin and Kings River Canal and Irrigation System. They were also embroiled for many years in litigation against Haggin and Carr over control of the water rights to the Kern River. Descendants of Henry Miller continue to play a major role in California water rights, with his great-grandson, George Nickel, Jr., the first to develop the concept of water banking, thus creating a system to buy and sell water (Levine 2011).

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

2.4.1 City of Woodlake

Woodlake was established by Gilbert F. Stevenson, a southern California developer, in 1912, through his "Woodlake Townsite Company." He had optioned 13,000-acres in the immediate area, hoping to establish citrus orchards and, through active marketing, a town. He also donated three miles of right-of-way to the Visalia Electric Railway, connecting the townsite to Visalia to the west. Stevenson built levees around the Bravo Lake (also sometimes called Wood Lake) along with recreational facilities to help attract new residents. Stevenson lost his fortune during the Depression but Woodlake continued to grow. It was incorporated in 1940 and continues to be primarily an agricultural community (City of Woodlake 2024).

2.4.2 Wutchumna Water Company

The Wutchumna Water Company (Company) was incorporated in 1872, predating the formation of Woodlake by 40 years and coinciding with the expansion of the railroads in the Central Valley and the reclamation of waterways as the Central Valley transitioned from ranching to agricultural pursuits. The Company was formed for the express purpose of creating better distribution of water to several ditches dependent on the Kaweah River for their supply (Grunsky 1898:14). Local irrigation districts continue to rely on the company's Wutchumna Canal/Ditch and Wood Lake/Bravo Lake as stockholders and receive Kaweah River allocations through it, specifically Lindsay-Strathmore Irrigation District (LSID) and Tulare Irrigation District (TID) (California Department of Public Works Division of Water Resources 1950:17; 1956:13; *Lindsay Gazette* 1941:1).

2.4.3 Sentinel Butte Mutual Water Company

As a 501(c)(12) organization, the Sentinel Butte Mutual Water Company is an agricultural water collective that formed in 1948 that "obtains water from available sources and distributes it to its stockholders for agricultural irrigation. It also buys, leases, sells and deals in water, water company stock, water facilities, rights, easements, contracts, real and personal property. Irrigation water is delivered through the irrigation system by use of pumps and primarily comes from wells owned by the organization (Figure 2) (Nonprofit Metrics LLC 2024).

2.4.4 Wutchumna Canal/Ditch

The Wutchumna Canal/Ditch was the first priority for the Company after its incorporation and commenced in 1872 shortly after the Company's formation. Two Wutchumna Canal/Ditch systems operated until 1880 when the company connected the upper canal and lower canal distribution system. Construction of the upper canal began in 1872 with the headgate of the canal at the base of Steve Barton Point (formerly known as Dillon Point). The headgate was installed in a rock cut with a headgate that was 20-ft. wide, which was maintained as the width of the canal for the main segments of the upper canal. By around 1875, the Company had to deepen the upper section of the upper canal by four feet for proper operation. From the headgate, the upper canal continued westerly from Kaweah River for four miles with output to the 40-acre Bravo Lake. From the lake, the upper canal continued westerly toward the base of Iron Mountain whereby it continued south six miles to St. Johns Channel, approximately four miles from Visalia.

