Teviston Community Services District

Water System Improvement Project

Public Draft Initial Study/Mitigated Negative Declaration

January 2021

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Teviston Community Services District

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Acronyms & Abbreviations

AAM ..... Annual arithmetic mean
AB ..... Assembly Bill
ACBM ..... Asbestos Containing Building Material
AE-40 ..... Exclusive Agricultural, 40-acre minimum
AFY ..... Acre-Feet per Year
AHERA ..... Asbestos Hazard Emergency Response Act
APE ..... Area of Potential Effect
APN ..... Assessor's Parcel Number
ARB ..... Air Resources Board
BMPs ..... Best Management Practices
BPS ..... Best Performance Standards
CAA ..... Clean Air Act
CalARP ..... California Accidental Release Prevention
CalEEMod ..... California Emissions Estimator Model
CalEPA ..... California Environmental Protection Agency
CAL FIRE ..... California Board of Forestry and Fire Protection
Cal/OSHA ..... California Division of Occupational Safety and Health
CalRecycle ..... Department of Resources Recycling and Recovery
Caltrans ..... California Department of Transportation
CARB ..... California Air Resources Board
CAA ..... Clean Air Act
CAAQS ..... California Ambient Air Quality Standards
CCAA ..... California Clean Air Act
CCAP ..... Climate Change Action Plan
CCR ..... California Code of Regulations
CDFW ..... California Department of Fish and Wildlife
CDP ..... Census Designated Place
CEC ..... California Energy Commission
CEQA ..... California Environmental Quality Act
CFC ..... Chlorofluorocarbons
CFR ..... U.S. Code of Federal Regulations
CH_4 ..... Methane
C_2H_3Cl ..... vinyl chloride

CNDDB ..... California Department of Fish and Wildlife Natural Diversity Database
CNPS ..... California Native Plant Society
CO ..... Carbon Monoxide
CO_2 ..... Carbon dioxide
CO_{2e} ..... Carbon Dioxide Equivalent
County ..... Tulare County
CPUC ..... California Public Utilities Commission
CRHR ..... California Register of Historical Resources
CSD ..... Community Services District
CUPA ..... Certified Unified Program Agency
CVRWQCB ..... Central Valley Regional Water Quality Control Board
CWA ..... Clean Water Act
CWHR ..... California Wildlife Habitat Relationships
dB ..... Decibel
DBCP 1,2-Dibromo-3-chloropropane
DDW ..... Division of Drinking Water
District ..... Teviston Community Services District
DOC ..... California Department of Conservation
DOD ..... Department of Defense
DPM ..... Diesel Particulate Matter
DPR ..... Department of Pesticide Regulation
DTSC ..... Department of Toxic Substances Control
DWR ..... Department of Water Resources
ECOS ..... Environmental Conservation Online System
EIR ..... Environmental Impact Report
EPA ..... U.S. Environmental Protection Agency
ESA ..... Endangered Species Act
FCP ..... Farmland Conservancy Program
FEMA ..... Federal Emergency Management Agency
FHSZ ..... Fire Hazard Severity Zone
FIP ..... Federal Implementation Plan
FIRM ..... Flood Insurance Rate Maps
FMMP ..... Farmland Mapping and Monitoring Program
GC ..... Government Code
GHG ..... Greenhouse Gas

gpm ..... Gallons Per Minute
GSP ..... Groundwater Sustainability Plan
GWP ..... Global Warming Potential
H_2S ..... hydrogen sulfide
HDB ..... Hamlet Development Boundary
HFC ..... Hydrofluorocarbons
HMIS ..... Hazardous Materials Inventory Statement
HMMP ..... Hazardous Materials Management Plans
HMRRP ..... Hazardous Materials Release Response Plans and Inventory Program
Hp ..... Horsepower
HSC ..... Health and Safety Code
HSWA ..... Hazardous and Solid Waste Act
HUC ..... Hydrologic Unit Code
HWG ..... Hazardous Waste Generator
HWMP ..... Hazardous Waste Management Program
IPaC ..... U.S. Fish and Wildlife Service's Information for Planning and Consultation system
IS ..... Initial Study
IS/MND ..... Initial Study/Mitigated Negative Declaration
km ..... kilometers
LAFCo ..... Local Agency Formation Commission
LEAs ..... Local Education Agencies
LOA ..... Live Oak Associates
MBTA ..... Federal Migratory Bird Treaty Act
MCC ..... Motor Control Center
MCL ..... Maximum Contaminant Level
MMRP ..... Mitigation Monitoring and Reporting Program
MMT ..... Million Metric Tons
$MMTCO_2e$ ..... *Million Metric Tons of Carbon Dioxide Equivalent*
MND ..... Mitigated Negative Declaration
MT CO_2e ..... Metric Tons of Carbon Dioxide Equivalent
NAAQS ..... National Ambient Air Quality Standards
NAHC ..... Native American Heritage Commission
ND ..... Negative Declaration
NEPA ..... National Environmental Policy Act
NESHAP ..... National Emission Standards for Hazardous Air Pollutants

NHPA ..... National Historic Preservation Act
N_2O ..... Nitrous oxide
NO_2 ..... Nitrogen Dioxide
NO_X ..... Nitrogen Oxide
NPDES ..... National Pollutant Discharge Elimination System
NRCS ..... Natural Resources Conservation Service
NRHP ..... National Register of Historic Places
O_3 ..... Ozone
OEHHA ..... Office of Environmental Health Hazard Assessment
Pb ..... Lead
PFC ..... Perfluorocarbons
PHD ..... Peak Hour Demand
PM_{10} ..... Particulate Matter less than 10 microns in diameter
$PM_{2.5}$ ..... Particulate Matter less than 25 microns in diameter
ppb ..... parts per billion
ppm ..... parts per million
PRC ..... Public Resource Code
Project ..... Teviston Community Services District Water System Improvement Project
RCRA ..... Resource Conservation and Recovery Act
ROG ..... Reactive Organic Gases
RWQCB ..... Regional Water Quality Control Board
SB ..... Senate Bill
SCE ..... Southern California Edison
SDAC ..... Severely Disadvantaged Community
SF_6 ..... Sulfur hexafluoride
SFHA ..... Special Flood Hazard Area
SGMA ..... Sustainable Groundwater Management Act
SHC ..... Streets and Highways Code
SIP ..... State Implementation Plan
SJKF ..... San Joaquin Kit Fox
SJVAB ..... San Joaquin Valley Air Basin
SJVAPCD ..... San Joaquin Valley Air Pollution Control District
SLIC ..... Spills-Leaks-Investigations-Cleanups
SMARA ..... Surface Mining and Reclamation Act
SO_2 ..... Sulfur Dioxide

SO_4^{-2} ..... sulfates
SOI ..... Sphere of Influence
SPCC ..... Spill Prevention, Control, and Countermeasure
sq. ft. ..... square feet
SRA ..... State Responsibility Areas
SRF ..... State Revolving Fund
SR ..... State Route
SWRCB ..... State Water Resources Control Board
SWPPP ..... Storm Water Pollution Prevention Plan
TAC ..... Toxic Air Contaminants
TCSD ..... Teviston Community Services District
TCP 1,2,3-trichloropropane
TPY ..... Tons Per Year
TSCA ..... Toxic Substances Control Act
µg ..... microgram
µg/m3 ..... microgram per cubic meter
µm ..... micrometer (or micron)
USACE ..... U. S. Army Corps of Engineers
USDA ..... U. S. Department of Agriculture
USFWS ..... U. S. Fish and Wildlife Service
USGS ..... U. S. Geological Survey
UST ..... underground storage tank
WC ..... Water Code
WDR ..... Waste Discharge Requirements

Chapter 1 Introduction

Provost & Pritchard Consulting Group (Provost & Pritchard) has prepared this Initial Study/Mitigated Negative Declaration (IS/MND) on behalf of Teviston Community Services District (TCSD) to address the environmental effects of the proposed Water System Improvement Project (Project). This document has been prepared in accordance with the California Environmental Quality Act (CEQA), Public Resources Code (PRC) Section 21000 *et. seq*. The District is the CEQA lead agency for this Project.

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

1.1 Regulatory Information

An Initial Study (IS) is a document prepared by a lead agency to determine whether a project may have a significant effect on the environment. In accordance with California Code of Regulations Title 14 (Chapter 3, Section 15000, *et seq*.)—also known as the CEQA Guidelines—Section 15064 (a)(1) states that an environmental impact report (EIR) must be prepared if there is substantial evidence in light of the whole record that the Project under review may have a significant effect on the environment and should be further analyzed to determine mitigation measures or project alternatives that might avoid or reduce project impacts to less than significant levels. A negative declaration (ND) may be prepared instead if the lead agency finds that there is *no* substantial evidence in light of the whole record that the project may have a significant effect on the environment. An ND is a written statement describing the reasons why a 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 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 Project *as revised* may have a significant effect on the environment.

1.2 Document Format

This IS/MND contains four chapters and four appendices. **Chapter 1 Introduction**, provides an overview of the Project and the CEQA process. **Chapter 2 Project Description**, provides a detailed description of Project components and objectives. **Chapter 3 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 4 Mitigation Monitoring and Reporting Program** (MMRP), provides the proposed mitigation measures, implementation timelines, and the entity/agency responsible for ensuring implementation.

The CalEEMod Output Files, Biological Evaluation, and Class III Inventory/Phase I Cultural 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 and Objectives

2.1.1 Project Title

Teviston Community Services District Water System Improvement Project

2.1.2 Lead Agency Name and Address

Teviston Community Services District
12934 Avenue 80
Pixley, CA 93256

2.1.3 Contact Person and Phone Number

Lead Agency Contact

Teviston Community Services District
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2.1.4 Project Location

The Project is located in the unincorporated community of Teviston, a census-designated place and a State-designated Severely Disadvantaged Community[1] (SDAC) in southwest Tulare County (County) in central California, approximately 70 miles southeast of Fresno and 45 miles northwest of Bakersfield (see **Figure 2-1**). The Project will be located between unincorporated communities of Pixley and Earlimart just east of State Route (SR) 99 within the adopted TCSD Sphere of Influence (SOI). The Project will involve meter replacement work along existing TCSD water mains within public and private rights-of-way and access drives (see **Figure 2-3**) and well improvement work on two well sites owned by Teviston Community Services District identified as Assessor's Parcel Numbers 316-220-004 and 316-220-009 (See **Figure 2-4**). The Project site is also situated within Township 23S, Range 25E, Section 9, Mount Diablo Base & Meridian within the Pixley Quadrangle of the USGS.

2.1.5 Latitude and Longitude

The approximate centroid of the Project area is latitude 35° 56' 20.112"N, longitude -119° 16' 37.689" W

[1] As defined by the Department of Water Resources, a community having a Median Household Income of less than 60% of the statewide MHI, which was $63,783, as of 2016 according to the U.S. Census Bureau. The MHI for Teviston was $25,429 as of 2016.

2.1.6 General Plan Designation

The County 2030 General Plan currently designates the community of Teviston as a "Hamlet" for which the Teviston Hamlet Plan was adopted in 2017 establishing the development needs and priorities for the community within its identified 1,443.2-acre Hamlet Development Boundary (HDB). The Teviston Hamlet Plan designates 1,312 acres, including the Project site, for Mixed Use development; the remaining 130.8 acres of lands contain dedicated public Rights-of-Way. Within the Mixed-Use land use designation, a range of agricultural, residential, commercial, and manufacturing zones are intended to be allowed (see below).

2.1.7 Zoning

The Project site is zoned for the following: Exclusive Agricultural 40 acre minimum (AE-40), General Commercial/Mixed Use (C-2 MU), and Residential-Agricultural (R-A and R-A 12.5) (See **Figure 3-3**).

2.1.8 Description of Project

2.1.8.1 Project Background and Purpose

Drinking water service for a portion of the residents in Teviston is supplied by the TCSD water system. TCSD was formed in 1956 and covers approximately 2.2 square miles. Residents not served by TCSD are served by private wells. As noted above, the community of Teviston is a state designated SDAC.

The TCSD current service area lies east of Highway 99 within its Sphere of Influence (SOI) boundaries as shown in **Figure 2-3**. TCSD currently serves approximately 432 persons through 136 metered service connections some of which lie outside the formal district boundary but are still within the TCSD SOI. TCSD intends to expand its boundaries to include all the current lots served.

TCSD is currently served by only a single well, "Well 3" (see **Figure 2-4**). The original well, "South Well," constructed in 1959, and the "North Well," subsequently constructed in 1978, are both inactive due to failure. Using emergency funds after North Well's failure, Well 3 was drilled in 2017 to a depth of approximately 575 feet. Well 3 features an annular seal to a depth of 140 feet and is equipped with a 125 horsepower (hp) oil-lubricated vertical turbine pump and a 5,000-gallon hydropneumatic tank. It is located approximately 600 feet east and 190 feet north of the intersection of Avenue 80 and Road 132, on the same parcel as the original South Well (APN 316-220-004). Well 3 and its pump cannot currently produce sufficient flow and minimum required pressure to meet fire flow and Title 22 standards for health and safety purposes. Once Well 4 is completed and permitted, Well 3 will be designated only as a standby source.

TCSD has received funding from the State Water Resources Control Board (SWRCB), Division of Drinking Water (DDW), State Revolving Fund (SRF) to address challenges caused by dependence on a single source of potable water:

- If Well 3 is taken offline for any reason, TCSD has no alternative to provide drinking water to the community.
- The system does not have any back up power source to protect against outages. Power outages are common and can last for several hours at a time, especially in the summer months when power demands are high due to the relatively high temperatures.
- Well 3 consistently exceeds the maximum contaminant level (MCL) for 1,2,3-trichloropropane (TCP) established by the DDW. TCSD was put under a compliance order in April 2018. Though water from Well 3 is routinely chlorinated, TCSD is not able to treat for 1,2,3-TCP at present.

- The Well 3 pump is rated to produce approximately 625 gallons per minute (gpm). While it has the capacity to meet the County Improvement Standards of maximum daily demand—392 gpm for 136 service connections—Well 3 does not have capacity to supply the fire flow demand during a maximum day condition required by County Improvement Standards. Small water systems typically meet fire flow requirements by use of a water storage tank. Without additional water storage TCSD cannot provide the required minimum storage needed to meet minimum required fire flow, which is 500 gpm. The well falls short of meeting maximum daily demand and fire flow by at least 267 gpm.

The entire water distribution system, originally constructed in the late 1950s, was replaced in 1998 with 6-inch PVC mains, including gate valves, fire hydrants, and water meters. There are approximately 25,300 linear feet of water mains and approximately 136 5/8-inch water meters in the system.

The 136 existing metered service connections are aging and beginning to show signs of failure. As the existing meters continue to fail, the District will have challenges complying with new State requirements to have all water services metered by 2025.

The existing system currently lacks water storage tanks which, combined with the lack of a second supply source, limits the District's ability to meet current County Improvement Standards for fire flow and Title 22 requirements.

As mentioned above, Well 3 consistently exceeds the MCL for 1,2,3-trichloropropane TCP. TCP is an exclusively man-made synthetic organic chemical and a carcinogen. It was used as a component in agricultural soil fumigants applied over large areas of the Central Valley, including Tulare County. TCP is heavier than water, very slow to biodegrade naturally, and is sparingly volatile—all characteristics that make it persistent in the groundwater and difficult to treat.

The purpose of the Project is to address well contamination, a lack of supply to meet all operating conditions, lack of redundancy in the event of an emergency, reduced operating pressures related to the lack of supply, lack of backup power at the well site in the event of an emergency, and aging meters.

2.1.8.2 Project Description

The Project includes construction of the following primary features:

- A new well, Well 4, including a new well pump, a water storage tank, emergency use-only generator, and interconnecting pipelines.
- Conversion of existing Well 3 to "stand-by" status.
- Proper abandonment of existing inactive North and South Wells.
- Replacement of 136 existing water meters with new.

The Project proposes to drill and construct a new production well, "Well 4", at the North Well site (APN 316-220-009), which is just off Road 132, approximately 650 feet north of the intersection of Avenue 80 and Road 132. Well 4 will become the primary source of water for TCSD. Well 4 would be drilled to an estimated depth of 660 feet. The proposed well is expected to yield up to 1,000 gpm, which would comfortably exceed the County Improvement Standards. The well would be drilled and constructed on the same 0.62-acre parcel of land as the existing North Well site, a minimum of 100 feet from the North Well. Construction activity is estimated will result is some level of disturb to the entire parcel, or approximately 27,000 sq. ft. Pump selection at Well 4 will be determined during final design and sized to accommodate the maximum day demand of 392 gpm.

In addition to the new Well 4, a 321,000-gallon (approximate storage capacity) potable water storage tank and booster pump station are necessary to meet County Improvement Standards as well as requirements detailed in Section 64554 of Title 22. The booster pump station will be sized to deliver flow and pressure to meet both

Title 22 and County Improvement Standards. The proposed well will pump into the storage tank which will then feed the booster pump station which will supply the distribution system.

A new hydropneumatic tank with a capacity of up to 15,000 gallons would be installed near the new well. The hydropneumatic tank will be sized to accommodate peak demands including fire flow and limit booster pump cycling to 6 cycles per hour. The hydropneumatic tank will be set up to maintain between 40–60 psi throughout the distribution system during normal system operations. Chlorination injection ports will be included upstream of the hydropneumatic tanks at each site. Chlorine will be injected from 100-gallon totes delivered as needed to the site.

The electrical service at the existing Well 4 site will be upgraded, as required by Southern California Edison, and power will be supplied to the well from the tank site. The well site will have a local disconnect panel at the well and site lighting. The motor control center (MCC) will be located at the well site. The electrical cabinet will not be enclosed in a building; however, a shade structure will be constructed over the cabinet. A portable emergency use-only diesel-powered generator will be installed at Well 4 capable of powering either Well 3 or 4 in the event of power outages. The generators are planned to have self-contain diesel fuel tanks.

The Project also proposes conversion and maintenance of existing Well 3, located on APN 316-220-004 (see **Figure 2-4**), to "stand-by" status in compliance with standards required and enforced through permitting by State Division of Drinking Water (DDW). Well 3 will be equipped with a treatment plant to remove 1,2,3-TCP as soon as funding permits. Construction activity is estimated will result is some level of disturbance to the entire 0.56-acre parcel, or approximately 24,400 sq. ft.

The currently inactive North and South Wells would be properly abandoned according to County and State requirements. All existing system components at the site of the new well (Well 4) will be demolished and removed from the site.

All 136 existing service connections will be replaced with new, one-inch water meters enclosed within a meter box and will have automatic read capability as well as reading equipment. Aggregate ground disturbance for the installation of the new meters is estimated to be approximately 2,040 sq. ft. of surface area (15 sq. ft. per each of 136 meters) and up to a maximum volume of 2,250 cubic feet (CF) (assumes maximum depth of 10 ft. for each meter for worst case, although most meters will not require that depth of disturbance.) Property owners are responsible for maintaining laterals or replacing them, if necessary, on their property.

As shown in **Figure 2-3**, TCSD has several distribution pipe alignments and meter connections that are outside of the current service boundary. As part of this Project, the current boundary discrepancy would be reconciled through the County Local Agency Formation Commission (LAFCo) process. The Project is funded to replace existing services and no new services are planned.

In list form, the Project proposes the following components all of which are depicted on **Figure 2-4:**

- All well casing, well screen, and other materials that will comprise Well 4
- New well pump and motor in Well 4
- Valves, flow monitoring equipment, and site piping at a maximum depth of 10 feet
- A portable diesel-powered generator to power either Well 3 or Well 4
- A 321k-gallon water storage tank with booster pump station and up to 15,000-gallon hydropneumatic tank at North Well Site
- Automatic read water meters and reading equipment

- Chlorination injection port for emergency disinfection at both wells
- Chlorination equipment with data logger
- Sample tap at each wellhead
- Site lighting and electrical cabinet for motor control center (MCC) and switchgear at North Well Site
- Relocate electrical service, install transformer and meter at North Well Site
- Surfacing at both well sites (assumed to be aggregate base rock)
- Onsite drainage pond at both sites (if required).
- Perimeter chain link fencing with barbed wire

2.1.8.3 Construction

Construction is anticipated to be completed within 15 months and will involve work within both well sites as well as public and private road rights-of-way as needed to install new water meters. Property owners are responsible for maintenance and replacement of the laterals on their property.

2.1.8.4 Operation and Maintenance

Operation and maintenance of the water supply system will continue as performed by TCSD.

2.1.9 Surrounding Land Uses and Setting

TCSD is located on the Valley floor east of the Coast Ranges and west of the Sierra Nevada Mountain Range. The proposed well replacement and water system improvement project is located immediately east of SR 99. Topographically, the Project site is at an elevation of approximately 270 feet above mean sea level.

Land uses in the vicinity of the Project site consists of active farmland, scattered rural residences, and vacant/fallow land typical of rural areas in the Central Valley. The Project site consists of two well sites owned by TCSD and sections of public road rights-of-way and private access drives. The lands adjacent to the Project's site are designated by the County's Teviston Hamlet Plan for "Mixed Uses" and are zoned as AE-20 and AE-40, Exclusive Agricultural Zones, 20- and 40-Acre Minimums, respectively; R-A 12.5, Residential-Agricultural, 12,500 sf minimum lot size; C-2 MU, General Commercial/Mixed Use; and M-1-MU, Light Industrial/Mixed Use. (See **Figure 3-3**)

2.1.10 Other Public Agencies Whose Approval May Be Required

- State Water Resources Control Board, Division of Drinking Water (DDW): Water Supply Permit
- Regional Water Quality Control Board, Central Valley Region: Individual or General Waste Discharge Permit, NPDES Construction General Permit
- San Joaquin Valley Air Pollution Control District: back-up generator permit & rules and regulations (Regulation VIII, Rule 9510; Regulation IV, Rule 4702)
- Tulare County Environmental Health Services Division: Well Construction and Destruction Permits
- County of Tulare: Building Permit and Encroachment Permit

2.1.11 Consultation with California Native American Tribes

Assembly Bill 52 (AB 52; codified as Public Resources Code Section 21080.3.1, *et seq.*) 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.

Teviston Community Services District indicated it has not received any written correspondence from any California Native American Tribes pursuant to Public Resources Code Section 21080.3.1 requesting notification of proposed projects.

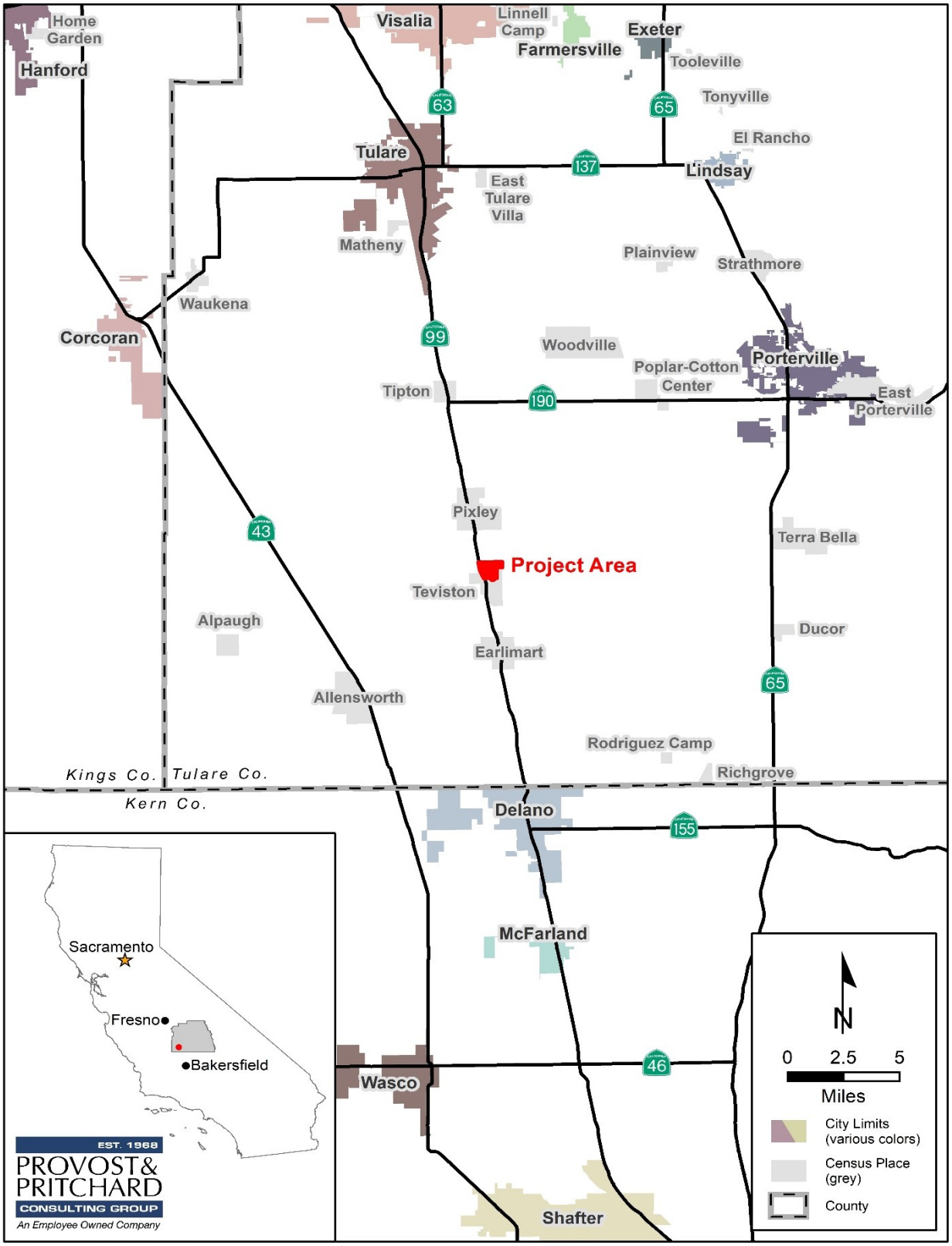

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Figure 2-1. Regional Location Map

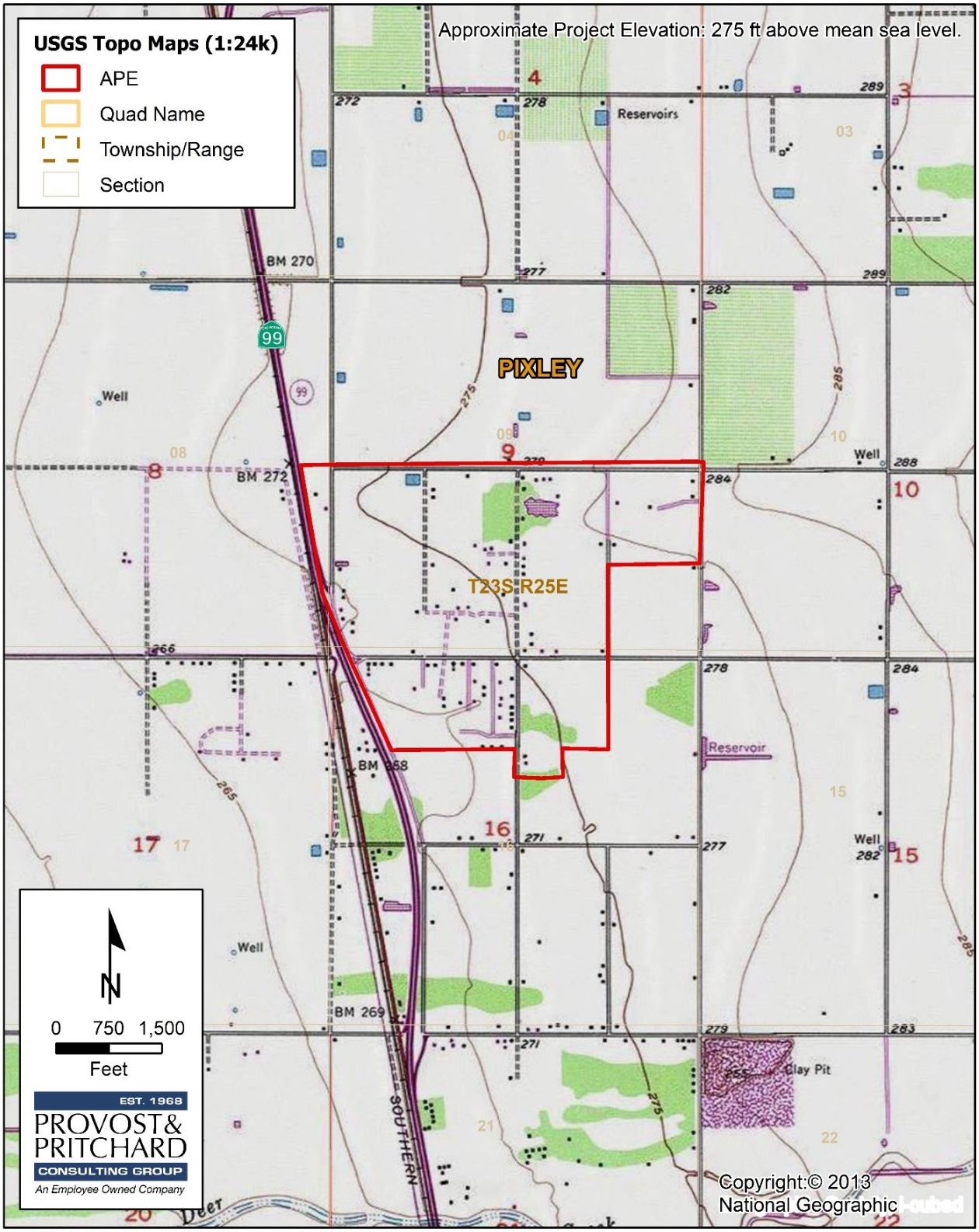

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Figure 2-2. Pixley Topographical Quadrangle Map

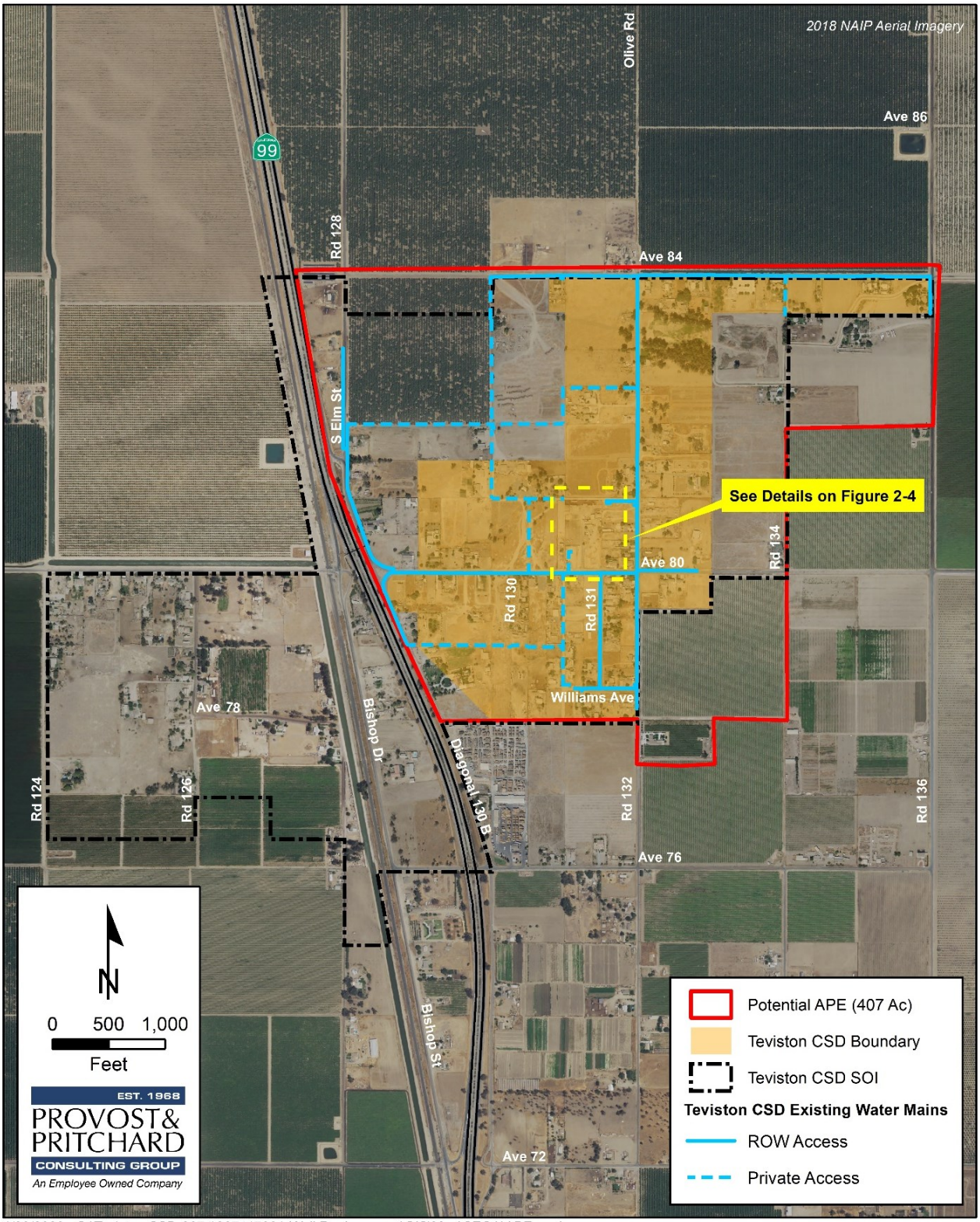

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Figure 2-3. Overall Site Plan/Area of Potential Effect

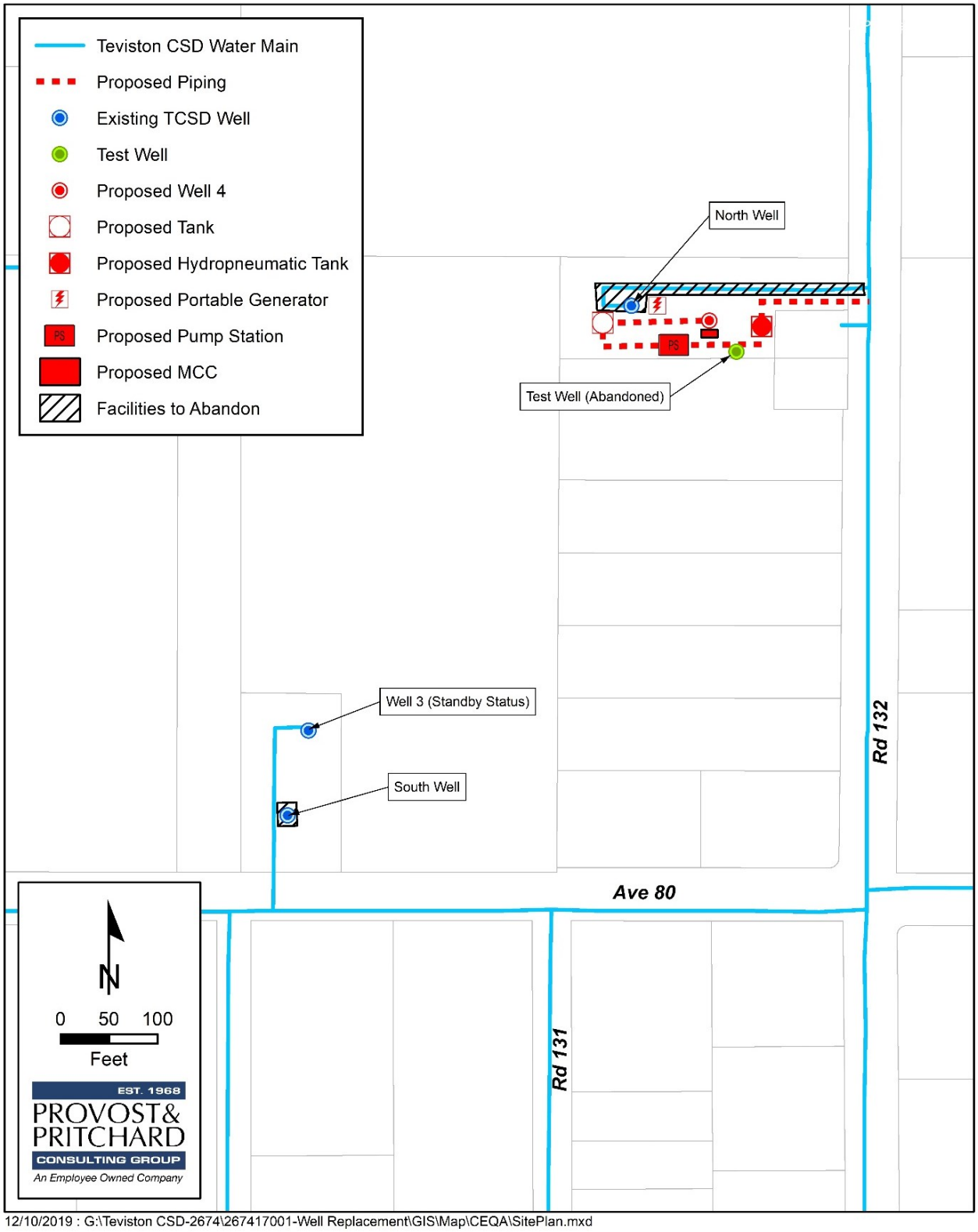

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Figure 2-4. Site Plan – Detail

Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, as indicated by the checklist and subsequent discussion on the following pages.

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

The analyses of environmental impacts in **Chapter 3** are separated into the following categories:

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

Less than Significant 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 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).

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Chapter 3 Impact Analysis

3.1 Aesthetics

Table 3-1. Aesthetics Impacts

Aesthetics				
Would the project:	**Potentially Significant Impact**	**Less than Significant with Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Have a 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 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?	☐	☐	☒	☐

3.1.1 Environmental Setting

The Project is located in the southwestern part of Tulare County in the Central San Joaquin Valley. Land in the vicinity consists of relatively flat irrigated farmland and retired farmland. Agricultural practices in the vicinity consist of row crop, field crop, and orchard cultivation in the form of vineyards and almonds. State Route 190 (SR 190) in Tulare County is eligible for the State Scenic Highway System designation beginning at its intersection with SR 65, 16 miles northeast of the Project site and ending roughly 57 miles east within the Sierra Nevada mountains. However, the SR 190 and SR 65 junction is out of view, approximately 16 miles northeast of the site. Although they are located approximately 19 miles east, the foothills of the Sierra Nevada Mountains are typically visible from the vantage point of the Project site on days of clear air quality. The nearest waterway, Deer Creek, is located approximately one mile south of the Project site and is also not visible from the site. Rural roadways, local water distribution canals, water retention basins, and other infrastructure typical of rural agricultural areas in the San Joaquin Valley are also in the immediate vicinity. The Project is consistent with the aesthetics of the area.

3.1.2 Regulatory Setting

3.1.2.1 Federal

There are no federal regulations, plans, programs, or guidelines associated with aesthetics that are applicable to the Project.

3.1.2.2 State

Scenic Highway Program: California's Scenic Highway Program was created by the Legislature in 1963. Its purpose is to preserve and protect scenic highway corridors from change which would diminish the aesthetic

value of lands adjacent to highways. The State laws governing the Scenic Highway Program are found in the Streets and Highway Code (SHC) Section 260, *et seq*. A highway may be officially designated "scenic" depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view. The State Scenic Highway System includes a list of highways that are either eligible for designation as scenic highways or have been so designated. These highways are identified in SHC Section 263. A list of California's scenic highways and map showing their locations may be obtained from Caltrans' Scenic Highway Coordinators.[2]

3.1.2.3 Local

2030 Tulare County General Plan:[3] The County General Plan sets forth the following goals and policies that protect the aesthetic character of the County and which have potential relevance to the Project's CEQA review:

- The County shall require that new non-agricultural structures and infrastructure located in or adjacent to croplands, orchards, vineyards, and open rangelands be sited so as to not obstruct important viewsheds and to be designed to reflect unique relationships with the landscape by:
    1. Referencing traditional agricultural building forms and materials,
    2. Screening and breaking up parking and paving with landscaping, and
    3. Minimizing light pollution and bright signage.
- The County shall require that stormwater detention/retention basins be visually unobtrusive and provide a secondary use, such as recreation, when feasible.
- The County shall encourage the planting of native trees, shrubs, and grasslands in order to preserve the visual integrity of the landscape, provide habitat conditions suitable for native vegetation and wildlife, and ensure that a maximum number and variety of well-adapted plants are maintained.

3.1.3 Impact Assessment

Would the project:

I-a) Have a substantial adverse effect on a scenic vista?

Less Than Significant Impact. Scenic features in the vicinity may include Deer Creek to the south and the vast expanse of agricultural uses. Deer Creek lies more than a mile south of the Project site and is therefore not within the viewshed of the Project. Project features to be constructed will either be located below ground or be similar in height and bulk to area residences and ancillary structures. The Project would not stand out from its surroundings in any remarkable fashion. Project components will be visually consistent with existing structures. Impacts would be less than significant.

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

No Impact. SR 190 in Tulare County is eligible for the State Scenic Highway System beginning at its intersection with SR 65 and ending at Quaking Aspen approximately 57 miles east in Sequoia National Forest. As Project activities would occur approximately 16 miles northeast of the intersection of SR 190 and SR 65 (from its closest point, as the crow flies) and does not have the potential to affect the visual quality of or from the highway, there would be no impact.

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[2] Streets and Highways Code. https://leginfo.legislature.ca.gov/faces/codes_displayexpandedbranch.xhtml?tocCode=SHC&division=1.&title=&part=&chapter=&article= Accessed 26 November 2019.
[3] Tulare County General Plan. http://generalplan.co.tulare.ca.us/ Accessed 26 November 2019.

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

Less Than Significant Impact. The Project site is surrounded by agricultural and rural infrastructure such as row crops, orchards, irrigation standpipes, wells, and ponding basins. The new well, infrastructure, and water storage tank will blend in well with existing rural agricultural uses and structures and the Project will not substantially degrade the visual character of the area. Impacts would be less than significant.

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

Less Than Significant Impact. The Project area is primarily surrounded by agriculture and other rural uses. Onsite security lighting at the North Well Site is proposed as part of the Project. Additional vehicular traffic after construction will be limited to pre-construction levels for maintenance and monitoring on an as-needed basis during the daytime except in the event of an emergency. The Project will not create substantial light such that it would adversely affect day or nighttime views in the area or be inconsistent with existing conditions.

3.2 Agriculture and Forestry Resources

Table 3-2. Agriculture and Forestry Resources Impacts

Agriculture and Forestry Resources				
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?	☐	☐	☐	☒

3.2.1 Environmental Setting

Tulare County is located in California's agricultural heartland. The county's total gross production value for 2016 was $6,370,121,600. There were forty-five commodities valued at over $1 million, with milk being number one at more than $1.6 billion. A wide range of commodities are grown in the county, with major production of milk, poultry, livestock, and other animal commodities; row crops, nuts, and fruit tree crops; and vegetables. Rich soil, irrigation water, Mediterranean climate, and steady access to local, national, and global markets make this possible.[4]

The Project's setting is a rural community with scattered housing surrounded by irrigated permanent farmland. The major crops grown in the vicinity include grapes, pistachios, almonds, and other fruit and nut trees. Irrigation methods include drip, micro, gravity, and sprinkler. The Project site and surrounding lands are zoned for agricultural, general commercial/mixed use, and rural residential uses all currently receiving water services from the TCSD or private wells.

The California Department of Conservation's (DOC) Farmland Mapping and Monitoring Program (FMMP) is a non-regulatory program that produces "Important Farmland" maps and statistical data used for analyzing impacts on California's agricultural resources. The Important Farmland maps identify eight land use categories,

[4] Tulare County Agricultural Commissioner/Sealer. http://agcomm.co.tulare.ca.us/ag/ Accessed 26 November 2019.

five of which are agriculture-related: prime farmland, farmland of Statewide importance, unique farmland, farmland of local importance, and grazing land—rated according to soil quality and irrigation status. The eight categories are summarized below:[5]

• PRIME FARMLAND (P): Farmland with the best combination of physical and chemical features able to sustain long term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

• FARMLAND OF STATEWIDE IMPORTANCE (S): Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

• UNIQUE FARMLAND (U): Farmland of lesser quality soils used for the production of the State's leading agricultural crops. This land is usually irrigated but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.

• FARMLAND OF LOCAL IMPORTANCE (L): Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.

• GRAZING LAND (G): Land on which the existing vegetation is suited to the grazing of livestock. The minimum mapping unit for Grazing Land is 40 acres.