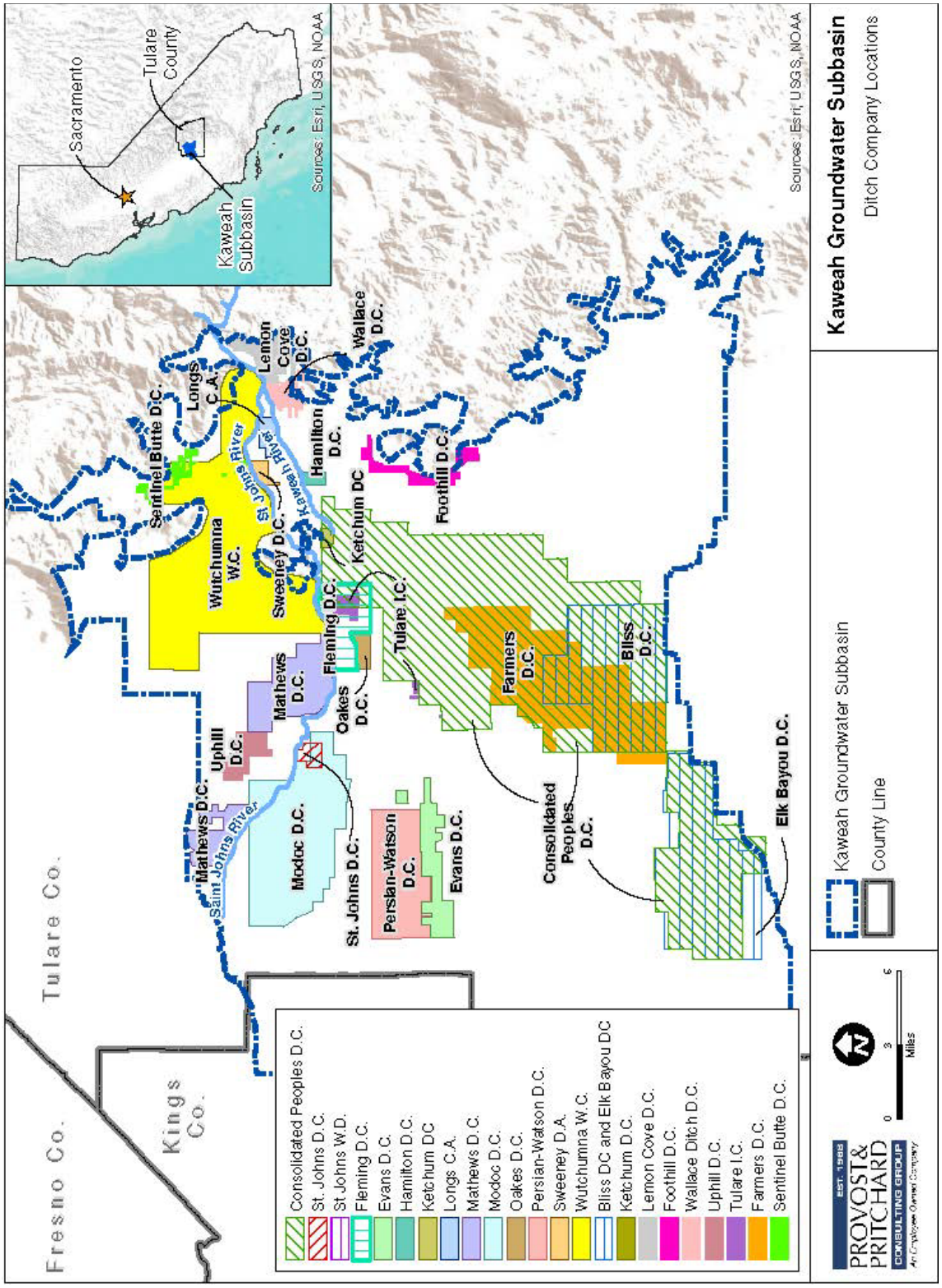
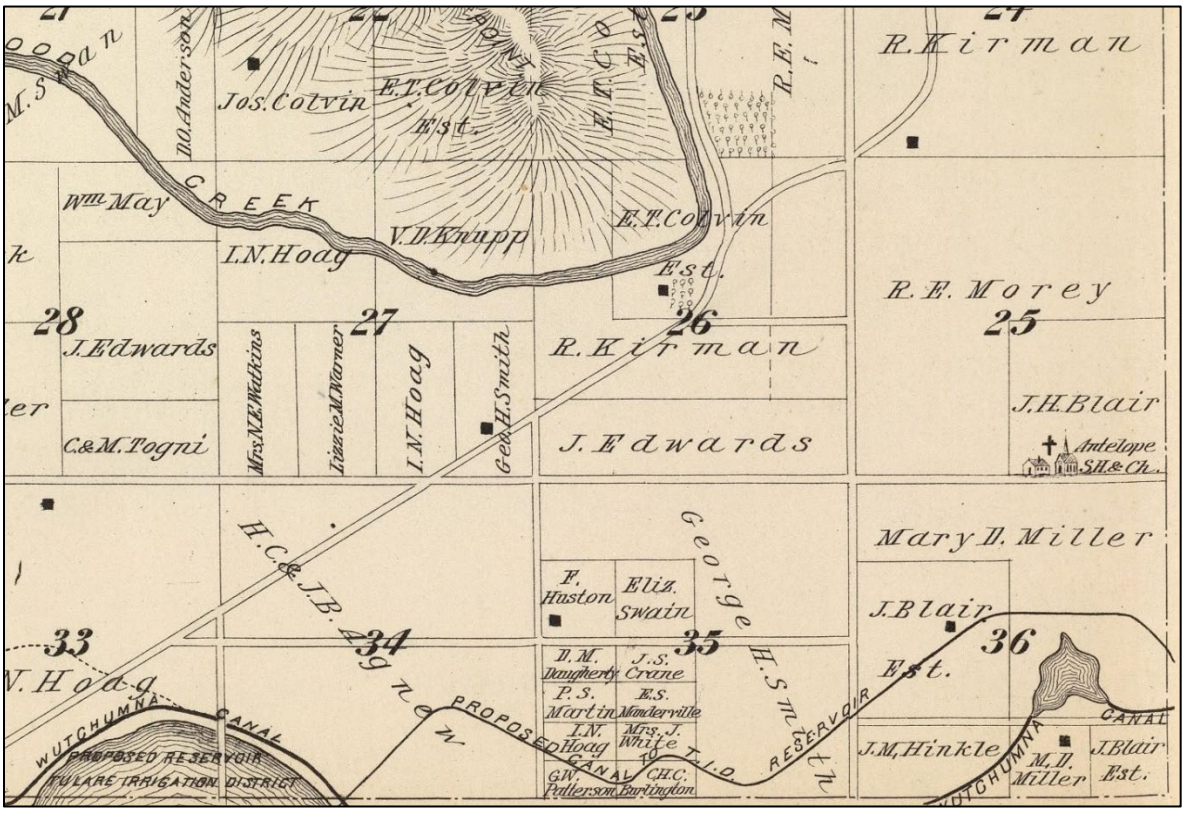


Figure 2. SBMWC and the Company within the larger Kaweah Groundwater Subbasin

At the junction of St. Johns Channel [1]and the upper canal, a flume carried the water from the upper canal across the Channel. Thereafter, the upper canal continued westerly two miles and connected with the lower Wutchumna Canal/Ditch. The lower Wutchumna Canal/Ditch conveyed water through branches that extended west beyond Visalia and terminated four miles south of Goshen. The company constructed the lower canal in 1873 or 1874(Grunsky 1898:14-16).

Wutchumna Canal/Ditch is one of the main conduits of the Kaweah River. It mainly served land north of the St. Johns Channel in 1922, such as Woodlake and along Cottonwood Creek as well as the lower branch that served the Visalia area (California Department of Public Works, Division of Engineering 1922:43, 51). After 1929, the Wutchumna Canal/Ditch provided water to the LSID. While the TID had been receiving water from the Wutchumna Canal/Ditch, beginning in 1949, the TID not only received water from Deep Creek, Ketchum Ditch, Tulare Irrigation Canal and Packwood Canal, but also Central Valley Project water via the Friant-Kern Canal from St. Johns Channel that was conveyed through Wutchumna Canal/Ditch. The Company continues to use the canal/ditch to provide water to its service area (California Department of Public Works Division of Water Resources, 1950:17; 1956:13-14).

The Wutchumna Canal/Ditch in the area of the APE was realigned sometime between 1892 and 1925, and again between 1925 and 1952 (Figures 3-5). The ditch retained the same alignment within the APE since at least 1952 (Figure 6).



[1] It is important to note that St. Johns Channel also received water from Kaweah River.

Figure 3. 1892 Plat map of T17S/R26E, Tulare County.