• URBAN AND BUILT-UP LAND (D): Land occupied by structures with a building density of at least 1 unit per 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, institutional, public administrative purposes, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.

• OTHER LAND (X): Land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines, borrow pits; and water bodies smaller than 40 acres. Vacant and nonagricultural land surrounded by urban development and greater than 40 acres is mapped as Other Land.

• WATER (W): Perennial water bodies with an extent of at least 40 acres.

The FMMP for Tulare County designates the site and surrounding areas as Prime Farmland, Farmland of Local Importance, Semi-Ag, Rural Residential, and Vacant or Disturbed Land as shown in **Figure 3-1**.

3.2.2 Regulatory Setting

3.2.2.1 Federal

There are no federal regulations, plans, programs, and guidelines associated with agriculture and forestry resources that are applicable to the Project.

[5] California Department of Conservation. FMMP – Report and Statistics.

3.2.2.2 State

Farmland Conservancy Program: The DOC's Farmland Conservancy Program (FCP) seeks to encourage the long-term, private stewardship of agricultural lands through the voluntary use of agricultural conservation easements. The FCP provides grant funding for easements and planning projects that support statewide agricultural land conservation.

Farmland Mapping and Monitoring Program (FMMP): The FMMP produces maps and statistical data used for analyzing impacts to California's agricultural resources. Agricultural land is rated according to soil quality and irrigation status; the best quality land is called Prime Farmland. The maps are updated every two years with the use of a computer mapping system, aerial imagery, public review, and field reconnaissance.

Williamson Act (California Land Conservation Act): The Williamson Act enables local governments to enter contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments which are much lower than normal because they are based upon farming and open space uses as opposed to full market value. The minimum term for contracts is ten years. However, since the contract term automatically renews on each anniversary date of the contract, the actual term is essentially infinite. **Figure 3-1** shows lands within and surrounding the Project APE that are under Williamson Act Contract.

3.2.2.3 Local

2030 Tulare County General Plan:[6] The Tulare County General Plan sets forth the following goals and policies that protect agriculture and forestry resources and which have potential relevance to the Project's CEQA review:

- One of the most identified assets in Tulare County is the rich agricultural land on the Valley floor and in the foothills. The General Plan identifies agriculture not only as an economic asset to the County, but also as a cultural, scenic, and environmental resource to be protected.
- Protect valuable agricultural uses from urban encroachment.
- Protect, expand, and diversify the County's agricultural economy and diversify employment opportunities.
- The County's economy will expand and diversify. Agriculture will remain the mainstay of the County's economy, while agriculturally related industries and non-agricultural industries will play an increasingly larger role in the local economy. Many of the planning principles and policies in the General Plan protect existing agricultural lands and industries while providing support for advancement and diversification of agriculturally related enterprises.
- The County shall oppose extension of urban services, such as sewer lines, water lines, or other urban infrastructure, into areas designated for agriculture use unless necessary to resolve a public health situation. Where necessary to address a public health issue, services should be located in public rights-of-way in order to prevent interference with agricultural operations and to provide ease of access for operation and maintenance. Service capacity and length of lines should be designed to prevent the conversion of agricultural lands into urban/suburban uses.
- The County shall discourage the location of new schools in areas designated for agriculture, unless the School District agrees to the construction and maintenance of all necessary infrastructure impacted by the project.

[6] Tulare County General Plan. http://generalplan.co.tulare.ca.us/ Accessed 26 November 2019.

3.2.3 Impact Assessment

Would the project:

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

No Impact. The FMMP for Tulare County designates the site as Rural Residential, Vacant or Disturbed Land, Semi-Ag, and Prime Farmland. Surrounding areas are designated similarly as Farmland of Local Importance as shown in **Figure 3-1.** The Project involves water system improvements for an existing community services district and will not result in any type of land use conversion. Implementation of the Project will not result in a conversion of farmland to non-agricultural use. There will be no impact.

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

Less Than Significant Impact. The principal objectives of the Williamson Act program include protection of agricultural resources, preservation of open space land, and promotion of efficient urban growth patterns. Project implementation will not conflict with existing zoning or a Williamson Act contract because improvements to the TCSD water system are needed only to provide cleaner domestic water and system capabilities to provide fire flow. The Project will not result in any change to or loss of agricultural land uses or resources in the community of Teviston. Construction and operation will take place at two currently developed well sites and within public and private rights-of-way as needed to install new water meters. Though three parcels within the APE are under Williamson Act contract (see **Figure 3-1**), the Project will not permanently, if at all, affect existing land uses. Impacts would be less than significant.

II-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))?

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

No Impact. There are no forest lands or timberlands as defined in PRC or Government Code (GC) within the Project site or vicinity. Furthermore, as stated above, the Project does not propose any type of land use conversion. There will be no impact.

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

No Impact. As discussed above in Impacts Assessments II a–d, the Project involves water system improvements for existing customers of the TCSD and will not result in any type of land use conversion, either directly or indirectly. There will be no impact.

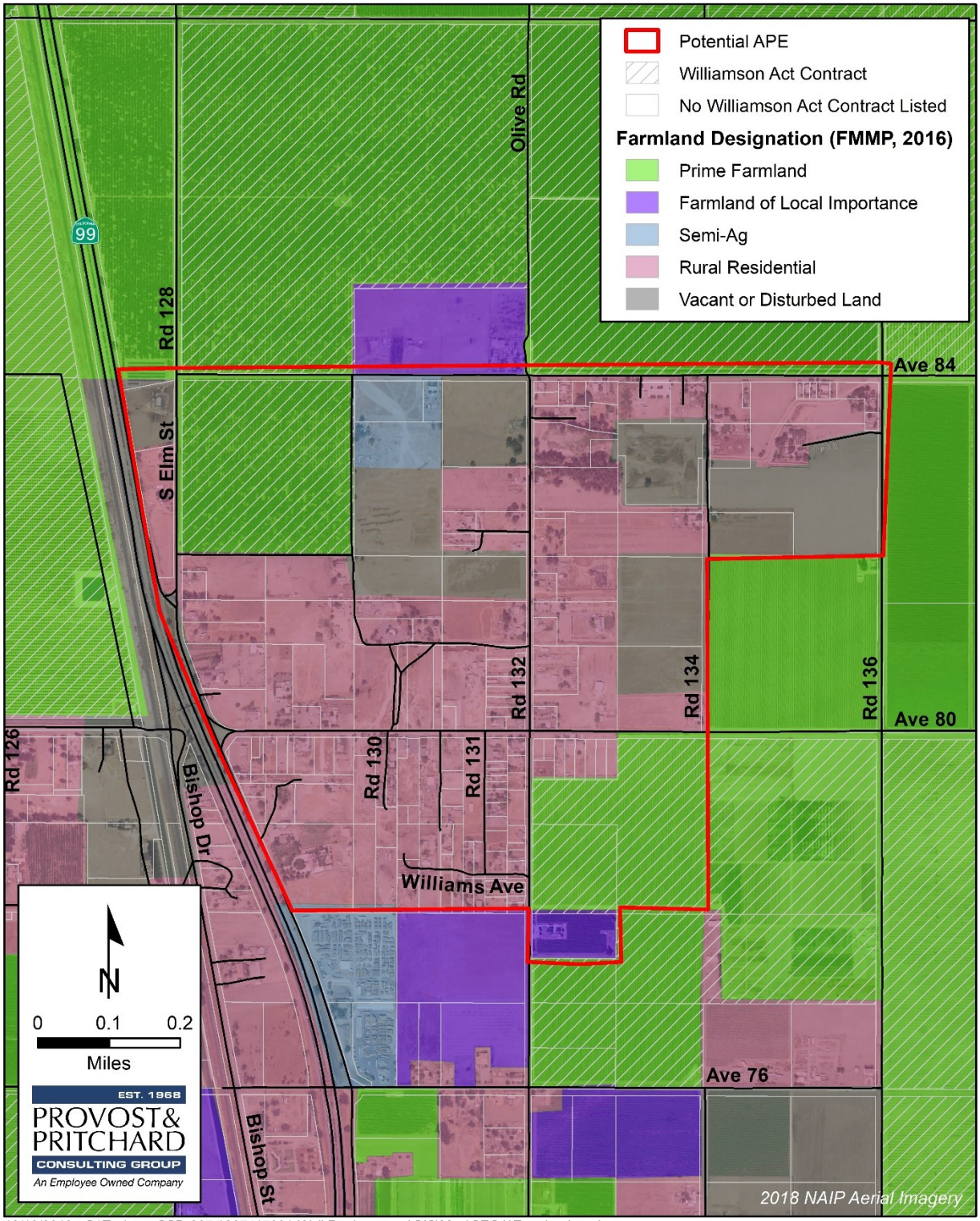

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Figure 3-1. Williamson Act Lands and Farmland Designation Map

3.3 Air Quality

Table 3-3. Air Quality Impacts

Air Quality				
Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. 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?	☐	☐	☒	☐

3.3.1 Environmental Setting

The Project lies within the eight-county San Joaquin Valley Air Basin (SJVAB), which is managed by the San Joaquin Valley Air Pollution Control District (SJVAPCD). Air quality in the SJVAB is influenced by a variety of factors, including topography, local and regional meteorology. National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) have been established for the following criteria pollutants: carbon monoxide (CO), ozone (O_3), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), particulate matter (PM_{10} and $PM_{2.5}$), and lead (Pb). The CAAQS also set standards for sulfates (SO_4^{-2}), hydrogen sulfide (H_2S), vinyl chloride (C_2H_3Cl) and visibility.

Air quality plans or attainment plans are used to bring the applicable air basin into attainment with all State and Federal ambient air quality standards designed to protect the health and safety of residents within that air basin. Areas are classified under the Federal Clean Air Act as either "attainment," "nonattainment," or "extreme nonattainment" areas for each criteria pollutant based on whether the NAAQS have been achieved or not. Attainment relative to the State standards is determined by the California Air Resources Board (CARB). The San Joaquin Valley is designated as a State and Federal nonattainment area for O_3, a State and Federal nonattainment area for $PM_{2.5}$, a State nonattainment area for PM_{10}, a Federal and State attainment area for CO, SO_2, and NO_2, and a State attainment area for sulfates, vinyl chloride, and Pb[3].[7]

3.3.2 Methodology

An Air Quality and Greenhouse Gas Emissions Evaluation Report (**Appendix A**) was prepared using CalEEmod Output Files, Version 2016.3.1 for the Project in January 2020. The sections below detail the methodology of the air quality and greenhouse gas emissions report (**Appendix A**) and its conclusions.

[7] San Joaquin Valley Air Pollution Control District. Ambient Air Quality Standards and Valley Attainment Status. http://www.valleyair.org/aqinfo/attainment.htm Accessed 26 November 2019.

3.3.2.1 Short-Term Construction-Generated Emissions

Short-term construction emissions associated with the Project were calculated using CalEEmod, Output Files Version 2016.3.1. The modeling includes emissions generated by off-road equipment, haul trucks, and worker commute trips. Emissions were quantified based on anticipated construction schedules and construction equipment requirements provided by the Project applicant. All remaining assumptions were based on 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**.

3.3.2.2 Long-Term Operational Emissions

Long-term operational emissions associated with the Project will be similar to existing conditions; however, a diesel-powered emergency generator will be installed at the North Well site and the District anticipates the generator will be used for a maximum of 100 hours annually. Maintenance will continue to be provided on an as needed basis and the additional operational equipment, such as the use of stationary electric pumps, will be similar to the existing system, which results in negligible emissions.

3.3.2.3 Thresholds of Significance

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

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

Short-Term Emissions of Ozone Precursors (ROG and NO_x): Construction impacts associated with the Project would be considered significant if the project generates emissions of Reactive Organic Gases (ROG) or NO_x that exceeds 10 TPY.

Long-Term Emissions of Particulate Matter (PM_{10}): Operational impacts associated with the Project would be considered significant if the project generates emissions of PM_{10} that exceed 15 TPY.

Long-Term Emissions of Ozone Precursors (ROG and NO_x): Operational impacts associated with the Project would be considered significant if the project generates emissions of ROG or NO_x that exceeds 10 TPY.

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

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

Exposure to toxic air contaminants (TAC) would be considered significant if the probability of contracting cancer for the Maximally Exposed Individual (i.e., maximum individual risk) would exceed 10 in 1 million or would result in a Hazard Index greater than 1.

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

3.3.3 Regulatory Setting

3.3.3.1 Federal

U.S. Environmental Protection Agency: At the Federal level, the EPA has been charged with implementing national air quality programs. The EPA's air quality mandates are drawn primarily from the Clean Air Act (CAA), which was signed into law in 1970. Congress substantially amended the CAA in 1977 and again in 1990.

Federal Clean Air Act: The CAA required the EPA to establish National Ambient Air Quality Standards (NAAQS), and also set deadlines for their attainment. Two types of NAAQS have been established: primary standards, which protect public health, and secondary standards, which protect public welfare from non-health-related adverse effects, such as visibility restrictions.

The CAA also required each State to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The CAA Amendments of 1990 added requirements for States with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. The EPA has responsibility to review all State SIPs to determine conformance with the mandates of the CAA, and the amendments thereof, and determine if implementation will achieve air quality goals. If the EPA determines a SIP to be inadequate, a Federal Implementation Plan (FIP) may be prepared for the nonattainment area that imposes additional control measures.

Toxic Substances Control Act: The Toxic Substances Control Act (TSCA) first authorized the EPA to regulate asbestos in schools and Public and Commercial buildings under Title II of the law, which is also known as the Asbestos Hazard Emergency Response Act (AHERA). AHERA requires Local Education Agencies (LEAs) to inspect their schools for ACBM and prepare management plans to reduce the asbestos hazard. The Act also established a program for the training and accreditation of individuals performing certain types of asbestos work.

National Emission Standards for Hazardous Air Pollutants: Pursuant to the CAA of 1970, the EPA established the National Emission Standards for Hazardous Air Pollutants (NESHAP). These are technology-based source-specific regulations that limit allowable emissions of hazardous air pollutants.

3.3.3.2 State

California Air Resources Board: The CARB is the agency responsible for coordination and oversight of State and local air pollution control programs in California and for implementing the California Clean Air Act of 1988. Other CARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control districts and air quality management districts, establishing California Ambient Air Quality Standards (CAAQS), which in many cases are more stringent than the NAAQS, and setting emissions standards for new motor vehicles. The emission standards established for motor vehicles differ depending on various factors including the model year, and the type of vehicle, fuel and engine used.

California Clean Air Act (CCAA): The CCAA requires that all air districts in the State endeavor to achieve and maintain CAAQS for ozone, CO, SO_2, and NO_2 by the earliest practical date. The CCAA specifies that districts focus attention on reducing the emissions from transportation and area-wide emission sources, and the act provides districts with authority to regulate indirect sources. Each district plan is required to either (1) achieve a five percent annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each nonattainment pollutant or its precursors, or (2) to provide for implementation of all feasible measures to reduce emissions. Any planning effort for air quality attainment would thus need to consider both State and Federal planning requirements.

Table 3-4. Summary of Ambient Air Quality Standards and Attainment Designation

Summary of Ambient Air Quality Standards & 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/m³	Nonattainment	–	Attainment
	24-hour	50 µg/m³		150 µg/m³	
Fine Particulate Matter ($PM_{2.5}$)	AAM	12 µg/m³	Nonattainment	12 µg/m³	Nonattainment
	24-hour	No Standard		35 µg/m³	
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/m³	Attainment	–	No Designation/ Classification
	Calendar Quarter	–		--	
	Rolling 3-Month Average	–		0.15 µg/m³	
Sulfates (SO_4^{-2})	24-hour	25 µg/m³	Attainment	No Federal Standards	
Hydrogen Sulfide (H_2S)	1-hour	0.03 ppm (42 µg/m³)	Unclassified		
Vinyl Chloride (C_2H_3Cl)	24-hour	0.01 ppm (26 µg/m³)	Attainment		
Visibility-Reducing Particle Matter	8-hour	Extinction coefficient: 0.23/km-visibility of 10 miles or more due to particles when the relative humidity is less than 70%.	Unclassified		

** For more information on standards visit: http//www.arb.ca.gov.research/aaqs/aaqs2.pdf*
*** No Federal 1-hour standard. Reclassified extreme nonattainment for the Federal 8-hour standard May 5, 2010.*
****Secondary Standard*
Source: CARB 2015; SJVAPCD 2015

California Assembly Bill 170: Assembly Bill 170, Reyes (AB 170), was adopted by State lawmakers in 2003 creating Government Code Section 65302.1 which requires cities and counties in the San Joaquin Valley to amend their general plans to include data and analysis, comprehensive goals, policies, and feasible implementation strategies designed to improve air quality.

Assembly Bills 1807 & 2588–Toxic Air Contaminants: Within California, TACs are regulated primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics Hot Spots Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for CARB to designate substances as TACs. This includes research, public participation, and scientific peer review before CARB designates a substance as a TAC. Existing sources of TACs that are subject to the Air Toxics Hot Spots Information and Assessment Act are required to: (1) prepare a toxic emissions inventory; (2) prepare a risk assessment if emissions are significant; (3) notify the public of significant risk levels; and (4) prepare and implement risk reduction measures. Primary TACs of concern within the State of California are Diesel Particulate Matter (DPM), Acetaldehyde, Benzene, 1,3-butadiene, Carbon Tetrachloride, Hexavalent chromium, Para-Dichlorobenzene, Formaldehyde, Methylene Chloride, and Perchloroethylene. Further information on these and other TACs can be found at the OEHHA website.[8]

3.3.3.3 Local

2030 Tulare County General Plan: The Tulare County General Plan sets forth several goals and policies relating to air quality, none of which are relevant to this Project's CEQA review.

San Joaquin Valley Air Pollution Control District: The SJVAPCD is the agency primarily responsible for ensuring that NAAQS and CAAQS are not exceeded and that air quality conditions are maintained in the SJVAB, within which the Project is located. Responsibilities of the SJVAPCD include, but are not limited to, preparing plans for the attainment of state and federal ambient air quality standards, adopting and enforcing rules and regulations concerning sources of air pollution, issuing permits for stationary sources of air pollution, inspecting stationary sources of air pollution and responding to citizen complaints, monitoring ambient air quality and meteorological conditions, and implementing programs and regulations required by the CAA and the CCAA.

The SJVAPCD Rules and Regulations that are applicable to the Project include, but are not limited to, the following:

Regulation VIII (Fugitive Dust Prohibitions), Regulation VIII (Rules 8011–8081): This regulation is a series of rules designed to reduce particulate emissions generated by human activity, including construction and demolition activities, carryout and trackout, paved and unpaved roads, bulk material handling and storage, unpaved vehicle/traffic areas, open space areas, etc. If a non-residential area is 5.0 or more acres in area, a Dust Control Plan must be submitted as specified in Section 6.3.1 of Rule 8021. Additional requirements may apply, depending on total area of disturbance.

San Joaquin Valley Air Pollution Control District Thresholds of Significance. Projects that produce emissions that exceed the thresholds listed in section 3.3.2.3 shall be considered to result in significant impacts at the project level. If these thresholds are exceeded by a Project, the impact is also considered to be a cumulatively considerable impact to air quality.

[8]OEHAA Toxic Air Contaminant List. https://oehha.ca.gov/air/general-info/toxic-air-contaminant-list-staff-reportsexecutive-summaries Accessed 28 January 2020.

3.3.3.4 Regulatory Attainment Designations

Under the CCAA, the 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 EPA 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 standards," "cannot be classified," or "better than national standards." However, the CARB terminology of attainment, nonattainment, and unclassified is more frequently used. The EPA uses the same sub-categories for nonattainment status: serious, severe, and extreme. In 1991, EPA 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."

The State and national attainment status designations pertaining to the SJVAB are summarized in **Table 3-4**. The SJVAB is currently designated as a nonattainment area with respect to the CAAQS PM_{10}, ozone, and $PM_{2.5}$ standards and nonattainment for the NAAQS 8-hour ozone and $PM_{2.5}$ standards.

3.3.4 Impact Assessment

Would the project:

III-a) Conflict with or obstruct implementation of the applicable air quality plan?

No Impact. As noted in Impact Assessment III-b and III-c below, implementation of the Project would not result in short-term or long-term increases in emissions that would exceed applicable thresholds of significance established under the local SJVAPCD air quality plans. Projects that do not exceed the recommended thresholds would not be considered to conflict with or obstruct the implementation of applicable air quality plans.

III-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?

Less Than Significant Impact. As demonstrated in **Table 3-6**, the emissions generated by the Project's construction phase would not exceed the SJVAPCD thresholds of significance. Long-term operational emissions associated with the Project will be substantively unchanged from baseline conditions. The new (Well 4) will be a more energy efficient well, Well 3 will be converted to "stand-by" status, operating only during emergency basis going forward), and the new generator will meet the Air District's Tier 4 emission reduction requirements. Maintenance will continue to be provided as currently, on an as-needed basis and the operational equipment, such as the use of stationary electric pumps, will be similar to the existing system which results in negligible emissions (see **Table 3-6**). Because emissions will be negligible as compared to existing conditions, the Project would not be considered to have a cumulative impact. Therefore, Project-related impacts to criteria pollutants would be considered less than significant.

Table 3-5. Unmitigated Short-Term Construction Emissions

Short-Term Construction-Generated Emissions of Criteria Air Pollutants						
		Annual Emissions (Tons/Year) [1]				
Source	ROG	NO_X	SO_2	CO	PM_{10}	$PM_{2.5}$
2021	0.1051	0.9093	0.0001	0.7250	0.0920	0.0634
2022	0.1753	1.3511	0.0003	1.3740	0.0839	0.0641
Maximum Annual Proposed Project Emissions:	0.1753	1.3511	0.0003	1.3740	0.0920	0.0641
SJVAPCD Significance Thresholds:	*10*	*10*	*27*	*100*	*15*	*15*
Exceed SJVAPCD Thresholds?	*No*	*No*	*NO*	*No*	*No*	*No*

1. *Emissions were quantified using CalEEmod Output Files Version 2016.3.1. Refer to Appendix A for modeling results and assumptions. Totals may not sum due to rounding.*

Table 3-6. Unmitigated Long-Term Operational Emissions

Long-Term Operational Emissions of Criteria Air Pollutants						
		Annual Emissions (Tons/Year) [1]				
Source	ROG	NO_X	SO_2	CO	PM_{10}	$PM_{2.5}$
Maximum Annual Project Emissions:	0.0321	0.0768	0.00001	0.0701	0.0040	0.0040
SJVAPCD Significance Thresholds:	*10*	*10*	*27*	*100*	*15*	*15*
Exceed SJVAPCD Thresholds?	*No*	*No*	*No*	*No*	*No*	*No*

1. *Emissions were quantified using CalEEmod Output Files Version 2016.3.2. Refer to Appendix A for modeling results and assumptions. Totals may not sum due to rounding.*

III-c) Expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact. Sensitive receptor land uses located along or adjacent to the existing well sites and water distribution lines/meters consist predominantly of residential land uses. These baseline conditions will not be substantively changed by the Project which will upgrade existing meters and convert an existing well to "standby" status and provide a new replacement well meeting current standards for domestic and fire flow water delivery. Short-term construction activities and emission sources that could adversely impact these nearest receptors will be short term and less than thresholds of significance.

Toxic Air Contaminants (TAC)

Implementation of the Project would not result in the long-term operation of any major onsite stationary sources of TACs nor would Project implementation result in an increase in vehicle trips along area roadways, in comparison to existing conditions. However, construction of the Project may result in temporary increases in emissions of diesel-exhaust particulate matter (DPM) associated with the use of off-road diesel equipment. More than 90% of DPM is less than one micrometer in diameter, and thus is a subset of $PM_{2.5}$.[9] Health-related risks associated with diesel-exhaust emissions are primarily associated with long-term exposure and associated risk of contracting cancer. As such, the calculation of cancer risk associated with exposure of to TACs are typically calculated based on a long-term (e.g., 70-year) period of exposure. The use of diesel-powered

[9] CARB. Inhalable Particulate Matter. https://www.arb.ca.gov/research/aaqs/common-pollutants/pm/pm.htm Accessed 9 December 2019.

construction equipment, however, would be episodic during the period of construction only. . Construction activities would occur over an approximate 15-month period, which would constitute less than 1 percent of the typical 70-year exposure period. As a result, exposure to construction generated DPM would not be anticipated to exceed applicable thresholds (i.e. incremental increase in cancer risk of 10 in one million).

Construction of the Project is not anticipated to result in a substantial increase in DPM or other TACs. As indicated in **Table 3-5**, construction of the Project would generate maximum unmitigated annual emissions of approximately 0.0641 tons/year of $PM_{2.5}$, which includes DPM. Project-related impacts to sensitive receptors would be less than significant.

Naturally Occurring Asbestos

Naturally occurring asbestos, which was identified by CARB as a TAC in 1986, is located in many parts of California and is commonly associated with ultramafic rock. The Project site is not located near any areas that are likely to contain ultramafic rock.[10] As a result, risk of exposure to asbestos during the construction process would be considered less than significant.

Fugitive Dust

Construction of the Project would include ground-disturbing activities which could result in increased emissions of airborne particulate matter. The Project would be required to comply with SJVAPCD Regulation VIII (Fugitive PM_{10} Prohibitions). Mandatory compliance with SJVAPCD Regulation VIII would reduce emissions of fugitive dust from the Project site.

Construction of the Project is not anticipated to result in a substantial increase in particulate matter. As indicated in **Table 3-5**, construction of the Project would generate maximum unmitigated annual emissions of approximately 0.0920 tons/year of PM_{10}, which is substantially less than SJVAPCD's threshold of significance of 15 tons/year. Project-related impacts to sensitive receptors would be less than significant.

III-d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less Than Significant Impact. Implementation of the Project would not result in long-term emissions of odors. However, construction of the Project would involve the use of a variety of gasoline- or diesel-powered equipment that would emit exhaust fumes. Exhaust fumes, particularly diesel exhaust, may be considered objectionable by some people**.** The Project is located within an area dominated by agricultural production, which includes the use of diesel-powered farm equipment and vehicles and various odorous chemicals on a regular basis. Conditions created by Project-related construction activities would be short-term in nature and would not vary substantially from the baseline conditions routinely experienced by Teviston residents. Impacts would be less than significant.

[10] Van Gosen, B.S. and J.P. Clinkenbeard. 2011. Report Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California – California Geological Survey map Sheet 59. United States Geological Survey.

3.4 Biological Resources

Table 3-7. Biological Resources Impacts

Biological Resources				
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 Game 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 Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on state or federally protected wetlands (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?	☐	☐	☐	☒

3.4.1 Environmental Setting

The Project site is located in southwest Tulare County within the lower San Joaquin Valley, part of the Great Valley of California. The Valley is bordered by the Sierra Nevada Mountain Ranges to the east, the Coast Ranges to the west, the Klamath Mountains and Cascade Range to the north, and the Transverse Ranges and Mojave Desert to the south.

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, and the humidity is generally low. Winter temperatures are often below 60 degrees Fahrenheit during the day and rarely exceed 70 degrees. On average, the Central Valley receives approximately 12 inches of precipitation in the form of rainfall yearly, most of which occurs between October and March.

Teviston is a Tulare County unincorporated community and census-designated place approximately 70 miles southeast of Fresno and 45 miles northwest of Bakersfield. The Project is located within the Town of Pixley-Deer Creek watershed; Hydrologic Unit Code (HUC): 180300050903[11], approximately 1.5 miles north of Deer Creek. Historically, Deer Creek was a tributary to the dry Tulare Lake endothermic basin, but now most of the water is diverted for irrigation of agricultural crops.

The Project lies entirely within the Tule Groundwater Subbasin of the San Joaquin Valley Groundwater Basin[12]. The Project site is confined to the portion of Teviston east of State Route 99 within the District's sphere of influence. Teviston is an agriculturally oriented service community surrounded by lands in agricultural production and scattered rural and farm residences.

Two biological communities were identified within the Project area: developed and ruderal. Surrounding land uses consist of developed, ruderal, agricultural, and fallow fields. All habitats of the Project site and surrounding lands are disturbed or frequently maintained and therefore of relatively low quality for most native wildlife species. For a complete description of habitats, methodology, list of references, and photographs of the Project site, refer to the biological evaluation report in **Appendix B.**

3.4.2 Methodology

A reconnaissance-level field survey of the Project site and surrounding areas was conducted on December 4, 2019 by Provost & Pritchard biologist Brooke Fletcher (see **Appendix B**). The survey consisted of a combination of driving along distribution line routes and walking through Project site while identifying and noting land uses, biological habitats and communities, and plant and animal species encountered. Furthermore, the site and surrounding areas were assessed for suitable habitats of various wildlife species.

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

The field investigation did not include a wetland delineation or focused surveys for special status species. The field survey conducted included an appropriate level of detail to assess the significance of potential impacts to sensitive biological resources resulting from 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 U.S. Army Corps of Engineers (USACE), CDFW, and the Regional Water Quality Control Board (RWQCB).

[11] EPA Waters GeoViewer. https://www.epa.gov/waterdata/waters-geoviewer Accessed 3 January 2020.
[12] DWR Groundwater Basin Boundary Assessment Tool. https://gis.water.ca.gov/app/bbat/ Accessed 3 January 2020.

3.4.3 Regulatory Setting

3.4.3.1 Tulare County General Plan

The Tulare County General Plan sets forth the following goals and policies to protect biological resources and with which the Project is not in conflict with:

- The County shall encourage the planting of native trees, shrubs, and grasslands in order to preserve the visual integrity of the landscape, provide habitat conditions suitable for native vegetation and wildlife, and ensure that a maximum number and variety of well-adapted plants are maintained.
- The County shall protect riparian areas through habitat preservation, designation as open space or recreational land uses, bank stabilization, and development controls.
- The County shall support the preservation and management of wetland and riparian plant communities for passive recreation, groundwater recharge, and wildlife habitats.
- The County shall review development proposals against the California Natural Diversity Data Base, and other available studies provided by the California Department of Fish and Game, and consult, as appropriate, with the California Department of Fish and Game and U.S. Fish and Wildlife to assist in identifying potential conflicts with sensitive natural communities or special status species.
- On project sites that have the potential to contain species of local or regional concern, sensitive natural communities or special-status species, the County shall require the project applicant to have the site surveyed and mapped by a qualified biologist. A report on the finding of this survey shall be submitted to the County as part of the application and environmental review process.
- The County shall continue efforts to maintain and enlarge wetland preserves, which provide waterfowl habitat necessary to the maintenance of the flyway route through the valley. Such wetlands should also be protected through stormwater management programs, erosion control, and public education.

3.4.3.2 Threatened and Endangered Species

Permits may be required from the USFWS and/or CDFW if activities associated with a Project have the potential to result in the "take" of a species listed as threatened or endangered under the federal and/or state Endangered Species Acts. "Take" is defined by the state of California 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 federal Endangered Species Act to include "harm" (16 USC, Section 1532(19), 50 CFR, Section 17.3). The CDFW and the USFWS are responding agencies under CEQA. Both agencies review CEQA documents in order to determine the adequacy of their treatment of endangered species issues and to make project-specific recommendations for their conservation.

3.4.3.3 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 federal Endangered Species Act (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.

3.4.3.4 Migratory Birds

The Federal 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 actually 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 bird covered by the MBTA (Section 3513), as well as any other native non-game bird (Section 3800).

3.4.3.5 Birds of Prey

Birds of prey are protected in California under provisions of 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 federal Bald and Golden Eagle Protection Act (16 USC 668), which makes it unlawful to kill birds or their eggs.

3.4.3.6 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.

3.4.3.7 Wetlands and other "Jurisdictional Waters"

Natural drainage channels and adjacent wetlands may be considered "waters of the United States" or "jurisdictional waters" subject to the jurisdiction of the U.S. Army Corps of Engineers (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:

- 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;
- All interstate waters including interstate wetlands;
- 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;
- Tributaries of waters identified in paragraphs (a)(1)-(4) (i.e. the bulleted items above).

As determined by the United States Supreme Court in its 2001 *Solid Waste Agency of Northern Cook County v. U.S. 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 U.S. 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 Environmental Protection Agency (EPA) 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 U.S. under the authority of Section 404 of the Clean Water Act. 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

U.S. 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 result in no net loss of wetland functions or 3-5 values. No permit can be issued until the Regional Water Quality Control Board (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 State Water Resources Control Board 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 U.S. 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 U.S., 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 or more acres 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 U.S. 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 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.

3.4.4 Impact Assessment

Would the project:

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

Less Than Significant Impact with Mitigation Incorporated. California contains several "rare" plant and animal species. In this context, "rare" is defined as species known to have low populations or limited distributions. As the human population grows, resulting in urban expansion which encroaches on the already limited suitable habitat, these sensitive species become increasingly more vulnerable to extirpation. State and Federal regulations have provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (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 California Native Plant Society (CNPS) has its list of native plants considered rare, threatened, or endangered. Collectively these plants and animals are referred to as "special status species."

A thorough search of the CNDDB for published accounts of special status plant and animal species was conducted for the Pixley 7.5-minute quadrangle that contains the Project site in its entirety, and for the 8

surrounding quadrangles: Saucelito School, Woodville, Tipton, Taylor Weir, Alpaugh, Allensworth, Delano West, and Delano East. An official species list was obtained using the USFWS IPaC system for federally listed species with potential to be affected by the Project. These species, and their potential to occur within the Project site are listed in Table 1 and Table 2 of the Biological Evaluation contained in **Appendix B**.

According to the biological evaluation report, all 14 of the regionally occurring special status plant species reported in the vicinity were determined to be absent from the site, and 20 of the 21 reported regionally occurring special status animal species were determined to be absent from or unlikely to occur onsite due to past or ongoing disturbance and/or the absence of suitable habitat. Therefore, implementation of the Project should have no impact on the special status plant and animal species determined to be absent from or unlikely to occur onsite. The biologist found it possible for the special status Swainson's hawk (*Buteo swainsoni)* to occur in the vicinity of the Project, and potential impacts to this species will be discussed below along with other avian species. For a complete list of species and explanation of occurrence determinations, please see the complete biological evaluation report.

As explained in **Chapter 2 Project Description**, the Project involves well site improvements and upgrades to meters along the existing distribution system. Well site improvements will involve the use of heavy equipment and construction activities with potential to result in disturbance to sensitive wildlife in the vicinity. However, potential disturbance related to meter upgrade activities is anticipated to be minimal in nature and short-term in duration. Existing meter boxes are typically located in the front or back yard of a residence. Upgrading the existing 136 metered connections will involve hand-excavation to remove the old meter and subsequent placement with a new meter in the same location. On average, each meter replacement is expected to take approximately 20-30 minutes and will utilize a crew of two to three workers. At this rate, the District anticipates completion of approximately 20-meter upgrades per day. The meter upgrades are not anticipated to involve the use of heavy machinery or loud, motorized equipment. Furthermore, the meters are all located in areas subject to frequent disturbance associated with urban dwellings, agricultural production, and vehicular traffic. Therefore, in the unlikely event that a bird was nesting in the vicinity of a meter upgrade site, this individual would likely be acclimated to a certain level of disturbance. Based on the description of the proposed activities related to the meter upgrades, it seems unlikely that this part of the Project would result in a significant disturbance to wildlife in the vicinity, including nesting birds.

Portions of the Project site, specifically the ruderal, vacant parcels, livestock enclosures, and agricultural lands, contain marginal foraging habitat for several avian species, including the Swainson's hawk. The proposed impact areas do not contain trees or shrubs, and the Project does not involve vegetation removal. However, there are eucalyptus and other ornamental trees in the vicinity large enough to house a raptor nest, and smaller avian species may nest within ornamental trees and shrubs in the vicinity. Ground-nesting birds, such as the killdeer could nest on the bare ground, and swallows could nest within buildings or structures in the vicinity.

Swainson's hawks are common in this portion of Tulare County, and there are known nest trees within five miles of the Project site. In the absence of preferred habitat, especially within the Central Valley, Swainson's hawks often nest within eucalyptus trees lining highways, and several raptor species nest within ornamental Mexican fan palms. Although nesting habitat onsite and in the vicinity is not ideal due to the absence of native riparian trees, and foraging habitat is suboptimal, raptors, such as the special status Swainson's hawk could conceivably nest or forage near Project site. In the event that a Swainson's hawk or other avian species is foraging within the Project site during construction activities, the individual would be expected to fly away from disturbance they encounter, subsequently eliminating the risk of injury or mortality while foraging.

Due to the developed and ruderal nature of the lands, nesting and foraging habitat for raptors, resident and migratory birds, and special status birds within the Project site is marginal, at best. Habitat of higher foraging and nesting value is regionally abundant. Furthermore, the Project does not involve vegetation removal or land use conversion. Therefore, implementation of the Project would not result in a loss of nesting or foraging habitat.

As mentioned above, the meter replacement activities are not expected to result in a significant disturbance to nesting birds. However, birds nesting within the two well sites could be injured or killed by construction activities. Furthermore, construction activities could disturb birds nesting within or adjacent to the well sites, resulting in nest abandonment. Project construction activities that adversely affect the nesting success of raptors and migratory birds or result in the mortality of individual birds constitutes a violation of State and federal laws and is considered a significant impact.

Nesting bird season is generally accepted as February 1 through August 31; however, Swainson's hawk nesting season is generally accepted as March 1 through September 15. For simplicity, these timeframes have been combined.

Implementation of the following measures will reduce potential Project-related impacts to nesting raptors, migratory birds, and special status birds, including Swainson's hawk to a less than significant level and will ensure compliance with State and federal laws protecting these avian species.

Mitigation. The following measures will be implemented prior to the start of construction at the well sites:

> ***Mitigation Measure BIO-1a (Avoidance):*** The Project's construction activities shall occur, if feasible, between September 16 and January 31 (outside of nesting bird season) in an effort to avoid impacts to nesting birds.
>
> ***Mitigation Measure BIO-1b (Pre-construction Surveys):*** If activities must occur within nesting bird season (February 1 to September 15), a qualified biologist shall conduct pre-construction surveys for active nests within 30 days prior to the start of construction. The survey shall include the proposed work area and surrounding lands within 0.5 mile. If no active nests are observed, no further mitigation is required. Raptor nests are considered "active" upon the nest-building stage.
>
> ***Mitigation Measure BIO-1c (Establish Buffers):*** On discovery of any active nests near work areas, the biologist shall determine appropriate construction setback distances based on applicable CDFW and/or USFWS guidelines and/or the biology of the species in question. Construction buffers shall be identified with flagging, fencing, or other easily visible means, and shall be maintained until the biologist has determined that the nestlings have fledged.

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

No Impact. The Project site and surrounding areas do not contain riparian habitat, designated critical habitat, or natural communities of special concern. There are no known Habitat Conservation Plans in the Project vicinity. Therefore, there will be no impact.

IV-c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

No Impact. Jurisdictional waters, wetlands, and other protected water features are absent from the Project site and surrounding vicinity. Therefore, there will be no impact.

IV-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 with Mitigation Incorporated. The Project site does not contain features that would be likely to function as wildlife movement corridors. Furthermore, the Project is located in a region often disturbed by human activities which would discourage dispersal, migration, or the formation of bat maternity

roosts onsite. Potential Project-related impacts to nesting birds has been discussed in Impact Assessment IV-a. Implementation of Mitigation Measures **BIO-1a** through **BIO-1c** will reduce potential impacts to nesting native and/or migratory birds to a less than significant level.

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

No Impact. The Project design appears to be consistent with the goals and policies of the Tulare County General Plan, and the Teviston Hamlet Plan does not contain any goals or policies related to biological resources. There are no known Habitat Conservation Plans in the Project vicinity. There will be no impact.

IV-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 site is not within a designated Habitat Conservation Plan, Natural Conservation Plan, or any other State or local habitat conservation plan. There would be no impact.

3.5 Cultural Resources

Table 3-8. Cultural Resources Impacts

Cultural Resources				
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 §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 formal cemeteries?	☐	☒	☐	☐

3.5.1 Environmental Setting

3.5.1.1 Regional Setting

The Project is located on the open flats of the San Joaquin Valley, approximately 11 miles southwest of the Tule River and fewer than two miles north of Deer Creek. More accurately, the Project site and vicinity are located on the broad Deer Creek alluvial fan. Prior to the emergence of agriculture, this location would have been prairie grasslands, grading into tree savannahs in the foothills to the east. According to the Cultural and Historical Resources Report (**Appendix C**) prepared by ASM Affiliates, Inc. due to the limitations the lack of surface water had on prehistoric and historic human settlement, it is unlikely that the Project site experienced more than sporadic human use prior to the Euro-American period. Ethnographic villages are located primarily on streams near the foothills, or along the shores of Tulare Lake. For instance, the nearest known ethnographic village was the Koyete Yokuts hamlet of *Chetetik Nowush*, on Deer Creek at the base of the foothills.

3.5.1.2 Methodology

An intensive Class III Inventory/Phase I Cultural Resources Survey was conducted for the Project. This study was conducted by ASM Affiliates, Inc., with David S. Whitley, Ph.D., RPA, serving as principal investigator. Background studies and fieldwork for the survey was completed in November and December 2019. The study was undertaken to provide compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (16 USC 470; 36 CFR Part 800), and CEQA. Information contained in the IS/MND was excerpted from or was used in support of this narrative.

In addition to the record search of the Sacred Lands File, NAHC provided ASM Affiliates a list of eight local Native American Tribes who may have knowledge of cultural resources in the vicinity or general interest in the Project. ASM contacted representatives for all eight Tribes in writing via U.S. Mail with a letter dated December 5, 2019 informing them of the Project. No comments were received in response to the letters. ASM Affiliates, Inc. further attempted to reach each Tribe by email on December 18, 2019. No comments were received in response to the email.

The Project site was surveyed by ASM Associate Archaeologist Rob Azpitarte, B.A. Field reconnaissance was conducted in December 2019. The site was examined with the archaeologist walking parallel transects along the pipeline route and proposed well upgrade locations spaced at 15-meter intervals, in order to identify surface artifacts, archaeological indicators (e.g., shellfish or animal bone), and/or archaeological deposits (e.g.,

organically enriched midden soil). Special attention was paid to rodent burrow back dirt piles, in the hope of identifying sub-surface soil conditions that might be indicative of archaeological features or remains.

A buffer 50-feet wide was included on each side of the pipeline route and the proposed well construction/upgrade locations. Because the route primarily follows existing paved and unpaved roads, this resulted in survey on both sides of the roads. Adjacent to the proposed pipe corridors were residential front yards with planted grass; paved parking lots, undeveloped portions of private property, and agricultural land consisting primarily of active almond orchards. Surface visibility was moderate to excellent throughout the Project APE, though planted lawn and paved areas restricted surface visibility in some areas. Roads lack curbing and sidewalks, however, providing surface visibility in most portions of the pipeline route. Careful attention was paid to any exposed ground-surface (e.g., in planters or road shoulders) immediately adjacent to paved or lawn areas to ensure survey coverage. Soils throughout the study area are sandy-silty alluvium with very few lithic clasts, reflecting a soils origin in deltaic processes.

No cultural resources of any kind were identified within the Project site as a result of the records search and field reconnaissance. Based on these findings, ASM determined the Project does not have the potential to result in adverse impacts or effects to significant historical resources or historic properties.

3.5.2 Regulatory Setting

3.5.2.1 Federal

National Historic Preservation Act of 1966 (as amended), Section 106

The significance of cultural resources is evaluated under the criteria for inclusion in the National Register of Historic Places (NRHP), authorized under the National Historic Preservation Act of 1966, as amended.

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 (see below) for significance applied under Section 106 are generally (although not entirely) consistent with CRHR criteria (see PRC Section 5024.1; Title 14 CCR, Sections 4852 and 15064.5(a)(3)).

Significant cultural resources are those archaeological resources and historical properties that:

(A) Are associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

(B) Are associated with the lives of persons important in our past;

(C) Embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of an important creative individual, or possess high artistic values; or

(D) Have yielded, or may be likely to yield, information important in prehistory or history.

Unique resources under CEQA, in slight contrast, are those that represent:

An archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

(1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

(2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.

(3) Is directly associated with a scientifically recognized important prehistoric or historic event or person (PRC § 21083.2(g)).

Preservation in place is the preferred approach under CEQA to mitigating adverse impacts to significant or unique cultural resources. Sites listed or eligible for listing on the NRHP are considered to be historic properties. Sites younger than 50 years, unless of exceptional importance, are not eligible for listing in the NRHP.

American Indian Religious Freedom Act

The American Indian Religious Freedom Act, a federal law and joint resolution of Congress was created to protect and preserve the traditional religious rights and cultural practices of American Indians, Eskimos, Aleuts and Native Hawaiians. These rights include, but are not limited to, access of sacred sites, repatriation of sacred objects held in museums, freedom to worship through ceremonial and traditional rites, including within prisons, and use and possession of objects considered sacred.

Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act requires federal agencies and institutions that receive federal funding to return Native American cultural items to lineal descendants and culturally affiliated Indian tribes and Native Hawaiian organizations. Cultural items include human remains, funerary objects, sacred objects, and objects of cultural patrimony.

3.5.2.2 State

CEQA requires consideration of project impacts on archaeological or historical sites deemed to be "historical resources." Under CEQA, a substantial adverse change in the significant qualities of a historical resource is considered a significant effect on the environment. For the purposes of CEQA, a "historical resource" is a resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources (Title 14 CCR Section 15064.5[a][1]-[3]). Historical resources may include, but are not limited to, "any object, building, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (PRC § 5020.1[j]).

The eligibility criteria for the California Register are the definitive criteria for assessing the significance of historical resources for the purposes of CEQA (Office of Historic Preservation.). The criteria for a resource to be considered "historically significant" for listing on the California Register is demonstrated below.

A resource is considered "historically significant" if it meets one or more of the following criteria for listing on the California Register:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
- Is associated with the lives of persons important in our past.
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
- Has yielded, or may be likely to yield, information important in prehistory or history. (PRC Section 5024.1[c])

California Health and Safety Code

Health and Safety Code Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the County coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the California Native American Heritage Commission. PRC § 5097.98 specifies the procedures to be followed in case of the discovery

of human remains on non-federal land. The disposition of Native American burials is within the jurisdiction of the Native American Heritage Commission.

Paleontological Resources

Paleontological resources are the fossilized remains of plants and animals and associated deposits. The Society of Vertebrate Paleontology has identified vertebrate fossils, their taphonomic and associated environmental indicators, and fossiliferous deposits as significant nonrenewable paleontological resources. Botanical and invertebrate fossils and assemblages may also be considered significant resources.[13] CEQA requires that a determination be made as to whether a project would directly or indirectly destroy a unique paleontological resource or site or unique geological feature (CEQA Appendix G(v)(c)). If an impact is significant, CEQA requires feasible measures to minimize the impact (CCR Title 14(3) § 15126.4(a)(1)). PRC § 5097.5 (see above) also applies to paleontological resources.

3.5.2.3 Local

2030 Tulare County General Plan: The Tulare County General Plan sets forth several goals and policies relating to cultural resources, none of which are relevant to this Project's CEQA review.

3.5.3 Impact Assessment

Would the project:

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

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

V-c) Disturb any human remains, including those interred outside of formal cemeteries?

Less than Significant Impact with Mitigation Incorporated.

Based upon the evidence and findings contained in the Class III Inventory/Phase I Cultural Resources Survey conducted by ASM Affiliates, Inc. (see **Appendix C**), no cultural resources of any kind, as defined in Section 106 of the NHPA, were identified within the APE and no sacred sites or traditional cultural places were identified within or adjacent to the APE.

In addition to the record search of the Sacred Lands File, NAHC provided a list of eight local Native American Tribes who may have knowledge of cultural resources in the vicinity or general interest in the Project. The following representatives for the eight Tribes were contacted in writing via U.S. Mail with a letter dated December 5, 2019 informing them of the Project.

1. Kern Valley Indian Community, Lake Isabella, Robert Robinson, Chairperson
2. Kern Valley Indian Community, Lake Isabella, Julie Turner, Secretary
3. Kern Valley Indian Community, Tehachapi, Brandy Kendricks
4. Santa Rosa Rancheria Tachi Yokut Tribe, Rueben Barrios Sr., Chairperson
5. Tubatulabals of Kern County, Robert L. Gomez Jr., Chairperson
6. Tule River Indian Tribe, Neil Pevron, Chairperson
7. Wuksache Indian Tribe, Eshom Valley Band, Kenneth Woodrow, Chairperson

No comments were received in response to the letters. ASM Affiliates, Inc. further attempted to reach each Tribe by email on December 18, 2019. No comments were received in response to the email.

[13] Society of Vertebrate Paleontology. Conformable Impact Mitigation Guidelines Committee Policy Statements. http://www.vertpaleo.org/ConformableImpactMitigationGuidelinesCommittee.htm. Accessed 15 January 2019.

No archaeological resources were identified by the ASM Affiliates archaeologist during the field survey of the Project area in December 2019.

Although it is unlikely that archeological resources will be discovered during construction or operation of the Project, **CUL-1** is to be considered.

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

No formal cemeteries or other places of human internment are known to exist within the Project site; however, in accordance with Health and Safety Code Section 7050.5 and Public Resource Code Section 5097.98, if human remains are uncovered, Mitigation Measure **CUL-2** would be implemented.

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

3.6 Energy

Table 3-9. Energy Impacts

Energy				
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?	☐	☐	☒	☐

3.6.1 Environmental Setting

Southern California Edison (SCE) supplies electricity to the Project site. SCE obtains its power through hydroelectric, natural gas, and eligible renewable sources. SCE continually produces new electric generation and natural gas sources and implements continuous improvements to gas lines throughout its service areas to ensure the provision of services to customers. The Project would require upgraded electric power service to the North Well Site to operate the upgraded water service system.

3.6.2 Impact Assessment

Would the project:

VI-a) 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. The Project would require upgraded electric power service to operate the expanded water service system. Technology used in the water supply system would employ Best Management Practices and employ the most energy efficient equipment available. Increases in the use of energy as a result of the Project would be minimal in comparison to energy used in this existing water supply system and for its current users. As such, impacts related to wasteful, inefficient, or unnecessary consumption of energy resources during Project construction and its operation would be minimal and would be considered less than significant.

VI-b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Less Than Significant Impact. Based on the analysis in the preceding discussion, the Project will not conflict with current State energy efficiency or electricity supply requirements or any local plans or programs for renewable energy or energy efficiency requirements. Thus, the Project's impact would be less than significant.

3.7 Geology and Soils

Table 3-10. Geology and Soils Impacts

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

3.7.1 Environmental Setting

3.7.1.1 Geology and Soils

The Project is located in southwestern Tulare County, in the southern section of California's Great Valley Geomorphic Province, or Central Valley. The Sacramento Valley makes up the northern third and the San Joaquin Valley makes up the southern two-thirds of the geomorphic province. Both valleys are watered by large rivers flowing west from the Sierra Nevada Range, with smaller tributaries flowing east from the Coast Ranges. Most of the surface of the Great Valley is covered by Quaternary (present day to 1.6 million years ago) alluvium.

The sedimentary formations are steeply upturned along the western margin due to the uplifted Sierra Nevada Range.[14] From the time the Valley first began to form, sediments derived from erosion of igneous and metamorphic rocks and consolidated marine sediments in the surrounding mountains have been transported into the Valley by streams.

3.7.1.2 Faults and Seismicity

The Project site is not located within an Alquist-Priolo Earthquake Fault Zone and no known faults cut through the local soil at the site. The nearest major fault is the San Andreas Fault, located approximately 53 miles southwest of the Project site. The San Andreas Fault is the dominant active tectonic feature of the Coast Ranges and represents the boundary of the North American and Pacific plates. A smaller fault zone, the Poso Creek Fault, is approximately 14 miles southwest of the site and an unnamed fault is also about 14 miles from the site to the east-northeast.

3.7.1.3 Liquefaction

The potential for liquefaction, which is the loss of soil strength due to seismic forces, is dependent on soil types and density, the groundwater table, and the duration and intensity of ground shaking. Although no specific liquefaction hazard areas have been identified in the county, this potential is recognized throughout the San Joaquin Valley where unconsolidated sediments and a high-water table coincide. It is reasonable to assume that due to the depth to groundwater within the southern portion of Tulare County, liquefaction hazards would be negligible. Soil conditions are key factors in selecting locations for direct groundwater recharge projects. Using the USDA NRCS soil survey of Tulare County, an analysis of the soils onsite was performed. Soils in the area consist of Hanford sandy loam and Akers-Akers, saline-Sodic, complex.

3.7.1.4 Soil Subsidence

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

3.7.2 Regulatory Setting

3.7.2.1 Federal

There are no federal regulations, plans, programs, and guidelines associated with geology and soils that are applicable to the Project.

3.7.2.2 State

California Alquist-Priolo Earthquake Fault Zoning Act: The Alquist-Priolo Earthquake Fault Zoning Act (originally enacted in 1972 and renamed in 1994) is intended to reduce the risk to life and property from surface fault rupture during earthquakes. The statute prohibits the location of most types of structures intended for human occupancy across the traces of active faults and regulates construction in the corridors along active faults.

California Building Standards Code: The California Code of Regulations (CCR) Title 24 is assigned to the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. The California Building Code incorporates by reference the International Building Code with necessary California amendments. The International Building Code is a widely adopted model building code in the United

[14] Harden, D.R. 1998, California Geology, Prentice Hall, 479 pages.

States published by the International Code Council. About one-third of the text within the California Building Standards Code has been tailored for California earthquake conditions.

3.7.2.3 Local

2030 Tulare County General Plan:[15] The Tulare County General Plan sets forth the following goals and policies regarding geology and soils and which have potential relevance to the Project's CEQA review:

- The County of Tulare shall establish the proper controls and ordinances for soil conservation.
- The County shall encourage landowners to participate in programs that reduce soil erosion and increase soil productivity. To this end, the County shall promote coordination between the Natural Resources Conservation Service, Resource Conservation Districts, UC Cooperative Extension, and other similar agencies and organizations.
- The County shall adopt standards applicable to all types of man-made disruption, including drainage alternations of soils and subsurface geological features in order to minimize erosion and sedimentation problems.

3.7.3 Impact Assessment

Would the project:

VII-a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

VII-a-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.

VII-a-ii) Strong seismic ground shaking?

Less Than Significant Impact. The Project site and its vicinity are located in an area traditionally characterized by relatively low seismic activity. The site is not located in an Alquist-Priolo Earthquake Fault Zone as established by the Alquist-Priolo Fault Zoning Act (Section 2622 of Chapter 7.5, Division 2 of the California Public Resources Code). The nearest major fault is the San Andreas Fault, located approximately 53 miles southwest of the Project site. The San Andreas Fault is the dominant active tectonic feature of the Coast Ranges and represents the boundary of the North American and Pacific plates. A smaller fault zone, the Poso Creek Fault, is approximately 14 miles southwest of the site and an unnamed fault also about 14 miles from the site to the east-northeast. As the Project involves water system improvements for the community of Teviston, it does not include development of habitable residential, agricultural, commercial or industrial structures. Operation of the Project would require infrequent, routine maintenance employees on site, which is no different than current site operations. Implementation of the Project would not result in an increase of people onsite. Any impact would be less than significant.

VII-a-iii) Seismic-related ground failure, including liquefaction?

Less Than Significant Impact. Liquefaction occurs when loose, water-saturated sediments lose strength and fail during strong ground shaking. In general, liquefiable areas are generally confined to the Valley floor covered by Quaternary-age alluvial deposits, Holocene soil deposits, current river channels, and active wash deposits and their historic floodplains, marshes, and dry lakes. Specific liquefaction hazard areas in the county have not

[15] Tulare County General Plan. http://generalplan.co.tulare.ca.us/ Accessed 26 November 2019.

been identified. The Project site is not in a wetland area and is located in the southwestern portion of the County where liquefaction risk is considered low to moderate. The impact would be less than significant.

VII-a-iv) Landslides?

No Impact. As the Project is located on the Valley floor, no major geologic landforms exist on or near the site that could result in a landslide event. The potential landslide impact at this location is minimal as the site is approximately 19 miles from the foothills and the local topography is essentially flat and level. There will be no impact.

VII-b) Result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact. There are no streams or rivers onsite or in the immediate vicinity. The Project does not propose significant alteration of the topography of the site. Total area of ground disturbance is estimated at approximately 1.25 acres. In addition to constructing a well, infrastructure, and water storage tank, the Project proposes calculated grading and development to prevent storm runoff from pooling around the proposed well head, tank, and booster pump. Furthermore, the onsite storm drainage will be constructed according to all regulations set forth in CCR Section 5595. The contractor is expected to formulate and implement a SWPPP since ground disturbance is greater than one acre. Additionally, construction activities will comply with all Cal/OSHA regulations regarding protection from loose rock or soil and hazards associated with water accumulation during excavating activities (CCR Section 1541). Impacts will be less than significant.

VII-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?

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

Less Than Significant Impact. Soil onsite consists of Hanford sandy loam, 0–2% slopes and Akers-Akers, saline-Sodic, complex, 0 to 2 percent slopes (see Custom Soil Resource Report in Appendix E of **Appendix B**). The soil is well-drained with very rare frequency of flooding and a negligible runoff class. With proper irrigation, these soils are considered prime farmland. The Project site and surrounding areas do not contain substantial grade changes. Risk of landslides, lateral spreading, subsidence, liquefaction, and collapse are minimal. The Project does not propose significant alteration of the topography of the site and it does not involve development of structures or facilities that could be affected by expansive soils or expose people to substantial risks to life or property. Furthermore, the Project will be consistent with the California Building Standards Code. Any impacts would be less than significant.

VII-e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact. Septic installation or alternative wastewater disposal systems are not necessary for the Project. There will be no impact.

VII-f) Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?

No Impact. No known paleontological resources have been identified at the Project site, which is an existing maintenance and storage site in an industrial area with extensive ground disturbance. The area is flat, and no unique geologic features have been noted in the Project area. The Project will have no impact to unique paleontological resources or unique geologic features

3.8 Greenhouse Gas Emissions

Table 3-11. Greenhouse Gas Emissions Impacts

Greenhouse Gas Emissions				
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?	☐	☐	☒	☐

3.8.1 Environmental Setting

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

3.8.1.1 Greenhouse Gases

The most abundant greenhouses gases in Earth's atmosphere and their emission 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.

[16] NASA, NOAA Data Show 2016 Warmest Year on Record Globally. https://www.nasa.gov/press-release/nasa-noaa-data-show-2016-warmest-year-on-record-globally. January 18, 2017. Accessed 21 October 2019.

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

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

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

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

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

Sulfur hexafluoride (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.

3.8.1.2 Effects of Climate Change

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

Emissions of GHGs contributing to global climate change are largely attributable to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. GHG emissions are typically expressed in carbon dioxide-equivalents (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 21 tons of CO_2. Therefore, CH_4 is a much more potent GHG than CO_2.

3.8.2 Methodology

An Air Quality and Greenhouse Gas Emissions Evaluation Report, **Appendix A**, was prepared in January 2020. The sections below detail the methodology of the report and its conclusions.

3.8.2.1 Short-Term Construction-Generated Emissions

Short-term construction emissions associated with the Project were calculated using CalEEmod Output Files, Version 2016.3.1. Emissions' modeling was assumed to occur over an approximate fifteen-month period and covering a site area of 1.25 acres. Remaining assumptions were based on the default parameters contained in the model. Modeling assumptions and output files are included in **Appendix A**.

3.8.2.2 Long-Term Operational Emissions

Long-term operational emissions associated with the Project will deviate minimally from existing baseline conditions due to the emergency generator. Maintenance will continue to be provided on an as needed basis and the operational equipment, such as the use of stationary electric pumps, will be similar to the existing system, which results in negligible emissions.

3.8.2.3 Thresholds of Significance

CEQA Guidelines Amendments became effective March 18, 2010. Included in the Amendments are revisions to the Appendix G Initial Study Checklist. In accordance with these Amendments, a project would be considered to have a significant impact to climate change if it would:

a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or,
b. Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

In accordance with SJVAPCD's CEQA Greenhouse Gas Guidance, proposed projects complying with Best Performance Standards (BPS)[17] 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.

3.8.3 Regulatory Setting

3.8.3.1 Federal

Although climate change and GHG reduction is a concern at the federal level; currently there are no regulations or legislation that have been enacted specifically addressing GHG emissions reductions and climate change at the project level.

3.8.3.2 State

Assembly Bill 1493:

Assembly Bill (AB) 1493 (Pavley) of 2002 (Health and Safety Code Sections 42823 and 43018.5) requires the California Air Resources Board (CARB) to develop and adopt the nation's first GHG emission standards for automobiles.

Assembly Bill 32 - California Global Warming Solutions Act of 2006

AB 32 (Health and Safety Code Sections 38500, 38501, 38510, 38530, 38550, 38560, 38561–38565, 38570, 38571, 38574, 38580, 38590, 38592–38599 "*et seq.,*") requires that Statewide GHG emissions be reduced to 1990 levels by the year 2020. The gases that are regulated by AB 32 include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, nitrogen trifluoride, and sulfur hexafluoride. The reduction to 1990 levels will be accomplished through an enforceable Statewide cap on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs CARB to develop and implement regulations to reduce Statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32

[17] Best Performance Standards for Stationary Sources. https://www.valleyair.org/Programs/CCAP/bps/BPS_idx.htm Accessed 30 January 2020.

also includes language stating that if the AB 1493 regulations cannot be implemented, then ARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 requires that ARB adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrives at the cap, institute a schedule to meet the emissions cap, and develop tracking, reporting, and enforcement mechanisms to ensure that the State achieves reductions in GHG emissions necessary to meet the cap. AB 32 also includes guidance to institute emissions reductions in an economically efficient manner and conditions to ensure that businesses and consumers are not unfairly affected by the reductions.

Climate Change Scoping Plan

In October 2008, ARB published its Climate Change Proposed Scoping Plan, which is the State's plan to achieve GHG reductions in California required by AB 32. The Scoping Plan contains the main strategies California will implement to achieve reduction of 169 million metric tons (MMT) of CO_2e, or approximately 30 percent from the State's projected 2020 emissions level of 596 $MMTCO_2e$ under a business-as-usual scenario (this is a reduction of 42 $MMTCO_2e$, or almost 10 percent, from 2002–2004 average emissions). The Scoping Plan also includes ARB-recommended GHG reductions for each emissions sector of the State's GHG inventory. The largest proposed GHG reduction recommendations are from improving emissions standards for light-duty vehicles (estimated reductions of 31.7 $MMTCO_2e$), implementation of the Low Carbon Fuel Standard (15.0 $MMTCO_2e$) program, energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 $MMTCO_2e$), and a renewable portfolio standard for electricity production (21.3 $MMTCO_2e$). The Scoping Plan identifies the local equivalent of AB 32 targets as a 15 percent reduction below baseline GHG emissions level, with baseline interpreted as GHG emissions levels between 2003 and 2008.

A key component of the Scoping Plan is the Renewable Portfolio Standard, which is intended to increase the percentage of renewables in California's electricity mix to 33 percent by year 2020, resulting in a reduction of 21.3 $MMTCO_2e$. Sources of renewable energy include, but are not limited to, biomass, wind, solar, geothermal, hydroelectric, and anaerobic digestion. Increasing the use of renewables will decrease California's reliance on fossil fuels, thus reducing GHG emissions.

The Scoping Plan States that land use planning and urban growth decisions will play important roles in the State's GHG reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth and the changing needs of their jurisdictions. (Meanwhile, ARB is also developing an additional protocol for community emissions.) ARB further acknowledges that decisions on how land is used will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emissions sectors. The Scoping Plan States that the ultimate GHG reduction assignment to local government operations is to be determined. With regard to land use planning, the Scoping Plan expects approximately 5.0 $MMTCO_2e$ will be achieved associated with implementation of Senate Bill 375, which is discussed further below. The Climate Change Proposed Scoping Plan was approved by ARB on December 11, 2008.

The First Update of the Scoping Plan was approved by the ARB on May 22, 2014, which looked past 2020 to set mid-term goals (2030–2035) on the road to reaching the 2050 goals. ARB's Key Action for the Waste Sector focused on eliminating organics from the landfill starting in 2016 and financing the in-State infrastructure development of composting and anaerobic digestion facilities. ARB's Key Action for Short-lived Climate Pollutants such as methane is to develop a comprehensive strategy by 2015 which will focus on methane generated at landfills from the disposal of organic wastes.

Senate Bill 97 – CEQA: Greenhouse Gas Emissions

Senate Bill 97, signed in August 2007, acknowledges that climate change is an important environmental issue that requires analysis under CEQA. This bill directs the Governor's Office of Planning and Research to prepare,

develop, and transmit to the Resources Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, by July 1, 2009. The Resources Agency is required to certify or adopt those guidelines by January 1, 2010. Amendments to the CEQA guidelines took effect March 18, 2010. The revisions include a new section (Sec. 15064.4) that specifically addresses the potential significance of GHG emissions. Section 15064.4 calls for a "good-faith effort" to "describe, calculate or estimate" GHG emissions. Section 15064.4 further States that a lead agency "should" consider several factors when assessing the significance of impacts from GHG emissions on the environment, including: the extent to which the project would increase or reduce GHG emissions; whether project emissions exceed an applicable threshold of significance; and the extent to which the project complies with "regulations or requirements adopted to implement a Statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions." The guidelines also State that a lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements of previously approved plan or mitigation program (Sec. 15064(h)(3)). However, the guidelines do not require or recommend a specific analytical methodology or provide quantitative criteria for determining the significance of GHG emissions.

This bill also protected projects until January 1, 2010 that were funded by the Highway Safety, Traffic Reduction, Air Quality and Port Security Bond Act of 2006, or the Disaster Preparedness and Flood Protection Bond Act of 2006 (Proposition 1B or 1E) from claims of inadequate analysis of GHG as a legitimate cause of action. Thus, this "protection" is highly limited to a handful of projects and for a short time period (California Air Pollution Control Officers Association, 2008).

Senate Bill 1368

Senate Bill (SB) 1368 (codified at Public Utilities Code Chapter 3) is the companion bill of AB 32. SB 1368 required the California Public Utilities Commission (CPUC) to establish a greenhouse gas emissions performance standard for baseload generation from investor-owned utilities by February 1, 2007. The bill also required the California Energy Commission (CEC) to establish a similar standard for local publicly owned utilities by June 30, 2007. These standards cannot exceed the greenhouse gas emission rate from a baseload combined-cycle natural-gas-fired plant. The legislation further requires that all electricity provided to California, including imported electricity, must be generated from plants that meet the standards set by the CPUC and the CEC.

Senate Bill 1078 and Governor's Order S-14-08 (California Renewables Portfolio Standards)

Senate Bill 1078 (Public Utilities Code Sections 387, 390.1, 399.25 and Article 16) addresses electricity supply and requires that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide a minimum 20 percent of their supply from renewable sources by 2017. This Senate Bill will affect Statewide GHG emissions associated with electricity generation. In 2008, Governor Schwarzenegger signed Executive Order S-14-08, which set the Renewables Portfolio Standard target to 33 percent by 2020. It directed State government agencies and retail sellers of electricity to take all appropriate actions to implement this target. The Project site would receive energy service from the investor-owned Southern California Edison.

Prior to the Executive Order, the CPUC and the CEC were responsible for implementing and overseeing the Renewables Portfolio Standard. The Executive Order shifted that responsibility to ARB, requiring it to adopt regulations by July 31, 2010. ARB is required by current law, AB 32 of 2006, to regulate sources of greenhouse gases to meet a State goal of reducing greenhouse gas emissions to 1990 levels by 2020 and an 80 percent reduction of 1990 levels by 2050. The CEC and CPUC are expected to serve in advisory roles to help ARB develop the regulations to administer the 33 percent by 2020 requirement. Additionally, the CEC and CPUC will continue their implementation and administration of the 20 percent requirement. The Executive Order also stipulates that ARB may delegate to the CPUC and CEC any policy development or program implementation responsibilities that would reduce duplication and improve consistency with other energy programs. ARB is also authorized to increase the target and accelerate and expand the time frame.

The general definition under the State Renewables Portfolio Standard for biomass is any organic material not derived from fossil fuels, including agricultural crops, agricultural wastes and residues, waste pallets, crates, dunnage, manufacturing, and construction wood wastes, landscape and right-of-way tree trimmings, mill residues that result from milling lumber, rangeland maintenance residues, sludge derived from organic matter, and wood and wood waste from timbering operations. Biomass feedstock from State and national forests is allowable under the definition.

Mandatory Reporting of Greenhouse Gas Emissions

Reporting of greenhouse gases by major sources is required by the California Global Warming Solutions Act (AB 32, 2006). Revisions to the existing ARB mandatory GHG reporting regulation were considered at the board hearing on December 16, 2010. The revised regulation was approved by the California Office of Administrative Law and became effective on January 1, 2012. The revised regulation affects industrial facilities, suppliers of transportation fuels, natural gas, natural gas liquids, liquefied petroleum gas, and carbon dioxide, operators of petroleum and natural gas systems, and electricity retail providers and marketers.

Cap-and-Trade Regulation

The cap-and-trade regulation is a key element in California's climate plan. It sets a Statewide limit on sources responsible for 85 percent of California's greenhouse gas emissions and establishes a price signal needed to drive long-term investment in cleaner fuels and more efficient use of energy. The cap-and-trade rules came into effect on January 1, 2013 and apply to large electric power plants and large industrial plants. In 2015, they will extend to fuel distributors (including distributors of heating and transportation fuels). At that stage, the program will encompass nearly 85 percent of the State's total greenhouse gas emissions.

GHG emissions addressed by the cap-and-trade regulation are subject to an industry-wide cap on overall GHG emissions. The cap-and-trade regulation sets a firm limit or cap on GHGs, which declines approximately 3 percent each year beginning in 2013. Any growth in emissions must be accounted for under the cap, such that a corresponding and equivalent reduction in emissions must occur to allow any increase. The cap-and-trade regulation will help California achieve its goal of reducing GHG emissions to 1990 levels by the year 2020, and ultimately achieving an 80% reduction from 1990 levels by 2050. As such, the ARB has determined that the cap-and-trade regulation meets the requirements of AB 32.

3.8.3.3 Local

San Joaquin Valley Air Pollution Control District

SJVAPCD Climate Change Action Plan:

On August 21, 2008, the SJVAPCD Governing Board approved the District's Climate Change Action Plan with the following goals and actions:

Goals:

- Assist local land-use agencies with California Environmental Quality Act (CEQA) issues relative to projects with GHG emissions increases.
- Assist Valley businesses in complying with mandates of AB 32.
- Ensure that climate protection measures do not cause increase in toxic or criteria pollutants that adversely impact public health or environmental justice communities.

Actions:

- Authorize the Air Pollution Control Officer to develop GHG significance threshold(s) or other mechanisms to address CEQA projects with GHG emissions increases. Begin the requisite public process, including public workshops, and develop recommendations for Governing Board consideration in the spring of 2009.

- Authorize the Air Pollution Control Officer to develop necessary regulations and instruments for establishment and administration of the San Joaquin Valley Carbon Exchange Bank for voluntary GHG reductions created in the Valley. Begin the requisite public process, including public workshops, and develop recommendations for Governing Board consideration in spring 2009.
- Authorize the Air Pollution Control Officer to enhance the District's existing criteria pollutant emissions inventory reporting system to allow businesses subject to AB 32 emission reporting requirements to submit simultaneous streamlined reports to the District and the State of California with minimal duplication.
- Authorize the Air Pollution Control Officer to develop and administer voluntary GHG emission reduction agreements to mitigate proposed GHG increases from new projects.
- Direct the Air Pollution Control Officer to support climate protection measures that reduce GHG emissions as well as toxic and criteria pollutants. Oppose measures that result in a significant increase in toxic or criteria pollutant emissions in already impacted area.

SJVAPCD CEQA Greenhouse Gas Guidance:

On December 17, 2009, the SJVAPCD Governing Board adopted "Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA" and the policy, "District Policy—Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency." The SJVAPCD concluded that the existing science is inadequate to support quantification of the impacts that project specific greenhouse gas emissions have on global climatic change. The SJVAPCD found the effects of project-specific emissions to be cumulative, and without mitigation, that their incremental contribution to global climatic change could be considered cumulatively considerable. The SJVAPCD found that this cumulative impact is best addressed by requiring all projects to reduce their greenhouse gas emissions, whether through project design elements or mitigation.

The SJVAPCD's approach is intended to streamline the process of determining if project-specific greenhouse gas emissions would have a significant effect. Projects exempt from the requirements of CEQA, and projects complying with an approved plan or mitigation program would be determined to have a less than significant cumulative impact. Such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources and have a certified final CEQA document.

Best performance standards (BPS) to address operational emissions of a project would be established according to performance-based determinations. Projects complying with BPS would not require specific quantification of GHG emissions and would be determined to have a less than significant cumulative impact for GHG emissions. Projects not complying with BPS would require quantification of GHG emissions and demonstration that operational greenhouse gas emissions have been reduced or mitigated by 29 percent, as targeted by ARB's AB 32 Scoping Plan. Furthermore, quantification of GHG emissions would be required for all projects for which the lead agency has determined that an Environmental Impact Report is required, regardless of whether the project incorporates BPS.

APR 2025 – CEQA Determinations of Significance for Projects Subject to ARB's Cap-and Trade Regulation

The purpose of this policy is to provide guidance for the determination of significance for increases of GHG emissions associated with projects that are subject to ARB's cap-and-trade regulation. The SJVAPCD recognizes that the ARB's Cap-and-Trade Regulation is an adopted State-wide plan for reducing or mitigating GHG emissions from targeted industries. GHG emissions addressed by the Cap-and-Trade regulation are subject to an industry-wide cap on overall GHG emissions. As such, any growth in emissions must be accounted for under that cap, such that a corresponding and equivalent reduction in emissions must occur to allow any increase. Further, the cap decreases over time, resulting in an overall decrease in GHG emissions. Therefore, the SJVAPCD concluded that GHG emissions increases subject to ARB's Cap-and-Trade regulation would have a less than significant individual and cumulative impact on global climate change. This policy applies

to projects for which the SJVAPCD is the lead agency but is also useful for evaluation of other CEQA related projects for which the SJVAPCD may not be the lead agency.

Bay Area Air Quality Management District's Thresholds for Significance

Bay Area Air Quality Management District's approach to developing a threshold of significance for GHG emissions is to identify the emissions level for which a project would not be expected to substantially conflict with existing California legislation adopted to reduce Statewide GHG emissions. If a project would generate GHG emissions above the threshold level, it would be considered to contribute substantially to a cumulative impact and would be considered significant. If mitigation can be applied to lessen the emissions such that the project meets its share of emission reductions needed to address the cumulative impact, the project would normally be considered less than significant. Although the Project is not located in the Bay Area, the Bay Area Air Quality Management District's thresholds for significance are based on the Statewide AB 32 objectives.

2030 Tulare County General Plan: The Tulare County General Plan sets forth goals and policies relating to greenhouse gas emissions, none of which are relevant to this Project's CEQA review.

Tulare County Climate Action Plan:[18] The Tulare County Climate Action Plan sets forth the following GHG emission reduction target for Tulare County:

- 26.2 percent reduction in County development related emissions
- 6 percent average project reduction required from new development beyond that required by regulation

3.8.4 Impact Assessment

Would the project:

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

Less Than Significant Impact.

Short-Term Construction-Generated Emissions

Estimated construction-generated emissions are summarized in **Table 3-12**. As indicated, construction of the Project would generate maximum annual emissions of approximately 222.4746 metric tons of carbon dioxide equivalent ($MTCO_{2e}$). Construction-related production of GHGs would be temporary and last approximately fifteen months.

[18] Tulare County Climate Action Plan. http://generalplan.co.tulare.ca.us/documents/GeneralPlan2010/ClimateActionPlan.pdf Accessed 26 November 2019.

Table 3-12. Short-Term Construction-Generated GHG Emissions

Short-Term Construction-Generated GHG Emissions	
Year	**Emissions (MT CO_2e)[1]**
2021	125.1962
2022	222.4647
AB 32 Consistency Threshold for Mobile Sources	*1,100*
AB 32 Consistency Threshold for Stationary Sources	*10,000*
Exceed Threshold?	No

1. *Emissions were quantified using the CalEEmod, Version 2016.3.1. Refer to Appendix A for modeling results and assumptions. Totals may not sum due to rounding.*

* 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 18 November 2019.

Long-Term Operational Emissions

Long-term operational emissions are summarized below in **Table 3-13**. Emissions resulting from the Project will be differ slightly from existing baseline conditions dependent on use of the emergency generator. Maintenance will continue to be provided on an as needed basis and the operational equipment, such as the use of stationary electric pumps, will be similar to the existing system, which results in negligible emissions.

Table 3-13. Long-Term Operational GHG Emissions

Long-Term Operational GHG Emissions	
	Emissions (MT CO_2e)[1]
Estimated Total Annual Operational CO_2e Emissions	12.8014
*AB 32 Consistency Threshold for Land-Use Development Projects**	*1,100*
*AB 32 Consistency Threshold for Stationary Source Projects**	*10,000*
Exceed Threshold?	No

1. *Emissions were quantified using the CalEEmod, Version 2016.3.2. Refer to Appendix A for modeling results and assumptions. Totals may not sum due to rounding.*

* 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 18 November 2019.

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

Less Than Significant Impact. In accordance with SJVAPCD's recommended guidance, project-generated GHG emissions would be considered less than significant if: (1) the Project complies with applicable BPS; (2) operational GHG emissions would be reduced or mitigated by a minimum of 29 percent in comparison to business-as usual (year 2004) conditions; or (3) project-generated emissions would comply with an approved plan or mitigation program.

The SJVAPCD recognizes that the ARB's Cap-and-Trade regulation is an adopted State-wide plan for reducing or mitigating GHG emissions from targeted industries. In June of 2014, the SJVAPCD issued APR- 2025. In this policy document, the SJVAPCD concluded that the combustion of fossil fuels including fuels associated

with on- and off-road vehicles, are subject to Cap-and-Trade requirements. The SJVAPCD further concluded that through implementation of the Cap-and-Trade regulation, project specific GHG emissions generated by fossil fuel use would be fully mitigated.

As noted above in **Table 3-12**, project-generated GHG emissions would be attributable to the consumption of fossil fuels associated with the operation of on- and off-road vehicles. As discussed above, the SJVAPCD has determined that project-generated GHG emissions associated with the use of fossil fuels would be fully mitigated through implementation of ARB's Cap-and-Trade regulation and, therefore, would be considered have a less than significant individual and cumulative impact on the environment.

As discussed earlier in this document, the Cap-and-Trade regulation is a key component in California's AB 32 GHG-reduction goals. On August 21, 2008, the SJVAPCD Governing Board approved the District's Climate Change Action Plan (CCAP). The CCAP and the Tulare County Climate Action Plan includes various recommended measures for the reduction of GHG emissions associated with development projects. However, of the measures recommended, none are applicable to the Project.

The Project complies with the Bay Area Air Quality Management District's GHG emissions thresholds for significance. For the aforementioned reasons, implementation of the Project is not anticipated to conflict with any applicable plan, policy or regulation for reducing the emissions of GHGs, nor will the Project have a significant impact on the environment. The impact would be considered less than significant.

3.9 Hazards and Hazardous Materials

Table 3-14. Hazards and Hazardous Materials Impacts

Hazards and Hazardous Materials				
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?	☐	☐	☐	☒

3.9.1 Environmental Setting

3.9.1.1 Hazardous Materials

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

California, including underground storage tank (UST) cases and non-UST cleanup programs, including Spills-Leaks-Investigations-Cleanups (SLIC) sites, Department of Defense (DOD) sites, and Land Disposal program. A search of the DTSC EnviroStor database and the SWRCB Geotracker performed on December 2, 2019 determined that there are no known active hazardous waste generators or hazardous material spill sites within the Project site or immediate surrounding vicinity.

3.9.1.2 Airports

Delano Municipal Airport is located approximately 12 miles south of the Project site while Porterville Municipal Airport is approximately 12 miles northeast of the site. A private airstrip is located approximately two miles southeast of the site though its current use is unknown to TCSD.

3.9.1.3 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.

3.9.1.4 Sensitive Receptors

Pixley Elementary and Middle Schools are located approximately two miles north of the site.

3.9.2 Regulatory Setting

3.9.2.1 Federal

Hazardous Materials – U.S. Environmental Protection Agency: The U.S. Environmental Protection Agency (EPA) was established in 1970 to consolidate in one agency a variety of Federal research, monitoring, standard-setting and enforcement activities to ensure environmental protection. EPA's mission is to protect human health and to safeguard the natural environment—air, water, and land—upon which life depends. EPA works to develop and enforce regulations that implement environmental laws enacted by Congress, is responsible for researching and setting national standards for a variety of environmental programs, and delegates to States and tribes the responsibility for issuing permits and for monitoring and enforcing compliance. Where national standards are not met, EPA can issue sanctions and take other steps to assist the states and tribes in reaching the desired levels of environmental quality.

Toxic Substances Control Act/Resource Conservation and Recovery Act/Hazardous and Solid Waste Act: The Toxic Substances Control Act (1976) and the Resource Conservation and Recovery Act of 1976 (RCRA) established a program administered by the EPA for the regulation of the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was amended in 1984 by the Hazardous and Solid Waste Act (HSWA), which affirmed and extended the "cradle to grave" system of regulating hazardous wastes.

Clean Water Act/SPCC Rule: The Clean Water Act (CWA) (33 U.S.C. Section 1251, *et seq*., formerly the Water Pollution Control Act of 1972), was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. As part of the Clean Water Act, the EPA oversees and enforces the Oil Pollution Prevention regulation contained in Title 40 of the CFR, Part 112, which is often referred to as the "SPCC rule" because the regulations describe the requirements for facilities to prepare, amend and implement Spill Prevention, Control, and Countermeasure (SPCC) Plans. A facility is subject to SPCC regulations if a single oil storage tank has a capacity greater than 660 gallons, or the total above ground oil storage capacity exceeds 1,320 gallons, or the underground oil storage capacity exceeds 42,000 gallons, and if, due to its location, the facility could reasonably be expected to discharge oil into or upon the "navigable waters" of the United States. Other federal regulations overseen by the EPA relevant to hazardous materials and environmental contamination include Title 40, CFR, Chapter 1, Subchapter D – Water Programs and

Subchapter I – Solid Wastes. Title 40, CFR, Chapter 1, Subchapter D, Parts 116 and 117 designate hazardous substances under the Water Pollution Control Act. Title 40, CFR, Part 116 sets forth a determination of the reportable quantity for each substance that is designated as hazardous. Title 40, CFR, Part 117 applies to quantities of designated substances equal to or greater than the reportable quantities that may be discharged into waters of the United States.

3.9.2.2 State

California Environmental Protection Agency (CalEPA): CalEPA was created in 1991 by Governor's Executive Order. The Air Resources Board (ARB), the Department of Pesticide Regulation (DPR), the Department of Resources Recycling and Recovery (CalRecycle), the Department of Toxic Substances Control (DTSC), the Office of Environmental Health Hazard Assessment (OEHHA) and the State Water Resources Control Board (SWRCB) were placed under the CalEPA umbrella to create a cabinet-level voice for the protection of human health and the environment and to assure the coordinated deployment of State resources. The mission of CalEPA is to restore, protect, and enhance the environment to ensure public health, environmental quality, and economic vitality under Title 22 of the CCR.[19]

Department of Toxic Substances Control (DTSC): DTSC is a department of CalEPA and is the primary agency in California that regulates hazardous waste, clean-up of existing contamination, and looks for ways to reduce the hazardous waste produced in California. DTSC regulates hazardous waste in California primarily under the authority of RCRA and the Health and Safety Code. Other laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning. GC Section 65962.5 (commonly referred to as the Cortese List) includes DTSC-listed hazardous waste facilities and sites, SWRCB Division of Drinking Water lists of contaminated drinking water wells, sites listed by the SWRCB as having UST leaks and which have had a discharge of hazardous wastes or materials into the water or groundwater, and lists from local regulatory agencies of sites that have had a known migration of hazardous waste/material.

Unified Program: The Unified Program (CCR Title 27, Division 1, Subdivision 4, Chapter 1, Sections 15100–15620) consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of the following six environmental and emergency response programs:[20]

- Hazardous Waste Generator (HWG) program and Hazardous Waste On-site Treatment activities;
- Aboveground Storage Tank (AST) program Spill Prevention Control and Countermeasure Plan requirements;
- Underground Storage Tank (UST) program;
- Hazardous Materials Release Response Plans and Inventory (HMRRP) program;
- California Accidental Release Prevention (CalARP) program;
- Hazardous Materials Management Plans and Hazardous Materials Inventory Statement (HMMP/HMIS) requirements.

The Secretary of CalEPA is directly responsible for coordinating the administration of the Unified Program. The Unified Program requires all counties to apply to the CalEPA Secretary for the certification of a local unified program agency. Qualified cities are also permitted to apply for certification. The local Certified Unified Program Agency (CUPA) is required to consolidate, coordinate, and make consistent the administrative requirements, permits, fee structures, and inspection and enforcement activities for these six program elements

[19] California Environmental Protection Agency. http://www.calepa.ca.gov Accessed 9 December 2019.
[20] California Environmental Protection Agency. http://www.calepa.ca.gov/cupa/ Accessed 9 December 2019.

in the county. Most CUPAs have been established as a function of a local environmental health or fire department.

In order to protect public health and safety, as well as the environment, the local CUPA also administers the Business Plan/Handler Program which regulates the storage and handling of hazardous materials through education, facility inspections and enforcement of State law. The Tulare County Environmental Health Department is the overseeing agency for facilities county wide. Businesses which store more than 55 gallons of a liquid substance, or 500 pounds of a solid substance or 200 cubic feet of a compressed gas hazardous materials are required to prepare and submit a Hazardous Materials Business Plan to the local CUPA and update it annually.

Hazardous Waste Management Program: The Hazardous Waste Management Program (HWMP) regulates hazardous waste through its permitting, enforcement, and Unified Program activities in accordance with HSC Section 25135, *et seq*. The main focus of HWMP is to ensure the safe storage, treatment, transportation, and disposal of hazardous wastes.

State Water Resources Control Board (SWRCB): The SWRCB was created by the California legislature in 1967. The mission of SWRCB is to ensure the highest reasonable quality for waters of the State, while allocating those waters to achieve the optimum balance of beneficial uses. The joint authority of water allocation and water quality protection enables SWRCB to provide comprehensive protection for California's waters.

California Department of Industrial Relations – Division of Occupational Safety and Health (Cal/OSHA): In California, every employer has a legal obligation to provide and maintain a safe and healthful workplace for employees, according to the California Occupational Safety and Health Act of 1973 (per Title 8 of the CCR). The Division of Occupational Safety and Health (Cal/OSHA) program is responsible for enforcing California laws and regulations pertaining to workplace safety and health and for providing assistance to employers and workers about workplace safety and health issues. Cal/OSHA regulations are administered through Title 8 of the CCR. The regulations require all manufacturers or importers to assess the hazards of substances that they produce or import and all employers to provide information to their employees about the hazardous substances to which they may be exposed.

3.9.2.3 Local

2030 Tulare County General Plan:[21] The Tulare County General Plan sets forth the following goals and policies regarding hazards and hazardous materials and which have potential relevance to the Project's CEQA review:

- 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.
- 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.

3.9.3 Impact Assessment

[21] Tulare County General Plan. http://generalplan.co.tulare.ca.us/ Accessed 26 November 2019.

Would the project:

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

IX-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?

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

Less Than Significant Impact. Project construction and operation will be primarily be located mainly within the well sites of TCSD and secondarily within roadway rights-of-way at existing meter locations. Project operation will require TCSD to store minimal supplies of 100-gallon totes and use of 12.5% sodium hypochlorite (chlorine) if emergency disinfection is required; TCSD does not anticipate regular usage will be necessary. However, storage, handling, and distribution of chlorine will be monitored and comply with all regulations set forth by DDW and the County of Tulare, including annual filing of a Hazardous Materials Business Plan. Implementation of the Project would correct existing water supply issues affecting residents in Teviston. Construction of the Project proposes an approximate area of ground disturbance of 1.25 acres, and therefore requires implementation of a Stormwater Pollution Prevention Plan (SWPPP). Additionally, construction activities will 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. Impacts will be less than significant.

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

No Impact. The Project does not involve land that is listed as a hazardous materials site pursuant to Government Code Section 65962.5 and is not included on a list compiled by the Department of Toxic Substances Control. A search of the DTSC EnviroStor database and the SWRCB Geotracker performed on December 2, 2019 determined that there are no known active hazardous waste generators or hazardous material spill sites within the Project site or immediate surrounding vicinity. There will be no impact.