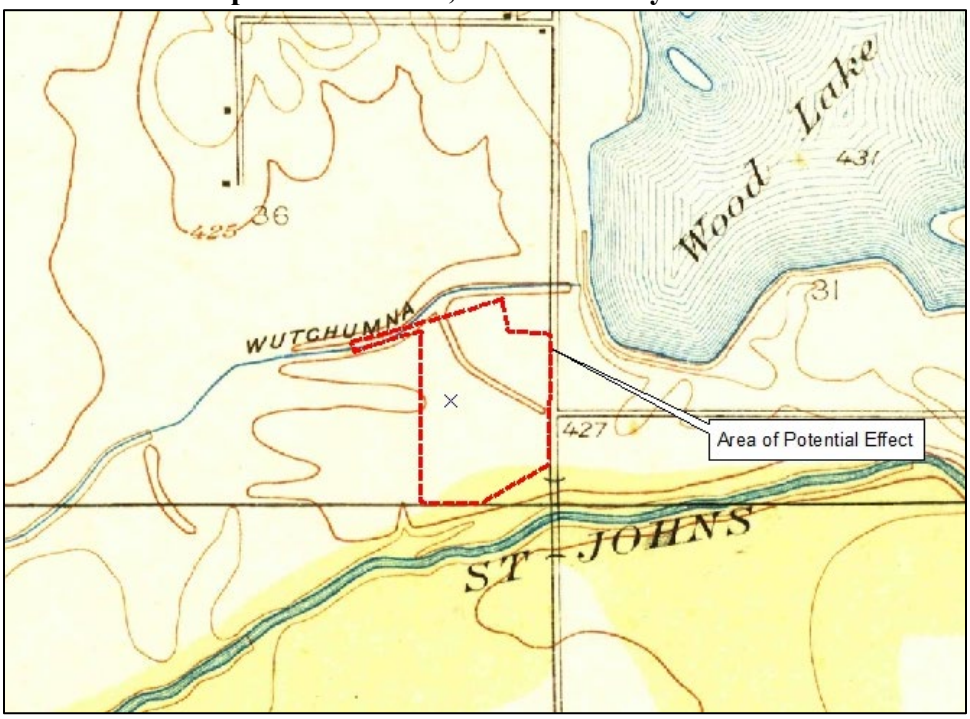


Figure 4. Wutchumna Canal/Ditch alignment in the vicinity of the APE on the 1928 Lemon Cove 1:31,680 topographical map

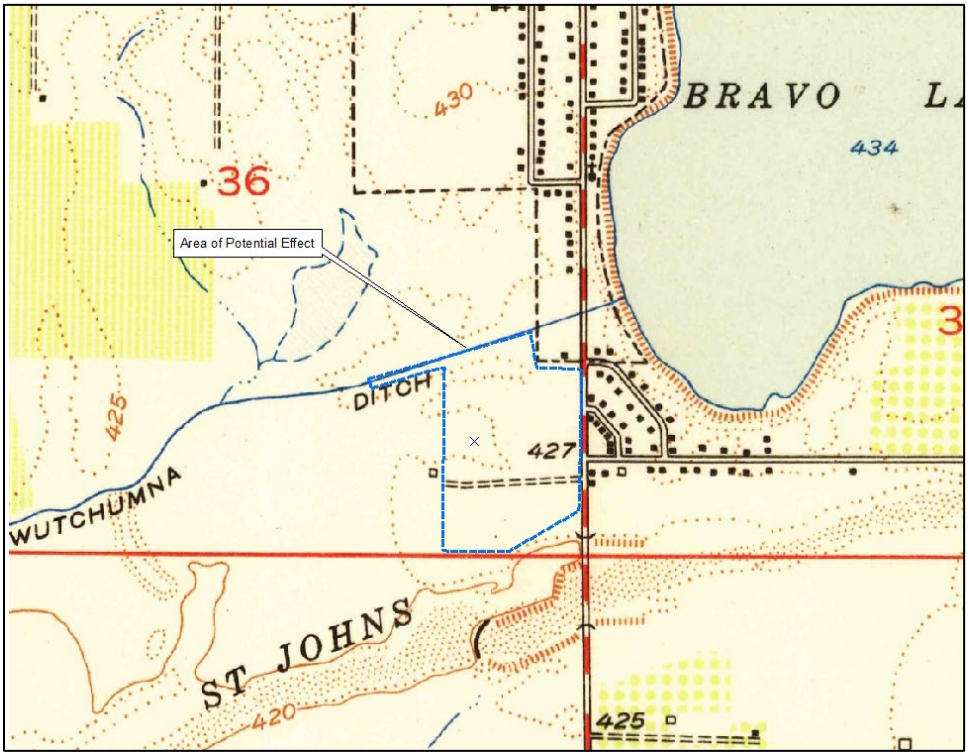


Figure 5. Wutchumna Canal/Ditch alignment in the vicinity of the APE on the 1952 Woodlake 1:24,000 topographical map

Figure 6. 1957 Aerial photograph depicting Bravo Lake (at right) and Wutchumna Canal/Ditch (at foreground).

2.5 NRHP CRITERIA FOR WATER CONVEYANCE SYSTEMS

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

Main Canals, Laterals, and Ditches

Main canals, laterals, or ditches can be individually eligible for the NRHP (Criteria A-D) and CRHR (Criteria 1-4). While the following criteria was developed for the Friant-Kern Canal, it is still applicable to smaller irrigation systems:[2]

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

Criterion A/1: They have had a significant impact on the settlement, agricultural economy, or development patterns of the Project area; they have been defining elements in the evolution of the cultural landscape; they are directly associated with important events.

Criterion B/2: They are the result of the direct efforts of a prominent individual associated with the development of the local area or region and are the most prominent feature associated with that individual.

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

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

Integrity

The need for continual maintenance and repairs to canals requires special consideration of integrity. Irrigation systems are constantly evolving as features are upgraded, repaired, or replaced. Alterations made to canals during the period of significance, and even subsequent thereto, may not preclude eligibility if a canal retains certain key qualities. Most important are integrity of ***location, association***, and overall ***design*** configuration of the conveyance prism (i.e. depth and width) and water control features. A canal which has retained its original form and associated appurtenant features has a high degree of integrity. It is not uncommon for canal lining to be replaced, or for previously unlined segments to be lined. Such changes may not preclude a canal's eligibility if replacement features are in-kind, or they do not significantly damage the canal's historic association or its overall design. If in addition to integrity of association, location, and overall design, the historical ***setting*** and ***feeling*** of a canal are maintained, then the likelihood is even higher that an altered canal could remain eligible. On the other hand, if an entire canal is piped, it would no longer convey any of its original design, workmanship, materials, or historical association and would not be contributing. Conversely, partial piping of a significant canal may not preclude eligibility if a majority of a canal is still open and intact.

Appurtenant Canal Features[3]

Although appurtenant canal features are all operationally and thematically related to canals/laterals/ditches, each feature type serves a specific purpose. These features can be divided

[3] Ibid., 53-54.

into five categories of structures: conveyance, regulating, protective, water measurement, and bridges. The first four of these types were built to function as part of the canal, while the bridges were built to function independently of the canal.