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

No Impact. The Project is not located within an airport land use plan or within two miles of a public airport. Delano Municipal Airport is located approximately 12 miles south of the Project site while Porterville Municipal Airport is approximately 12 miles northeast of the site. A private airstrip is located approximately two miles southeast of the site though its current use is unknown to TCSD. Construction of a new well and associated water system improvements would not be a safety hazard for people working in the area. There would be no impact.

IX-f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less Than Significant Impact. Construction of the Project is expected to last 15 months and it may be necessary to establish temporary road closures or detours, though such measures are not anticipated. However,

since detours will be available, Project implementation would not impede emergency or hazards response. Impacts would be less than significant.

IX-g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

No Impact. The nearest State Responsibility Area is located approximately 14 miles southeast of the Project site. Additionally, the site is approximately 23 miles from the nearest High classification of Fire Hazard Severity Zone (FHSZ). Therefore, there would be no impacts.

3.10 Hydrology and Water Quality

Table 3-15. Hydrology and Water Quality Impacts

Hydrology and Water Quality				
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 offsite;	☐	☐	☒	☐
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?	☐	☐	☐	☒

3.10.1 Environmental Setting

The Project is located within the lower San Joaquin Valley, part of the Great Valley of California. The Valley is bordered by the Sierra Nevada Mountain Ranges to the east, the Coast Ranges to the west, the Klamath Mountains and Cascade Range to the north, and the Transverse Ranges and Mojave Desert to the south. 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, and the humidity is generally low. Winter temperatures are often below 60 degrees Fahrenheit during the day and rarely exceed 70 degrees. On average, the Central Valley receives an average of seven inches of precipitation in the form of rainfall yearly, most of which occurs between October and March.

Water resources in Tulare County include many natural rivers and streams, man-made surface water conveyance structures, and groundwater. Tulare County's groundwater and surface water management is accomplished through various combinations of public and private water entities, including the Bureau of Reclamation, water utility companies, and local irrigation districts, all of which are governed by State and federal regulations. West-flowing Tule River, Deer Creek, and the White River are the major drainages in the subbasin which empty into the Tulare lakebed. Deer Creek is located approximately one mile south of the Project site.

According to the U.S. Geological Survey (USGS) classification system, the Project is located within the Town of Pixley-Deer Creek watershed; Hydrologic Unit Code (HUC): 180300050903.[22]

The Project lies entirely within the Tule Groundwater Subbasin of the San Joaquin Valley Groundwater Basin.[23]

3.10.2 Regulatory Setting

3.10.2.1 Federal

Clean Water Act: The Clean Water Act (CWA) is intended to restore and maintain the chemical, physical, and biological integrity of the nation's waters (33 CFR 1251). The regulations implementing the CWA protect waters of the U.S. including streams and wetlands (33 CFR 328.3). The CWA requires states to set standards to protect, maintain, and restore water quality by regulating point source and some non-point source discharges. Under Section 402 of the CWA, the National Pollutant Discharge Elimination System (NPDES) permit process was established to regulate these discharges.

Federal Emergency Management Agency (FEMA) Flood Zones: The National Flood Insurance Act (1968) makes available federally subsidized flood insurance to owners of flood-prone properties. To facilitate identifying areas with flood potential, FEMA has developed Flood Insurance Rate Maps (FIRM) that can be used for planning purposes. Flood hazard areas identified on the Flood Insurance Rate Map are identified as a Special Flood Hazard Area (SFHA). SFHA are defined as the area that will be inundated by the flood event having a 1-percent chance of being equaled or exceeded in any given year. The 1-percent annual chance flood is also referred to as the base flood or 100-year flood. SFHAs are labeled as Zone A, Zone AO, Zone AH, Zones A1-A30, Zone AE, Zone A99, Zone AR, Zone AR/AE, Zone AR/AO, Zone AR/A1-A30, Zone AR/A, Zone V, Zone VE, and Zones V1-V30. Moderate flood hazard areas, labeled Zone B or Zone X (shaded) are also shown on the FIRM, and are the areas between the limits of the base flood and the 0.2-percent-annual-chance (or 500-year) flood. The areas of minimal flood hazard, which are the areas outside the SFHA and higher than the elevation of the 0.2-percent-annual-chance flood, are labeled Zone C or Zone X (un-shaded).

3.10.2.2 State

State Water Resources Control Board: The SWRCB has jurisdiction over water quality issues in California. The SWRCB is governed by the Porter-Cologne Water Quality Act (Division 7 of the Water Code (WC)), which establishes the legal framework for water quality control activities by the SWRCB. The intent of the Porter-Cologne Act is to regulate factors which may affect the quality of waters of the State to attain the highest quality which is reasonable, considering a full range of demands and values. Much of the implementation of the SWRCB's responsibilities is delegated to its nine Regional Boards. The Project site is located within the Central Valley Regional Water Quality Control Board (CVRWQCB). The CVRWQCB administers the NPDES storm water-permitting program in the Central Valley region. Construction activities on one acre or more are subject to the permitting requirements of the NPDES General Permit for Discharges of Storm Water Runoff Associated with Construction Activity (General Construction Permit). Additionally, CVRWQCB is responsible

[22] USGS Watershed Maps. https://water.usgs.gov/maps.html Accessed 2 December 2019.
[23] DWR Bulletin 118. BBAT. https://gis.water.ca.gov/app/bbat/ Accessed 2 December 2019.

for issuing Waste Discharge Requirements Orders under WC Section 13260, Article 4, Waste Discharge Requirements.

For projects proposing ground disturbance of one acre or greater, the SWRCB requires a Storm Water Pollution Prevention Plan (SWPPP) as a requirement of the NPDES to regulate water quality associated with construction or industrial activities.

Recycled Water Policy: The Water Recycling Act of 1991 (WC Section 1357,5 *et seq.*) established a Statewide goal to recycle a total of 700,000 acre-feet of water per year (AFY) by the year 2000 and 1,000,000 AFY by the year 2010. In February 2009, the SWRCB adopted its Recycled Water Policy (SWRCB Resolution No. 2009-0011), the purpose of which is to increase the beneficial use of recycled water from municipal wastewater sources in a manner that fully implements State and Federal water quality laws. The policy directs the State to rely less on variable annual precipitation and more on sustainable management of surface waters and groundwater, together with enhanced water conservation, water reuse and the use of stormwater. As a part of the new recycled water policy, the SWRCB adopted the following four goals for California:

1. Increase the use of recycled water over 2002 levels by at least one million AFY by 2020 and by at least two million AFY by 2030.
2. Increase the use of stormwater over use in 2007 by at least 500,000 AFY by 2020 and by at least one million AFY by 2030.
3. Increase the amount of water conserved in urban and industrial uses by comparison to 2007 by at least 20 percent by 2020.
4. Included in these goals is the substitution of as much recycled water for potable water as possible by 2030.

In the new policy, the SWRCB also discussed several practical impacts of the greater use of recycled water in the State. Those impacts include the following:

- Groundwater salt and nutrient control: The SWRCB imposed a requirement that consistent salt and nutrient management plans be prepared for each basin and subbasin in California. Such plans must include a significant stormwater use and recharge component.
- Landscape irrigation: The SWRCB discussed issues involving the permitting of landscape irrigation projects that use recycled water, including the control of incidental runoff of recycled water.
- Groundwater recharge: The SWRCB addressed site-specific approvals of groundwater recharge projects using recycled water, emphasizing that such projects must not lower the water quality within a groundwater basin.
- Chemicals of emerging concern: The SWRCB further addressed chemicals of emerging concern (CEC), knowledge of which is currently "incomplete." An advisory panel will advise the Water Board regarding actions involving CECs, as they relate to the use of recycled water.

The wide-ranging ramifications of using recycled water, coupled with the aggressive goals established by the SWRCB for such future use in California, demonstrates that the new Recycled Water Policy will have a significant impact on land use activities within the State for many years to come.

Department of Water Resources (DWR): WC Section 10004, *et seq.* requires that DWR update the State Water Plan every five years. The Plan is currently undergoing its 2018 update; the most recent adopted version is from 2013.

For Update 2013, DWR worked with researchers at the University of California, Davis, to quantify how much growth might occur in the Tulare Lake Hydrologic Region through 2050. The model was used to estimate a year 2050 urban footprint under the scenarios of alternative population growth and development density. Each

of the growth scenarios shows a decline in irrigated acreage over existing conditions, but to varying degrees. Irrigated crop acreage declines, on average, by about 90 thousand acres by year 2050 as a result of low population growth and urbanization in Tulare Lake region, while the decline under high population growth was higher by about 200 thousand acres. The change in water demand from 2006 to 2050 is estimated for the Tulare Lake Hydrologic Region for the agriculture and urban sectors under nine growth scenarios and 13 scenarios of future climate change. Urban demand increased under all nine growth scenarios tracking with population growth. Agricultural water demand decreases under all future scenarios due to reduction in irrigated lands as a result of urbanization and background water conservation. Groundwater resources were evaluated for performance under the plausible futures, resulting in 198 scenarios showing the change in groundwater storage from 2013 to 2050. About 95 percent of the futures lead to groundwater declines in the Tulare Lake Hydrologic Region and about 50 percent of the futures lead to declines greater than 10 percent.[24]

Government Code 65302 (d): A conservation element for the conservation, development, and utilization of natural resources including water and its hydraulic force, forests, soils, river and other waters, harbors, fisheries, wildlife, minerals, and other natural resources. That portion of the conservation element including waters shall be developed in coordination with any County-wide water agency and with all district and city agencies which have developed, served, controlled or conserved water for any purpose for the County or city for which the plan is prepared. Coordination shall include the discussion and evaluation of any water supply and demand information described in Section 65352.5, if that information has been submitted by the water agency to the city or County. The conservation element may also cover:

1. The reclamation of land and waters.
2. Prevention and control of the pollution of streams and other waters.
3. Regulation of the use of land in stream channels and other areas required for the accomplishment of the conservation plan.
4. Prevention, control, and correction of the erosion of soils, beaches, and shores.
5. Protection of watersheds.
6. The location, quantity and quality of the rock, sand, and gravel resources.
7. Flood control.

Sustainable Groundwater Management Act: On September 16, 2014 Governor Edmund G. Brown, Jr. signed historic legislation to strengthen local management and monitoring of groundwater basins most critical to the State's water needs. The three bills, SB 1168 (Pavley), SB 1319 (Pavley), and AB 1739 (Dickinson) together make up the Sustainable Groundwater Management Act (SGMA). SGMA comprehensively reforms groundwater management in California. The intent of the Act is to place management at the local level, although the State may intervene to manage basins when local agencies fail to take appropriate responsibility. The Act provides authority for local agency management of groundwater and requires creation of groundwater sustainability agencies and implementation of plans to achieve groundwater sustainability within basins of high and medium priority including the Tulare County Sub-basin. The Act took effect on January 1, 2015 and will be implemented over the course of next several years and decades.

3.10.2.3 Local

2030 Tulare County General Plan:[25] The Tulare County General Plan sets forth the following goals and policies regarding hydrology and water quality and which have potential relevance to the Project's CEQA review:

- *The long-term strategy for water in Tulare County centers on protecting and conserving existing water supplies and identifying new sources of water. As Tulare County continues to grow, new methods for conserving, treating, and supplying*

[24] DWR California Water Plan. https://water.ca.gov/LegacyFiles/waterplan/docs/cwpu2013/Final/Vol2_TulareLakeRR.pdf Accessed 2 December 2019.
[25] Tulare County General Plan. http://generalplan.co.tulare.ca.us/ Accessed 26 November 2019.

water will enable County residents and farmers to continue to have an adequate supply of quality water that limits long-term impacts on groundwater.

- *Protect the supply and quality of urban, agricultural, and environmental water serving the County.*
- *Identify and encourage the development of new sources for water that do not deplete or negatively impact groundwater.*
- *Plan delivery systems to ensure adequate water is available to meet demand.*
- *Encourage efficient use, conservation, and reuse of water.*
- *The County shall take an active role in cooperating in the management of the County's groundwater resources.*
- *The County shall support the additional collection of water quality and flow information for the County's major drainages as part of project approvals.*
- *The County shall consult with water agencies within those areas of the County where groundwater extraction exceeds groundwater recharge, with the goal of reducing and ultimately reversing groundwater overdraft conditions in the County.*
- *The County shall continue to promote protection of each individual drainage basin within the County based on the basins unique hydrologic and use characteristics.*
- *The County shall encourage, support and, as warranted, require the identification and development of additional water sources through the expansion of water storage reservoirs, development of groundwater banking for recharge and infiltration, and promotion of water conservation programs, and support of other projects and programs that intend to increase the water resources available to the County and reduce the individual demands of urban and agricultural users.*
- *Diversions of surface water or runoff from precipitation should be prevented where such diversions may cause a reduction in water available for groundwater recharge.*
- *The County shall monitor actions taken at the federal and State level which impact water resources in order to evaluate the effects of these actions on the County's resources.*
- *Tulare County will work with neighboring counties to promote development of joint water projects, such as a cross-valley canal, and other efforts to expand water supply.*
- *The County shall encourage responsible agencies and organizations to install and monitor additional groundwater monitoring wells in areas where data gaps exist.*
- *The County shall identify a system of critically inadequate water supply, water transfer facilities, and groundwater recharge areas on a map, incorporating existing canals, creeks and rivers, groundwater recharge basins; proposed sites for regional recharge basins; and needed water transfer facilities. The County shall, in conjunction with stakeholders, draft an ordinance relating to the care and maintenance of this system, such as: discouragement of piping or alteration; encouraging of multi- use as trails and recreational facilities, etc., wherever feasible.*
- *The County shall work with other local/regional agencies, water purveyors, and interest groups to seek funding sources to implement a variety of surface and groundwater restoration activities.*

- *The County shall encourage and support the identification of degraded surface water and groundwater resources and promote restoration where appropriate.*
-
- *The County shall work with agricultural and industrial concerns to ensure that water contaminants and waste products are handled in a manner that protects the long-term viability of water resources in the County.*

- *The County shall work with the Regional Water Quality Control Board to ensure that all point source pollutants are adequately mitigated (as part of the California Environmental Quality Act review and project approval process) and monitored to ensure long-term compliance.*

- *The County shall ensure that private wells are adequately constructed to provide protection from bacteriological and chemical contamination and do not provide a hazard as to contaminate the aquifer.*

- *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.*

- *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.*

- *The County shall continue to enforce provisions to control erosion and sediment from construction sites.*

- *The County shall encourage the use of low water consuming, drought-tolerant and native landscaping and emphasize the importance of utilizing water conserving techniques, such as night watering, mulching, and drip irrigation.*

- *The County shall encourage the use of tertiary treated wastewater and household gray water for irrigation of agricultural lands, recreation and open space areas, and large landscaped areas as a means of reducing demand for groundwater resources.*

- *The County shall work with federal, State, local and regional agencies to improve local groundwater pollution detection and monitoring.*

- *Development projects involving drainage alterations shall be constructed to minimize soil erosion and silt transport.*

- *The County shall amend the well ordinance to require deeper seals in areas of known contaminants. The County shall also oversee the proper abandonment of unused wells.*

- *The County shall require new development that includes the use of water wells to be accompanied by evidence that the site can produce the required volume of water without impacting the ability of existing wells to meet their needs.*

- *Where connection to a community water system is not feasible…, service by individual wells or new community systems may be allowed if the water source meets standards for quality and quantity.*

3.10.3 Impact Assessment

Would the project:

X-a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

No Impact. The existing water system consists of three wells. The South and North Wells (Wells 1 and 2 respectively) are inactive so Well 3 is Teviston's sole source of water. Well 3 consistently exceeds the maximum contaminant level (MCL) for 1,2,3-trichloropropane (TCP) established by the DDW. TCSD was put under a compliance order in April 2018. Though water from Well 3 is routinely chlorinated, TCSD is not able to treat for 1,2,3-TCP at present. TCSD will pursue funding at a later date to treat Well 3 for 1,2,3-TCP, but in the meantime Project implementation would allow TCSD to drill and construct Well 4 allowing the TCSD to transition Well 3 to standby status only. As part of the Project, Well 4 will be permitted when standards for quality and quantity are met. The inactive North and South Wells would be properly abandoned according to County and State requirements. Neither the construction phase nor the operational phase of the Project proposes waste discharge and therefore regulations regarding waste discharge requirements have no relevance to this Project or its CEQA review. There will be no impact.

X-b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project would impede sustainable groundwater management of the basin?

Less Than Significant Impact. TCSD does not anticipate that demand will surpass existing levels so Project implementation will not result in an increase in demand. Well 4 is expected to yield at least 1,000 gpm, comfortably exceeding Tulare County Improvement Standards for a system with 136 connections as well as fire flow requirements, a total of 892 gpm. Impervious surfaces will be added to the well sites as part of necessary infrastructure installation. However, the surface area of the impervious materials represents a small fraction of the unpaved well sites.

As a result of the Sustainable Groundwater Management Act, the TCSD will be subject to the Groundwater Sustainability Plan (GSP) implemented by the Pixley Irrigation District Groundwater Sustainability Agency. The GSP is out for public review and has not yet been adopted. Once adopted, TCSD will adhere to the GSP. Any impacts to groundwater supply, recharge, or sustainability would be less than significant.

X-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 offsite;

(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or offsite;

(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?

X-d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

Less Than Significant Impact. Deer Creek is 1.15 miles south and has an existing mapped flood plain area that currently reaches into Teviston and the Project APE along the east side of SR 99. (See **Figure 3-2**). This is an existing condition that would not be exacerbated by the Project in terms of exposure of more people to

risks of releases of pollutants from flooding or causing a significant obstruction of and resulting rerouting of flood flows that would impact lives or property not currently threatened..

The Project does not propose significant alteration of the topography of the site. Total area of ground disturbance is estimated at approximately 1.25 acres. The Project consists of constructing a well, infrastructure, and water storage tank as well as calculated grading to prevent storm runoff from pooling around the proposed site additions. The contractor is expected to formulate and implement a SWPPP because ground disturbance will exceed one acre. Additionally, construction activities will 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 into stormwater runoff. Impacts will be less than significant.

X-e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

No Impact. The Project will improve water quality and system resiliency for the Teviston community. As mentioned in impact X-b, TCSD will be subject to the GSP implemented by the Pixley Irrigation District Groundwater Sustainability Agency. The GSP is out for public review and has not yet been adopted. Once adopted, TCSD will adhere to the GSP. Any impacts to groundwater supply, recharge, or sustainability would be less than significant. The Project would not impact a water quality control plan. There would be no impact.

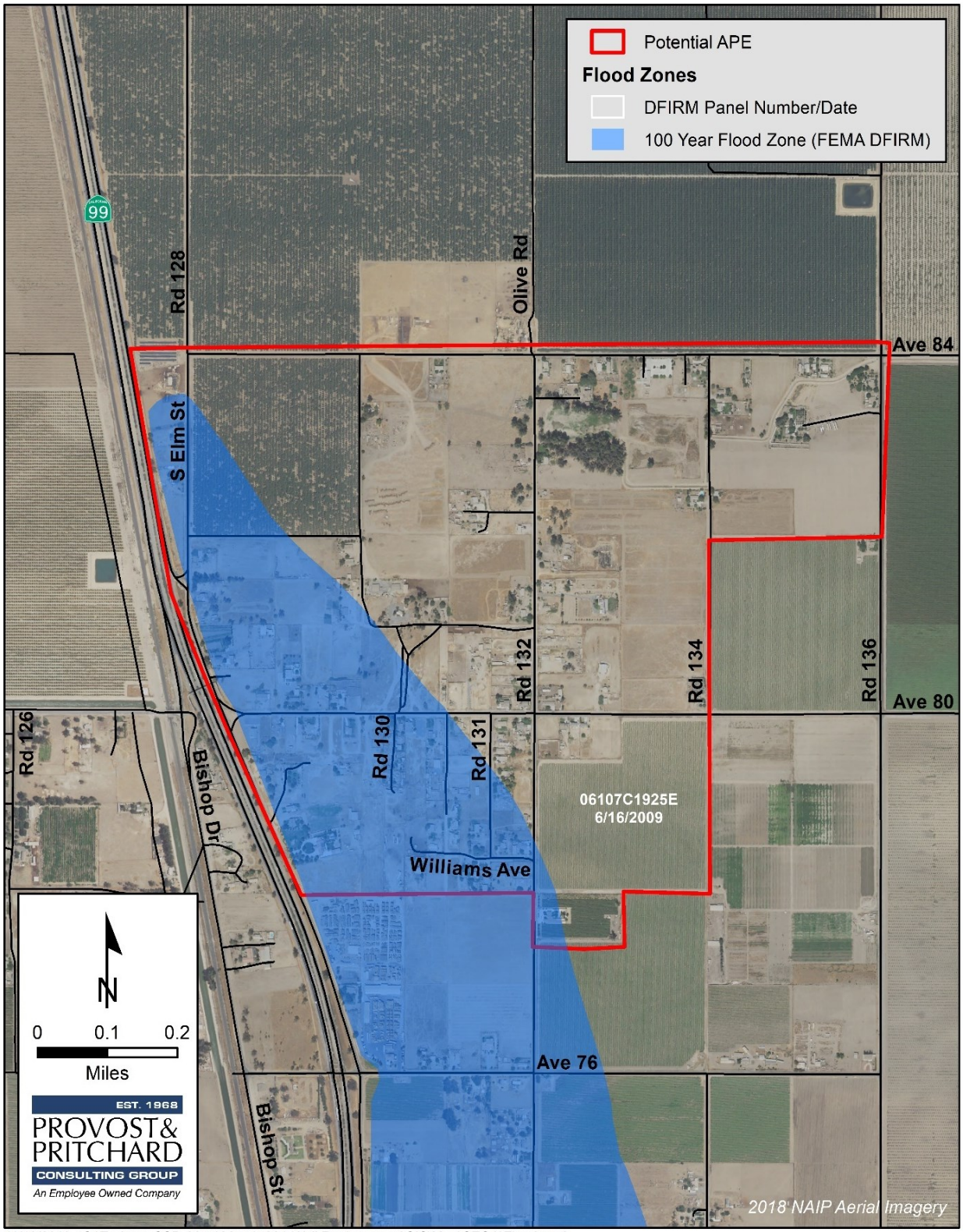

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Figure 3-2. FEMA Map

3.11 Land Use and Planning

Table 3-16. Land Use and Planning Impacts

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

3.11.1 Environmental Setting

The Project sites consists of two well sites owned by TCSD and sections of public road rights-of-way and private access drives. The Project site is designated by the County's Teviston Hamlet Plan for "Mixed Uses" and are zoned by the County as AE-40, Exclusive Agricultural Zone, 40-Acre Minimum; C-2 MU, General Commercial/Mixed Use; and R-A 12.5, Rural Residential (see **Figure 3-3**). The FMMP for Tulare County designates the APE as Rural Residential, Vacant/Disturbed Land, Semi-Ag, Prime Farmland, and Farmland of Local Importance as shown in **Figure 3-1**. Surrounding parcels are designated Farmland of Local Importance and Prime Farmland. Land uses in the vicinity of the Project site consist of active farmland, scattered rural residences, and vacant/fallow land typical of rural areas in the Central Valley. TCSD is located on the Valley floor east of the Coast Ranges and west of the Sierra Nevada Mountain Range. The proposed water system improvement project is located adjacent to SR 99. Topographically, the Project site is at an elevation of approximately 275 feet above mean sea level. No forest or timber land is present at the Project site or in the Project vicinity.

3.11.2 Regulatory Setting

3.11.2.1 Federal

There are no federal regulations, plans, programs, and guidelines associated with land use and planning that are applicable to the Project.

3.11.2.2 State

There are no State regulations, plans, programs, and guidelines associated with land use and planning that are applicable to the Project.

3.11.2.3 Local

2030 Tulare County General Plan: The Tulare County General Plan sets forth several goals and policies relating to land use and planning, none of which are relevant to this Project's CEQA review.

3.11.3 Impact Assessment

Would the project:

XI-a) Physically divide an established community?

No Impact. The Project does not involve the development of habitable structures or the conversion of land use. Surrounding lands consist primarily of agricultural uses. The Project would not physically divide any established community or conflict with any applicable plans, policies, ordinances, or regulations. There would be no impact.

XI-b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact. The Project would not conflict with any plan, policy, or regulation regarding land use outlined in the Teviston Hamlet Plan and Tulare County General Plan; therefore, there would be no impact.

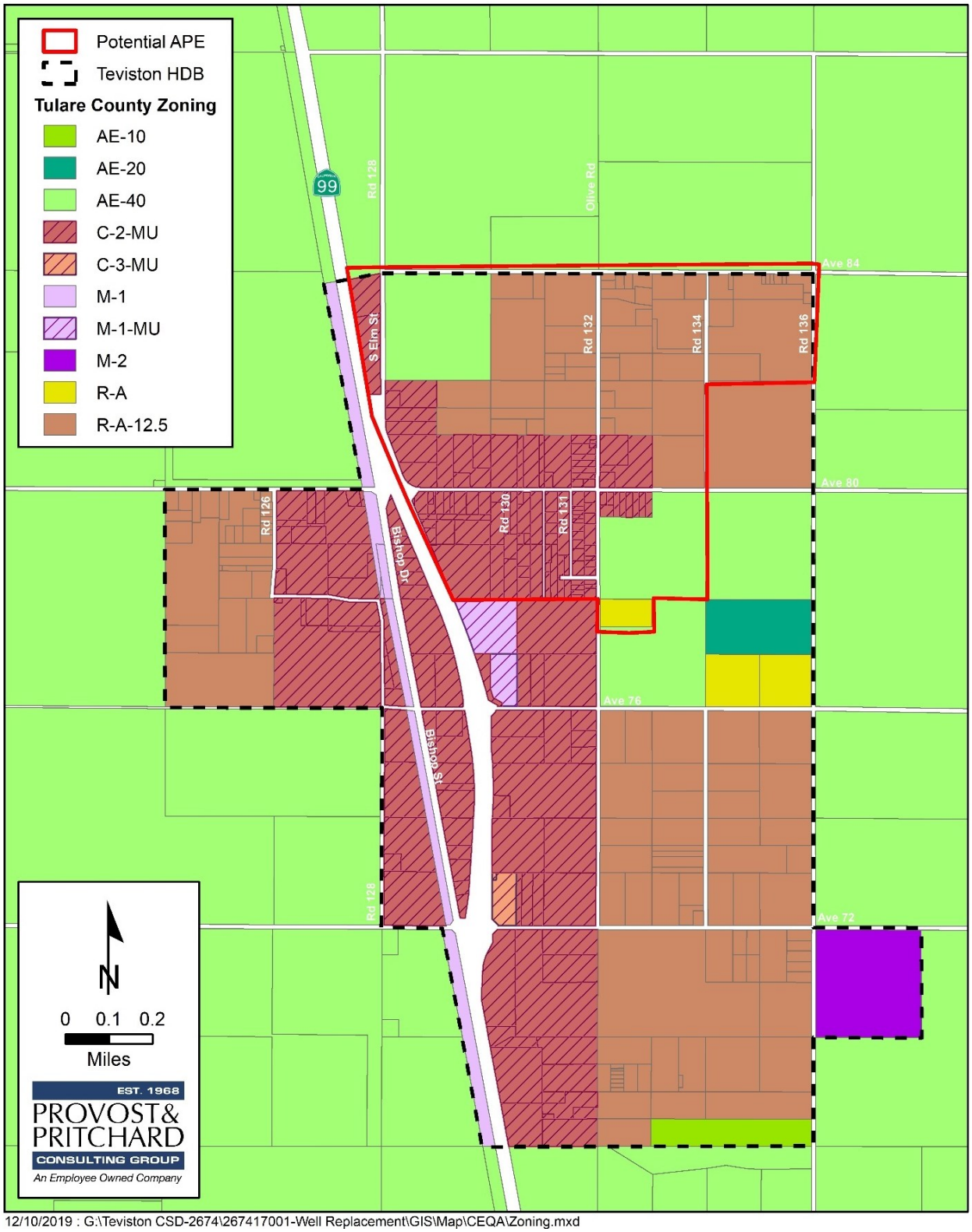

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Figure 3-3. Zone District Map

3.12 Mineral Resources

Table 3-16. Mineral Resources Impacts

Mineral Resources				
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?	☐	☐	☐	☒

3.12.1 Environmental Setting

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. Similarly, the only active oil and gas fields are located in the foothills along Deer Creek. [26]

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

3.12.2 Regulatory Setting

3.12.2.1 Federal

There are no federal regulations, plans, programs, and guidelines associated with mineral resources that are applicable to the Project.

3.12.2.2 State

There are no State regulations, plans, programs, and guidelines associated with mineral resources that are applicable to the Project.

3.12.2.3 Local

2030 Tulare County General Plan: The Tulare County General Plan sets forth several goals and policies relating to mineral resources, none of which are relevant to this Project's CEQA review.

[26] Tulare County General Plan Background Report. http://generalplan.co.tulare.ca.us/documents/GeneralPlan2010/BackgroundReport.pdf Accessed 26 November 2019.

3.12.3 Impact Assessment

Would the project:

XII-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?

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

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

3.13 Noise

Table 3-17. Noise Impacts

Noise				
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 groundborne vibration or groundborne 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?	☐	☐	☐	☒

3.13.1 Environmental Setting

The Project site and surrounding area is designated as part of the Hamlet Development area by the Tulare County General Plan. The Project takes place in the CDP of Teviston within two TCSD-owned well sites and sections of public road rights-of-way and private access drives. The westernmost edge of the APE is located approximately 0.5 miles east of State Route 99.

The Project site is situated within a region dominated by agricultural uses. Surrounding land uses include agricultural operations and water infrastructure. Noise levels in the community are therefore caused by farm equipment and related activities, as well as noise caused by travelers on SR 99 and rural traffic. While much of unincorporated Tulare County is composed of discrete small communities and remote rural residences, the primary source of noise generation comes from major highways, such as SR 99, as well as other State highways, several airports, and industrial facilities. Maximum noise levels generated by farm-related tractors typically range from 77 to 85 decibels (dB) at a distance of 50 feet from the tractor, depending on the horsepower of the tractor and the operating conditions. The Tulare County General Plan identifies the normally acceptable noise range for agricultural land uses between 50 and 75 dB.[27]

3.13.2 Regulatory Setting

3.13.2.1 Federal

There are no federal regulations, plans, programs, and guidelines associated with noise that are applicable to the Project.

[27] Tulare County General Plan. 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 Accessed 26 November 2019.

3.13.2.2 State

California Building Standards Code: The California Code of Regulations (CCR) Title 24 is assigned to the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. The California Building Code incorporates by reference the International Building Code with necessary California amendments. The International Building Code is a widely adopted model building code in the United States published by the International Code Council.

3.13.2.3 Local

2030 Tulare County General Plan:[28] The Tulare County General Plan sets forth the following goals and policies regarding noise and which have potential relevance to the Project's CEQA review.

- The County shall limit noise generating activities, such as construction, to hours of normal business operation (7 a.m. to 7 p.m.). No peak noise generating activities shall be allowed to occur outside of normal business hours without County approval.

- The County shall seek to limit the potential noise impacts of construction activities by limiting construction activities to the hours of 7 am to 7pm, Monday through Saturday when construction activities are located near sensitive receptors. No construction shall occur on Sundays or national holidays without a permit from the County to minimize noise impacts associated with development near sensitive receptors.

- The County shall ensure that construction contractors implement best practices guidelines (i.e. berms, screens, etc.) as appropriate and feasible to reduce construction-related noise-impacts on surrounding land uses.

3.13.3 Impact Assessment

Would the project result in:

XIII-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?

Less Than Significant Impact. The construction phase of the Project will involve temporary noise sources, originating predominantly from construction equipment, such as backhoes, drilling rigs, scrapers, and tractors. The Project is located within a rural agricultural community surrounded by actively farmed lands that is accustomed to noises associated with farm equipment and traffic noise from adjacent SR 99. Operational maintenance activities would continue to be on an as-needed basis consistent with baseline conditions. Any impacts would be intermittent or temporary and therefore, less than significant.

XIII-b) Generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant Impact. The construction phase of the Project will last approximately 15 months and will involve excavation and grading as part of development of the new well and installation of the water storage tank.

The Project is located within an area dominated by agricultural production, which includes the use of off-road equipment and ground-disturbing activities on a regular basis. Conditions created by Project-related

[28] Ibid.

construction activities would not vary substantially from the baseline conditions routinely experienced by the community. Impacts would be less than significant.

XIII-c) For a project located within the vicinity of a private air strip 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. Delano Municipal Airport is located approximately 12 miles south of the Project site while Porterville Municipal Airport is approximately 12 miles northeast of the site. A private airstrip is located approximately two miles southeast of the site though its current use is unknown to TCSD. The Project does not propose any activity or use that would expose residents to noise levels in excess of what they are currently experiencing. There would be no impact.

3.14 Population and Housing

Table 3-18. Population and Housing Impacts

Population and Housing				
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?	☐	☐	☐	☒

3.14.1 Environmental Setting

The immediate area surrounding the Project site consists primarily of rural residences, agriculturally productive lands, and associated agricultural-support facilities. According to the 2013–2017 American Community Survey 5-Year Estimate, the most recent five-year estimate available, Teviston's population is 1,135, slightly lower than the number of inhabitants captured during the 2010 U.S. Census.[29]

3.14.2 Regulatory Setting

3.14.2.1 Federal

There are no federal regulations, plans, programs, and guidelines associated with population or housing that are applicable to the Project.

3.14.2.2 State

There are no State regulations, plans, programs, and guidelines associated with population or housing that are applicable to the Project.

3.14.2.3 Local

There are no local regulations, plans, programs, and guidelines associated with population or housing that are applicable to the Project.

[29] American Fact Finder. https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml Accessed December 9, 2019.

3.14.3 Impact Assessment

Would the project:

XIV-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)?

XIV-b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact. The Project involves TCSD water system improvements for the existing service connections within the community of Teviston. The Project is not designed to accommodate population growth directly or indirectly. No housing or habitable structures would be built, nor will any be removed. Implementation of the Project will not result in displacement of people or existing housing. Therefore, there will be no impact.

3.15 Public Services

Table 3-19. Public Services Impacts

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

3.15.1 Environmental Setting

Fire Protection: The Project site would be served by the Tulare County Fire Department Battalion 2 Pixley Fire Station 27 located approximately three miles north of the Project site.

Police Protection: Police protection is provided by the Tulare County Sheriff. The closest patrol substation is located in Pixley approximately three miles north of the Project site.

Schools: Public school services are provided throughout the County by 48 school districts. Of the 48 school districts, seven are unified districts providing educational services for kindergarten through 12th grade. Of the remaining 41 districts, 36 are elementary school districts, and four are high school districts. Many of these districts consist of just one school.[30]

Parks: Tulare County has several regional parks, as well as State and national parks, national forest, wilderness areas, and ecological reserves. There are 13 park and recreation facilities that are owned and operated by Tulare County. The development and maintenance of regional parks and landscaped areas is managed by the Tulare County Resource Management Agency, Parks and Recreation Branch. 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

[30] Tulare County General Plan Background Report. http://generalplan.co.tulare.ca.us/documents/GeneralPlan2010/BackgroundReport.pdf Accessed 26 November 2019.

within Sequoia National Forest, Giant Sequoia National Monument, and in Sequoia and Kings Canyon National Parks.

The nearest park is the Pixley National Wildlife Refuge located approximately 1.5 miles southwest of the Project site. Additionally, Pixley Park is located approximately 2.3 miles north of the Project.

Landfills: The nearest landfill to the Project site is the Teapot Dome Landfill, located approximately 11 miles to the northeast.

3.15.2 Regulatory Setting

3.15.2.1 Federal

There are no federal regulations, plans, programs, and guidelines associated with public services that are applicable to the Project.

3.15.2.2 State

There are no State regulations, plans, programs, and guidelines associated with public services that are applicable to the Project.

3.15.2.3 Local

2030 Tulare County General Plan: The Tulare County General Plan sets forth several goals and policies relating to public services, none of which are relevant to this Project's CEQA review.

3.15.3 Impact Assessment

Would the project:

XV-a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: fire and police protection, schools, parks, and other public facilities?

No Impact. The Project will not require new or physically altered governmental facilities, the construction of which would cause significant environmental effect in order to maintain acceptable service objectives regarding police protection, schools, or parks. There would be no impact to these services. Upon Project completion, Well 4 is expected to produce 1,000 gpm, comfortably exceeding County Improvement Standards for domestic water as well as fire flow requirements of 892 gpm, a beneficial impact.

3.16 Recreation

Table 3-20. Recreation Impacts

Recreation				
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?	☐	☐	☐	☒

3.16.1 Environmental Setting

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

Federal lands, such as wilderness, national forests, monuments, and parks occupy 52.2 percent of land area within Tulare County. Agricultural uses encompass 43 percent of the County's land. The remainder comprises miscellaneous uses, such as County parks, urban uses in cities, unincorporated communities, and hamlets, and infrastructure rights-of-way. The Tulare County General Plan sets forth guidelines in order to maintain an overall standard of five or more acres of public County parkland per 1,000 population in unincorporated areas, regional parks at one-acre per 1,000 population, neighborhood parks at three to six acres per 1,000 population, and community parks at one to two acres per 1,000 population.[31]

As noted in **Section 3.15**, the nearest park is the Pixley National Wildlife Refuge located approximately 1.5 miles southwest of the Project site. Additionally, Pixley Park is located approximately 2.3 miles north of the Project.

[31] Tulare County General Plan. http://generalplan.co.tulare.ca.us/ Accessed 26 November 2019.

3.16.2 Regulatory Setting

3.16.2.1 Federal

There are no federal regulations, plans, programs, or guidelines associated with recreation that are applicable to the Project.

3.16.2.2 State

There are no State plans, programs, or guidelines associated with recreation that are applicable to the Project.

3.16.2.3 Local

There are no local regulations, plans, programs, or guidelines associated with recreation that are applicable to the Project.

3.16.3 Impact Assessment

Would the project:

XVI-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?

No Impact. The Project includes the construction and operation of a new well and various water system improvements for the community of Teviston. It would not increase the demand for recreational facilities or put a strain on the existing recreational facilities. No population growth would be associated with the Project or be necessitated by the Project. There would be no impact.

XVI-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 does not include recreational facilities. As there is no population growth associated with the Project, construction or expansion of nearby recreational facilities would not be necessary. There would be no impact.

3.17 Transportation

Table 3-21. Transportation Impacts

Transportation				
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?	☐	☐	☒	☐

3.17.1 Environmental Setting

The Project site is surrounded by agriculture operations and rural residences. Though SR 99 is adjacent to the community of Teviston, the Project will not result in a long-term increase in staff. Delano Municipal Airport is located approximately 12 miles south of the Project site while Porterville Municipal Airport is approximately 12 miles northeast of the site. A private airstrip is located approximately two miles southeast of the site though its current use is unknown to TCSD.

3.17.2 Regulatory Setting

3.17.2.1 Federal

There are no federal regulations, plans, programs, and guidelines associated with transportation/traffic that are applicable to the Project.

3.17.2.2 State

There are no State regulations, plans, programs, and guidelines associated with transportation/traffic that are applicable to the Project.

3.17.2.3 Local

2030 Tulare County General Plan: The Tulare County General Plan sets forth several goals and policies relating to transportation and traffic, none of which are relevant to this Project's CEQA review.

3.17.3 Impact Assessment

Would the project:

XVII-a) Conflict with a plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Less Than Significant Impact. Construction traffic associated with the water system improvement Project would be minimal and temporary, lasting approximately 15 months. Operational traffic consists of as-needed maintenance trips. There would not be a significant adverse effect to existing roadways in the area.

There are no pedestrian or bicycle facilities in the vicinity of the site. Therefore, the Project would not conflict with any congestion management plan or any other applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system.

XVII-b) Conflict or be inconsistent with CEQA Guidelines section 15064.3 subdivision (b)?

No Impact. Section 15064.3 Subdivision (b) of the CEQA guidelines specify for Land Use Projects, "Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major traffic stop or a stop along an existing high-quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be presumed to have a less than significant transportation impact."

Guidelines also specify, "Quantitative Analysis. If existing models or methods are not available to estimate the vehicles miles traveled for the particular project being considered, a lead agency may analyze the project vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc. For many projects, a qualitative analysis of construction traffic may be appropriate."

No models or methods are available for use of this Project. Instead the project will be evaluated qualitatively.

The Project is located near the developed traffic corridor of SR 99, with established roads surrounding the affected areas. There are no major traffic stops or other major transit routes other than SR 99 in the area of Teviston. There is no public transit offered in the community. Construction and operation of the water treatment system will not create issues for vehicle traffic or other modes of transportation in the area and operations phase of the Project will remain at baseline conditions. As a result, the project may be determined, consistent with Section 15064.3, to not have a significant impact on transportation impacts.

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

No Impact. No new roadway design features are associated with the Project. Therefore, there will be no impact.

XVII-d) Result in inadequate emergency access?

Less Than Significant Impact. No roads would be permanently modified as a result of the Project. Should construction necessitate road closures or establishing detours, impacts would be less than significant because alternate routes will be available, and the road closure or detours would be temporary.

3.18 Tribal Cultural Resources

Table 3-22. Tribal Cultural Resources Impacts

Tribal Cultural Resources				
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.	☐	☒	☐	☐

3.18.1 Environmental Setting

3.18.1.1 Regional Setting

The Project is located on the open flats of the San Joaquin Valley, approximately 11 miles southwest of the Tule River and less than two miles north of Deer Creek. More accurately, the Project site and vicinity are located on the broad Deer Creek alluvial fan. Prior to the emergence of agriculture, this location would have been prairie grasslands, grading into tree savannahs in the foothills to the east. According to the Cultural and Historical Resources Report (**Appendix C**) prepared by ASM Affiliates, Inc. due to the limitations the lack of surface water had on prehistoric and historic human settlement, it is unlikely that the Project site experienced more than sporadic human use prior to the Euro-American period. Ethnographic villages are located primarily on streams near the foothills, or along the shores of historic Tulare Lake bed approximately 15 miles to the west. For instance, the nearest known ethnographic village was the Koyete Yokuts hamlet of *Chetetik Nowush*, on Deer Creek at the base of the foothills.

3.18.1.2 Methodology

In November and December 2019, ASM Affiliates, Inc. prepared an intensive Class III Inventory/Phase I Survey report for the Project site, including parallel survey transects. A records search was conducted at the Southern San Joaquin Valley Archaeological Information Center, California State University, Bakersfield. A

record search of the Native American Heritage Commission (NAHC) Sacred Lands File was also conducted, which resulted in a declaration that no sacred sites or tribal cultural resources are known to exist within the Project site or in the vicinity.

In addition to the record search of the Sacred Lands File, NAHC provided ASM Affiliates a list of eight local Native American Tribes who may have knowledge of cultural resources in the vicinity or general interest in the Project. ASM contacted representatives for all eight Tribes in writing via U.S. Mail with a letter dated December 5, 2019 informing them of the Project. No comments were received in response to the letters. ASM Affiliates, Inc. further attempted to reach each Tribe by email on December 18, 2019. No comments were received in response to the email.

The Project site was surveyed by ASM Associate Archaeologist Rob Azpitarte, B.A. Field reconnaissance was conducted in December 2019. The site was examined with the archaeologist walking parallel transects along the pipeline route and proposed well upgrade locations spaced at 15-meter intervals, in order to identify surface artifacts, archaeological indicators (e.g., shellfish or animal bone), and/or archaeological deposits (e.g., organically enriched midden soil). Special attention was paid to rodent burrow back dirt piles, in the hope of identifying sub-surface soil conditions that might be indicative of archaeological features or remains.

A buffer 50-feet wide was included on each side of the pipeline route and the proposed well construction/upgrade locations. Because the route primarily follows existing paved and unpaved roads, this resulted in survey on both sides of the roads. Adjacent to the proposed pipe corridors were residential front yards with planted grass; paved parking lots, undeveloped portions of private property, and agricultural land consisting primarily of active almond orchards. Surface visibility was moderate to excellent throughout the Project APE, though planted lawn and paved areas restricted surface visibility in some areas. Roads lack curbing and sidewalks, however, providing surface visibility in most portions of the pipeline route. Careful attention was paid to any exposed ground-surface (e.g., in planters or road shoulders) immediately adjacent to paved or lawn areas to ensure survey coverage. Soils throughout the study area are sandy-silty alluvium with very few lithic clasts, reflecting a soils origin in deltaic processes.

No cultural resources of any kind were identified within the Project site as a result of the records search and field reconnaissance. Based on these findings, ASM determined the Project does not have the potential to result in adverse impacts or effects to significant historical resources or historic properties.

3.18.2 Regulatory Setting

3.18.2.1 Federal

There are no federal regulations, plans, programs, and guidelines associated with tribal cultural resources that are applicable to the Project.

3.18.2.2 State

Assembly Bill 52 (PRC Section 21080.3.1): The Project is subject to consultation with California Native American Indian Tribes, if required pursuant to California Public Resources Code Section 21080.3.1 (AB 52). The PRC requires the lead agency must, within 14 days of determining that an application for a project is complete, notify any California Native American Tribe in writing that has previously requested such notification about the project from the lead agency and inquire whether the Tribe wishes to initiate formal consultation. Tribes have 30 days from receipt of said notification to request formal consultation; tribal consultation is required only with those tribes that formally request consultation, in writing. The lead agency then has 30 days to initiate the consultation, which then continues until the parties come to an agreement regarding necessary mitigation for

impacts to Tribal Cultural Resources 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.

TCSD has not received any letters from Tribes requesting notification of upcoming projects. As mentioned above in **Section 3.18.1.2**, eight local Tribes, as identified by NAHC, were contacted in writing and by email in December 2019. No comments were received.

California Environmental Quality Act and the CEQA Guidelines (PRC 21000, *et seq.*; CCR Title 14, Chapter 3, Section 15000. *et seq.*):

CEQA is applicable to discretionary actions by State or local lead agencies. Under CEQA, lead agencies must analyze impacts to cultural resources, generally (see **Section 3.5**), and Tribal Cultural Resources, specifically. This PRC section discusses impacts to cultural resources directly related to Native American Tribes of the Project site. The distinction for Tribal Cultural Resources is that they are described as 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.

3.18.2.3 Local

There are no local regulations, plans, programs, and guidelines associated with tribal cultural resources that are applicable to the Project.

3.18.3 Impact Assessment

Would the project:

XVIII-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:

XVIII-a-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

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

Less than Significant Impact with Mitigation Incorporated. TCSD, as a public lead agency, has not received any formal requests for notification from any State tribes, pursuant to AB52. However, an intensive Class III Inventory/Phase I Survey of the Project site, including parallel survey transects, was conducted by ASM Affiliates, Inc. in November and December 2019. A records search was conducted at the Southern San Joaquin Valley Archaeological Information Center, California State University, Bakersfield. A record search of the Native American Heritage Commission (NAHC) Sacred Lands File was also conducted, which resulted in a declaration that no sacred sites or tribal cultural resources are known to exist within the Project site or in the vicinity.

In addition to the record search of the Sacred Lands File, NAHC provided a list of eight local Native American Tribes who may have knowledge of cultural resources in the vicinity or general interest in the Project. The following representatives for the eight Tribes were contacted in writing via U.S. Mail with a letter dated December 5, 2019 informing them of the Project.

1. Kern Valley Indian Community, Lake Isabella, Robert Robinson, Chairperson

2. Kern Valley Indian Community, Lake Isabella, Julie Turner, Secretary
3. Kern Valley Indian Community, Tehachapi, Brandy Kendricks
4. Santa Rosa Rancheria Tachi Yokut Tribe, Rueben Barrios Sr., Chairperson
5. Tubatulabals of Kern County, Robert L. Gomez Jr., Chairperson
6. Tule River Indian Tribe, Neil Pevron, Chairperson
7. Wuksache Indian Tribe, Eshom Valley Band, Kenneth Woodrow, Chairperson

No comments were received in response to the letters. ASM Affiliates, Inc. further attempted to reach each contact by email on December 18, 2019. No comments were received in response to the email.

No tribal cultural resources were identified by the ASM Affiliates archaeologist during the field survey of the Project site in December 2019.

Therefore, it is concluded, barring evidence to the contrary, that there is little or no chance the Project will cause a substantial adverse change to the significance of a tribal cultural resource as defined. Nonetheless, Mitigation Measures **CUL-1** and **CUL-2**, described above in **Section 3.5**, are recommended in the event cultural materials or human remains are unearthed during excavation or construction.

3.19 Utilities and Service Systems

Table 3-23. Utilities and Service Systems Impacts

Utilities and Service Systems				
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?	☐	☐	☐	☒

3.19.1 Environmental Setting

3.19.1.1 Water Supply

The Project site is located within the Tule subbasin of the San Joaquin Valley Groundwater Basin, as defined by the California Department of Water Resources Groundwater Bulletin 118. 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.

3.19.1.2 Wastewater Collection and Treatment

No wastewater will be generated during Project construction or operation.

3.19.1.3 Landfills

The closest landfill to the Project site is the Teapot Dome Landfill located approximately 11 miles northeast of the site. No significant solid waste will be generated during Project construction or operation.

3.19.2 Regulatory Setting

3.19.2.1 Federal

Clean Water Act: The Clean Water Act (CWA) is intended to restore and maintain the chemical, physical, and biological integrity of the nation's waters (33 CFR 1251). The regulations implementing the CWA protect waters of the U.S. including streams and wetlands (33 CFR 328.3). The CWA requires states to set standards to protect, maintain, and restore water quality by regulating point source and some non-point source discharges. Under Section 402 of the CWA, the National Pollutant Discharge Elimination System (NPDES) permit process was established to regulate these discharges.

3.19.2.2 State

State Water Resources Control Board's Waste Discharge Requirement (WDR) Program: State regulations pertaining to the treatment, storage, processing, or disposal of solid waste are found in Title 27, CCR, Section 20005, *et seq*. (hereafter Title 27). In general, the Waste Discharge Requirements (WDRs) Program (sometimes also referred to as the "Non-Chapter 15 (Non 15) Program" regulates point discharges that are exempt pursuant to Subsection 20090 of Title 27 and not subject to the Water Pollution Control Act. Exemptions from Title 27 may be granted for nine categories of discharges (e.g., sewage, wastewater, etc.) that meet, and continue to meet, the preconditions listed for each specific exemption. The scope of the WDRs Program also includes the discharge of wastes classified as inert, pursuant to Section 20230 of Title 27.

Assembly Bill 2882: AB 2882 relates to water conservation programs and authorizes any public entity that supplies water at retail or wholesale for the benefit of persons within the service area or area of jurisdiction of the public entity to adopt and enforce, by ordinance or resolution, a water conservation program to reduce the quantity of water used by those persons for the purpose of conserving the water supplies of the public entity.

This bill authorizes a public entity to adopt allocation-based conservation water pricing meeting certain requirements. The bill would require that revenues derived from allocation-based conservation water pricing not exceed the reasonable cost of water service, including basic costs and incremental costs, as defined.

3.19.2.3 Local

2030 Tulare County General Plan:[32] The Tulare County General Plan sets forth the following policy relating to utilities and service systems and which has potential relevance to the Project's CEQA review:

- The County shall oppose extension of urban services, such as sewer lines, water lines, or other urban infrastructure, into areas designated for agriculture use unless necessary to resolve a public health situation. Where necessary to address a public health issue, services should be located in public rights-of-way in order to prevent interference with agricultural operations and to provide ease of access for operation and maintenance. Service capacity and length of lines should be designed to prevent the conversion of agricultural lands into urban/suburban uses.

[32] Tulare County general Plan. http://generalplan.co.tulare.ca.us/ Accessed 26 November 2019.

3.19.3 Impact Assessment

Would the project:

XIX-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?

No Impact. The Project entails the development of a replacement well, water storage to facilitate improved fire flow, and upgraded meter replacements. The Project will not generate wastewater or require expansion of existing facilities. There would be no impact.

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

Less Than Significant Impact. The Project is not intended to increase TCSD water production. The amount of water Teviston residents need will be unchanged upon Project implementation. A test well drilled in December 2018 returned favorable results in terms of quantity. Well 4 is expected to yield at least 1,000 gpm, comfortably exceeding Tulare County Improvement Standards for a system with 136 connections as well as fire flow requirements, a total of 892 gpm.

The Project is necessary to improve water quality and system resiliency for the Teviston community. As mentioned in **Section 3.10**, TCSD will be subject to the GSP implemented by the Pixley Irrigation District Groundwater Sustainability Agency. The GSP is out for public review and has not yet been adopted. Once adopted, TCSD will adhere to the GSP. Impacts would be less than significant.

XIX-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?

No Impact. As an unincorporated CSD, Teviston wastewater is not treated by a central provider. The community relies on septic systems. The Project will have no impact on Teviston's wastewater treatment.

XIX-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?

No Impact. The Project does not involve solid waste. There would be no impact.

XIX-e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

No Impact. Implementation of the Project involves water system improvements and is not anticipated to produce any solid waste. There would be no impact.

3.20 Wildfire

Table 3-24. Wildfire Impacts

Wildfire				
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 uncontrolled spread of a 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?	☐	☐	☐	☒

3.20.1 Environmental Setting

State Responsibility Areas (SRAs) are areas where California Board of Forestry and Fire Protection (CAL FIRE) is the primary emergency response agency responsible for wildfire suppression and prevention.

CAL FIRE has defined Fire Hazard Severity Zones for the state[33]. Areas designated High and Very High are most likely to experience wildfire where structures in these zones can be potentially impacted.

[33] State of California, California Board of Forestry and Fire Protection, Office of the State Fire Marshal. *Fire Hazard Severity Zones Maps*. Available for all California Counties at website: https://osfm.fire.ca.gov/divisions/wildfire-planning-engineering/wildland-hazards-building-codes/fire-hazard-severity-zones-maps/. Accessed January 2020.

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

XX-a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

XX-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 uncontrolled spread of a wildfire?

XX-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?

XX-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?

No Impact. The nearest boundary of an is located approximately 14 miles southeast of the Project site beginning just east of the unincorporated community of Ducor near the foothill area of the Sierra Nevada Mountain Range. The Project site is not located within or near a State Responsibility Areas or lands classified as Very High fire hazard severity zones and would not result in or be susceptible to any of the adverse effects related to the impact topics a)-d) described above. Therefore, there would be no impacts.

3.21 CEQA Mandatory Findings of Significance

Table 3-25. Mandatory Findings of Significance Impacts

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 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?	☐	☐	☒	☐

3.21.1 Impact Assessment

Would the project:

XXI-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?

Less Than Significant Impact with Mitigation Incorporated. The analysis conducted in this Initial Study/Mitigated Negative Declaration 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, cultural, and tribal cultural resources from the implementation of the Project will be less than significant with the incorporation of the mitigation measures discussed in **Chapter 4 Mitigation Monitoring and Reporting Program**. Accordingly, the Project will involve no potential for significant impacts through the degradation of the quality of the environment, the reduction in the habitat or population of fish or wildlife, including endangered plants or animals, the elimination of a plant or animal community or example of a major period of California history or prehistory.

XXI-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 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 a new well and associated infrastructure updates to improve the water system serving the residents of Teviston. No additional roads or other development requiring water services would be constructed as a result of the Project and though electrical service to the well site will be upgraded, the impacts will be less than significant. The Project is intended to improve water supply and resilience and would not 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.

XXI-c) 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 permitted abandonment of two inactive wells, conversion of an existing well to "stand-by" status for use during emergencies only, and construction of a new well, water storage tank installation, and associated infrastructure. The Project would not create substantial adverse effects on human beings, either directly or indirectly. On the contrary, implementation of the Project would correct water supply issues experienced by Teviston residents related to water quality and fire flow needs. 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.

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3.22 Determination: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

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

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

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

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

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

Signature

01/11/21
Date

Brianna Ayon, General Manager
Printed Name/Position

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Chapter 4 Mitigation Monitoring and Reporting Program

This Mitigation Monitoring and Reporting Program (MMRP) has been formulated based upon the findings of the IS/MND for the Teviston Community Services District Water System Improvement Project in the County. The MMRP lists mitigation measures recommended in the IS/MND for the Project and identifies monitoring and reporting requirements.

Table 4-1 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 4-1** 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 TCSD to ensure that individual mitigation measures have been complied with and monitored.

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Table 4-1. 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					
Mitigation Measure BIO-1a: Avoidance					
The Project's construction activities shall occur, if feasible, between September 16 and January 31 (outside of nesting bird season) in an effort to avoid impacts to nesting birds.	During construction activities	Daily, during construction activities	TCSD	Site visits	Site visits and review of construction reports
Mitigation Measure BIO-1b: Pre-Construction Surveys					
If activities must occur within nesting bird season (February 1 to September 15), a qualified biologist shall conduct pre-construction surveys for active nests within 30 days prior to the start of construction. The survey shall include the proposed work area and surrounding lands within 0.5 mile. If no active nests are observed, no further mitigation is required. Raptor nests are considered "active" upon the nest-building stage.	Within 30 days prior to the start of work performed from February 1 to September 15	Once	TCSD	Pre-construction survey report from qualified biologist	Site visits and review of construction reports
Mitigation Measure BIO-1c: Establish Buffers					
On discovery of any active nests near work areas, the biologist shall determine appropriate construction setback distances based on applicable CDFW and/or USFWS guidelines and/or the biology of the species in question. Construction buffers shall be identified with flagging, fencing, or other easily visible means, and shall be maintained until the biologist has determined that the nestlings have fledged.	On discovery of active nests	Once, per nest, or more frequently as determined by biologist	TCSD	Report from qualified biologist	Site visits and review of construction reports
Cultural Resources					
Mitigation Measure CUL-1: Archaeological Resources					
In the event that archaeological resources are encountered at any time during development or ground-moving activities within the entire project area, all work in the vicinity of the find shall halt until a qualified archaeologist can assess the discovery. TCSD shall implement all recommendations of the archaeologist necessary to avoid or reduce to a less than significant level	In the event archaeological resources are uncovered	During excavation	TCSD	Report from qualified archaeologist	Site visits and review of construction reports

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**
potential impacts to cultural resource. Appropriate actions could include a Data Recovery Plan or preservation in place.					
Mitigation Measure CUL-2: Human Remains					
If human remains are uncovered, or in any other case when human remains are discovered during construction, the Tulare County Coroner is to be notified to arrange proper treatment and disposition. If the remains are identified—on the basis of archaeological context, age, cultural associations, or biological traits—as those of a Native American, California Health and Safety Code 7050.5 and Public Resource Code 5097.98 require that the coroner notify the NAHC within 24 hours of discovery. The NAHC will then identify the Most Likely Descendent who will determine the manner in which the remains are treated.	In the event human remains are uncovered	During excavation	TCSD	Report from qualified archaeologist	Site visits and review of construction reports

Appendix A

CalEEMod Output Files

Teviston Water System Improvement

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	1.25	Acre	1.25	54,450.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	51
Climate Zone	3			**Operational Year**	2023
Utility Company	Sierra Pacific Resources				
CO2 Intensity (lb/MWhr)	1328.16	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Assumes construction begins August 2021 and lasts 15 months to end in October 2022

Grading - Assumes worst case scenario. Amount of soil to be excavated is 20,500 cubic yards and assumes that 10% of soil will be hauled away.

Operational Off-Road Equipment - Assumes diesel-powered emergency generator will be needed 120 hours per year

Stationary Sources - Emergency Generators and Fire Pumps -

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	260.00
tblConstructionPhase	NumDays	20.00	25.00
tblConstructionPhase	NumDays	4.00	10.00
tblConstructionPhase	NumDays	10.00	20.00
tblConstructionPhase	NumDays	2.00	5.00
tblConstructionPhase	PhaseEndDate	11/20/2020	9/23/2022
tblConstructionPhase	PhaseEndDate	2/6/2020	9/3/2021
tblConstructionPhase	PhaseEndDate	2/14/2020	9/24/2021
tblConstructionPhase	PhaseEndDate	12/4/2020	10/21/2022
tblConstructionPhase	PhaseEndDate	2/10/2020	9/10/2021
tblConstructionPhase	PhaseStartDate	2/15/2020	9/27/2021
tblConstructionPhase	PhaseStartDate	1/10/2020	8/2/2021
tblConstructionPhase	PhaseStartDate	2/11/2020	9/13/2021
tblConstructionPhase	PhaseStartDate	11/21/2020	9/26/2022
tblConstructionPhase	PhaseStartDate	2/7/2020	9/6/2021
tblGrading	AcresOfGrading	3.75	1.25
tblGrading	AcresOfGrading	2.50	1.25
tblGrading	MaterialExported	0.00	2,050.00
tblStationaryGeneratorsPumpsEF	CH4_EF	0.07	0.07
tblStationaryGeneratorsPumpsEF	ROG_EF	2.2480e-003	2.2477e-003
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	335.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	24.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	100.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00

2.0 Emissions Summary

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					
2021	0.1051	0.9093	0.7250	1.4500e-003	0.0497	0.0423	0.0920	0.0232	0.0402	0.0634	0.0000	124.6415	124.6415	0.0222	0.0000	125.1962
2022	0.1753	1.3511	1.3740	2.6300e-003	0.0241	0.0598	0.0839	6.5400e-003	0.0576	0.0641	0.0000	221.5962	221.5962	0.0351	0.0000	222.4746
Maximum	**0.1753**	**1.3511**	**1.3740**	**2.6300e-003**	**0.0497**	**0.0598**	**0.0920**	**0.0232**	**0.0576**	**0.0641**	**0.0000**	**221.5962**	**221.5962**	**0.0351**	**0.0000**	**222.4746**

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					
2021	0.1051	0.9093	0.7250	1.4500e-003	0.0292	0.0423	0.0715	0.0123	0.0402	0.0525	0.0000	124.6414	124.6414	0.0222	0.0000	125.1960
2022	0.1753	1.3511	1.3740	2.6300e-003	0.0241	0.0598	0.0839	6.5400e-003	0.0576	0.0641	0.0000	221.5960	221.5960	0.0351	0.0000	222.4744
Maximum	**0.1753**	**1.3511**	**1.3740**	**2.6300e-003**	**0.0292**	**0.0598**	**0.0839**	**0.0123**	**0.0576**	**0.0641**	**0.0000**	**221.5960**	**221.5960**	**0.0351**	**0.0000**	**222.4744**

	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**	**27.75**	**0.00**	**11.63**	**36.63**	**0.00**	**8.55**	**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)
7	**7-10-2021**	**10-9-2021**	0.4636	0.4636
8	**10-10-2021**	**1-9-2022**	0.5426	0.5426
9	**1-10-2022**	**4-9-2022**	0.4912	0.4912
10	**4-10-2022**	**7-9-2022**	0.4963	0.4963
11	**7-10-2022**	**9-30-2022**	0.4280	0.4280
		Highest	0.5426	0.5426

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	4.6600e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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
Stationary	0.0275	0.0768	0.0701	1.3000e-004		4.0400e-003	4.0400e-003		4.0400e-003	4.0400e-003	0.0000	12.7567	12.7567	1.7900e-003	0.0000	12.8014
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	**0.0321**	**0.0768**	**0.0701**	**1.3000e-004**	**0.0000**	**4.0400e-003**	**4.0400e-003**	**0.0000**	**4.0400e-003**	**4.0400e-003**	**0.0000**	**12.7567**	**12.7567**	**1.7900e-003**	**0.0000**	**12.8014**

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	4.6600e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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
Stationary	0.0275	0.0768	0.0701	1.3000e-004		4.0400e-003	4.0400e-003		4.0400e-003	4.0400e-003	0.0000	12.7567	12.7567	1.7900e-003	0.0000	12.8014
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	**0.0321**	**0.0768**	**0.0701**	**1.3000e-004**	**0.0000**	**4.0400e-003**	**4.0400e-003**	**0.0000**	**4.0400e-003**	**4.0400e-003**	**0.0000**	**12.7567**	**12.7567**	**1.7900e-003**	**0.0000**	**12.8014**

	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	Demolition	Demolition	8/2/2021	9/3/2021	5	25	
2	Site Preparation	Site Preparation	9/6/2021	9/10/2021	5	5	
3	Grading	Grading	9/13/2021	9/24/2021	5	10	
4	Building Construction	Building Construction	9/27/2021	9/23/2022	5	260	
5	Paving	Paving	9/26/2022	10/21/2022	5	20	

Acres of Grading (Site Preparation Phase): 1.25

Acres of Grading (Grading Phase): 1.25

Acres of Paving: 1.25

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

OffRoad Equipment

Teviston Water System Improvement - Tulare County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	6.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	256.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	23.00	9.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0249	0.2462	0.1812	3.0000e-004		0.0130	0.0130		0.0121	0.0121	0.0000	26.3392	26.3392	6.7400e-003	0.0000	26.5076
Total	**0.0249**	**0.2462**	**0.1812**	**3.0000e-004**		**0.0130**	**0.0130**		**0.0121**	**0.0121**	**0.0000**	**26.3392**	**26.3392**	**6.7400e-003**	**0.0000**	**26.5076**

3.2 Demolition - 2021

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	7.0000e-004	4.5000e-004	4.6600e-003	1.0000e-005	1.2900e-003	1.0000e-005	1.3000e-003	3.4000e-004	1.0000e-005	3.5000e-004	0.0000	1.0772	1.0772	3.0000e-005	0.0000	1.0780
Total	**7.0000e-004**	**4.5000e-004**	**4.6600e-003**	**1.0000e-005**	**1.2900e-003**	**1.0000e-005**	**1.3000e-003**	**3.4000e-004**	**1.0000e-005**	**3.5000e-004**	**0.0000**	**1.0772**	**1.0772**	**3.0000e-005**	**0.0000**	**1.0780**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0249	0.2462	0.1812	3.0000e-004		0.0130	0.0130		0.0121	0.0121	0.0000	26.3391	26.3391	6.7400e-003	0.0000	26.5075
Total	**0.0249**	**0.2462**	**0.1812**	**3.0000e-004**		**0.0130**	**0.0130**		**0.0121**	**0.0121**	**0.0000**	**26.3391**	**26.3391**	**6.7400e-003**	**0.0000**	**26.5075**

3.2 Demolition - 2021

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	7.0000e-004	4.5000e-004	4.6600e-003	1.0000e-005	1.2900e-003	1.0000e-005	1.3000e-003	3.4000e-004	1.0000e-005	3.5000e-004	0.0000	1.0772	1.0772	3.0000e-005	0.0000	1.0780
Total	**7.0000e-004**	**4.5000e-004**	**4.6600e-003**	**1.0000e-005**	**1.2900e-003**	**1.0000e-005**	**1.3000e-003**	**3.4000e-004**	**1.0000e-005**	**3.5000e-004**	**0.0000**	**1.0772**	**1.0772**	**3.0000e-005**	**0.0000**	**1.0780**

3.3 Site Preparation - 2021

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					0.0138	0.0000	0.0138	7.3100e-003	0.0000	7.3100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8900e-003	0.0436	0.0189	4.0000e-005		1.9100e-003	1.9100e-003		1.7600e-003	1.7600e-003	0.0000	3.7796	3.7796	1.2200e-003	0.0000	3.8102
Total	**3.8900e-003**	**0.0436**	**0.0189**	**4.0000e-005**	**0.0138**	**1.9100e-003**	**0.0158**	**7.3100e-003**	**1.7600e-003**	**9.0700e-003**	**0.0000**	**3.7796**	**3.7796**	**1.2200e-003**	**0.0000**	**3.8102**

3.3 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-005	6.0000e-005	5.7000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1326	0.1326	0.0000	0.0000	0.1327
Total	**9.0000e-005**	**6.0000e-005**	**5.7000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1326**	**0.1326**	**0.0000**	**0.0000**	**0.1327**

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					6.2300e-003	0.0000	6.2300e-003	3.2900e-003	0.0000	3.2900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8900e-003	0.0436	0.0189	4.0000e-005		1.9100e-003	1.9100e-003		1.7600e-003	1.7600e-003	0.0000	3.7796	3.7796	1.2200e-003	0.0000	3.8102
Total	**3.8900e-003**	**0.0436**	**0.0189**	**4.0000e-005**	**6.2300e-003**	**1.9100e-003**	**8.1400e-003**	**3.2900e-003**	**1.7600e-003**	**5.0500e-003**	**0.0000**	**3.7796**	**3.7796**	**1.2200e-003**	**0.0000**	**3.8102**

3.3 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-005	6.0000e-005	5.7000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1326	0.1326	0.0000	0.0000	0.1327
Total	**9.0000e-005**	**6.0000e-005**	**5.7000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1326**	**0.1326**	**0.0000**	**0.0000**	**0.1327**

3.4 Grading - 2021

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					0.0234	0.0000	0.0234	0.0125	0.0000	0.0125	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.4400e-003	0.0717	0.0317	7.0000e-005		3.1900e-003	3.1900e-003		2.9300e-003	2.9300e-003	0.0000	6.1918	6.1918	2.0000e-003	0.0000	6.2419
Total	**6.4400e-003**	**0.0717**	**0.0317**	**7.0000e-005**	**0.0234**	**3.1900e-003**	**0.0266**	**0.0125**	**2.9300e-003**	**0.0154**	**0.0000**	**6.1918**	**6.1918**	**2.0000e-003**	**0.0000**	**6.2419**

3.4 Grading - 2021

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	9.7000e-004	0.0329	5.6500e-003	1.0000e-004	2.1800e-003	1.1000e-004	2.2900e-003	6.0000e-004	1.0000e-004	7.0000e-004	0.0000	9.6044	9.6044	3.2000e-004	0.0000	9.6123
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	1.7000e-004	1.1000e-004	1.1500e-003	0.0000	3.2000e-004	0.0000	3.2000e-004	8.0000e-005	0.0000	9.0000e-005	0.0000	0.2652	0.2652	1.0000e-005	0.0000	0.2654
Total	**1.1400e-003**	**0.0330**	**6.8000e-003**	**1.0000e-004**	**2.5000e-003**	**1.1000e-004**	**2.6100e-003**	**6.8000e-004**	**1.0000e-004**	**7.9000e-004**	**0.0000**	**9.8695**	**9.8695**	**3.3000e-004**	**0.0000**	**9.8776**

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					0.0105	0.0000	0.0105	5.6300e-003	0.0000	5.6300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.4400e-003	0.0717	0.0317	7.0000e-005		3.1900e-003	3.1900e-003		2.9300e-003	2.9300e-003	0.0000	6.1918	6.1918	2.0000e-003	0.0000	6.2419
Total	**6.4400e-003**	**0.0717**	**0.0317**	**7.0000e-005**	**0.0105**	**3.1900e-003**	**0.0137**	**5.6300e-003**	**2.9300e-003**	**8.5600e-003**	**0.0000**	**6.1918**	**6.1918**	**2.0000e-003**	**0.0000**	**6.2419**

3.4 Grading - 2021

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	9.7000e-004	0.0329	5.6500e-003	1.0000e-004	2.1800e-003	1.1000e-004	2.2900e-003	6.0000e-004	1.0000e-004	7.0000e-004	0.0000	9.6044	9.6044	3.2000e-004	0.0000	9.6123
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	1.7000e-004	1.1000e-004	1.1500e-003	0.0000	3.2000e-004	0.0000	3.2000e-004	8.0000e-005	0.0000	9.0000e-005	0.0000	0.2652	0.2652	1.0000e-005	0.0000	0.2654
Total	**1.1400e-003**	**0.0330**	**6.8000e-003**	**1.0000e-004**	**2.5000e-003**	**1.1000e-004**	**2.6100e-003**	**6.8000e-004**	**1.0000e-004**	**7.9000e-004**	**0.0000**	**9.8695**	**9.8695**	**3.3000e-004**	**0.0000**	**9.8776**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0634	0.4773	0.4515	7.7000e-004		0.0240	0.0240		0.0231	0.0231	0.0000	63.5417	63.5417	0.0113	0.0000	63.8253
Total	**0.0634**	**0.4773**	**0.4515**	**7.7000e-004**		**0.0240**	**0.0240**		**0.0231**	**0.0231**	**0.0000**	**63.5417**	**63.5417**	**0.0113**	**0.0000**	**63.8253**

3.5 Building Construction - 2021

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	1.0100e-003	0.0349	6.6500e-003	9.0000e-005	2.0800e-003	1.0000e-004	2.1800e-003	6.0000e-004	1.0000e-004	7.0000e-004	0.0000	8.3737	8.3737	3.7000e-004	0.0000	8.3830
Worker	3.4900e-003	2.2500e-003	0.0231	6.0000e-005	6.4100e-003	4.0000e-005	6.4600e-003	1.7000e-003	4.0000e-005	1.7400e-003	0.0000	5.3363	5.3363	1.5000e-004	0.0000	5.3401
Total	**4.5000e-003**	**0.0371**	**0.0298**	**1.5000e-004**	**8.4900e-003**	**1.4000e-004**	**8.6400e-003**	**2.3000e-003**	**1.4000e-004**	**2.4400e-003**	**0.0000**	**13.7100**	**13.7100**	**5.2000e-004**	**0.0000**	**13.7230**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0634	0.4773	0.4515	7.7000e-004		0.0240	0.0240		0.0231	0.0231	0.0000	63.5416	63.5416	0.0113	0.0000	63.8252
Total	**0.0634**	**0.4773**	**0.4515**	**7.7000e-004**		**0.0240**	**0.0240**		**0.0231**	**0.0231**	**0.0000**	**63.5416**	**63.5416**	**0.0113**	**0.0000**	**63.8252**

3.5 Building Construction - 2021

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	1.0100e-003	0.0349	6.6500e-003	9.0000e-005	2.0800e-003	1.0000e-004	2.1800e-003	6.0000e-004	1.0000e-004	7.0000e-004	0.0000	8.3737	8.3737	3.7000e-004	0.0000	8.3830
Worker	3.4900e-003	2.2500e-003	0.0231	6.0000e-005	6.4100e-003	4.0000e-005	6.4600e-003	1.7000e-003	4.0000e-005	1.7400e-003	0.0000	5.3363	5.3363	1.5000e-004	0.0000	5.3401
Total	**4.5000e-003**	**0.0371**	**0.0298**	**1.5000e-004**	**8.4900e-003**	**1.4000e-004**	**8.6400e-003**	**2.3000e-003**	**1.4000e-004**	**2.4400e-003**	**0.0000**	**13.7100**	**13.7100**	**5.2000e-004**	**0.0000**	**13.7230**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1566	1.1878	1.2090	2.0900e-003		0.0559	0.0559		0.0540	0.0540	0.0000	172.4981	172.4981	0.0300	0.0000	173.2492
Total	**0.1566**	**1.1878**	**1.2090**	**2.0900e-003**		**0.0559**	**0.0559**		**0.0540**	**0.0540**	**0.0000**	**172.4981**	**172.4981**	**0.0300**	**0.0000**	**173.2492**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.5500e-003	0.0899	0.0167	2.4000e-004	5.6500e-003	2.4000e-004	5.8900e-003	1.6300e-003	2.3000e-004	1.8600e-003	0.0000	22.5268	22.5268	9.7000e-004	0.0000	22.5510
Worker	8.7500e-003	5.4300e-003	0.0569	1.5000e-004	0.0174	1.1000e-004	0.0175	4.6300e-003	1.0000e-004	4.7300e-003	0.0000	13.9706	13.9706	3.7000e-004	0.0000	13.9798
Total	**0.0113**	**0.0953**	**0.0736**	**3.9000e-004**	**0.0231**	**3.5000e-004**	**0.0234**	**6.2600e-003**	**3.3000e-004**	**6.5900e-003**	**0.0000**	**36.4973**	**36.4973**	**1.3400e-003**	**0.0000**	**36.5308**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1566	1.1878	1.2090	2.0900e-003		0.0559	0.0559		0.0540	0.0540	0.0000	172.4979	172.4979	0.0300	0.0000	173.2490
Total	**0.1566**	**1.1878**	**1.2090**	**2.0900e-003**		**0.0559**	**0.0559**		**0.0540**	**0.0540**	**0.0000**	**172.4979**	**172.4979**	**0.0300**	**0.0000**	**173.2490**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.5500e-003	0.0899	0.0167	2.4000e-004	5.6500e-003	2.4000e-004	5.8900e-003	1.6300e-003	2.3000e-004	1.8600e-003	0.0000	22.5268	22.5268	9.7000e-004	0.0000	22.5510
Worker	8.7500e-003	5.4300e-003	0.0569	1.5000e-004	0.0174	1.1000e-004	0.0175	4.6300e-003	1.0000e-004	4.7300e-003	0.0000	13.9706	13.9706	3.7000e-004	0.0000	13.9798
Total	**0.0113**	**0.0953**	**0.0736**	**3.9000e-004**	**0.0231**	**3.5000e-004**	**0.0234**	**6.2600e-003**	**3.3000e-004**	**6.5900e-003**	**0.0000**	**36.4973**	**36.4973**	**1.3400e-003**	**0.0000**	**36.5308**

3.6 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.8800e-003	0.0677	0.0881	1.4000e-004		3.4700e-003	3.4700e-003		3.2100e-003	3.2100e-003	0.0000	11.7696	11.7696	3.7300e-003	0.0000	11.8629
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.8800e-003**	**0.0677**	**0.0881**	**1.4000e-004**		**3.4700e-003**	**3.4700e-003**		**3.2100e-003**	**3.2100e-003**	**0.0000**	**11.7696**	**11.7696**	**3.7300e-003**	**0.0000**	**11.8629**

3.6 Paving - 2022

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	5.2000e-004	3.2000e-004	3.3800e-003	1.0000e-005	1.0400e-003	1.0000e-005	1.0400e-003	2.8000e-004	1.0000e-005	2.8000e-004	0.0000	0.8312	0.8312	2.0000e-005	0.0000	0.8318
Total	**5.2000e-004**	**3.2000e-004**	**3.3800e-003**	**1.0000e-005**	**1.0400e-003**	**1.0000e-005**	**1.0400e-003**	**2.8000e-004**	**1.0000e-005**	**2.8000e-004**	**0.0000**	**0.8312**	**0.8312**	**2.0000e-005**	**0.0000**	**0.8318**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.8800e-003	0.0677	0.0881	1.4000e-004		3.4700e-003	3.4700e-003		3.2100e-003	3.2100e-003	0.0000	11.7696	11.7696	3.7300e-003	0.0000	11.8629
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.8800e-003**	**0.0677**	**0.0881**	**1.4000e-004**		**3.4700e-003**	**3.4700e-003**		**3.2100e-003**	**3.2100e-003**	**0.0000**	**11.7696**	**11.7696**	**3.7300e-003**	**0.0000**	**11.8629**

3.6 Paving - 2022

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	5.2000e-004	3.2000e-004	3.3800e-003	1.0000e-005	1.0400e-003	1.0000e-005	1.0400e-003	2.8000e-004	1.0000e-005	2.8000e-004	0.0000	0.8312	0.8312	2.0000e-005	0.0000	0.8318
Total	**5.2000e-004**	**3.2000e-004**	**3.3800e-003**	**1.0000e-005**	**1.0400e-003**	**1.0000e-005**	**1.0400e-003**	**2.8000e-004**	**1.0000e-005**	**2.8000e-004**	**0.0000**	**0.8312**	**0.8312**	**2.0000e-005**	**0.0000**	**0.8318**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

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

4.3 Trip Type Information

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

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.533627	0.031932	0.174885	0.126979	0.018773	0.004811	0.020615	0.079394	0.001826	0.001217	0.004186	0.001092	0.000663

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

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**

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	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**

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**

5.3 Energy by Land Use - Electricity

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

	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	4.6600e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	4.6600e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.1400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.5200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.6600e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

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	1.1400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.5200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.6600e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	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

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	24	100	335	0.73	Diesel

Boilers

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

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/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
Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel (300 - 600 HP)	0.0275	0.0768	0.0701	1.3000e-004		4.0400e-003	4.0400e-003		4.0400e-003	4.0400e-003	0.0000	12.7567	12.7567	1.7900e-003	0.0000	12.8014
Total	**0.0275**	**0.0768**	**0.0701**	**1.3000e-004**		**4.0400e-003**	**4.0400e-003**		**4.0400e-003**	**4.0400e-003**	**0.0000**	**12.7567**	**12.7567**	**1.7900e-003**	**0.0000**	**12.8014**

11.0 Vegetation

Appendix B

Biological Evaluation

Teviston Community Services District: Well Replacement Project

Biological Evaluation

Prepared by:
Brooke Fletcher, Wildlife Biologist

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January 2020

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1 Introduction

Teviston is a census-designated place in Tulare County, California. Teviston Community Services District (District or TCSD) provides potable water to the majority of Teviston residents. TCSD has received funding to address challenges caused by dependence on a single source of drinking water and to improve water quality for residents.

The following technical report, prepared by Provost & Pritchard Consulting Group, in compliance with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA), includes a description of the biological resources present or with potential to occur within the Project site and surrounding areas and evaluates potential Project-related impacts to those resources.

1.1 Project Description

The District is currently served by only a single well, "Well 3." Well 3 is located approximately 600 feet east and 190 feet north of the intersection of Avenue 80 and Road 132, on the same parcel as the original South Well that is now abandoned (APN 316-220-004).

TCSD proposes to drill and construct a new production well, "Well 4," at the North Well site (APN 316-220-009), which is just off Road 132, approximately 650 feet north of the intersection of Avenue 80 and Road 132. Well 4 will become the primary source of water for TCSD while Well 3 at the South Well site will be maintained as a standby source. Eventually, the District plans to equip Well 3 with a treatment system for 1,2,3-TCP.

The original well, "South Well," constructed in 1959, and the "North Well," subsequently constructed in 1978, are both inactive due to failure. Therefore, as part of this Project both the North and South Well will be properly abandoned.

In addition to the various well site improvements (categorically listed below), the Project includes replacement of 136 existing water metered connections with upgraded meters along the distribution system shown in **Figure 3**.

As illustrated on the site plan (**Figure 4**), the Project proposes the following well site improvements:

- Drill and construct Well 4, install pump and motor, valves, flow monitoring equipment, and site piping on the North Well site
- 321,000-gallon water storage tank with booster pump station and 15,000-gallon hydropneumatics tank at North Well site
- Site lighting and electrical cabinet for motor control center (MCC) and switchgear at North Well site
- Relocate electrical service, install transformer and meter at North Well site
- Diesel-powered generators at both well sites
- Chlorination system and associated infrastructure at both well sites
- Sample tap at each wellhead
- Surfacing at both well sites (assumed to be aggregate base rock)
- Onsite drainage pond at both well sites (if required)
- Perimeter chain link fencing with barbed wire at both sites (if required)

1.2 Report Objectives

Construction activities such as those proposed by Teviston CSD could potentially damage biological resources or modify habitats that are crucial for sensitive plant and wildlife species. In cases such as these,

development may be regulated by state or federal agencies, subject to provisions of CEQA, and/or NEPA, and/or addressed by local regulatory agencies.

The report addresses issues related to the following:

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

Therefore, the objectives of this report are:

1) Summarize all site-specific information related to existing biological resources.
2) 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.
3) Summarize all state and federal natural resource protection laws that may be relevant to the Project.
4) Identify and discuss Project impacts to biological resources likely to occur onsite within the context of CEQA or state or federal laws.
5) Identify and publish a set of avoidance and mitigation measures that would reduce impacts to a less-than-significant level (as identified by CEQA) and are generally consistent with recommendations of the resource agencies for affected biological resources.

1.3 Study Methodology

A reconnaissance-level field survey of the Project site and surrounding areas was conducted on December 4, 2019 by Provost & Pritchard biologist, Brooke Fletcher. The survey consisted of a combination of driving along distribution line routes and walking through Project areas while identifying and noting land uses, biological habitats and communities, and plant and animal species encountered. Furthermore, the site and surrounding areas were assessed for suitable habitats of various wildlife species.

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

The field investigation did not include a wetland delineation or focused surveys for special status species. The field survey conducted included an appropriate level of detail to assess the significance of potential impacts to sensitive biological resources resulting from 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 U.S. Army Corps of Engineers (USACE), CDFW, and the Regional Water Quality Control Board (RWQCB).