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

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

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

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

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

Significance

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

Registration Requirements

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

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

Criterion B/2: not applicable;

Criterion C/3: They are among the best or a rare surviving example of a distinctive type of appurtenant canal feature; they represent the evolving technology in the design of appurtenant canal features; they represent a unique design solution developed in response to a difficult engineering challenge; they were identified during the construction period as an individually significant feature;

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

Integrity

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

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

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

3. ARCHIVAL RECORDS AND SACRED LANDS FILE SEARCHES

3.1 ARCHIVAL RECORDS SEARCH

In order to determine whether the Project APE had been previously surveyed for cultural resources, and/or whether any such resources were known to exist within or near to it, an archival records search was conducted by the staff of the Southern San Joaquin Valley Information Center (SSJVIC) on June 26, 2023. The records search was completed to determine: (i) if pre-contact or historic-era cultural resources had previously been recorded within the Project APE; (ii) if the Project APE had been systematically surveyed by archaeologists prior to the initiation of this fieldwork; and/or (iii) whether the area surrounding the proposed Project was known to contain archaeological sites or built environment resources and to thereby be culturally sensitive. Records examined included archaeological site files and maps, the NRHP, Historic Property Data File, California Inventory of Historic Resources, and the California Points of Historic Interest. The records search included the Project APE and a 0.5 mi. buffer.

According to the SSJVIC, two previous studies (TU-01196 and TU-01392) have been conducted within the Project APE, and eight previous studies were identified within the 0.5 mi. buffer (Table 1). The SSJVIC results identified a single built environment resource adjacent to the APE, consisting of the Wutchumna Canal/Ditch (P-54-004875). An additional three built environment resources were identified within the 0.5 mi. buffer, with the nearest located approximately 0.2 mi. from the Project APE (Table 2). The results of the SSJVIC records search are available in Confidential Appendix A.

Table 1. Previously Recorded Reports

Report #	Year	Author	Title	APE Relationship
TU-00297	1977	Davis, Alan and Varner, Dudley	Archaeological Resources Assessment, Site Records Search and Literature Review for the Proposed Improvements at the Woodlake Airport, Tulare County	Outside
TU-00409	1981	O'Connor, Denise	Archaeological Survey Report for Grade Raising Project Between Road 204 and Cypress Street, Near Woodlake, Tulare County, California	Outside
TU-00423	1994	Miller, Jeff	Cultural Resources Assessment of the Proposed Woodlake Valley Apartments I and II, Woodlake, Tulare County, California	Outside
TU-01013	1999	Hovey, Kevin and Tackett, Will	Negative Archaeological Survey Report to Construct an Asphalt Concrete Overlay and Shoulder Backing on State Route 245 from State Route 198 to State Route 201 In Tulare County, California	Outside
TU-01156	2007	Kus, James	Negative Archaeological Survey Report for the Reconstruction/Expansion of the Woodlake Airport	Outside

TU-01196	2004	Kus, James	Negative Archaeological Survey Report for the Woodlake Wastewater Treatment Facility Expansion	**Within**
TU-01392	2009	Greenwald, Alexandra and Goetter, Karin	Cultural and Paleontological Resources Study for the Woodlake Wastewater Treatment Facility Project, Woodlake, Tulare County, California	**Within**
TU-01445	2010	Hudlow, Scott	A Phase I Cultural Resource Survey for Woodlake Village II, City of Woodlake, California	Outside
TU-01498	2010	Leach-Palm, Laura, Brandy, Paul, King, Jay, Mikkelsen, Pat, Seil, Libby, Hartman, Lindsay, and Bradeen, Jill	Cultural Resources Inventory of Caltrans District 6 Rural Conventional Highways in Fresno, Western Kern, Kings, Madera, and Tulare Counties	Outside
TU-01813	2017	Thomas, Katherine	Cultural Resources Records Search and Site Visit Results for AT&T Mobility, LLC Candidate CVL03488 (Acacia Street), 353 South Acacia Street, Woodlake, Tulare County, California	Outside

Table 2. Previously Recorded Resources

Primary #	Type	Description	Eligibility Status	APE Relationship
P-54-004033	Historic-era Structure	Bravo Lake	Determined not eligible	Outside
P-54-004034	Historic-era Structure	Visalia Electric Railroad	Determined not eligible	Outside
P-54-004632	Historic-era Structure	Santa Fe Railroad	Recommended not eligible	Outside
P-54-004875	Historic-era Structure	Wutchumna Ditch	Unevaluated	**Within**

3.2 HISTORIC AERIAL AND TOPOGRAPHIC MAP REVIEW

Historical topographical maps and aerial imagery that included the Project APE were consulted to identify potential historical resources. According to USGS topographic quadrangles, historical aerials, Google Earth imagery, and Nationwide Environmental Title Research, the Project APE has undergone minimal development from the early-to-mid-twentieth century. The 1928 Lemon Cove 1:31,680 scale topographical map depicts the APE as largely undeveloped with a no longer extant unnamed road at the north portion of the APE and running northwest-southeast through the APE. The Wutchumna Canal/Ditch is depicted north of the APE in a previous alignment, St. John's River is south of the APE, and South Valencia Boulevard is directly east of the APE. The 1952 Woodlake 1:24,000 topographical map depicts the APE as remaining largely undeveloped with a no longer extant east-west unnamed road running through the center of the APE and the Wutchumna Canal/Ditch in its current alignment.

Historic aerial imagery from 1956 depicts the Project APE containing the Wutchumna Canal/Ditch in its current alignment, a ditch running south from the Wutchumna Canal/Ditch toward a shed building in the center of the APE, an additional building at the west end of the APE , and an access road from South Valencia Boulevard to the building. By 1969, the buildings and associated ditch and access road are no longer present. During this period, the APE was converted to agricultural use. Between 1969 and 1994 the APE remained in use as agricultural land with unpaved access

roads. These access roads changed alignment within the APE during this period. From 2005 on, the Project APE appears in its current condition.