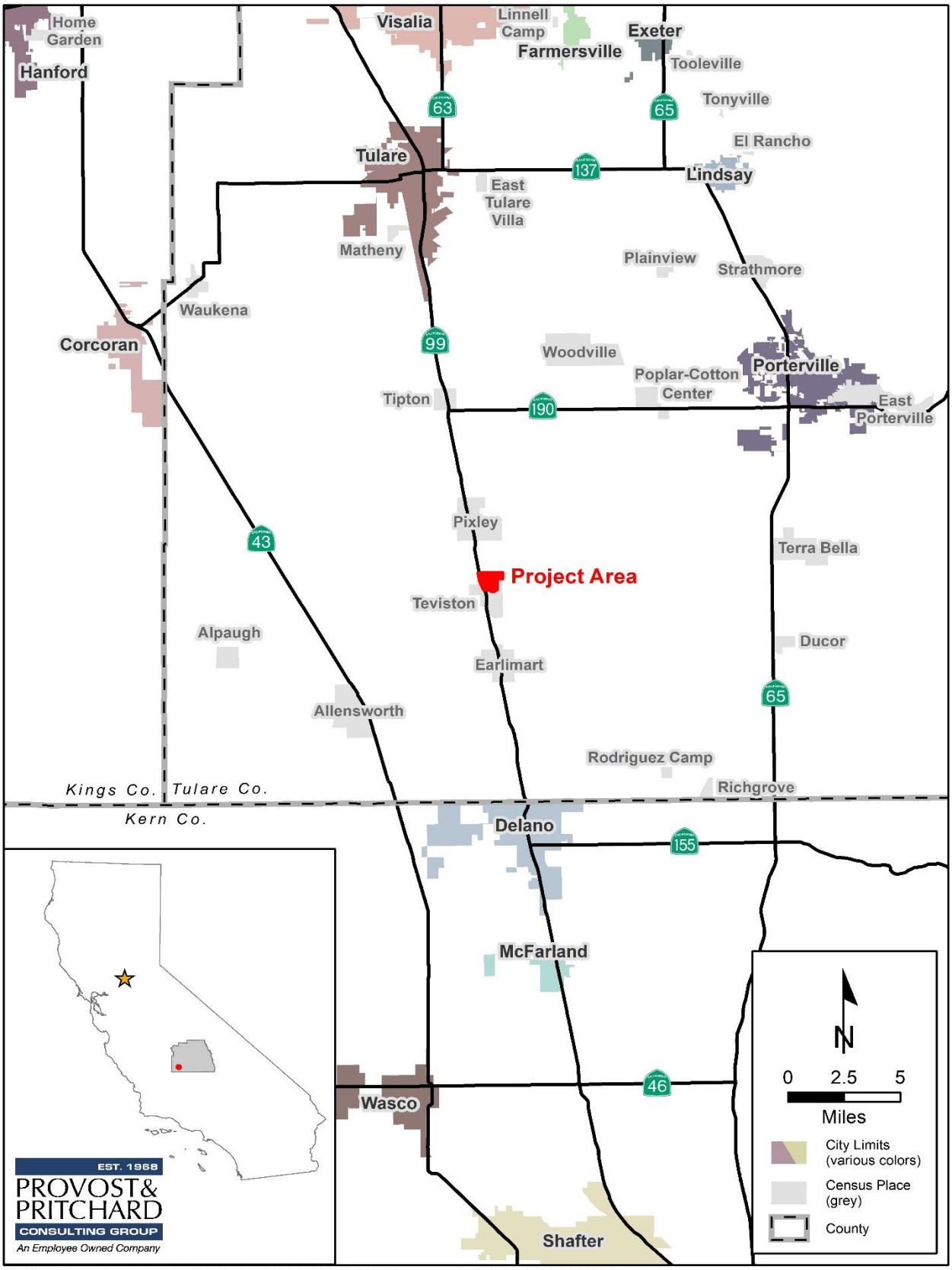

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Figure 1. Regional Location Map

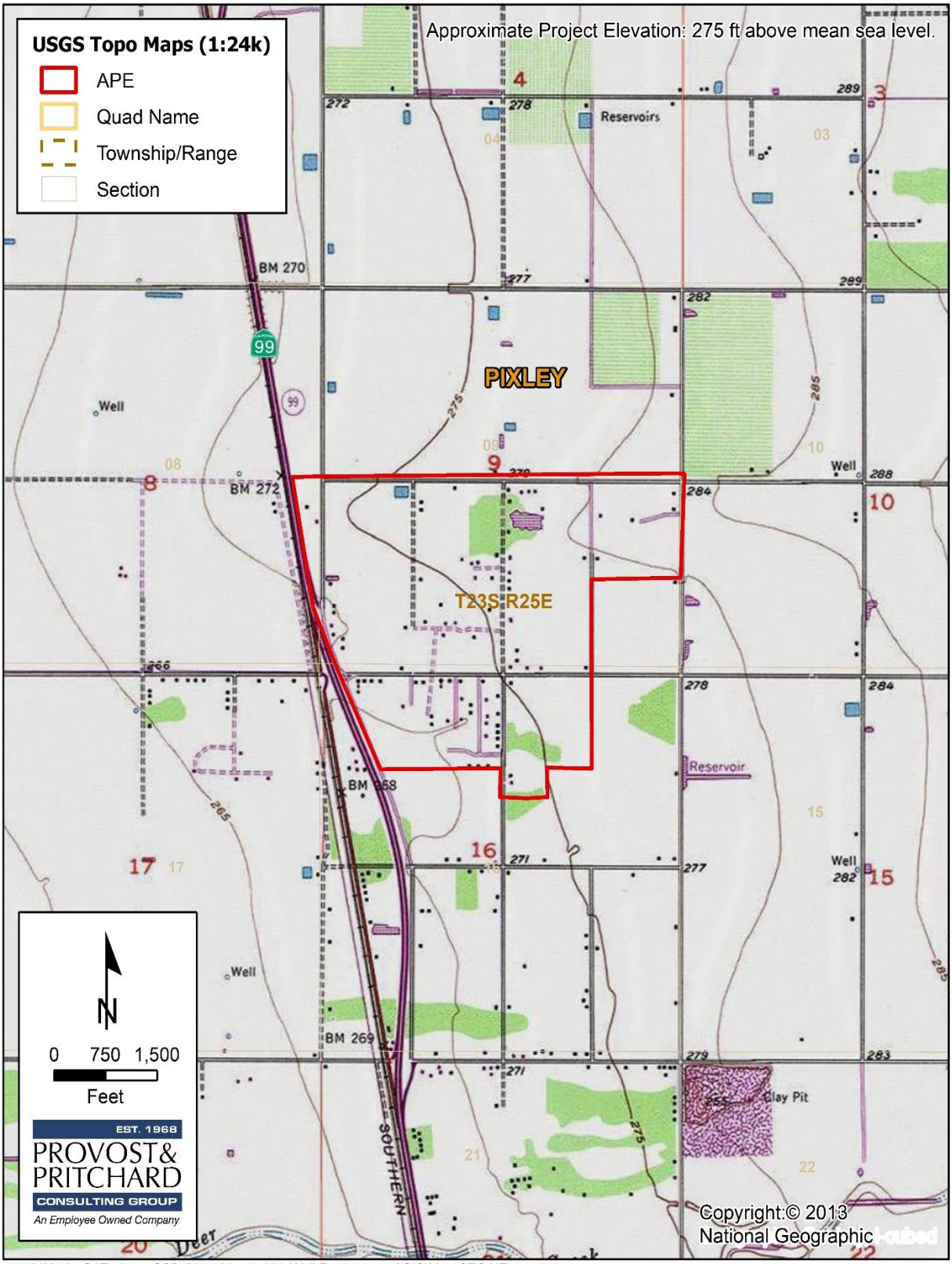

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Figure 2. Topographic Quadrangle Map

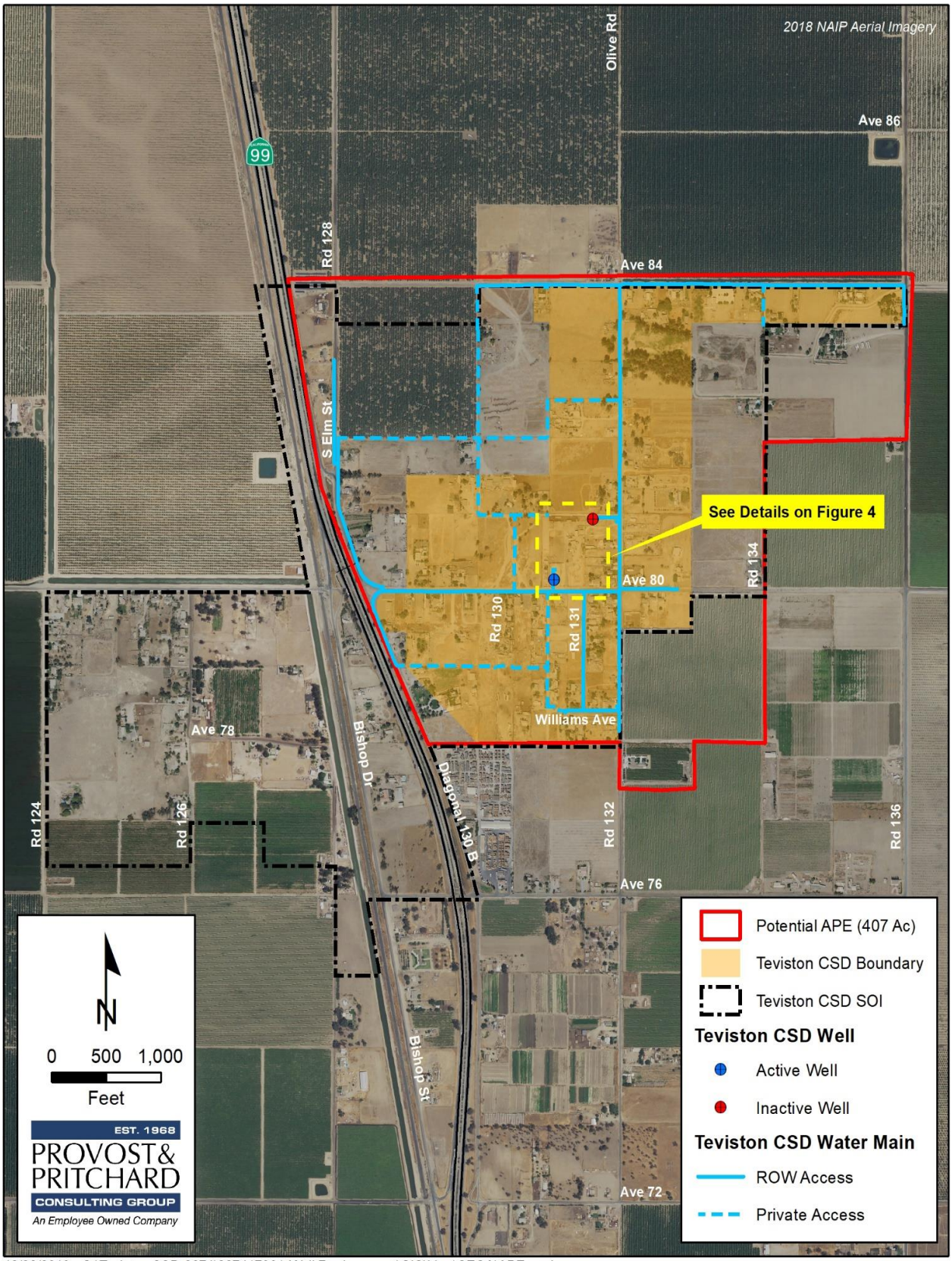

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Figure 3. Area of Potential Effect (APE)

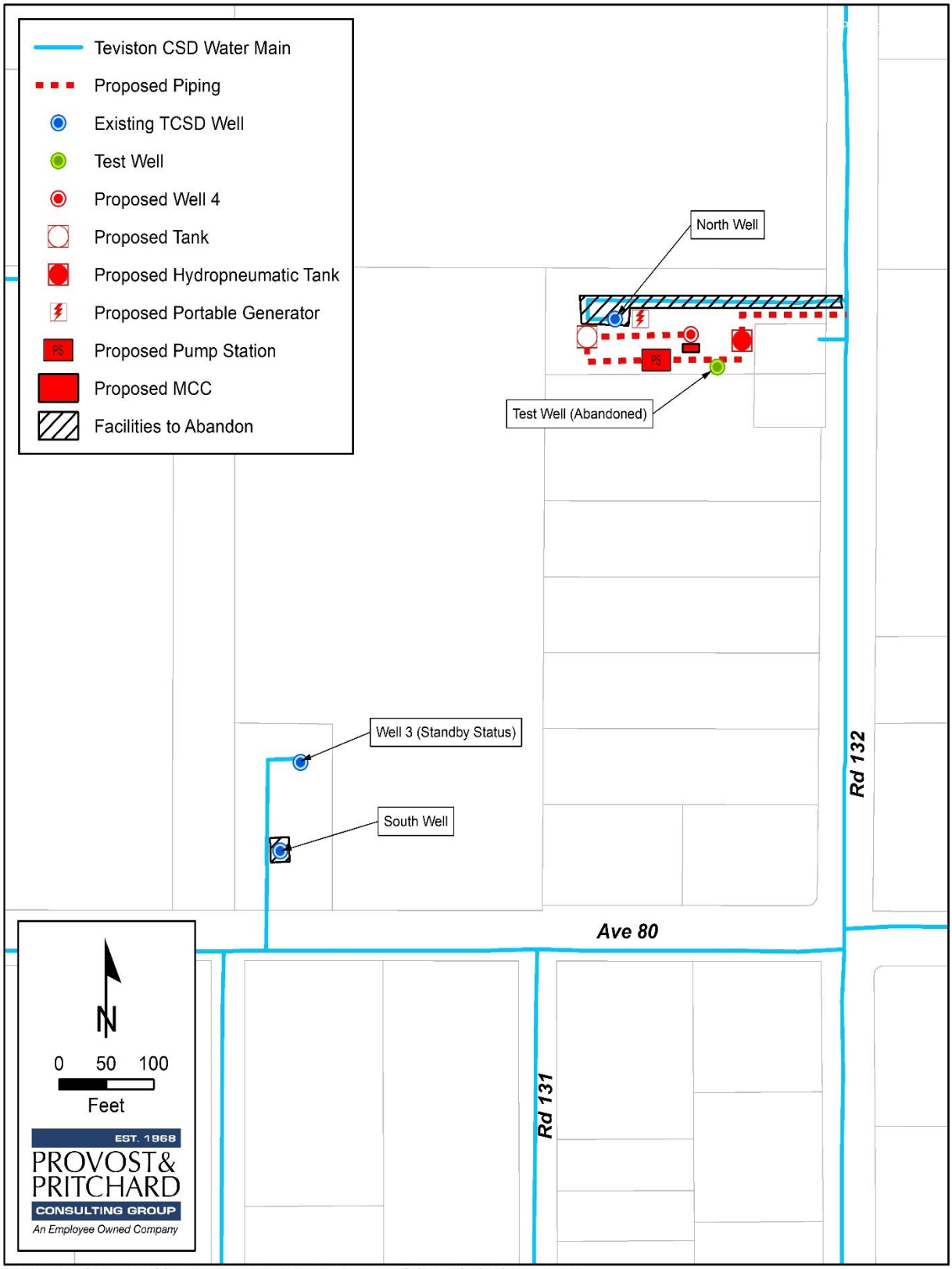

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Figure 4. Well Site Map

2 Existing Conditions

2.1 Regional Setting

The Project site is located in southwest Tulare County within the lower San Joaquin Valley, part of the Great Valley of California (See **Figure 1**). The Valley is bordered by the Sierra Nevada Mountain Ranges to the east, the Coast Ranges to the west, the Klamath Mountains and Cascade Range to the north, and the Transverse Ranges and Mojave Desert to the south.

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, and the humidity is generally low. Winter temperatures are often below 60 degrees Fahrenheit during the day and rarely exceed 70 degrees. On average, the Central Valley receives approximately 12 inches of precipitation in the form of rainfall yearly, most of which occurs between October and March.

Teviston is a Tulare County unincorporated community and census-designated place approximately 70 miles southeast of Fresno and 45 miles northwest of Bakersfield. The Project is located within the *Town of Pixley-Deer Creek* watershed; Hydrologic Unit Code (HUC): 180300050903 (EPA, 2019), approximately 1.5 miles north of Deer Creek. Historically, Deer Creek was a tributary to the dry Tulare Lake endothermic basin, but now most of the water is diverted for irrigation of agricultural crops.

The Project lies entirely within the Tule Groundwater Subbasin of the San Joaquin Valley Groundwater Basin (DWR, 2019). The Project area is confined to the portion of Teviston east of State Route 99 within the District's sphere of influence, as illustrated on **Figure 3**. Teviston is an agriculturally oriented service community surrounded by lands in agricultural production and scattered rural and farm residences.

2.2 Project Site

The Project involves improvements at two well sites and upgrades to meters at service connections along the existing distribution system as illustrated in **Figure 3.** The North Well site consists of the existing developed well site and a ruderal vacant lot abutting the existing site fencing to the south. The South Well site is fenced and developed with substrate of compacted dirt, gravel, and concrete pads. The distribution system runs along the perimeter of paved and dirt roads, residential yards, livestock enclosures, agricultural lands, and ruderal vacant lots of what appears to be previously retired farmland. In some areas, the distribution system passes through ruderal lots, livestock enclosures, and residential yards; however, potential impacts in these areas would be limited to the service connection sites for activities related to the proposed meter upgrades. Photographs of the Project site and surrounding areas are available in **Appendix A** of this document.

2.3 Biological Communities

Two biological communities, described in more detail below, were identified within the Project area: developed and ruderal. Surrounding land uses consist of developed, ruderal, agricultural, and fallow fields. All habitats of the Project area and surrounding lands are disturbed or frequently maintained and therefore of relatively low quality for most native wildlife species.

2.3.1 Developed

Both well sites include fenced, developed land with substrate of compacted dirt, gravel, and concrete pads. The majority of the Project area along the existing distribution system consists of development associated with the residential community of Teviston. Potential impact areas along the water main and laterals include meter upgrades at each service connection, typically located in the front or back yard of a residence. The developed habitats of the well sites and meter locations represent low-quality habitat for most wildlife species.

Avian species could potentially nest within ornamental trees and shrubs associated with landscaping, although many would likely be deterred from nesting in these areas due to the lack of native vegetation, frequent human disturbance, and the presence of domestic dogs and cats. Some disturbance tolerant avian species with potential to occur within developed habitats of the Project area include: American crow (*Corvus brachyrhynchos*), northern mockingbird (*Mimus polyglottos*), mourning dove (*Zenaida macroura*), western scrub jay (*Aphelocoma californica*), American robin (*Turdus migratorius*), European starling (*Sturnus vulgaris*), house sparrow (*Passer domesticus*), house finch (*Haemorhous mexicanus*), black phoebe (*Sayornis nigricans*), killdeer (*Charadrius vociferus*), and western kingbird (*Tyrannus verticalis*).

Common mammalian species tolerant of disturbance such as raccoons (*Procyon lotor*), coyotes (*Canis latrans*), striped skunks (*Mephitis mephitis*), gray foxes (*Urocyron cinereoargentus*) and non-native opossums (*Didelphis virginiana*) would be expected to occur in the vicinity. Urban and agricultural "pests" such as Botta's pocket gophers (*Thomomys bottae*) and California ground squirrels (*Otospermophilus beecheyi*) likely occur within the rural agricultural community, and populations are likely managed by rodenticides as several bait stations were observed during the biological survey. Although none were observed during the field survey, some reptiles and amphibians such as the San Joaquin fence lizard (*Sceloporus occidentalis biseriatus*), California toad (*Anaxyrus boreas halophilus*), western side-blotched lizard (*Uta stansburiana elegans*), Sierran treefrog (*Pseudacris sierra*), and the invasive American bullfrog (*Lithobates* catesbeianus) likely occur in the vicinity of the Project. In the winter and spring, the aforementioned amphibian species may breed in small ponding basins or irrigation basins in the vicinity of the Project. Pacific gophersnake (*Pituophis catenifer catenifer*) and California kingsnake (*Lampropeltis californiae*) likely inhabit orchards and vineyards in the vicinity and could pass through adjacent urban environments.

Although none of the structures within the Project area contained projections, crevices, or potential roosts large enough to house a western mastiff bat (*Eumops perotis*), a variety of smaller native bat species could potentially roost within the present structures or trees in the vicinity. However, no bat individuals or bat sign was observed during the biological survey and frequent human disturbance makes the possibility of roosting bats unlikely in the developed areas of the Project.

2.3.2 Ruderal

Ruderal habitats are characterized by a high level of human disturbance and absence of vegetation or are dominated by non-native plant species. Implementation of the Project will include expanding the existing footprint of the North Well site into the southern ruderal area of the parcel. Additionally, occasional vacant parcels of land, ruderal in nature, are interspersed with the developed area of residences and agricultural lands along the distribution system. Several highly disturbed livestock enclosures that could also be classified as ruderal were present along the distribution system at the time of the field survey. Ruderal, vacant parcels within the Project area are typically disked at least once per year for weed abatement and fire control. At the time of the field survey, ruderal areas observed were either barren (livestock enclosures and compacted dirt areas) or contained an abundance of weedy grasses and forbs. The following species were dominant within the ruderal areas observed: cheeseweed (*Malva parviflora*), Russian thistle (*Salsola tragus*), pigweed amaranth (*Amaranthus albus*), heliotrope (*Heliotropum curassavicum*), wild oats (*Avena fatua*), Bermuda grass (*Cynodon dactylon*), ripgut brome (*Bromus diandrus*), prickly lettuce (*Lactuca serriola*), big heron bill (*Erodium botrys*), mustard (*Brassica nigra* and *Brassica rapa*), and horse nettle (*Solanum elaeagnifolium*). Non-native blue gum eucalyptus (*Eucalyptus globulus*) trees lined several of the roadways and property lines within the Project area.

Ruderal areas within the Project vicinity have minimal value to wildlife due to frequent human disturbance, the presence of domestic dogs and cats, and lack of native vegetation. However, some disturbance tolerant species may make incidental use of these ruderal lands. Wildlife expected to occur within ruderal communities would be similar to those described for the developed lands of the Project area in **Section 2.3.1** and therefore, will not be re-stated here.

2.4 Soils

According to the November 8, 2019 Soil Survey of Tulare County, Western Part, California, two soil mapping units occurs within the Project area: Akers-Akers, saline-Sodic, complex, 0 to 2 percent slopes and Hanford sandy loam, 0 to 2 percent slopes. These soils are both classified as prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season. Both major soil components are very deep, well-drained with moderate permeability. Both components contain alluvium parent material derived from granite rock. The following are listed as minor components, each comprising 5 % or less of the complex: Colpien, Calgro, Exeter, Grangeville, Hanford, Tagus, Tujunga, Yettem, and one unnamed soil. The unnamed soil comprises approximately 1 % of the map unit and is associated with depressions that experience seasonal ponding, and is therefore considered hydric. Hydric soils are defined as soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions such that under sufficiently wet conditions hydrophytic vegetation is supported.

The complete Natural Resources Conservation Service (NRCS) Web Soil Survey report is available in **Appendix E** of this document.

2.5 Natural Communities of Special Concern

Natural communities of special concern are those that are of limited distribution, distinguished by significant biological diversity, or home to special status species. CDFW is responsible for the classification and mapping of all natural communities in California. Just like the special status plant and animal species, these natural communities of special concern can be found within the CNDDB.

According to CNDDB, there are no recorded observations of natural communities of special concern with potential to occur within the Project area or vicinity. Additionally, no natural communities of special concern were observed during the biological survey.

2.6 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 and that may require special management and protection.

According to CNDDB and IPaC, designated critical habitat is absent from the Project area and vicinity.

2.7 Wildlife Movement Corridors

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 area does not contain features that would be likely to function as wildlife movement corridors. Furthermore, the Project is located in a region often disturbed by intensive agricultural cultivation practices and human disturbance which would discourage dispersal and migration.

2.8 Special Status Plants and Animals

California contains several "rare" plant and animal species. In this context, "rare" is defined as species known to have low populations or limited distributions. As the human population grows, resulting in urban expansion which encroaches on the already limited suitable habitat, these sensitive species become increasingly more vulnerable to extirpation. State and Federal regulations have provided the CDFW and the U.S. Fish and Wildlife Service (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 California Native Plant Society (CNPS) has its list of native plants considered rare, threatened, or endangered. Collectively these plants and animals are referred to as "special status species."

A thorough search of the CNDDB for published accounts of special status plant and animal species was conducted for the Pixley 7.5-minute quadrangle that contains the Project site in its entirety, and for the 8 surrounding quadrangles: Sausalito School, Woodville, Tipton, Taylor Weir, Alpaugh, Allensworth, Delano West, and Delano East. An official species list was obtained using the USFWS IPaC system for federally listed species with potential to be affected by the Project. These species, and their potential to occur within the Project area are listed in **Table 1** and **Table 2** on the following pages. Additionally, Section 7 Determinations are made in **Table 3** of Section 3.5. Raw data obtained from CNDDB and IPaC are available in **Appendix B** and **Appendix C**, respectively, at the end of this document. Other sources of information utilized in the preparation of this analysis included the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Vascular Plants of California, CalFlora's online database of California native plants, the Jepson Herbarium online database (Jepson eFlora), U.S. Fish and Wildlife Service (USFWS) Environmental Conservation Online System (ECOS), the NatureServe Explorer online database, the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Plants Database, the California Department of Fish and Wildlife (CDFW) California Wildlife Habitat Relationships (CWHR) database, ebird.org, and the California Herps online database. **Figure 2** shows the Project's 7.5-minute quadrangle, according to USGS Topographic Maps.

Table 1. List of Special Status Animals with Potential to Occur Onsite and/or in the Vicinity

Species	Status	Habitat	Occurrence on Project Site
American badger (*Taxidea taxus*)	CSC	Grasslands, savannas, and mountain meadows near timberline are preferred. Most abundant in drier open spaces of shrub and grassland. Burrows in soil.	**Unlikely.** Habitats of the Project area are disturbed, developed, and/or fragmented and therefore are considered marginal, at best, for this species. In the past 30 years, there has only been one recorded observation of this species in the vicinity. The observation occurred in 2016 approximately 7.5 miles southwest of the Project area.
Bakersfield Legless Lizard *(Anniella grinnelli)*	CSC	General habitat is sandy with herbaceous cover and scattered shrubs in grassland, sand/dune, or chaparral. Burrows in soil. Fallen logs, woody debris, and leaf litter under trees and bushes in sunny areas often indicate suitable habitat.	**Absent.** The Project area is outside of the accepted distribution range of this species. Suitable habitat for *Anniella ssp.* was not observed during the field survey.
blunt-nosed leopard lizard *(Gambelia sila)*	FE, CE, CFP	Inhabits semi-arid grasslands, alkali flats, low foothills, canyon floors, large washes, and arroyos, usually on sandy, gravelly, or loamy substrate, sometimes on hardpan. Often found where there are abundant rodent burrows in dense vegetation or tall grass. Cannot survive on lands under cultivation. Known to bask on kangaroo rat mounds and often seeks shelter at the base of shrubs, in small mammal burrows, or in rock piles. Adults may excavate shallow burrows, but rely on deeper pre-existing rodent burrows for hibernation and reproduction.	**Absent.** Habitats of the Project area are disturbed, developed, and/or densely vegetated with non-native grasses, forbs, and shrubs and therefore unsuitable for this species.

Species	Status	Habitat	Occurrence on Project Site
burrowing owl (*Athene cunicularia*)	CSC	Resides in open, dry annual or perennial grasslands, deserts, and scrublands with low growing vegetation. Nests underground in existing burrows created by burrowing mammals, most often ground squirrels.	**Unlikely.** Suitable foraging and breeding habitat was not observed within Project areas during the field survey. The presence of large trees makes the majority of the Project area unsuitable for this species, and many of the vacant lots and fallow fields observed were covered in dense vegetation, which is incompatible for this species. This species is known to occur in grasslands, along embankments, and along the perimeter of dairy forage fields west of State Route 99. There are no recorded observations of this species in the vicinity of the Project, east of State Route 99. At most, this species could conceivably winter in burrows along canal banks or within urban vacant lots, but would not be expected to nest or forage within or adjacent to proposed impact areas.
California red-legged frog *(Rana draytonii)*	FT, CSC	Inhabits perennial rivers, creeks, and stock ponds with vegetative cover within the Coast Range and northern Sierra foothills.	**Absent.** The Project area does not provide suitable habitat for this species and is outside of its current known range. There have been no recorded observations of this species in the vicinity of the Project.
coast horned lizard *(Phrynosoma blainvillii)*	CSC	Found in grasslands, coniferous forests, woodlands, and chaparral, primarily in open areas with patches of loose, sandy soil and low-lying vegetation in valleys, foothills, and semi-arid mountains. Frequently found near ant hills and along dirt roads in lowlands along sandy washes with scattered shrubs.	**Absent.** Habitats of the Project area are disturbed, developed, or contain dense non-native grasses, forbs, and shrubs, and are therefore unsuitable for this species. There have been several reported occurrences of this species in the vicinity, but none north of Deer Creek or east of State Route 99.
conservancy fairy shrimp *(Branchinecta conservatio)*	FE	Endemic to the grasslands of the northern two-thirds of the Central Valley. Found in large, turbid pools.	**Absent.** Vernal pools are absent from the Project areas. While areas of seasonal and ephemeral pooling, such as roadside tire ruts may be present, these areas are subject to frequent disturbance associated with agricultural production and/or urban development and therefore generally unsuitable for this species.
Delta smelt *(Hypomesus transpacificus)*	FT, CE	This pelagic and euryhaline species is Endemic to the Sacramento-San Joaquin River Delta, upstream through Contra Costa, Sacramento, San Joaquin, and Solano Counties.	**Absent.** Suitable perennial aquatic habitat for this species is absent from the Project area and surrounding lands.

Species	Status	Habitat	Occurrence on Project Site
giant gartersnake ***(Thamnophis gigas)***	FT, CT	Occurs in marshes, sloughs, drainage canals, irrigation ditches, rice fields, and adjacent uplands. Prefers locations with emergent vegetation for cover and open areas for basking. This species uses small mammal burrows adjacent to aquatic habitats for hibernation in the winter and to escape from excessive heat in the summer.	**Absent.** Habitats required by this species are absent from the Project area and surrounding lands. The Project is outside of the known current range of this species.
Kern Brook Lamprey ***(Entosphenus hubbsi)***	CSC	Silty backwaters of large rivers in the foothills region. Requires slight flow and shallow pools with sand, gravel, rubble, and mud substrate in areas where summer temperatures rarely exceed 77 degrees Fahrenheit.	**Absent.** Suitable habitat is absent from the Project area.
loggerhead shrike (*Lanius ludovicianus*)	CSC	Frequents open habitats with sparse shrubs and trees, other suitable perches, bare ground, and low herbaceous cover. In the Central Valley, nests in riparian areas, desert scrub, and agricultural hedgerows.	**Unlikely.** Nesting, foraging, and perching habitat onsite and in the vicinity is marginal, at best. The only recorded observation of this species in the vicinity was reported over 100 years ago approximately 8.5 miles north of the Project area.
mountain plover ***(Charadrius montanus)***	CSC	Breeds on open plains at moderate elevations. Winters in short-grass plains and fields, plowed or fallow fields, and sandy deserts. Prefers flat, bare ground with burrowing rodents.	**Unlikely.** Suitable habitat was not observed during the field survey. The nearest recorded observation was reported in 2002 approximately 12.5 miles west of the Project area.
Nelson's antelope squirrel ***(Ammospermophilus nelsoni)***	CT	Found in the western San Joaquin Valley on dry, sparsely vegetated loamy soils. Relies heavily on existing small mammal burrows.	**Absent.** Suitable habitat is absent from the Project area.
San Joaquin coachwhip ***(Masticophis flagellum ruddocki)***	CSC	Found in open dry habitats with little or no tree cover in valley grassland and saltbush scrub communities in the San Joaquin Valley. Relies on mammal burrows for refuge and oviposition sites.	**Absent.** Suitable habitat is absent from the Project area.

Species	Status	Habitat	Occurrence on Project Site
San Joaquin kit fox (*Vulpes macrotis mutica*)	FE, CT	Underground dens with multiple entrances in alkali sink, valley grassland, and woodland in valleys and adjacent foothills.	**Unlikely.** The highly disturbed habitats of the Project area and fragmentation of the surrounding lands are unsuitable for this species. The Project is located approximately 40 miles north-northeast of the nearest known core population in western Kern County. Although some populations of San Joaquin kit fox in other parts of California have adapted to an urbanized environment, modern kit fox occurrences are locally scarce. At most, this species could conceivably pass through the Project area during dispersal movements. Of the 66 recorded regional occurrences of this species, only 6 of these records were reported within the past 25 years. All 6 of the recent sightings occurred west of State Route 99 either within or adjacent to grassland or saltbush scrub habitats and in the vicinity of either Pixley National Wildlife Refuge or Allensworth Ecological Reserve (California Department of Fish and Wildlife, 2019). The nearest mapped patch of highly suitable habitat is located within Pixley National Wildlife Refuge (Cypher, Phillips, & Kelly, Quantity and Distribution of Suitable Habitat for Endangered San Joaquin Kit Foxes: Conservation Implications, 2013), approximately 5 miles west of the Project area. However, State Route 99 would likely preclude eastward movement of a San Joaquin kit fox into the Project area. In the past 25 years, there have only been two recorded observations east of State Route 99 in Tulare County, and both occurred more than 20 miles north of the Project area.
Swainson's hawk (*Buteo swainsoni*)	CT	Nests in large trees in open areas adjacent to grasslands, grain or alfalfa fields, or livestock pastures suitable for supporting rodent populations.	**Possible.** Swainson's hawks are relatively common in this portion of Tulare County and there are known nest trees within 5 miles of the Project area. This species has been recorded nesting along Deer Creek and within eucalyptus trees along State Route 99. This species could potentially nest in eucalyptus trees in the vicinity of the Project and could forage on rodents in vacant lots and lands developed into agricultural uses.

Species	Status	Habitat	Occurrence on Project Site
Tipton kangaroo rat *(Dipodomys nitratoides nitratoides)*	FE, CE	Burrows in soil. Often found in grassland and shrubland.	**Absent.** Habitats of the Project area are disturbed, developed, and/or fragmented and therefore are considered unsuitable for this species. There are several recorded observations of this species in the vicinity; however, these typically occur within grassland or alkali scrub habitats of Pixley National Wildlife Refuge, Allensworth Ecological Reserve, and other undisturbed lands west of State Route 99. Lands east of State Route 99, including the Project area, have been developed into urban or intensive agriculture and are generally unsuitable for this species.
tricolored blackbird *(Agelaius tricolor)*	CCE, CSC	Nests colonially near fresh water in dense cattails or tules, or in thickets of riparian shrubs. Forages in grassland and cropland. Large colonies are often found on dairy farm forage fields.	**Unlikely.** The Project is located within the historic and current breeding range of this species. Suitable nesting habitat was not observed onsite or within 500 feet during the field survey. Colonies of tricolored blackbird have been reported and monitored in Tulare County; however, there are no known extant colonies east of State Route 99 (Colibri Ecological Consulting, LLC, 2017) (Colibri Ecological Consulting, LLC, 2018) (California Department of Fish and Wildlife, 2019).
vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	Occupies vernal pools, clear to tea-colored water, in grass or mud-bottomed swales, and basalt depression pools.	**Absent.** Vernal pools are absent from the Project areas. While areas of seasonal and ephemeral pooling, such as roadside tire ruts may be present, these areas are subject to frequent disturbance associated with agricultural production and/or urban development and therefore generally unsuitable for this species.
western snowy plover *(Charadrius alexandrinus nivosus)*	FT, CSC	Typically found on sandy beaches, salt pond levees, and shores of large alkali lakes.	**Absent.** Suitable nesting habitat for this species is absent from the Project area and surrounding lands. The nearest recorded observation of this species was reported in 1987 approximately 12.5 miles west of the Project area.

Species	Status	Habitat	Occurrence on Project Site
western spadefoot (*Spea hammondii*)	CSC	Prefers open areas with sandy or gravelly soils, in a variety of habitats including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Vernal pools or temporary wetlands, lasting a minimum of three weeks, which do not contain bullfrogs, fish, or crayfish are necessary for breeding.	**Unlikely.** The highly disturbed habitats of the Project area and surrounding lands are unsuitable for this species. Temporary wetland or vernal pool habitat suitable for breeding is absent from the Project area and potential aestivation habitat is marginal, at best.

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

Species	Status	Habitat	Occurrence on Project Site
alkali mariposa-lily *(Calochortus striatus)*	CNPS 1B	Found in the Sierra Nevada Foothills, the Desert Mountains and the Mojave Desert in alkaline meadows and creosote-bush scrub in shadescale scrub, chaparral, and riparian communities at elevations between 2625 feet and 4600 feet. Usually occurs in wetlands, but occasionally found in non-wetlands. Blooms April – June.	**Absent.** Suitable habitat is absent from the Project area.
brittlescale (*Atriplex depressa*)	CNPS 1B	Found in the San Joaquin Valley and Sacramento Valley in alkali or clay soils in shadescale scrub, valley grassland, alkali sink, and sometimes riparian communities at elevations below 1050 feet. Equally likely to occur in wetlands and non-wetlands. Blooms June – October.	**Absent.** The disturbed and developed habitats of the Project area are unsuitable for this species.
California alkali grass (*Puccinellia simplex*)	CNPS 1B	Found in the San Joaquin Valley and other parts of California in saline flats and mineral springs within valley grassland and wetland-riparian communities at elevations below 3000 feet. Blooms March – May.	**Absent.** Suitable habitat is absent from the Project area.
California jewelflower *(Caulanthus californicus)*	FE, CE, CNPS 1B	Found in the San Joaquin Valley and Western Traverse Ranges. Occurs on flats and slopes, generally in non-alkaline grassland at elevations between 230 feet and 3280 feet. Blooms February – April.	**Absent.** The disturbed and developed habitats of the Project area are unsuitable for this species. This species is thought to be extirpated from the region due to conversion of natural habitat to intensive agriculture.
Coulter's goldfields *(Lasthenia glabrata ssp. coulteri)*	CNPS 1B	Found in salt marshes, playas, and vernal pools at elevations below 3200 feet. Blooms April – May.	**Absent.** Suitable habitat is absent from the Project area.

Species	Status	Habitat	Occurrence on Project Site
Earlimart orache (*Atriplex cordulata var. erecticaulis*)	CNPS 1B	Found in the San Joaquin Valley in saline or alkaline soils, within valley or foothill grasslands, at elevations below 325 feet. Equally likely to occur within wetlands and non-wetlands. Blooms August – September.	**Unlikely.** The disturbed and developed habitats of the Project area are generally unsuitable for this species. Although this species has been observed in ruderal lots abutting agricultural lands in the vicinity of Earlimart (California Department of Fish and Wildlife, 2019), frequent disturbance associated with livestock, traffic, and agricultural activities within the Project area would make it extremely unlikely for a population of this plant to persist.
Kern Mallow *(Eremalche parryi ssp. kernensis)*	CNPS 1B, FE	Occurs in the San Joaquin Valley and the Inner South Coast Ranges in eroded hillsides and alkali flats in shadescale scrub and valley grassland communities at elevations between 325 feet and 3275 feet. Blooms March – May.	**Absent.** Suitable habitat is absent from the Project area. An observation of this species has not been reported in the vicinity of the Project in over 30 years.
lesser saltscale (*Atriplex minuscula*)	CNPS 1B	Found in the San Joaquin Valley in playas; sandy, alkaline soils in shadescale scrub, valley grassland, and alkali sink communities at elevations below 300 feet. Blooms April – October.	**Absent.** The disturbed and developed habitats of the Project area are unsuitable for this species.
Lost Hills crownscale *(Atriplex coronata var. vallicola)*	CNPS 1B	Found in the San Joaquin Valley in chenopod scrub, valley and foothill grassland, and vernal pools at elevations below 1400 feet. Typically found in dried ponds on alkaline soils. Blooms April – September.	**Absent.** Suitable habitat is absent from the Project area.
recurved larkspur (*Delphinium recurvatum*)	CNPS 1B	Found in the San Joaquin Valley and other parts of California. Occurs in poorly drained, fine, alkaline soils in grassland at elevations between 100 feet and 1965 feet. Most often found in non-wetlands, but occasionally found in wetlands. Blooms March – June.	**Absent.** The disturbed and developed habitats of the Project area are unsuitable for this species.

Species	Status	Habitat	Occurrence on Project Site
San Joaquin woollythreads *(Monolopia congdonii)*	FE, CNPS 1B	Occurs in the San Joaquin Valley in sandy soils in shadescale shrub and grasslands at elevations between 300 feet and 2300 feet. Found primarily in non-wetlands, but occasionally found in wetlands. Blooms February – May.	**Absent.** The disturbed and developed habitats of the Project area are unsuitable for this species. The only recorded regional occurrence of this species corresponded to a historic (1881) collection at an unknown location near Deer Creek (California Department of Fish and Wildlife, 2019). Approximately half of historical occurrences of this species have been extirpated (California Native Plant Society, 2019). Both CNDDB and CNPS suggest that the Tulare County population is possibly extirpated.
spiny-sepaled button-celery (*Eryngium spinosepalum*)	CNPS 1B	Found in the Sierra Nevada Foothills and portions of the San Joaquin Valley. Occurs in vernal pools, swales, and roadside ditches at elevations between 325 feet and 4160 feet in valley grassland, freshwater wetlands, and riparian communities. Blooms April – July.	**Absent.** Suitable habitat is absent from the Project area.
subtle orache (*Atriplex subtilis*)	CNPS 1B	Found in the San Joaquin Valley in saline depressions at elevations below 230 feet. Blooms June – October.	**Absent.** Suitable habitat is absent from the Project area.
vernal pool smallscale *(Atriplex persistens)*	CNPS 1B	Found in alkaline vernal pools throughout the San Joaquin Valley at elevations between 10-377 feet. Blooms June – September.	**Absent.** Suitable habitat is absent from the Project area.

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
FPE	Federally Endangered (Proposed)	CCT	California Threatened (Candidate)
FPT	Federally Threatened (Proposed)	CFP	California Fully Protected
FC	Federal Candidate	CSC	California Species of Special Concern
		CWL	California Watch List
		CCE	California Endangered (Candidate)
		CR	California Rare

CNPS LISTING

1A	Plants Presumed Extinct in California	2	Plants Rare, Threatened, or Endangered in California, but more common elsewhere
1B	Plants Rare, Threatened, or Endangered in California and 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 location, 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 state and/or federally listed as threatened or endangered 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 *California Environmental Quality Act, Statute and Guidelines* (AEP 2019), "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 (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, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

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

Projects located on federal lands or receiving federal funding (in this case this Project is receiving federal funding administered by the California Water Resources Control Board's Drinking Water State Revolving Fund, ("SRF")) are subject to the provisions of NEPA. The purpose of NEPA is to assess the adverse, beneficial or neutral effects of a proposed action on the human environment, assess the significance of those effects, and recommend measures, that if implemented, would mitigate adverse effects. As used in NEPA, a determination that certain effects on the human environment are "significant" requires considerations of both context and intensity (CFR 1508.27).

Context means that the significance of an action must be analyzed in terms of the affected environment in which a proposed action would occur. For the purposes of assessing effects of an action on biological resources, the relevant context is often local, which means the analysis requires a comparison of the action area's biological resources to the biological resources of the local area. However, the analysis may also require a comparison of the action area's biological resources with the biological resources of an entire region.

Intensity refers to the severity of impact. In considering intensity of impact to biological resources, it is necessary to address the unique qualities of wetlands and ecologically critical areas that may be beneficially or adversely affected, the degree to which the action will be controversial, the degree to which the effects will be controversial, the degree to which the effects will be uncertain, the degree to which the action will establish a precedent for future actions with potentially significant effects, and the potential for the action to result in cumulatively significant effects.

The effects of an action on some biological resources are generally considered to be "significant." An action that adversely affects federally listed threatened or endangered species, waters of the United States, or migratory movements of fish and wildlife are some examples of significant effects.

NEPA requires disclosure of feasible mitigation measures for the effects of an action on the environment. Suitable measures include the following:

a) Avoidance of the effect by not taking a certain action or parts of an action.
b) Mitigation of the effect by limiting the degree or magnitude of the action and its implementation.
c) Rectifying the effect by repairing, rehabilitating, or restoring the affected environment.
d) Reducing or eliminating the effect over time by preservation and maintenance operations throughout the life of the action.
e) Compensating for the effect by replacing or providing substitute resources or environments.

This report identifies likely effects of an action, identifies those that may be considered significant pursuant to the provisions of NEPA, and provides mitigation measures to avoid adverse effects to biological resources.

3.2 Relevant Goals, Policies, and Laws

3.2.1 Tulare County General Plan

The Tulare County General Plan (2012) sets forth the following goals and policies to protect biological resources and with which the Project is not in conflict with:

- The County shall encourage the planting of native trees, shrubs, and grasslands in order to preserve the visual integrity of the landscape, provide habitat conditions suitable for native vegetation and wildlife, and ensure that a maximum number and variety of well-adapted plants are maintained.
- The County shall protect riparian areas through habitat preservation, designation as open space or recreational land uses, bank stabilization, and development controls.
- The County shall support the preservation and management of wetland and riparian plant communities for passive recreation, groundwater recharge, and wildlife habitats.
- The County shall review development proposals against the California Natural Diversity Data Base, and other available studies provided by the California Department of Fish and Game, and consult, as appropriate, with the California Department of Fish and Game and U.S. Fish and Wildlife to assist in identifying potential conflicts with sensitive natural communities or special status species.
- On project sites that have the potential to contain species of local or regional concern, sensitive natural communities or special-status species, the County shall require the project applicant to have the site surveyed and mapped by a qualified biologist. A report on the finding of this survey shall be submitted to the County as part of the application and environmental review process.
- The County shall continue efforts to maintain and enlarge wetland preserves, which provide waterfowl habitat necessary to the maintenance of the flyway route through the valley. Such wetlands should also be protected through stormwater management programs, erosion control, and public education.

3.2.2 Teviston Hamlet Plan

The Teviston Hamlet Plan does not contain any goals or policies related to biological resources.

3.2.3 Threatened and Endangered Species

Permits may be required from the USFWS and/or CDFW if activities associated with a Project have the potential to result in the "take" of a species listed as threatened or endangered under the federal and/or state Endangered Species Acts. "Take" is defined by the state of California 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 federal Endangered Species Act to include "harm" (16 USC, Section 1532(19), 50 CFR, Section 17.3). The CDFW and the USFWS are responding agencies under CEQA. Both agencies review CEQA documents in order to determine the adequacy of their treatment of endangered species issues and to make project-specific recommendations for their conservation.

3.2.4 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 federal Endangered Species Act (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.

3.2.5 Migratory Birds

The Federal 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 actually 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 bird covered by the MBTA (Section 3513), as well as any other native non-game bird (Section 3800).

3.2.6 Birds of Prey

Birds of prey are protected in California under provisions of 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 federal Bald and Golden Eagle Protection Act (16 USC 668), which makes it unlawful to kill birds or their eggs.

3.2.7 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.

3.2.8 Wetlands and other "Jurisdictional Waters"

Natural drainage channels and adjacent wetlands may be considered "waters of the United States" or "jurisdictional waters" subject to the jurisdiction of the U.S. Army Corps of Engineers (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:

- 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;
- All interstate waters including interstate wetlands;
- 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;
- Tributaries of waters identified in paragraphs (a)(1)-(4) (i.e. the bulleted items above).

As determined by the United States Supreme Court in its 2001 *Solid Waste Agency of Northern Cook County v. U.S. 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 U.S. 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 Environmental Protection Agency (EPA) 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 U.S. under the authority of Section 404 of the Clean Water Act. 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 U.S. 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 result in no net loss of wetland functions or

values. No permit can be issued until the Regional Water Quality Control Board (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 State Water Resources Control Board 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 U.S. 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 U.S., 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 or more acres 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 U.S. 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 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 identified as candidate, sensitive, or special status species in local or regional plans policies or regulations by CDFW or the USFWS that have the potential to be impacted by Project-related construction activities are identified below with corresponding mitigation measures.

As mentioned in **Section 1.1**, the Project involves well site improvements and upgrades to meters along the existing distribution system. Well site improvements will involve the use of heavy equipment and construction activities with potential to result in disturbance to sensitive wildlife in the vicinity. However, potential disturbance related to meter upgrade activities is anticipated to be minimal in nature and short-term in duration. Existing meter boxes are typically located in the front or back yard of a residence. Upgrading the existing 136 metered connections will involve hand-excavation to remove the old meter and subsequent placement with a new meter in the same location. On average, each meter replacement is expected to take approximately 20-30 minutes and will utilize a crew of two to three workers. At this rate, the District anticipates completion of approximately 20-meter upgrades per day. The meter upgrades are not anticipated to involve the use of heavy machinery or loud, motorized equipment. Furthermore, the meters are all located in areas subject to frequent disturbance associated with urban dwellings, agricultural production, and vehicular traffic. Therefore, in the unlikely event that a bird was nesting in the vicinity of a meter upgrade site, this individual would likely be acclimated to a certain level of disturbance. Based on the description of the proposed activities related to the meter upgrades, it seems unlikely that this part of the Project would result in a significant disturbance to wildlife in the vicinity, including nesting birds.