3.3 TRIBAL OUTREACH

As part of the CEQA process, the Native American Heritage Commission (NAHC) was contacted to request a list of Tribes traditionally and culturally affiliated with the Project APE, as well as a Sacred Lands File (SLF). On July 17, 2023, the NAHC responded with negative SLF results and 14 Tribal contacts from seven Tribes. Outreach letters were mailed to all listed Tribes on July 25, 2023, and follow-up emails were sent on April 30, 2024. The North Fork Mono Tribe responded with no comment on the Project. No additional responses were received. The NAHC request, NAHC results, Tribal outreach letters, and Tribal responses can be found in Confidential Appendix A.

4. METHODS AND RESULTS

4.1 FIELD METHODS

An intensive Class III inventory/Phase I survey of the Project APE was conducted by ASM Assistant Archaeologist Maria Silva, B.A., Daniel Ware, B.A., and Margarita Medina Lemus, B.A., on April 18, 2024. The Class III inventory/Phase I survey included a review of the Project APE for the presence of built environment features. The field methods employed also included intensive pedestrian examination of the ground surface for evidence of archaeological sites in the form of artifacts, surface features (such as bedrock mortars, historical mining equipment), and archaeological indicators (e.g., organically enriched midden soil, burnt animal bone). One previously recorded historical resource was identified within the Project APE and the site record updated. Had any previously unknown resources been observed during the survey, they would have been recorded following the California Office of Historic Preservation (OHP) Instructions for Recording Historic Resources using California Department of Parks and Recreation (DPR) series 523 forms. This would have included tabulation and recording of surface diagnostic artifacts, site sketch mapping, and preliminary evaluation of site integrity. Parallel survey transects spaced at maximum intervals of 15 meters (m.) apart were employed for pedestrian survey of the 29 ac. Project APE.

4.2 SURVEY RESULTS

4.2.1 Built Environment Results

Background research, field survey, and historical and contemporary aerial photographic surveys revealed one built environment resource in the Project APE: the Wutchumna Canal/Ditch (P-54-004875). Construction of the ditch began in 1872 with occasional maintenance and improvements to various locations over time. A residential parcel with multiple structures has been located northeast of (but outside of) the APE since at least 1952 as shown on the USGS topographic map from that year. Multiple roads were previously built within the APE but only an unpaved road from the southeast corner of the parcel to the northwest corner is still extant. Underground piping was exposed in one of the open test pits and above ground pumps were observed, as well as an electric pole supplying power to the pump. The surveyed parcel are adjacent to existing water storage basins and associated structures to the west.

P-54-004875 (Wutchumna Canal/Ditch)

Pacific Legacy first recorded one 380 ft. long segment of the Wutchumna Canal/Ditch in 2007. The segment they recorded is east of Visalia and approximately 9.5 mi. southwest of the current Project APE. The Pacific Legacy recording shows photos of an unimproved, hand dug earthen ditch. In 2022, ASM recorded an additional segment of the Wutchumna Canal/Ditch at the west end of the current Project APE. The segment ASM recorded was approximately 105 ft. long west-southwest by east-northeast and approximately 60 ft. wide at the top of the ditch. At the time of the 2022 recording, the ditch was carrying water and an accurate base width and depth

measurement was not possible. Neither Pacific Legacy nor ASM evaluated the Wutchumna Canal/Ditch for NRHP/CRHR eligibility.

While the original alignment of the earliest version of the canal/ditch was only 20 ft. wide at its widest point, the segment of the Wutchumna Canal/Ditch recorded in the Project APE is approximately 60 ft. wide at the top of the canal/ditch. The length of the recorded segment is 694 ft. long west-southwest by east-northeast. The canal/ditch was carrying water at the time of the survey so no accurate measurements of bottom width or depth could be made. Rock riprap has been placed over the earthen ditch walls to prevent erosion (Figures 7 and 8). The east end of the recorded segment abuts a concrete check structure that was constructed sometime between 2018 and 2020 based on historical aerial imagery (Figure 9).

Figure 7. Wutchumna Canal/Ditch overview from west end of APE, 2024. View toward northeast.

Figure 8. **Detail of riprap and rubble placed adjacent to concrete ramp on south side of Wutchumna Canal/Ditch, 2024. View toward west.**

Figure 9. **Wutchumna Canal/Ditch overview showing concrete walls and ramp leading down into ditch, 2024. Large riprap installed on soil slope of ditch to control erosion. View toward northwest.**

4.2.2 Archaeological Results

The proposed Project APE consists of unpaved roads and agricultural land. The APE is bounded by agricultural fields, paved roads, and residential structures, a water treatment plant and an airport. Much of the Project APE appears to have been disturbed by agriculture and the development of access roads. Ground surface visibility within the APE varied from fair (approximately 50 percent) in the eastern portion of the APE to poor (less than 10 percent) in the western portion of the APE for the Class III inventory/Phase I survey (Figure 10). Non-native vegetation inhibited visibility. Within the area of poor visibility, four mechanically excavated test pits, dug 4 ft. to 5 ft. deep, were present allowing visibility of surficial and subsurface soils. Soils consisted of light brown sandy loam throughout the Project APE and were consistent within the excavated holes.

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

Figure 10. Visibility of APE.

5. SUMMARY, EVALUATION, ASSESSMENT OF EFFECTS, AND RECOMMENDATIONS

An intensive Class III inventory/Phase I survey was conducted for the Sentinel Butte Mutual Water Company Basin Project, Tulare County, California. A records search was conducted at the Southern San Joaquin Valley Information Center, California State University, Bakersfield. This search indicated that the Project APE had been previously surveyed twice and that one built environment resource was within the Project APE. An NAHC SLF search was conducted for the Project APE and the NAHC responded with negative SLF results.

The Class III inventory/Phase I survey of the Project APE was conducted on April 18, 2024, with parallel transects at 15 m. intervals. A segment of P-54-004875 (Wutchumna Canal/Ditch) was identified and recorded. This segment has been modified from the original hand dug ditch with earthen walls and now has two large concrete walls/ramps on each bank, as well as concrete and rock riprap placed over the earthen walls to inhibit erosion. The previous dirt road that accessed a house at the western side of the Project APE from South Valencia Boulevard fell out of use when the house was removed between 1956 and 1969; however, portions of it remained partially visible in historic aerials until between 2010 and 2012 when it was permanently removed. Another dirt road that currently accesses the property from South Valencia Boulevard enters from the east and turns north where it then turns west and parallels the Wutchumna Canal/Ditch to the western APE boundary. This road was constructed between 1985 and 1994. Other, shorter-lived, cleared paths or roads are also shown on aerial photos until 2005; the APE has remained the same since then.

No additional built environment resources and no archaeological resources were identified within the APE.

5.1 EVALUATION

Evaluation of Wutchumna Canal/Ditch Segment (P-54-004875)

At present, the entire Wutchumna Water Company irrigation system has not been recorded and evaluated as a potential historic district. It is outside the purview of this Project to record and evaluate the entire service area of the Wutchumna Water Company and stockholders that utilize the water from the Wutchumna Canal/Ditch. For the purposes of this project, ASM assumes the Wutchumna Water District irrigation system is eligible for listing in the NRHP under Criteria A/1 for providing water that sustained agriculture in Woodlake and surrounding agricultural communities, which remains the primary economic driver in the area. As such, ASM evaluated the Wutchumna Canal/Ditch within the Project APE for listing to the NRHP/CRHR under Criteria A/1 as a potential contributor to a potential Wutchumna Water Company irrigation system historic district under two periods of significance. The first potential period of significance is 1872 (when construction on the Wutchumna Water Company irrigation system began) to 1929 (when the LSID began utilizing water from the Wutchumna Canal/Ditch). The second potential period of significance is 1930 (when two irrigation districts and Wutchumna Water Company began utilizing the canal/ditch) to 1952 (when the TID began using the Wutchumna Canal/Ditch as a conduit for

CVP water in 1949 that likely required changes to the canal). As such, ASM assessed the integrity of the canal/ditch.

Given that the segment of the canal/ditch within the Project APE was realigned between 1892 and 1928, the segment does not retain high integrity of location, design, workmanship, materials, and feeling of an earlier irrigation canal/ditch in the area. Therefore, ASM recommends the recorded segment of the Wutchumna Canal/Ditch within the APE is not eligible for listing to the NRHP/CRHR under Criterion A/1 for the period of significance of 1872 to 1929. The segment of the canal/ditch within the Project APE was also realigned sometime between 1928 and 1952. ASM was not able to procure drawings or data from the Wutchumna Water Company but based on the use of the Wutchumna Canal/Ditch by the TID as a conduit for CVP water in 1949, ASM assumes that the canal/ditch was realigned and improved after that time and before 1952. A topographic map from 1952, a historic aerial photograph from 1957, and additional aerial photographs confirm that the segment within the APE retains that same alignment (location) and design (width). The segment does not have high integrity of workmanship, materials, and feeling of that period. The important elements of integrity for a canal/ditch are location, association, and overall design configuration of the conveyance prism (i.e. depth and width) and water control features. Aerials confirm that it retains its original design even with newer concrete riprap placed on the slopes and additional features have been added to the system (a concrete check structure added between 2018 and 2020). However, ASM does not have drawings for the original prism. For the purposes of this project, ASM assumes that the segment of the canal within the APE is potentially eligible for listing to the NRHP/CRHR under Criterion A/1 as a contributing segment of a potential Wutchumna Water Company historic district. ASM also recommends that the segment of the canal/ditch within the APE is also potentially individually eligible for listing to the NRHP/CRHR under Criterion A/1 for the period of significance for 1930 to 1952.

ASM considered whether the recorded segments of the Wutchumna Canal/Ditch are eligible under NRHP/CRHR Criteria B/2. In order for a resource to be eligible under this criterion, it must be the result of direct efforts of a prominent individual associated with the development of the local area or region and must be the most prominent feature associated with that individual. Research did not reveal that any particular person important to the history of the area was directly involved in the planning, development and/or construction of the canal. While the Wutchumna Canal/Ditch is associated with Stephen Barton, he is not an important individual in San Joaquin Valley or Woodlake history. As such, ASM recommends the recorded segment of the Wutchumna Canal/Ditch as not eligible under NRHP/CRHR Criteria B/2.

ASM considered whether the recorded segment of the Wutchumna Canal/Ditch is eligible under NRHP/CRHR Criteria C/3. Construction of the ditch began in 1872 and while the construction of the ditch to transport water was important for the area at this time, the ditch did not represent a distinctive characteristic of canal design, or a method of construction used during the late nineteenth century. The canal was designed and constructed by the Wutchumna Water Company in a way largely similar to other canal systems and structures in the central California area in the late 1800s. Although the ditch was part of the initial construction of water conveyance systems in California in the mid-to-late nineteenth century, it does not appear to historically represent a specific engineering design problem that was solved, as nothing of note was printed in the local newspapers nor did any resources contemporary to the development of the canal in the late

nineteenth century note any particular challenges in the construction, design, or engineering. Research did not reveal that the ditch operates in a capacity beyond its intended use to redirect water and irrigate the local areas, and as such does not appear to be a distinctive type of canal in comparison to other examples from its period of construction. Finally, research did not reveal that the design and engineering of the canal was the work of a significant engineer or builder. As described above, the Wutchumna Canal/Ditch does not appear to embody the distinct characteristics of a type, period, or method of construction, represent the work of a master or possess high artistic values, nor represent a significant and distinguishable entity whose components may lack individual distinction. Therefore, for the purposes of this Project, ASM assumes the segment of the Wutchumna Canal/Ditch within the Project APE is not eligible under NRHP/CRHR Criteria C/3.

ASM then considered whether the recorded segment of the Wutchumna Canal/Ditch is eligible under NRHP/CRHR Criteria D/4. As a built environment resource, Criterion D is not applicable as the segment of the ditch does not have the potential to provide information about history or prehistory that is not available through historic research. As such, ASM recommends the recorded section of the ditch as not eligible under NRHP/CRHR Criteria D/4.

In summary, the recorded segment of the Wutchumna Canal/Ditch is recommended eligible for listing in the NRHP/ CRHR under Criterion A/1.

5.2 ASSESSMENT OF EFFECTS

The proposed Project will result in a new diversion structure being constructed on the Wutchumna Canal/Ditch (P-54-004875) to supply water to the proposed basin (s). As such, the Project will result in some physical effects to the Wutchumna Canal/Ditch. The Secretary of the Interior's *Standards for the Treatment of Historic Properties for Rehabilitation (Standards for Rehabilitation*) allow for reasonable change to a historic property, including related new construction and changes to setting, provided that change does not destroy character-defining features unnecessarily or impair a historic property's ability to convey its significance. Thus, following is an analysis of the proposed Project for compliance with the *Standards for Rehabilitation*.