3.3.1 Project-Related Impacts to Nesting Raptors, Migratory Birds, and Special Status Birds (Including Swainson's Hawk)

Portions of the Project area, specifically the ruderal, vacant parcels, livestock enclosures, and agricultural lands, contain marginal foraging habitat for several avian species, including the Swainson's hawk. The proposed impact areas do not contain trees or shrubs, and the Project does not involve vegetation removal. However, there are eucalyptus and other ornamental trees in the vicinity large enough to house a raptor nest, and smaller avian species may nest within ornamental trees and shrubs in the vicinity. Ground-nesting birds, such as the killdeer could nest on the bare ground, and swallows could nest within buildings or structures in the vicinity.

Swainson's hawks are common in this portion of Tulare County, and there are known nest trees within five miles of the Project site. In the absence of preferred habitat, especially within the Central Valley, Swainson's hawks often nest within eucalyptus trees lining highways, and several raptor species nest within ornamental Mexican fan palms. Although nesting habitat onsite and in the vicinity is not ideal due to the absence of native riparian trees, and foraging habitat is suboptimal, raptors, such as the special status Swainson's hawk could conceivably nest or forage near Project areas. In the event that a Swainson's hawk or other avian species is foraging within the Project site during construction activities, the individual would be expected to fly away from disturbance they encounter, subsequently eliminating the risk of injury or mortality while foraging.

Due to the developed and ruderal nature of the lands, nesting and foraging habitat for raptors, resident and migratory birds, and special status birds within the Project area is marginal, at best. Habitat of higher foraging and nesting value is regionally abundant. Furthermore, the Project does not involve vegetation removal or land use conversion. Therefore, implementation of the Project would not result in a loss of nesting or foraging habitat.

As mentioned above, the meter replacement activities are not expected to result in a significant disturbance to nesting birds. However, birds nesting within the two well sites could be injured or killed by construction activities. Furthermore, construction activities could disturb birds nesting within or adjacent to the well sites, resulting in nest abandonment. Project construction activities that adversely affect the nesting success of raptors and migratory birds or result in the mortality of individual birds constitutes a violation of State and federal laws and is considered a significant impact under CEQA and NEPA.

Nesting bird season is generally accepted as February 1 through August 31; however, Swainson's hawk nesting season is generally accepted as March 1 through September 15. For simplicity, these timeframes have been combined.

Implementation of the following measures will reduce potential Project-related impacts to nesting raptors, migratory birds, and special status birds, including Swainson's hawk to a less than significant level under CEQA and NEPA, and will ensure compliance with State and federal laws protecting these avian species.

Mitigation. The following measures will be implemented prior to the start of construction **at the well sites**:

> ***Mitigation Measure 3.3.1a (Avoidance):*** The Project's construction activities shall occur, if feasible, between September 16 and January 31 (outside of nesting bird season) in an effort to avoid impacts to nesting birds.
>
> ***Mitigation Measure 3.3.1b (Pre-construction Surveys):*** If activities must occur within nesting bird season (February 1 to September 15), a qualified biologist shall conduct pre-construction surveys for active nests within 30 days prior to the start of construction. The survey shall include the proposed work area and surrounding lands within 0.5 mile. If no active nests are observed, no further mitigation is required. Raptor nests are considered "active" upon the nest-building stage.
>
> ***Mitigation Measure 3.3.1c (Establish Buffers):*** On discovery of any active nests near work areas, the biologist shall determine appropriate construction setback distances based on applicable CDFW and/or USFWS guidelines and/or the biology of the species in question. Construction buffers shall

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

3.4 Less Than Significant Project-Related Impacts

3.4.1 Project-Related Impacts to Special Status Plant Species

14 special status plant species have been documented in the Project vicinity, including alkali mariposa-lily (*Calochortus striatus*), brittlescale (*Atriplex depressa*), California alkali grass (*Puccinellia simplex*), California jewelflower (*Caulanthus californicus*), Coulter's goldfields (*Lasthenia glabrata ssp. coulteri*), Earlimart orache (*Atriplex cordulata var. erecticaulis*), Kern mallow (*Eremalche parryi ssp. kernensis*), lesser saltscale (*Atriplex miniscula*), Lost Hills crownscale (*Atriplex coronata var. vallicola*), recurved larkspur (*Delphinium recurvatum*), San Joaquin woollythreads (*Monolopia congdonii*), spiny-sepaled button-celery (*Eryngium spinosepalum*), subtle orache (*Atriplex subtilis*), and vernal pool smallscale (*Atriplex persistens*). As explained in **Table 2**, all of the aforementioned plant species are absent from or unlikely to occur within the Project area due to past and ongoing disturbance and/or the absence of suitable habitat. Therefore, implementation of the Project will have no effect on individual plants or regional populations of these special status plant species. Mitigation measures are not warranted.

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

Of the 21 regionally occurring special status species, 20 are considered absent from or unlikely to occur within the Project area due to past or ongoing disturbance and/or absence of suitable habitat. As explained in **Table 1**, the following 13 species were deemed absent from the Project area: Bakersfield legless lizard (*Anniella grinnelli*), blunt-nosed leopard lizard (*Gambelia sila*), California red-legged frog (*Rana draytonii*), coast horned lizard (*Phrynosoma blainvillii*), conservancy fairy shrimp (*Branchinecta conseratio*), Delta smelt (*Hypomesus transpacificus*), giant garter snake (*Thamnophis gigas*), Kern Brook lamprey (*Entosphenus hubbsi*), Nelson's antelope squirrel (*Ammospermophilus nelsoni*), San Joaquin coachwhip (*Masticophis flagellum ruddocki*), Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*), vernal pool fairy shrimp (*Branchinecta lynchi*), and western snowy plover (*Charadrius alexandrinus nivosus*). The following 7 species were deemed unlikely to occur within the Project area: American badger (*Taxidea taxus*), burrowing owl (*Athene cunicularia),* loggerhead shrike *(Lanius ludovicianus),* mountain plover (*Charadrius montanus*), San Joaquin kit fox (*Vulpes macrotis mutica*), tricolored blackbird (*Agelaius tricolor*), and western spadefoot (*Spea hammondii*). Since it is highly unlikely that these species would occur onsite, implementation of the Project should have no impact on these 20 special status species through construction mortality, disturbance, or loss of habitat. Mitigation measures are not warranted.

3.4.3 Project-Related Impacts to Jurisdictional Waters, Wetlands, Navigable Waters, Wild and Scenic Rivers, or other Water Features, and Riparian Habitat

Potential Project-related impact areas include the two developed well sites and at meter sites along the distribution system. Man-made canals, irrigation ditches, ponding basins, and a seasonal pond were observed within the surveyed portion of Teviston. However, the Project does not propose impacts or discharge to any surface waters or riparian habitat. Navigable waters and Wild and Scenic Rivers are absent from the community of Teviston. For all of these reasons, implementation of the Project should have no impact on jurisdictional waters, wetlands, navigable waters, wild and scenic rivers, or other water features, and riparian habitat. Furthermore, the Project will not impact any bodies of water and will not require compliance with the Fish and Wildlife Coordination Act. Mitigation measures are not warranted.

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

As discussed in **Section 2.7**, the Project site does not contain features likely to serve as a wildlife movement corridor. Therefore, the Project will not impact wildlife movement corridors or impeded the movement of any wildlife species.

If the Project were to negatively affect the success of a native bat maternity roost, this would be considered a potentially significant impact under CEQA. However, developed habitats of the well sites and meter locations are generally unsuitable for roosting bats due to ongoing disturbance and lack of potential roost sites. Therefore, bats would likely be deterred from forming maternity roosts adjacent to the disturbed Project areas. Furthermore, as discussed in **Section 3.3.1** above, activities related to the meter upgrades along the distribution system are not expected to result in a significant increase in disturbance or a change in the type of disturbance typically experienced onsite, and therefore would not be likely to result in disturbance of roosting bats or nesting birds. Potential impacts to nesting and migratory birds have been discussed above. Implementation of the Project will not result in impacts to wildlife movement corridors or native nursery sites. Additional mitigation measures are not warranted.

3.4.5 Project-Related Impacts to Critical Habitat

Designated critical habitat is absent from the Project area and surrounding lands. Therefore, there will be no impact to critical habitat, and mitigation is not warranted.

3.4.6 Local Policies or Habitat Conservation Plans

Proposed Project design appears to be consistent with the goals and policies of the Tulare County General Plan. There are no known habitat conservation plans in the Project vicinity. Mitigation is not warranted.

3.4.7 Coastal Zone and Coastal Barriers Resources Act

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

3.4.8 Project-Related Impact to Essential Fish Habitat

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

3.5 Section 7 Determinations

In addition to the effects analysis performed in **Section 2 and 3** of this document, **Table 3** summarizes Project effect determinations for Federally Listed Species found on the USFWS IPaC list generated on November 7, 2019 (**Appendix C**), in accordance with Section 7 of the Endangered Species Act.

Table 3. Section 7 Determinations

Species	Determination	Rationale for Determination
blunt-nosed leopard lizard (*Gambelia sila*)	**No effect**	Habitat absent.
California red-legged frog (*Rana draytonii*)	**No effect**	Habitat absent. Project area is outside of the known distribution range of this species.
conservancy fairy shrimp *(Branchinecta conservation*)	**No effect**	Habitat absent.
Delta smelt (*Hypomesus transpacificus*)	**No effect**	Habitat absent. The Project does not include lake or streambed altering activities. Therefore, there is no potential for indirect downstream effects.
giant gartersnake (*Thamnophis gigas*)	**No effect**	Habitat absent.
San Joaquin kit fox (*Vulpes macrotis mutica*)	**No effect**	Habitat absent. Lack of observations in the vicinity (east of State Route 99).
Tipton kangaroo rat *(Dipodomys nitratoides nitratoides*)	**No effect**	Habitat absent.
vernal pool fairy shrimp (*Branchinecta lynchi*)	**No effect**	Habitat absent.

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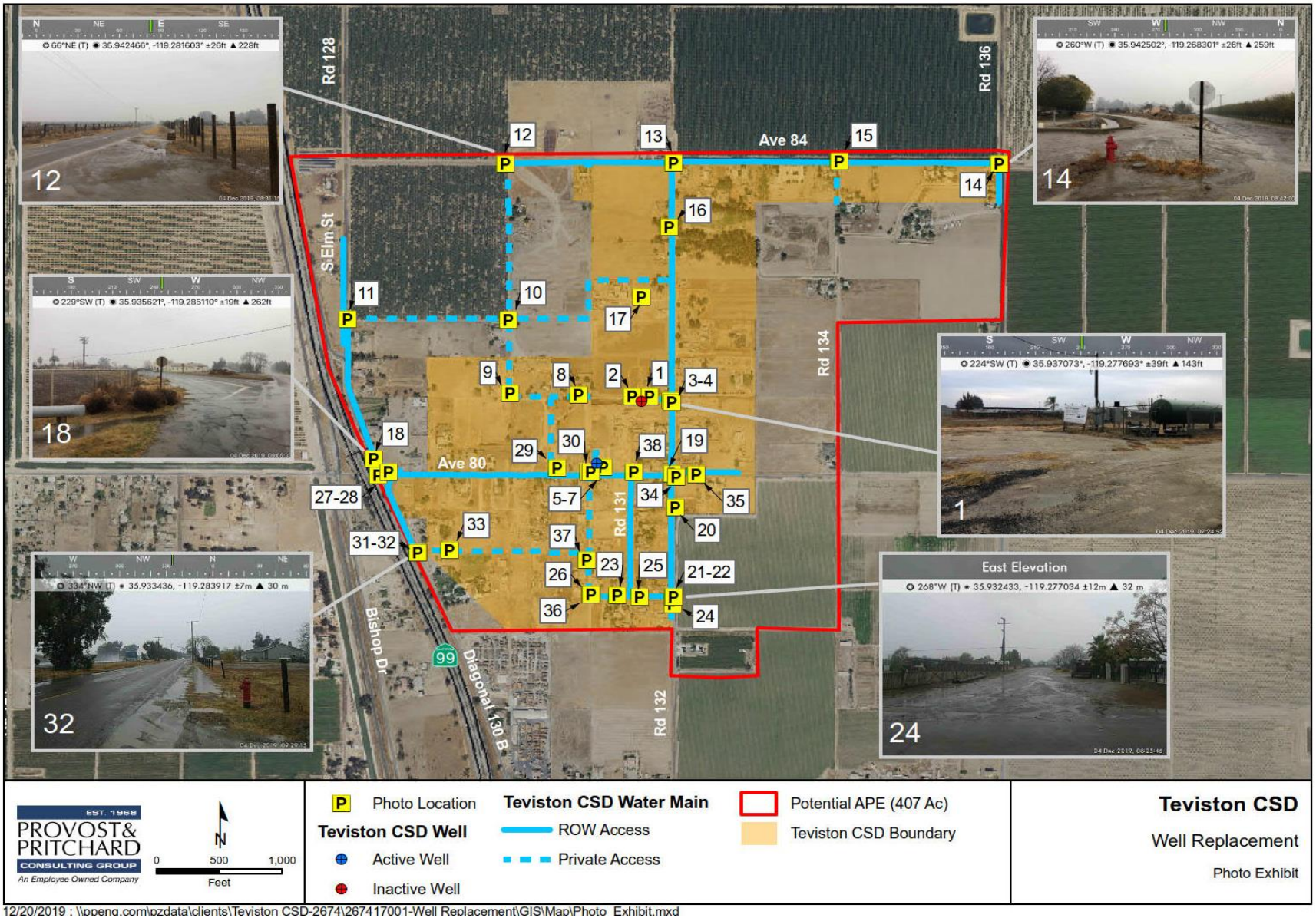
Appendix A. Selected Photographs of the Project Site



Photograph Location Map

Photograph 1: Overview of the North Well site.

Photograph 2: Overview of the North Well site, facing Rd 132.

Photograph 3: Overview of the ruderal, vacant lot along the Rd 132 alignment, adjacent to the existing North Well site.

Photograph 4: Overview of the Rd 132 alignment, from the North Well site, facing south.

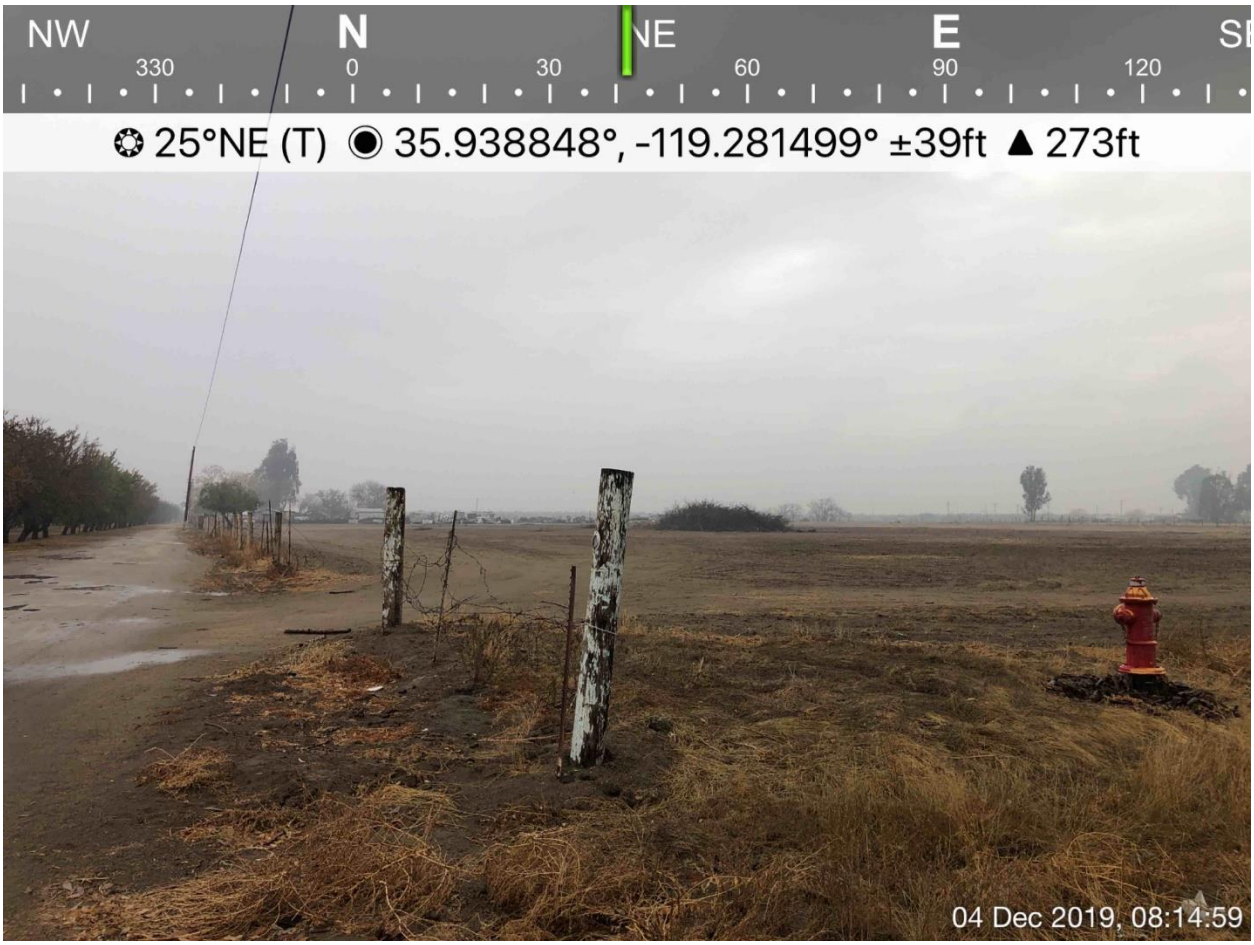
Photograph 5: Overview of the South Well site.

Photograph 6: Overview of the South Well site.

Photograph 7: Overview of the Ave 80 alignment, from the South Well site, facing Rd 132.

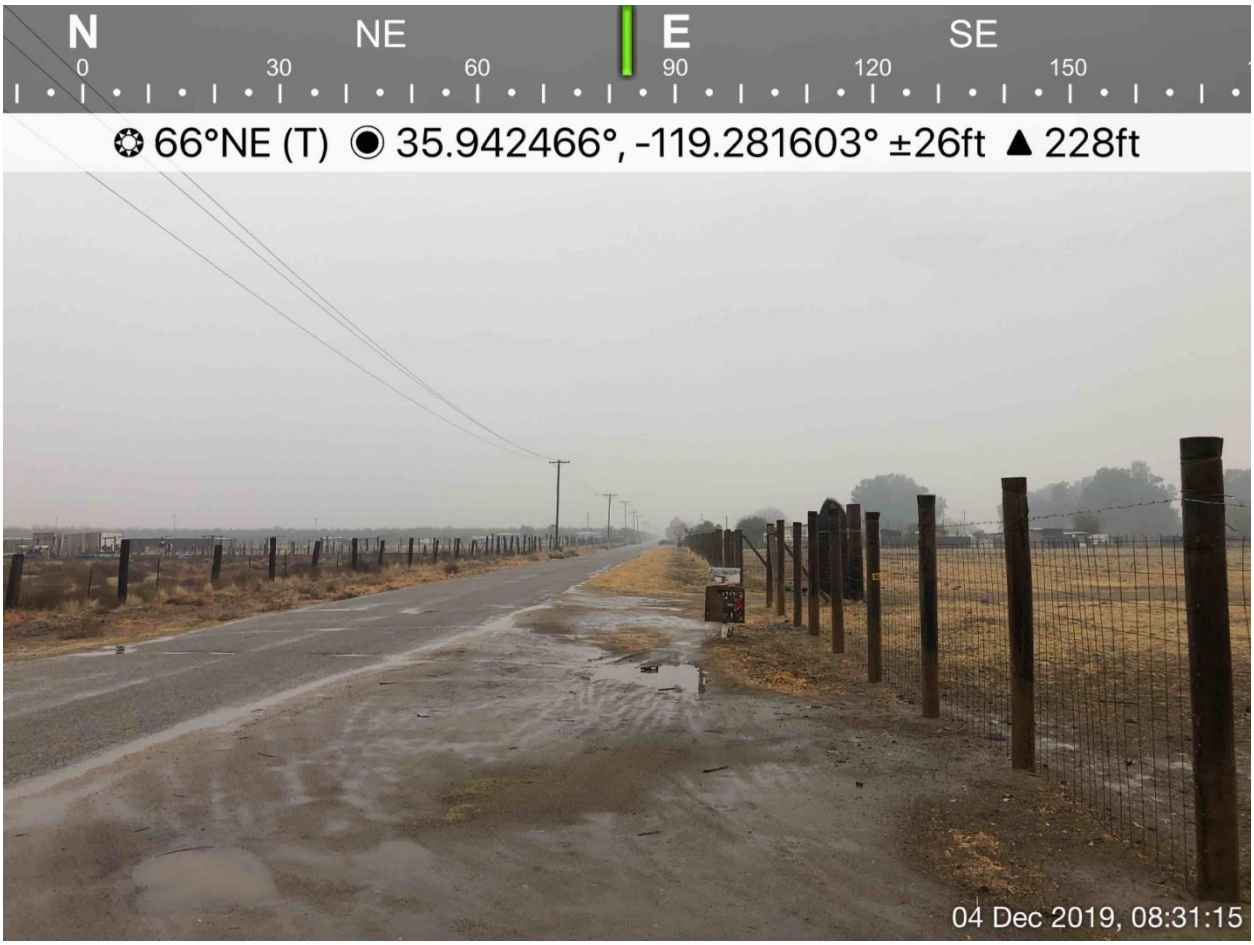
Photograph 8: Overview of the alignment west of the North Well Site, facing State Route 99.

Photograph 9: Overview of the alignment east of Elm St and west of Rd 132, facing north, towards Ave 84.



Photograph 10: Overview of the alignment east of Elm St, west of Rd 132, north of the North Well site, and south of Ave 84. A recently-disked, ruderal lot with a large slash pile is visible to the left and an orchard is visible to the right. Rodent bait stations were observed within the orchard.

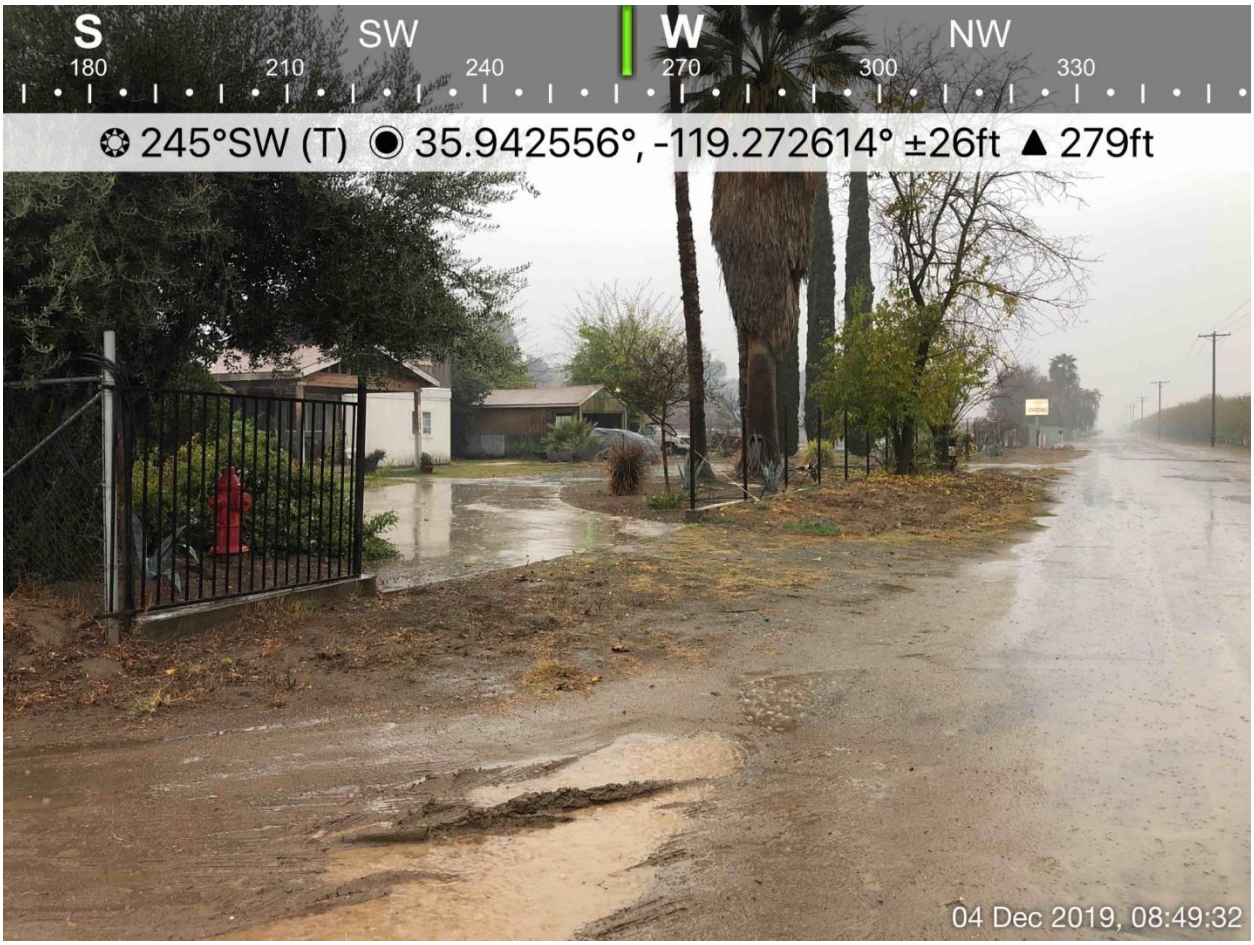
Photograph 11: Overview of the alignment along Elm St. State Route 99 is visible on the left.



Photograph 12: Overview of the alignment along Ave 84.

Photograph 13: Overview of Ave 84 alignment.

Photograph 14: Overview of the alignment at the Ave 84 and Rd 136 intersection. A canal is visible in this photograph. No burrows were observed within the banks. Rodent bait stations were observed within adjacent orchard and vineyard.



Photograph 15: Overview of Rd 132 alignment.

Photograph 16: Overview of pond and grove of eucalyptus along Rd 132.

Photograph 17: Overview of a typical residence and service connection (meter upgrade site) along the water distribution system.

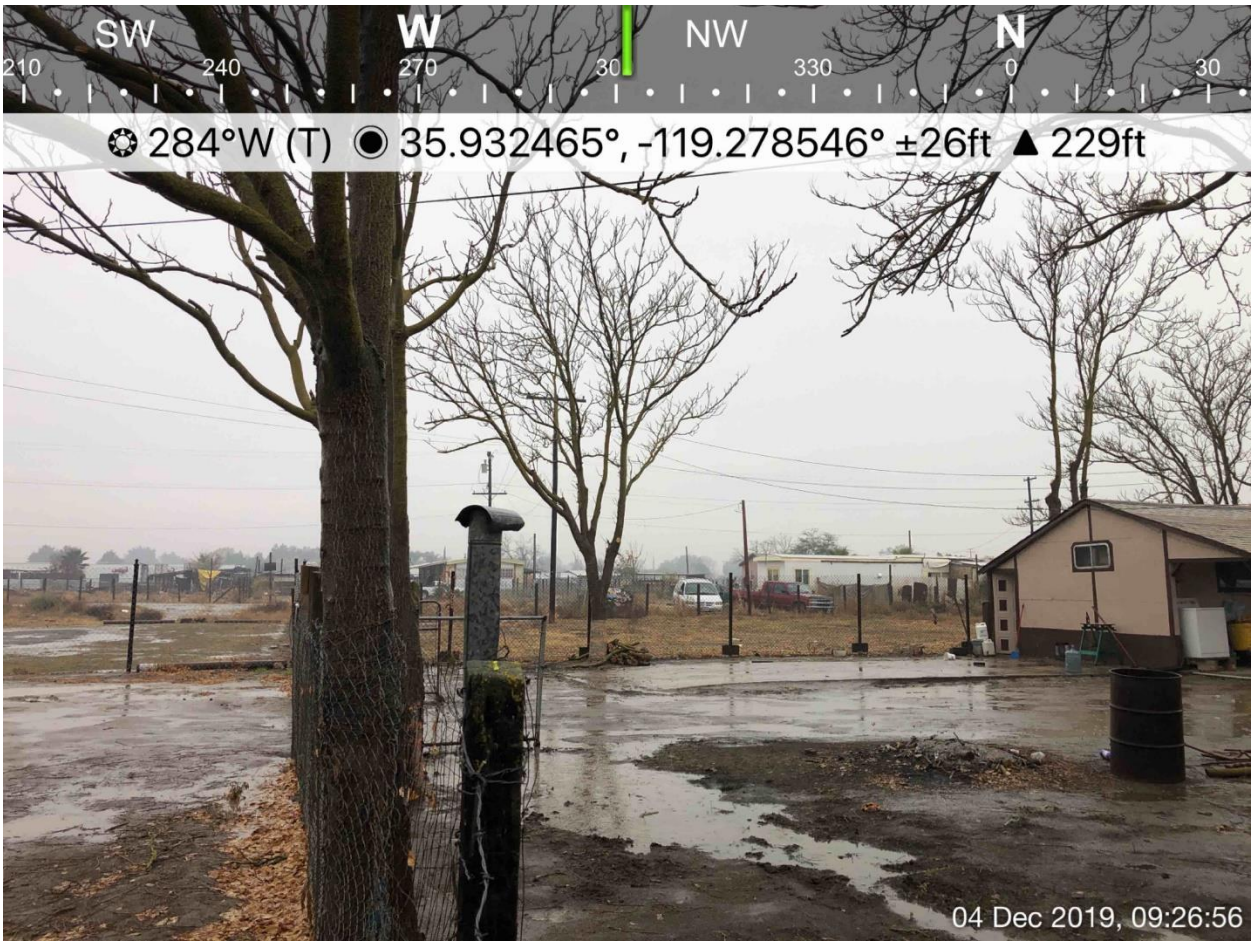
Photograph 18: Overview of the alignment at the intersection of Elm St and Ave 80.

Photograph 19: Overview of the alignment at the intersection of Ave 80 and Rd 132.

Photograph 20: Drainage basin along Rd 132, south of Ave 80.

Photograph 21: Overview of alignment at the intersection of Rd 132 and Williams Ave.

Photograph 22: Overview of the Rd 132 alignment facing south from the intersection of Williams Ave and Rd 132.



Photograph 23: Overview of the alignment and meter upgrade sites at residences northwest of Williams Ave.

Photograph 24: Overview of the Williams Ave alignment facing west from the intersection of Rd 132 and Williams Ave.

Photograph 25: Overview of the Rd. 131 alignment facing northwest from the intersection of Williams Ave and Rd. 131.

Photograph 26: Overview of the compacted dirt road along the Williams Ave alignment facing east from Rd. 130.

Photograph 27: Overview of the Elm St alignment facing north from the intersection of Ave 80 and Elm St. State route 99 is visible on the left.

Photograph 28: Overview of the Ave 80 alignment facing east from the intersection of Elm St and Ave 80.

Photograph 29: Overview of ruderal, vacant lot along the alignment west of the south well site facing north from Ave 80.

Photograph 30: Overview of the Rd 130 alignment facing south from Ave 80.

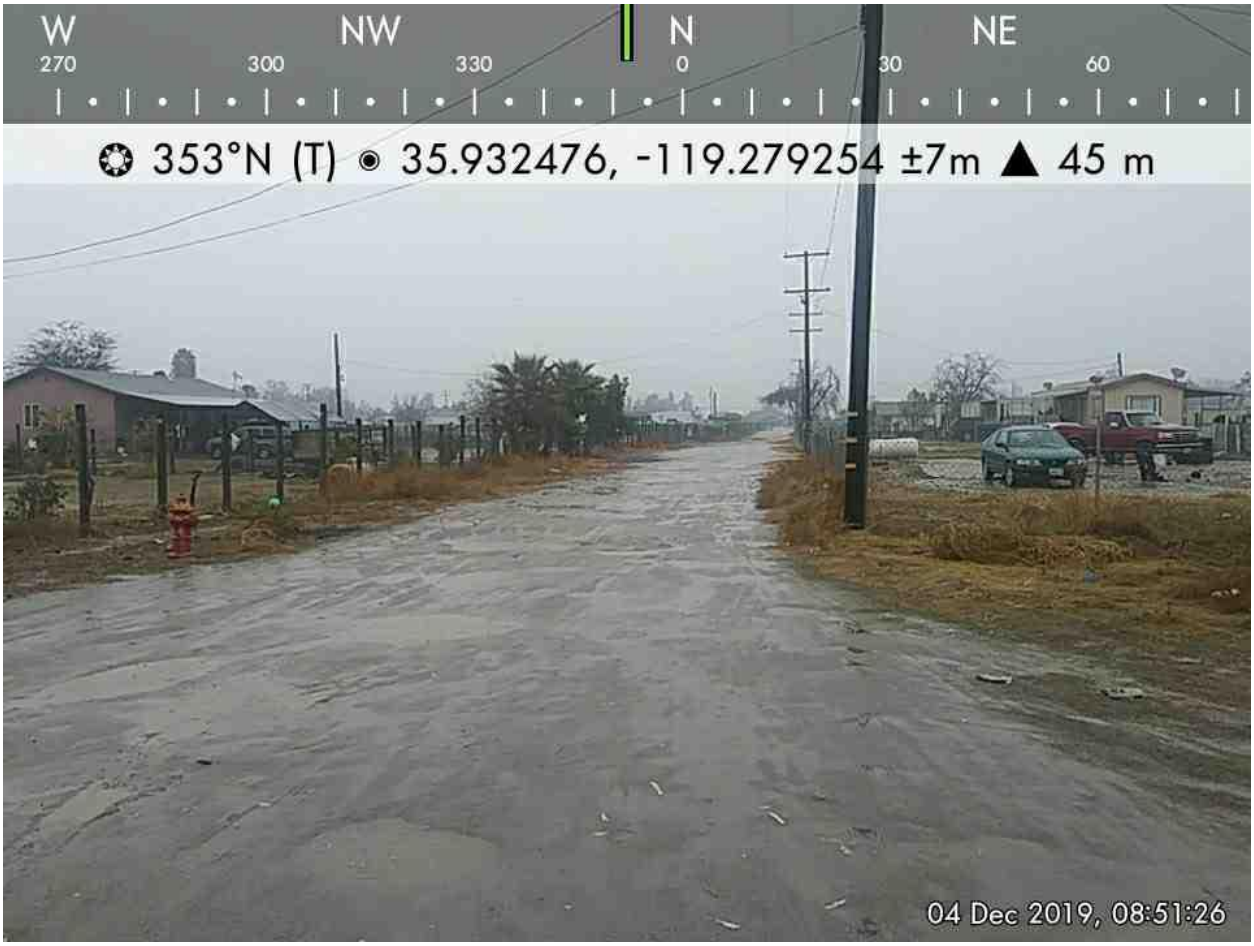
Photograph 31: Overview of the driveway along the alignment south of Ave 80 facing east from Elm St.

Photograph 32: Overview of the Elm St alignment south of Ave 80. State route 99 is visible on the left.

Photograph 33: Overview of the recently disked ruderal field along the alignment south of Ave 80.

Photograph 34: Overview of the Ave 80 alignment at the intersection of Rd 132 and Ave 80.

Photograph 35: Overview of the recently disked ruderal vacant lot south of the Ave 80 alignment.



Photograph 36: Overview of the Rd 130 alignment facing north from the intersection of Williams Ave and Rd 130.

Photograph 37: Overview of the ruderal livestock enclosure along the alignment south of Ave 80 facing west from Rd 130.

Photograph 38: Overview of the Rd 131 alignment facing south form the intersection of Rd 131 and Ave 80.

Appendix B. CNDDB Query Results

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Pixley (3511983) OR Sausalito School (3511982) OR Woodville (3611912) OR Tipton (3611913) OR Taylor Weir (3611914) OR Alpaugh (3511984) OR Allensworth (3511974) OR Delano West (3511973) OR Delano East (3511972))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
alkali mariposa-lily *Calochortus striatus*	PMLIL0D190	None	None	G3?	S2S3	1B.2
American badger *Taxidea taxus*	AMAJF04010	None	None	G5	S3	SSC
An andrenid bee *Andrena macswaini*	IIHYM35130	None	None	G2	S2	
Bakersfield legless lizard *Anniella grinnelli*	ARACC01050	None	None	G2G3	S2S3	SSC
blunt-nosed leopard lizard *Gambelia sila*	ARACF07010	Endangered	Endangered	G1	S1	FP
brittlescale *Atriplex depressa*	PDCHE042L0	None	None	G2	S2	1B.2
burrowing owl *Athene cunicularia*	ABNSB10010	None	None	G4	S3	SSC
California alkali grass *Puccinellia simplex*	PMPOA53110	None	None	G3	S2	1B.2
California jewelflower *Caulanthus californicus*	PDBRA31010	Endangered	Endangered	G1	S1	1B.1
coast horned lizard *Phrynosoma blainvillii*	ARACF12100	None	None	G3G4	S3S4	SSC
Coulter's goldfields *Lasthenia glabrata ssp. coulteri*	PDAST5L0A1	None	None	G4T2	S2	1B.1
Earlimart orache *Atriplex cordulata var. erecticaulis*	PDCHE042V0	None	None	G3T1	S1	1B.2
Hopping's blister beetle *Lytta hoppingi*	IICOL4C010	None	None	G1G2	S1S2	
Kern brook lamprey *Entosphenus hubbsi*	AFBAA02040	None	None	G1G2	S1S2	SSC
Kern mallow *Eremalche parryi ssp. kernensis*	PDMAL0C031	Endangered	None	G3G4T3	S3	1B.2
lesser saltscale *Atriplex minuscula*	PDCHE042M0	None	None	G2	S2	1B.1
loggerhead shrike *Lanius ludovicianus*	ABPBR01030	None	None	G4	S4	SSC
Lost Hills crownscale *Atriplex coronata var. vallicola*	PDCHE04250	None	None	G4T2	S2	1B.2
molestan blister beetle *Lytta molesta*	IICOL4C030	None	None	G2	S2	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Morrison's blister beetle *Lytta morrisoni*	IICOL4C040	None	None	G1G2	S1S2	
mountain plover *Charadrius montanus*	ABNNB03100	None	None	G3	S2S3	SSC
Nelson's antelope squirrel *Ammospermophilus nelsoni*	AMAFB04040	None	Threatened	G2	S2S3	
Northern Claypan Vernal Pool *Northern Claypan Vernal Pool*	CTT44120CA	None	None	G1	S1.1	
recurved larkspur *Delphinium recurvatum*	PDRAN0B1J0	None	None	G2?	S2?	1B.2
San Joaquin coachwhip *Masticophis flagellum ruddocki*	ARADB21021	None	None	G5T2T3	S2?	SSC
San Joaquin kit fox *Vulpes macrotis mutica*	AMAJA03041	Endangered	Threatened	G4T2	S2	
San Joaquin Pocket Mouse *Perognathus inornatus*	AMAFD01060	None	None	G2G3	S2S3	
San Joaquin tiger beetle *Cicindela tranquebarica ssp.*	IICOL0220E	None	None	G5T1	S1	
San Joaquin woollythreads *Monolopia congdonii*	PDASTA8010	Endangered	None	G2	S2	1B.2
spiny-sepaled button-celery *Eryngium spinosepalum*	PDAPI0Z0Y0	None	None	G2	S2	1B.2
subtle orache *Atriplex subtilis*	PDCHE042T0	None	None	G1	S1	1B.2
Swainson's hawk *Buteo swainsoni*	ABNKC19070	None	Threatened	G5	S3	
Tipton kangaroo rat *Dipodomys nitratoides nitratoides*	AMAFD03152	Endangered	Endangered	G3T1T2	S1S2	
tricolored blackbird *Agelaius tricolor*	ABPBXB0020	None	Threatened	G2G3	S1S2	SSC
Valley Sacaton Grassland *Valley Sacaton Grassland*	CTT42120CA	None	None	G1	S1.1	
Valley Saltbush Scrub *Valley Saltbush Scrub*	CTT36220CA	None	None	G2	S2.1	
Valley Sink Scrub *Valley Sink Scrub*	CTT36210CA	None	None	G1	S1.1	
vernal pool fairy shrimp *Branchinecta lynchi*	ICBRA03030	Threatened	None	G3	S3	
vernal pool smallscale *Atriplex persistens*	PDCHE042P0	None	None	G2	S2	1B.2
western snowy plover *Charadrius alexandrinus nivosus*	ABNNB03031	Threatened	None	G3T3	S2S3	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
western spadefoot *Spea hammondii*	AAABF02020	None	None	G3	S3	SSC

Record Count: 41

Appendix C. USFWS 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: November 07, 2019
Consultation Code: 08ESMF00-2020-SLI-0315
Event Code: 08ESMF00-2020-E-00891
Project Name: Teviston CSD: Well Replacement Project

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

To Whom It May Concern:

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

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

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

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

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

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

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

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

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

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

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

Attachment(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

Consultation Code: 08ESMF00-2020-SLI-0315

Event Code: 08ESMF00-2020-E-00891

Project Name: Teviston CSD: Well Replacement Project

Project Type: WATER SUPPLY / DELIVERY

Project Description: Teviston Community Services District is proposing a water system improvement. The Project involves the abandonment of the South Well and conversion of Well #3 on the same parcel to “standby” status; abandonment of the North Well and demolition of all improvements on the North Well parcel to make room for development of a new well (Well #4) and booster pump, water storage tank, hydro-pneumatic tank, related inter-connecting piping and valving, and connection to existing water distribution lines. In addition, new meters will be installation throughout the district service area.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/35.93668881235942N119.27920374593623W

Counties: Tulare, CA

Endangered Species Act Species

There is a total of 8 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
San Joaquin Kit Fox *Vulpes macrotis mutica* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2873	Endangered
Tipton Kangaroo Rat *Dipodomys nitratoides nitratoides* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7247 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/40/office/11420.pdf	Endangered

Reptiles

NAME	STATUS
Blunt-nosed Leopard Lizard *Gambelia silus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/625	Endangered
Giant Garter Snake *Thamnophis gigas* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/205/office/11420.pdf	Threatened

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Crustaceans

NAME	STATUS
Conservancy Fairy Shrimp *Branchinecta conservatio* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8246	Endangered
Vernal Pool Fairy Shrimp *Branchinecta lynchi* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened

Critical habitats

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

Appendix D. NOAA EFH Mapping Query Results

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

West Coast Regional Office
Alaska Regional Office

Query Results

Degrees, Minutes, Seconds: Latitude = 35º56'17" N, Longitude = 120º43'8" W
Decimal Degrees: Latitude = 35.94, Longitude = -119.28

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

HAPCs

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

EFH Areas Protected from Fishing

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

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

NOAA HABITAT CONSERVATION | HABITAT PROTECTION
NATIONAL MARINE FISHERIES SERVICE

EFH View Tool | Data Query Tool

Print This 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.