Per the *Standards for Rehabilitation*, the Wutchumna Canal/Ditch would continue to irrigate agricultural lands it has historically. The historic character of the Wutchumna Canal/Ditch would be preserved because the majority of extant materials, features, and spatial relationships that characterize the linear resource would be retained. Only a small amount of the historic materials will be impacted and will result in an almost immeasurable percent of change to the entire Wutchumna Canal/Ditch. The spatial relationship between the Wutchumna Canal/Ditch and its setting would remain unchanged. The diversion structure would be differentiated from the historic features of the canal, but still visually compatible in terms of materials, features, size, scale, and proportion. Additionally, views of the setting from the APE, including the canal/ditch, will remain the same. After completion of the project, the Wutchumna Canal/Ditch will remain eligible for the NRHP and CRHR. Therefore, ASM recommends that the Project will not result in an adverse effect to historic properties under Section 106 of the NHPA and a less-than-significant impact to a historical resource pursuant to under CEQA.

5.3 RECOMMENDATIONS

Based on the above analyses and findings, the proposed Project will not result in adverse impacts or effects to historic properties or historical resources, and a determination of ***no adverse effect*** under Section 106 and ***less than significant impact*** under CEQA is recommended. It is further recommended that, in the unlikely event that previously unrecorded cultural resources are identified during Project construction, work be halted within a 100 ft. radius of the find and a qualified archaeologist be contacted to evaluate the newly discovered resource.

REFERENCES

Advisory Council on Historic Preservation
n.d. National Register Evaluation Criteria. Electronic document, http://www.achp.gov/nrcriteria.html. Accessed June 18, 2018.

AECOM
2016 "Primary Record – CWA20-221-1 (Tulare Irrigation District Canal);" *Cultural Resources Survey Report for the Southern California Edison North of Magunden Transmission Line Rating Remediation Project, Kern and Tulare Counties, California*.

ASM Affiliates
2022 Addendum Report on Additional Survey for the Woodlake Sewer Improvements Project, Kern County, California. Report on file at the Southern San Joaquin Information Center

Boyd, W.H.
1997 *Lower Kern River Country 1850-1950: Wilderness to Empire*. Kings River Press, Lemoore.

California Department of Public Works, Division of Engineering
1922 Bulletin No. 3: Water Resources of Tulare County and Their Utilization. Sacramento: California Printing Office.

California Department of Public Works Division of Water Resources,
1950 Bulletin No. 49-A: Kaweah River Flows, Diversions, and Service Areas, 1949-1955. Sacramento: California Printing Office.
1956 Bulletin No. 49-B: Kaweah River Flows, Diversions, and Service Areas, 1949-1955. Sacramento: California Printing Office.

California State Parks
2024 How Can Substantial Adverse Change be Avoided or Mitigated?" Available at https://ohp.parks.ca.gov/?page_id=21727. Accessed April 3, 2024.

City of Woodlake
2024 History. Available online at https://cityofwoodlake.com/about/history/; accessed 6/26/2024

Cook, S. F.
1978 Historical Demography. In *Handbook of North American Indians, Volume 8, California*, R. F. Heizer, editor, pp. 91-98. Washington, D.C., Smithsonian Institute.

Culleton, Brendan J.
2006 Implications of a Freshwater Radiocarbon Reservoir Correction for the Timing of the Late Holocene Settlement of the Elk Hills, Kern County, California. *Journal of Science* 33:1331-1339.

Driver, H.E.
1937 Cultural Element Distributions: VI, Southern Sierra Nevada. *University of California Anthropological Records* 1(2):53-154. Berkeley

Elsasser, A.
1962 *Indians of Sequoia and Kings Canyon National Parks*. Three Rivers: Sequoia Natural History Association.

Fenenga, F.
1952 The Archaeology of the Slick Rock Village, Tulare County, California. *American Antiquity* 17:339-347.

Fenenga, G.
1993 Test Excavations at the Witt Site (CA-KIN-32). In W.J. Wallace and F.A. Riddell, editors, pp. 25-38, *Finding the Evidence: The Quest for Tulare Lake's Archaeological Past*. Contributions to Tulare Lake Archaeology II. Redondo Beach, Tulare Lake Archaeological Research Group.

Fredrickson, D.A., and J. Grossman
1977 A San Dieguito component at Buena Vista Lake, California. *Journal of California and Great Basin Anthropology* 4:173-190.

Gayton, A.H.
1930 Yokuts-Mono Chiefs and Shamans. *University of California Publications in American Archaeology and Ethnology* 24. Berkeley, 361-420.
1948 Yokuts and Western Mono Ethnography. *University of California Anthropological Records* 10:1–290. Berkeley.

Gifford, E.W., and W.E. Schenck
1926 Archaeology of the Southern San Joaquin Valley. *University of California Publications in American Archaeology and Ethnology* 23(1):1-122.

Glennan, W.S.
1987a Concave-Based Lanceolate Fluted Projectile Points from California. *Prehistory of the Antelope Valley, California: An Overview*, R.W. Robinson, ed., Antelope Valley Archaeological Society, Occasional Papers No.1: 21-24.
1987b Evidence for Paleoeastern Culture Type in the Southwestern Great Basin. P*rehistory of the Antelope Valley, California: An Overview*, R.W. Robinson, ed., Antelope Valley Archaeological Society, Occasional Papers No.1:11-20.

Grunsky, C.E.
1898 Irrigation Near Fresno. *Water-Supply and Irrigation Papers of the United States Geological Survey, No. 18*. Washington, Government Printing Office.

Harrington, John Peabody
n.d. Yokuts ethnographic notes. National Anthropological Archives.

Hattersley-Drayton, Karana
2022 "Primary Record – Tulare Irrigation Canal (Segment);" *Cultural Resources Assessment for the Higgin's Ranch Annexation and Tentative Subdivision Map Project, City of Visalia, Tulare County, California*.

Hewes, G.
1941 Archaeological reconnaissance of the central San Joaquin Valley. *American Antiquity* 7:123-133.

Horne, S.P.
1981 *The Inland Chumash: Ethnography, Ethnohistory and Archaeology*. Ph.D. dissertation, UCSB. University Microfilms, Ann Arbor.

Jones. T.L., G.M. Brown, L.M. Raab, J.L. McVickar, W.G. Spaulding. D.J. Kennett, A. York, and P.L. Walker
1999 Demographic Crisis in Western North America during the Medieval Climatic Anomaly. *Current Anthropology* 40:137-170.

JRP Historical Consulting Services
2009 North Kern Water Storage District, Lateral Canal 8-1: Inventory and Evaluations, Kern County, California. Prepared for North Kern Water Storage District.
2019 *Historic Property Survey Report: Friant Kern Canal*.

King, C., C. Smith, and T. King
n.d. *Archaeological Report Related to the Interpretation of Archaeological Resources Present at the Vasquez Rocks County Park*. Report on file, SCCIC.

Kroeber, A.L.
1925 Handbook of the Indians of California. *Bureau of American Ethnology, Bulletin 78*. Washington, D.C.

Levine, Yasha
2011 California Class War History: Meet the Oligarch Family That's Been Scamming Taxpayers for 150 Years, and Counting! Available online at http://exiledonline.com/california-class-war-history-meet-the-oligarch-family-thats-been-scamming-taxpayers-for-150-years-and-counting/; accessed November 8, 2023.

Lindsay Gazette
1941 "Reduce Valuation." 25 July. Page 1.

Menafee, Eugene L. and Fred A. Dodge
1913 *History of Tulare and Kings Counties, California*. Historic Record Company, Los Angeles.

Meyer, J., D. Craig Young, and Jeffrey S. Rosenthal
2010 *Volume I: A Geoarchaeological Overview and Assessment of Caltrans Districts 6 and 9.* Submitted to California Department of Transportation.

Morgan, W.A.
1914 *History of Kern County, California with Biographical Sketches*. Los Angeles: Historic Record Company.

Moratto, M.
1984 *California Archaeology*. New York: Academic Press.

NETRonline
2023 Historic Aerials. Electronic document online at https://www.historicaerials.com/viewer. Accessed December 2023.

Pacific Legacy, Inc.
2006 *Southern San Joaquin Valley Oil Fields Comprehensive Study*. Manuscript on file, BLM Bakersfield office.

Powers, Stephen
1971 The Yokuts Dance for the Dead. In *The California Indians: A Source Book* (second edition), edited by R.F. Heizer and M.A. Whipple, pp. 513-519. Berkeley, University of California Press (original 1877).
1976 *Tribes of California*. Berkeley, University of California Press (original 1877).

Preston, William L.
1981 *Vanishing Landscapes: Land and Life in the Tulare Lake Basin*. Berkeley, University of California Press.

Rosenthal, J. S., White, G. G., & Sutton, M. Q.
2007 The Central Valley: A View From the Catbird's Seat. *California Prehistory: Colonization, Culture, and Complexity*(50):147-164.

Sacramento Union
1882 "Tulare." January 7.

Schiffman, R.A., and A.P. Garfinkel
1981 Prehistory of Kern County: An Overview. *Bakersfield College Publications in Archaeology, Number 1*.

Siefkin, Nelson
1999 Archaeology of the Redfeldt Mound (CA-KIN-66), Tulare Basin, California. M.A. Thesis, Department of Sociology and Anthropology, California State University, Bakersfield.

Sutton, M.Q.
1988a An Introduction to the Archaeology of the Western Mojave Desert, California. *Archives of California Prehistory, No. 14*. Salinas: Coyote Press.
1988b On the Late Prehistory of the Western Mojave Desert. *Pacific Coast Archaeological Society Quarterly* 24(1):22-29.
2009 People and Language: Defining the Takic Expansion into the Southern California. *Pacific Coast Archaeological Society Quarterly* 40(2, 3): 31-73.

Thompson, H.
1892 California State Engineering Department. Fresno Sheet. Electronic document online at https://ia802207.us.archive.org/6/items/dr_california-state-engineering-department-detail-irrigation-map-fresno-shee-5832002/5832002.jpg. Accessed December 2023.

TID (Tulare Irrigation District)
n.d. Tulare Irrigation District History. Available online at http://tulareid.org/district-profile; accessed November 8, 2021.

United States Geological Survey (USGS)
1926 "California (Tulare County) Exeter Quadrangle." Topography by E. S. Rickard. Surveyed 1924-1925.
1950 "Exeter Quadrangle, California-Tulare County." Topography by Kelsh plotter 1950, Culture and Drainage by Multiplex Methods from Aeiral Photographs 1946.
2023 "Exeter Quadrangle, California-Tulare County."

W&S Consultants
1994 Phase II Test Excavations and Determinations of Significance at CA-LAN-2133, -2233, -2234, -2235, -2236, -2240, -2241 and -2242, Los Angeles County, California. Manuscript on file, CSUF AIC.
1999 Class III Inventory/Limited Archaeological Testing Program for the Manuscript on file, CSUB AIC.
2004 Class II Inventory of the Carrizo Plain National Monument, San Luis Obispo County, California. Report on file, BLM Bakersfield office.
2006 *Phase II Test Excavations and Determinations of Significance for the Tejon Mountain Village Project, Kern County, California*. Report on file, Tejon Ranch Company.

Wedel, W.
1941 Archaeological Investigations at Buena Vista Lake, Kern County, California. *Bureau of American Ethnology Bulletin* 130.

Whitley, D.S.
1992 Shamanism and Rock Art in Far Western North America. *Cambridge Archaeological Journal* 2(1):89-113.
2000 *The Art of the Shaman: Rock Art of California*. Salt Lake City: University of Utah Press.

Whitley, D.S., and M.P. Beaudry
1991 Chiefs on the Coast: The Development of Complex Society in the Tiquisate Region in Ethnographic Perspective. In *The Development of Complex Civilizations in Southeastern Mesoamerica*, edited by W. Fowler, pp. 101-120. Orlando: CRC Press.

Whitley, D.S., G. Gumerman IV, J. Simon, and E. Rose
1988 The Late Prehistoric Period in the Coso Range and Environs. *Pacific Coast Archaeological Society Quarterly* 24(1):2-10.

Whitley, D.S., J. Simon, and J.H.N. Loubser
2007 The Carrizo Collapse: Art and Politics in the Past. In *A Festschrift Honoring the Contributions of California Archaeologist Jay von Werlhof*, edited by R.L. Kaldenberg, pp. 199-208. Ridgecrest: Maturango Museum Publication 20.

Zimmerman, K.L., C.L. Pruett, and M.Q. Sutton
1989 A Clovis-Like Projectile Point from the Southern Sierra Nevada. *Journal of California and Great Basin Anthropology* 11:89-91.