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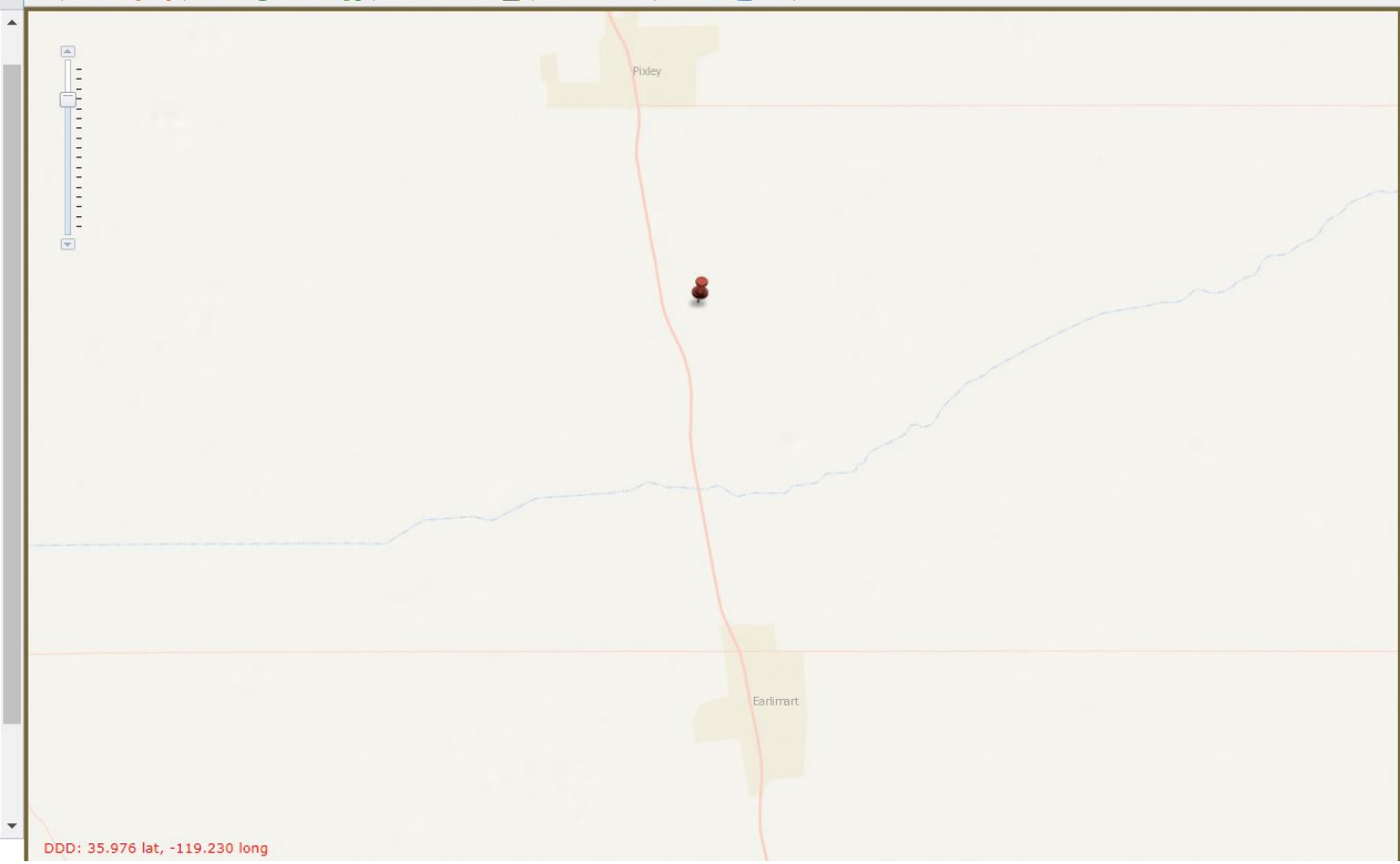
****For links to all EFH text descriptions see the complete data inventory: open data inventory -->**

Pacific Coastal Pelagic Species,
Jack Mackerel,
Pacific (Chub) Mackerel,
Pacific Sardine,
Northern Anchovy - Central Subpopulation,
Northern Anchovy - Northern Subpopulation,
Pacific Highly Migratory Species,
Pigeye Thresher Shark - North Pacific

Zoom: | Extent: | Location Query: | 10 Min sq.: | Help:



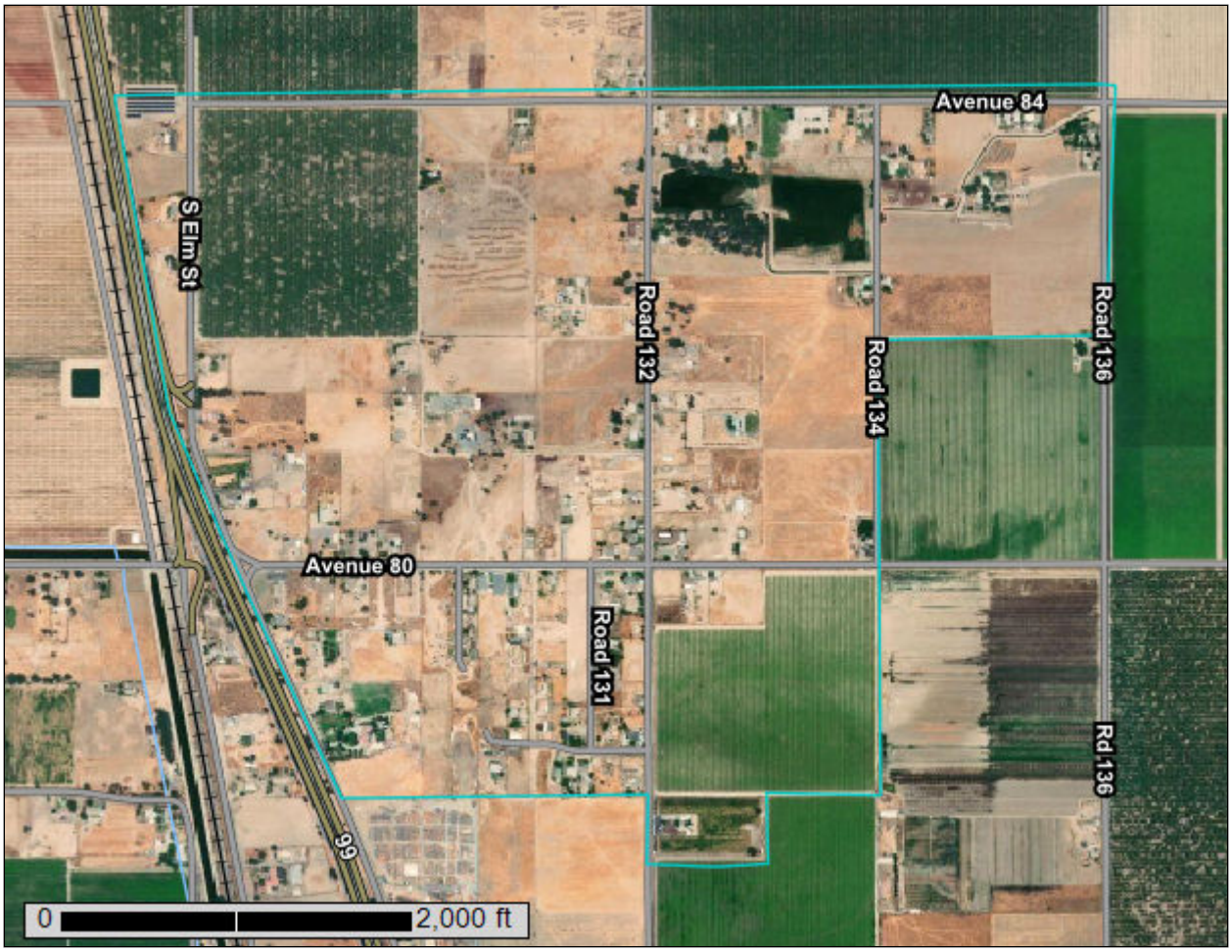
Appendix E. Soils Report

United States Department of Agriculture

Natural Resources Conservation Service

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

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



November 8, 2019

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

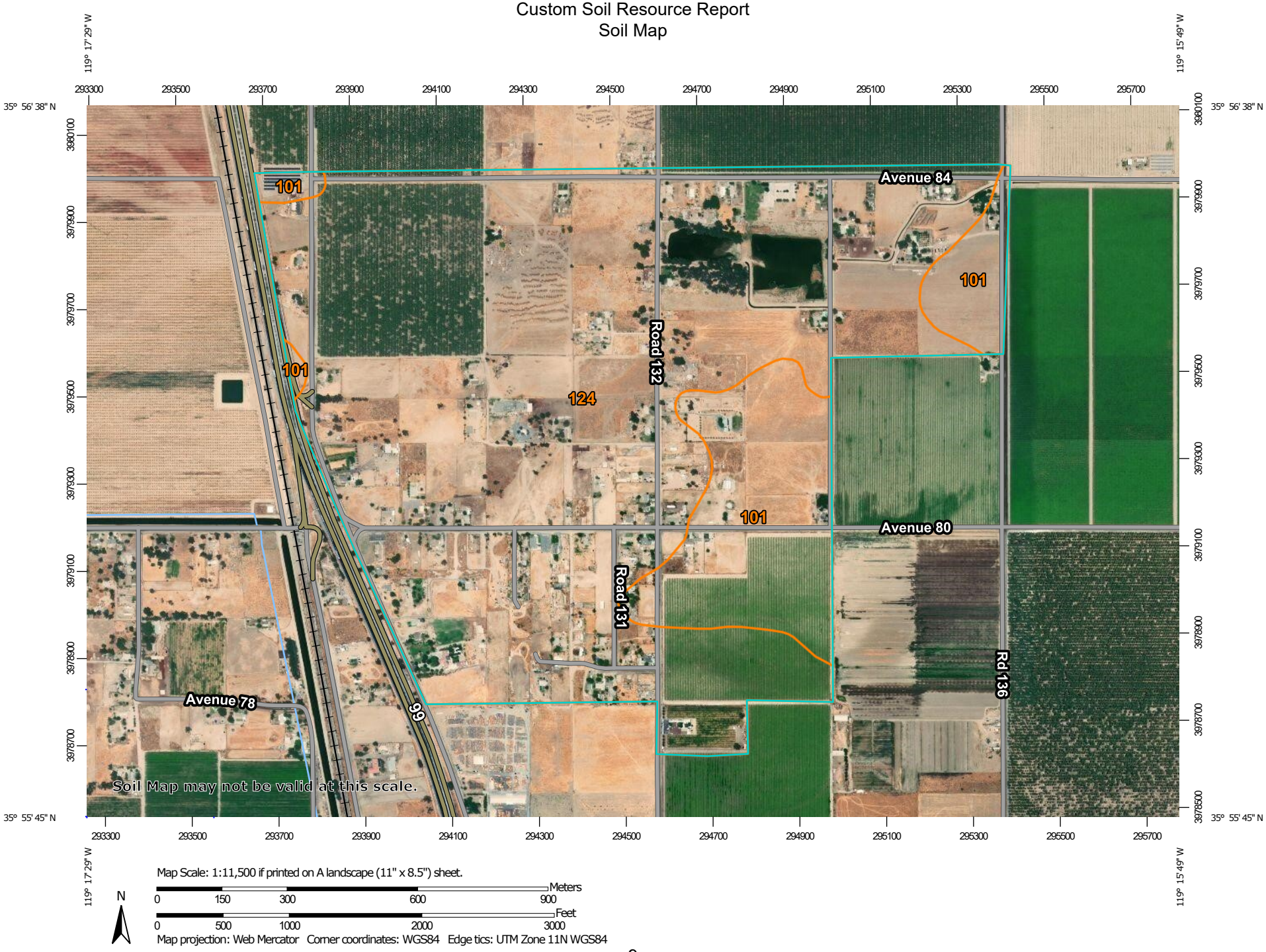
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:11,500 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 150 300 600 900

Feet: 0 500 1000 2000 3000

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

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

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

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

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

Soil Survey Area: Tulare County, Western Part, California
Survey Area Data: Version 13, Sep 16, 2019

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

Date(s) aerial images were photographed: Apr 15, 2016—Nov 5, 2017

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
101	Akers-Akers, saline-Sodic, complex, 0 to 2 percent slopes	67.6	16.6%
124	Hanford sandy loam, 0 to 2 percent slopes	339.6	83.4%
Totals for Area of Interest		**407.2**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the

development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Tulare County, Western Part, California

101—Akers-Akers, saline-Sodic, complex, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hp6z
Elevation: 230 to 350 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 63 to 64 degrees F
Frost-free period: 225 to 300 days
Farmland classification: Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Akers and similar soils: 60 percent
Akers, saline-sodic, and similar soils: 25 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Akers

Setting

Landform: Fan remnants
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granitic rock sources

Typical profile

Ap - 0 to 16 inches: fine sandy loam
Bk - 16 to 60 inches: fine sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Very rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 12.0
Available water storage in profile: High (about 9.7 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 4c
Hydrologic Soil Group: B
Hydric soil rating: No

Description of Akers, Saline-sodic

Setting

Landform: Fan remnants
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granitic rock sources

Typical profile

Ap - 0 to 15 inches: fine sandy loam
Bk - 15 to 60 inches: fine sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Very rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 30.0
Available water storage in profile: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Tujunga

Percent of map unit: 3 percent
Landform: Flood plains
Hydric soil rating: No

Colpien

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

Yettem

Percent of map unit: 2 percent
Landform: Flood plains, alluvial fans
Hydric soil rating: No

Tagus

Percent of map unit: 2 percent
Landform: Fan remnants

Hydric soil rating: No

Grangeville

Percent of map unit: 2 percent
Landform: Flood plains, alluvial fans
Hydric soil rating: No

Hanford

Percent of map unit: 2 percent
Landform: Flood plains, alluvial fans
Hydric soil rating: No

Unnamed, ponded

Percent of map unit: 1 percent
Landform: Depressions
Hydric soil rating: Yes

124—Hanford sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hp4v
Elevation: 220 to 490 feet
Mean annual precipitation: 9 to 12 inches
Mean annual air temperature: 63 to 64 degrees F
Frost-free period: 250 to 280 days
Farmland classification: Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

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

Description of Hanford

Setting

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

Typical profile

Ap - 0 to 6 inches: sandy loam
C1 - 6 to 30 inches: fine sandy loam
C2 - 30 to 60 inches: sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches

Natural drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Very rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 7.0
Available water storage in profile: Moderate (about 6.6 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 3c
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Exeter

Percent of map unit: 5 percent
Landform: Fan remnants
Hydric soil rating: No

Tujunga

Percent of map unit: 5 percent
Landform: Flood plains
Hydric soil rating: No

Calgro

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

Yettem

Percent of map unit: 2 percent
Landform: Flood plains, alluvial fans
Hydric soil rating: No

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Appendix C

Cultural and Historical Resources Evaluation

CLASS III INVENTORY/PHASE I SURVEY, TEVISTON CSD WATER SYSTEM IMPROVEMENT PROJECT, TULARE COUNTY, CALIFORNIA

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January 2020

PN 33770.00

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MANAGEMENT SUMMARY

An intensive Class III inventory/Phase I cultural resources survey was conducted for the Teviston Community Services District (TCSD) Water System Improvement Project (Project), near Pixley, Tulare County, California. This study was conducted by ASM Affiliates, Inc., with David S. Whitley, Ph.D., RPA, serving as principal investigator. Background studies and fieldwork for the survey were completed in November and December 2019. The study was undertaken to provide compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (16 USC 470; 36 CFR Part 800), and the California Environmental Quality Act (CEQA). The project consists of upgrading the existing water infrastructure within the community of Teviston by replacing and installing new water wells and water main connecting pipes for residents serviced by the TCSD.

The area of potential effect (APE) for the Project was defined as all ground-surface disturbance areas along with staging, lay-down and work areas. This included an approximately 4.7-mi long water main corridor that was 50-ft wide; a new well location; and two existing well locations. The horizontal APE is approximately 54-acres (ac) in total size. The vertical APE, defined as the maximum depth of excavation, was 10-ft.

A records search of site files and maps was conducted in November 2019, at the Southern San Joaquin Valley Archaeological Information Center (IC), California State University, Bakersfield. A search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was also completed. The IC investigations determined that the Project APE had not been previously surveyed in its entirety and that no cultural resources were known or had been recorded within it. Based on the NAHC records, no sacred sites or traditional cultural places had been identified within or adjacent to the APE. Outreach letters were sent and follow-up calls to tribal organizations on the NAHC contact list were made. No responses or concerns have been expressed by any tribe.

The Class III inventory/Phase I survey fieldwork was conducted in December 2019. Parallel transects spaced at 15-meter intervals were walked along the approximately 4.7-mi pipeline routes, and the three well locations, all with an applied 50-ft wide buffer.

No cultural resources of any kind were identified within the APE. Based on these findings, the Teviston CSD Water System Improvement Project does not have the potential to result in adverse impacts or effects to significant historical resources or historic properties. A determination of No Effect/No Significant Impact is recommended for the Project.

1. INTRODUCTION AND REGULATORY CONTEXT

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

This current study included:

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

This study was conducted by ASM Affiliates, Inc., of Tehachapi, California, in November – December 2019. David S. Whitley, Ph.D., RPA, served as principal investigator. ASM Associate Archaeologist Robert Azpitarte, B.A. conducted the fieldwork.

This manuscript constitutes a Historic Properties Identification Report (HPIR) for the proposed Project. 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 area.

1.1 PROJECT LOCATION

The proposed Project APE is located just east of Highway 99, approximately midway between the towns of Pixley (to the north) and Earlimart (to the south) in Tulare County. The Project area of potential effect (APE) is within the Pixley 7.5’ United States Geographical Survey (USGS) topographic quadrangle, within Sections 8, 9, and 16, of Township 23 South, Range 25 East (Figure 1).

The Project is located on open flats of the San Joaquin Valley, a large interior and relatively low-lying valley that drains northwards to the San Francisco Bay. Elevation within the Project APE ranges slightly from 255-ft on the west and 277-ft amsl on the east.

1.2 PROJECT DESCRIPTION AND APE

Teviston is a census-designated place (CDP) and State-designated Severely Disadvantaged Community located in southern Tulare County. Drinking water service for a portion of the residents in Teviston is supplied by the TCSD water system. TCSD was formed in 1956 and covers approximately 2.2 square miles. Residents not served by TCSD are served by private wells. TSCD currently serves approximately 432 persons through 136 metered service connections, some of which lie outside the formal district boundary. TSCD intends to expand its boundaries to include all the current lots served.

TCSD is currently served by only a single well (Well 3). The original well, "South Well", constructed in 1959, and the "North Well", subsequently constructed in 1978, are both inactive due to failure. Using emergency funds after North Well's failure, Well 3 was drilled in 2017 to a depth of approximately 575 feet. It is located approximately 600 feet east and 190 feet north of the intersection of Avenue 80 and Road 132, on the same parcel as the original South Well that is now abandoned (APN 316-220-004).

TCSD has received funding from the State Water Resources Control Board (SWRCB), Division of Drinking Water (DDW), State Revolving Fund (SRF) to address challenges caused by dependence on a single source of potable water:

- If Well 3 is taken offline for any reason, TCSD has no alternative to provide drinking water to the community.
- The system has no back-up power source to protect against outages. Power outages are common, especially in the summer months when power demands are high due to the relatively high temperatures, and can last for several hours at a time.
- Well 3 consistently exceeds the maximum contaminant level for 1,2,3-trichloropropane (TCP) established by the DDW. TCSD was put under a compliance order in April 2018. Though water from Well 3 is routinely chlorinated, TCSD is not able to treat for 1,2,3-TCP at present.
- The Well 3 pump is rated to produce approximately 625 gallons per minute (gpm). While it has the capacity to meet the Tulare County Improvement Standards of maximum daily demand—392 gpm for 136 service connections—Well 3 does not have capacity to supply the fire flow demand during a maximum day condition required by County Improvement Standards. Small water systems typically meet fire flow requirements by use of a water storage tank. Without additional water storage TCSD cannot provide the required minimum storage needed to meet minimum required fire flow, which is 500 gpm. The well falls short of meeting maximum daily demand and fire flow by at least 267 gpm.

The entire water distribution system, originally constructed in the late 1950s, was replaced in 1998 with 6-inch PVC mains, including gate valves, fire hydrants, and water meters. There are approximately 25,300 linear feet of water mains and approximately 136 5/8-inch water meters in the system.

The Project proposes to drill and construct a new production well, “Well 4”, at the North Well site (APN 316-220-009), which is just off Road 132, approximately 650 feet north of the intersection of Avenue 80 and Road 132. Well 4 will become the primary source of water for TCSD while Well 3 will be maintained as a standby. The well would be drilled and constructed on the same 0.6-acre parcel of land as the existing North Well site, a minimum of 100 feet from the North Well.

The inactive North and South Wells would be properly abandoned according to County and State requirements. All existing system components at the site of the new well will be demolished and removed from the site.

In addition to the new well, a 321,000-gallon minimum potable water storage tank accompanied by a booster pump station are necessary to meet County Improvement Standards as well as requirements detailed in Section 64554 of Title 22. The proposed well will pump into the storage tank which will then feed the booster pump station which will supply the distribution system.

A new hydropneumatic tank with a capacity of at least 15,000 gallons would be installed near the new well. The hydropneumatic tank will be sized to accommodate the peak hour demand limit booster pump cycling to 6 cycles per hour. Site piping would include piping and valving to allow the tank to fill from the distribution system or the wellhead.

The electrical service at existing Well 4 will be upgraded, as required by Southern California Edison, and power will be supplied to the well from the tank site. The well site will have a local disconnect panel at the well and site lighting. The controls will be located at the well site. The electrical cabinet will not be enclosed in a building; however, a shade structure will be constructed over the cabinet. To protect against power outages, a diesel-powered generator will be installed at Well 4 capable of powering both wells.

For all service connections, one-inch water meters with automatic read capability as well as reading equipment would replace the aging meters.

Approximately 9,300 linear feet of the distribution system piping passes through private access roads while the remaining approximately 16,000 linear feet are located within public road rights-of-way. Property owners are responsible for maintaining and replacing laterals on their property.

The Project also proposes that Well 3, located on APN 316-220-004, will be equipped with a treatment plant to remove 1,2,3-TCP as soon as funding permits.

In addition to the well site improvements, new connecting pipelines are proposed. The pipeline corridors total approximately 25,300-feet in length (see Figure 1). The Project will also involve installation of new water meters within the APE.

The horizontal APE for the project was defined as the area of potential ground-surface disturbance, including access, staging and lay-down areas. The vertical APE was defined as the maximum depth of Project grading, estimated at 10-feet. With an applied 50-ft buffer to the well sites and potential pipe corridors, the project footprint is about 56-acres total, including all staging areas and unpaved access routes.

1.3 REGULATORY CONTEXT

1.3.1 NHPA

The NHPA of 1966, as amended (54 United States Code § 300101 *et seq*.), is the primary federal legislation that outlines the federal government's responsibility to consider the effects of its actions on historic properties and affords the Advisory Council on Historic Preservation a reasonable opportunity to comment. Section 106 of the NHPA and its implementing regulations at 36 CFR Part 800 describes the process that the federal agency shall take to identify cultural resources and assess the level of effect that the proposed undertaking will have on historic properties. An undertaking is defined as a "…project, activity or program funded in whole or in part, under the direct or indirect jurisdiction of a federal agency." This includes projects that are carried out by, or on behalf of, the agency; those carried out with federal assistance; those requiring a federal permit, license, or approval; and those subject to state or local regulation administered pursuant to a delegation, or approval by, a federal agency.

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

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

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

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

1.3.2 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 the history or prehistory in order to be considered for listing under Criterion A. Additionally, the specific association of the property, itself, must also be considered significant. Criterion B applies to properties associated with individuals whose specific contributions to the history can be identified and documented. The association between the property and individual must itself be more than just incidental, with the property having figured prominently in that individual's life. 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 CEQA

CEQA is applicable to discretionary actions by state or local lead agencies. Under CEQA, lead agencies must analyze impacts to cultural resources. Significant impacts under CEQA occur when "historically significant" or "unique" cultural resources are adversely impacted, which occurs

when such resources could be altered or destroyed through project implementation. Historically significant cultural resources are defined by eligibility for or by listing in the California Register of Historical Resources (CRHR). In practice, the federal NRHP criteria for significance applied under Section 106 are generally (although not entirely) consistent with CRHR criteria (see PRC § 5024.1, Title 14 CCR, Sections § 4852 and § 15064.5(a)(3)).

Significant cultural resources are those archaeological resources and historical properties that:

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.

1.4 PROFESSIONAL QUALIFICATIONS

David S. Whitley, Ph.D., RPA, ASM Director and Project Principal Investigator, has 45 years of experience conducting prehistoric and historic archaeological and ethnographic studies. He received his Ph.D. in Anthropology from UCLA in 1982. Whitley has published 19 books and over 100 articles and book chapters, primarily on aspects of California archaeology. Whitley received the Society for California Archaeology Thomas King Award for Excellence in Cultural Resource Management in 2001.

Robert Azpitarte, B.A., ASM Associate Archaeologist, received B.A. degrees in Anthropology and Fine Arts from California State University, Bakersfield, in 2012. He has worked as an ASM

crew-chief and field director since 2015, conducting fieldwork throughout California and southern Nevada. Azpitarte is permitted as a Field Director by the California BLM (Permit # CA-18-07).

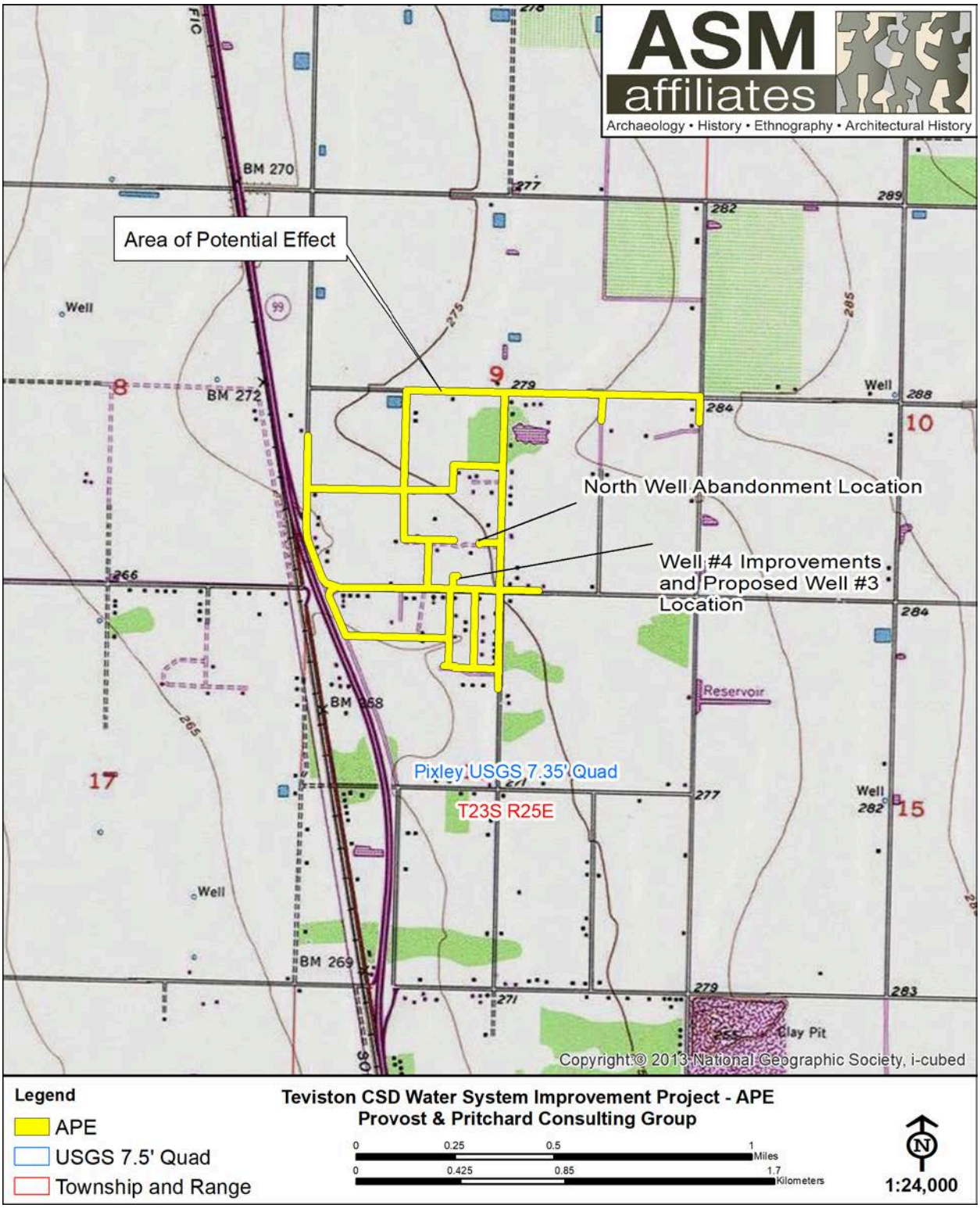

Figure 1. Location of the Teviston CSD Water System Improvement Project, Tulare County, California.

2. ENVIRONMENTAL AND CULTUAL BACKGROUND

2.1 ENVIRONMENTAL BACKGROUND

As noted above, the TCSD Project APE is located at between 255-ft and 277-ft elevation on the open flats of the San Joaquin Valley, about 11-mi southwest of the Tule River and less than 2-mi north of Deer Creek.

Prior to the appearance of agriculture, starting in the nineteenth century, this location would have been prairie grasslands, grading into tree savannas in the foothills to the east (Preston 1981). Historically, and likely prehistorically, riparian environments would have been present along the drainages, waterways and marshes. The Project APE and immediate surroundings have been farmed and grazed for many years and no native vegetation is present. Perennial bunchgrasses such as purple needlegrass and nodding needlegrass most likely would have been the dominant plant cover in the study area prior to cultivation. At the time of the Class III Inventory/Phase I survey, the study area consisted of paved and unpaved rights-of-way; active almond orchards; undeveloped strips of land, and residential properties.

2.2 GEOARCHAEOLOGICAL CONTEXT

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

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

The implications are, first, that the project area historically and prehistorically was a dynamic geomorphological environment, at least periodically, due to seasonal flooding. No records are known that allow us to estimate the impact this flooding may have had on the landscape but, due to changing climatic conditions prehistorically, this is likely to have varied over time, with greater dynamism occurring during wetter periods. The existing topography in the general region, however, provides some indication of how the landscape has been changed by seasonal flooding events. The 1892 “Thompson Map of Tulare County” shows the “Old Channel” of Deer Creek heading north from the current stream channel, creating what appears to have been an oxbow, to the east of the project area. The “Old Channel” is still shown on current USGS topographical quadrangles, and it apparently has not carried water for over a century. At some point in the past the stream straightened its course and eliminated this earlier, meandering course, suggesting that relatively recent hydrological events have been of sufficient magnitude to move the channel

southwards to its current location. The course of the river, in other words, has been historically unstable, indicating that the current land-surface is youthful in age.

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

Third, while occasional flooding along Deer Creek has blanketed the area with alluvium, surface water was only present sporadically—during floods. As noted by Storie et al (1942:3), normal surface flows along Deer Creek effectively ended at Terra Bella, east of the study area.

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

A Caltrans geoarchaeological study that included the TCSD Project APE classified this location as having Low to Moderate sensitivity for subsurface sites (Meyer et al. 2010). This study involved first determining the location and ages of late Pleistocene (>25,000 years old) landforms in the southern San Joaquin Valley. These were identified by combining a synthesis of 2,400 published paleontological, soils and archaeological chronometric dates with geoarchaeological field testing. The ages of surface landforms were then mapped to provide an assessment for the potential for buried archaeological deposits. These ages were derived primarily from the Soil Survey Geographic Database (SSURGO) and the State Soils Geographic (STATSGO) database. A series of maps were created from this information that ranked locations in 7 ordinal classes for sensitivity for buried soils, from Very Low to Very High. Given its Low to Moderate sensitivity for buried deposits according to this analysis, combined with its distance from known centers of prehistoric occupation, it is unlikely that the TCSD Project APE would contain subsurface archaeological deposits.

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

2.3 ETHNOGRAPHIC CONTEXT

Penutian-speaking Yokuts tribal groups occupied the southern San Joaquin Valley region and much of the nearby Sierra Nevada. Ethnographic information about the Yokuts was collected primarily by Powers (1971, 1976 [originally 1877]), Kroeber (1925), Gayton (1930, 1948), Driver (1937), Latta (1977) and Harrington (n.d.). For a variety of historical reasons, existing research information emphasizes the central Yokuts tribes who occupied both the valley and particularly

the foothills of the Sierra. The northernmost tribes suffered from the influx of Euro-Americans during the Gold Rush and their populations were in substantial decline by the time ethnographic studies began in the early twentieth century. In contrast, the southernmost tribes were partially removed by the Spanish to missions and eventually absorbed into multi-tribal communities on the Sebastian Indian Reservation (on Tejon Ranch), and later the Tule River Reservation and Santa Rosa Rancheria to the north. The result is an unfortunate scarcity of ethnographic detail on southern Valley tribes, especially in relation to the rich information collected from the central foothills tribes where native speakers of the Yokuts dialects are still found. Regardless, the general details of indigenous life-ways were similar across the broad expanse of Yokuts territory, particularly in terms of environmentally influenced subsistence and adaptation and with regard to religion and belief, which were similar everywhere.

This scarcity of specific detail is particularly apparent in terms of southern valley tribal group distribution. Kroeber (1925) places the Deer Creek area in Wowol territory, with the closest listed village at Porterville. Latta (1977:195-196) limits the Wowol on the eastern shore of Tulare Lake and on Atwell Island, with the Koyete on Deer Creek in the project vicinity. As noted above, he identifies the closest Koyete village as *Chetetik Nowsuh*, near Terra Bella, east of the study area. Regardless of tribal affiliation, historical village distribution was similar across the region. Winter villages were typically located along lakeshores and major stream courses (as these existed circa AD 1800), with dispersal phase family camps located at elevated spots on the valley floor and near gathering areas in the foothills.

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

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

Shamanism is a religious system common to most Native American tribes. It involves a direct and personal relationship between the individual and the supernatural world enacted by entering a trance or hallucinatory state (usually based on the ingestion of psychotropic plants, such as jimsonweed or more typically native tobacco). Shamans were considered individuals with an unusual degree of supernatural power, serving as healers or curers, diviners, and controllers of natural phenomena (such as rain or thunder). Shamans also produced the rock art of this region, depicting the visions they experienced in vision quests believed to represent their spirit helpers and events in the supernatural realm (Whitley 1992, 2000).

The centrality of shamanism to the religious and spiritual life of the Yokuts was demonstrated by the role of shamans in the yearly ceremonial round. The ritual round, performed the same each year, started in the spring with the jimsonweed ceremony, followed by rattlesnake dance and (where appropriate) first salmon ceremony. After returning from seed camps, fall rituals began in

the late summer with the mourning ceremony, followed by first seed and acorn rites and then bear dance (Gayton 1930:379). In each case, shamans served as ceremonial officials responsible for specific dances involving a display of their supernatural powers (Kroeber 1925).

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

Although population estimates vary and population size was greatly affected by the introduction of Euro-American diseases and social disruption, the Yokuts were one of the largest, most successful groups in Native California. Cook (1978) estimates that the Yokuts region contained 27 percent of the aboriginal population in the state at the time of contact; other estimates are even higher. Many Yokuts continue to live in Tulare, Fresno and Kings counties to this day.

2.3.1 Significant Themes

The ethnographic period in the southern San Joaquin Valley extended from first Euro-American contact, in AD 1772, to 1853, when tribal populations were first moved onto reservations. The major significant historic themes during this period of significance involve the related topics of Historic-Aboriginal Archaeology, and Native American Ethnic Heritage. More specifically, these concern the Adaptation of the Indigenous Population to Euro-American Encroachment and Settlement, and their Acculturation to Western Society. These processes included the impact of missionization on the San Joaquin Valley (circa 1800 to about 1845); the introduction of the horse and the development of a San Joaquin Valley "horse culture," including raiding onto the coast and Los Angeles Basin (after about 1810); the use of the region as a refuge for mission neophyte escapees (after 1820); responses to epidemics from introduced diseases (especially in the 1830s); armed resistance to Euro-American encroachment (in the 1840s and early 1850s); and, ultimately, the adoption of the Euro-American society's economic system and subsistence practices and acculturation into that society.

2.3.2 Associated Property Types

Site types that have been identified in the southern San Joaquin Valley in the general vicinity of the study area dating to the ethnographic period of significance primarily include villages and habitations, some of which contain cemeteries. The different social processes associated with this historical theme may be manifest in the material cultural record in terms of changing settlement patterns and village organization; the breakdown of traditional trading networks with their replacement by new economic relationships; changing subsistence practices, especially the introduction of agriculture initially via escaped mission neophytes; the use of Euro-American artifacts and materials rather than traditional tools and materials; and, possibly, changing mortuary practices.

Inasmuch as culture change is a primary intellectual interest in archaeology, ethnographic villages and habitations may be NRHP eligible under Criterion D, research potential. They may also be eligible under Criterion A, association with events contributing to broad patterns of history. Ethnographic sites, further, may be NRHP eligible as Traditional Cultural Properties due to potential continued connections to tribal descendants, and their resulting importance in traditional practices and beliefs, including their significance for historical memory, tribal- and self-identity formation, and tribal education. For Criteria A and D, eligibility requires site integrity (including the ability to convey historical association for Criterion A). These may include intact archaeological deposits for Criterion D, as well as setting and feel for Criterion A. Historical properties may lack physical integrity, as normally understood in heritage management, but still retain their significance to Native American tribes as Traditional Cultural Properties if they retain their tribal associations and uses.

2.4 PREHISTORIC BACKGROUND

The San Joaquin Valley region has received minimal archaeological attention compared to other areas of the state. In part, this is because the majority of California archaeological work has concentrated in the Sacramento Delta, Santa Barbara Channel and central Mojave Desert areas (see Moratto 1984). Although knowledge of the region's prehistory is limited, enough is known to determine that the archaeological record is broadly similar to south-central California as a whole (see Gifford and Schenk 1926; Hewes 1941; Wedel 1941; Fenenga 1952; Elsasser 1962; Fredrickson and Grossman 1977; Schiffman and Garfinkel 1981). Based on these sources, the general prehistory of the region can be outlined as follows.

Initial occupation of the region occurred at least as early as the *Paleoindian Period*, or prior to about 10,000 YBP (years before present). Evidence of early use of the region is indicated by characteristic fluted and stemmed points found around the margin of Tulare Lake, in the foothills of the Sierra, and in the Mojave Desert proper. (In each case, these are locations many miles distant from the study area.)

Both fluted and stemmed points are particularly common around the Tulare Lake margins, suggesting a terminal Pleistocene/early Holocene lakeshore adaptation similar to that found throughout the far west at the same time; little else is known about these earliest peoples. Over 250 fluted points have been recovered from the Witt Site (CA-KIN-32), located along the western shoreline of ancient Tulare Lake west of the Project APE, demonstrating the importance of this early occupation in the San Joaquin Valley specifically (see Fenenga 1993). Additional finds consist of a Clovis-like projectile point discovered in a flash-flood cut-bank near White Oak Lodge in 1953 on Tejon Ranch (Glennan 1987a, 1987b). More recently, a similar fluted point was found near Bakersfield (Zimmerman et al. 1989), and a number are known from the Edwards Air Force Base and Boron area of the western Mojave Desert. Although human occupation of the state is well-established during the Late Pleistocene, relatively little can be inferred about the nature and distribution of this occupation with a few exceptions. First, little evidence exists to support the idea that people at that time were big-game hunters, similar to those found on the Great Plains. Second, the western Mojave Desert evidence suggests small, very mobile populations that left a minimal archaeological signature. The evidence from the ancient Tulare Lake shore, in contrast,

suggests a much more substantial population and settlements which, instead of relying on big game hunting, were tied to the lacustrine lake edge. Variability in subsistence and settlement patterns is thus apparent in California, in contrast to the Great Plains.

Substantial evidence for human occupation of California first occurs during the middle Holocene, roughly 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 tool-kits dominated by mullers and grindstones (manos and metates). Additionally, little evidence for Early Horizon occupation exists in most inland portions of the state, partly due to a severe cold and dry paleoclimatic period occurring at this time. Regardless of specifics, Early Horizon population density was low with a subsistence adaptation more likely tied to plant food gathering than hunting.

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

Evidence for Middle Horizon occupation of interior south-central California is substantial. For example, in northern Los Angeles County along the upper Santa Clara River, to the south of the San Joaquin Valley, the Agua Dulce village complex indicates occupation extending back to the Intermediate Period, when the population of the village may have been 50 or more people (King et al n.d.). Similarly, inhabitation of the Hathaway Ranch region near Lake Piru, and the Newhall Ranch near Valencia, appears to date to the Intermediate Period (W & S Consultants 1994). To the west, little or no evidence exists for pre-Middle Horizon occupation in the upper Sisquoc and Cuyama River drainages; populations first appear there at roughly 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 years ago. Although most efforts to explain this expansion have focused on local circumstances and events, it is increasingly apparent this was a major southern California-wide occurrence and any explanation must be sought at a larger level of analysis (Whitley 2000). Additionally, evidence from the Carrizo Plain suggests the origins of the tribelet level of political organization developed during this period (W & S Consultants 2004; Whitley et al. 2007). Whether this same demographic process holds for the southern San Joaquin Valley, including the study area, is yet to be determined.

The beginning of the *Late Horizon* is set variously at 1500 and 800 YBP, with a consensus for the shorter chronology. Increasing evidence suggests the importance of the Middle-Late Horizons transition (AD 800 to 1200) in the understanding of south-central California. This corresponds to the so-called Medieval Climatic Anomaly, a period of climatic instability that included major droughts and resulted in demographic disturbances across much of the west (Jones et al. 1999). It is also believed to have resulted in major population decline and abandonments across south-central California, involving as much as 90 percent of the interior populations in some regions including the Carrizo Plain (Whitley et al. 2007). It is not clear whether site abandonment was accompanied by a true reduction in population or an agglomeration of the same numbers of peoples into fewer but larger villages. What is clear is that Middle Period villages and settlements were widely dispersed across the landscape; many at locations that lack contemporary evidence of fresh water sources. Late Horizon sites, in contrast, are typically located where fresh water was available during the historical period, if not currently.

One extensively studied site that shows evidence of intensive occupation during the Middle-Late Horizons transition (~1,500 – 500 YBP) is the Redtfeldt Mound (CA-KIN-66/H), located near the Santa Rosa Rancheria, northwest of the study area. There, Siefkin (1999) reported on human burials and a host of artifacts and ecofacts excavated from a modest-sized mound. He found that both Middle Horizon and Middle-Late Horizons transition occupations were more intensive than Late Horizon occupations, which were sporadic and less intensive (Siefkin 1999:110-111).

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

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

2.4.1 Significant Themes

Previous research and the nature of the prehistoric archaeological record suggest two significant themes, both of which fall under the general *Prehistoric Archaeology* area of significance. These are the *Expansion of Prehistoric Populations and Their Adaptation to New Environments*; and *Adaptation to Changing Environmental Conditions*.

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

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

2.4.2 Associated Property Types

Given the physiographic and hydrographic nature of the San Joaquin Valley (low-lying alluvial flats prehistorically containing streams, sloughs, swamps and lakes), two primary site types can be expected for both themes: villages and camps, and resource exploitation/special activity areas. Archaeological evidence potentially pertinent to these themes could include settlement locations and sizes, trade patterns, and especially subsistence evidence.

Prehistoric sites would be primarily eligible under NRHP Criterion D, research potential. Eligibility would require integrity in the form of intact archaeological deposits, including preserved stratigraphic relationships, internal site features, and artifact associations.

2.5 HISTORIC BACKGROUND

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

The discovery of gold in northern California in 1848 resulted in a dramatic increase of population, consisting in good part of fortune seekers and gold miners, who began to scour other parts of the

state. After 1851, when gold was discovered in the Sierra Nevada Mountains in eastern Kern County, the population of the area grew rapidly. Some new immigrants began ranching in the San Joaquin Valley to supply the miners and mining towns. Ranchers grazed cattle and sheep, and farmers dry-farmed or used limited irrigation to grow grain crops, leading to the creation of small agricultural communities throughout the valley (JRP Historical Consulting 2009).

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

With the increase of ranching in the southern San Joaquin came the dramatic change in the landscape, as non-native grasses more beneficial for grazing and pasture replaced native flora (Preston 1981). After the passing of the Arkansas Act in 1850, efforts were made to reclaim small tracts of land in order to create more usable spaces for ranching. Eventually, as farming supplanted ranching as a more profitable enterprise, large tracts of land began to be reclaimed for agricultural use, aided in part by the extension of the railroad in the 1870s (Pacific Legacy 2006).

Following the passage of state wide 'No-Fence' laws in 1874, ranching practices began to decline, while farming expanded in the San Joaquin Valley in both large land holdings and smaller, subdivided properties. As the farming population grew, so did the demand for irrigation. Settlers began reclamation of swampland in 1866, and built small dams across the Kern River to divert water into the fields. By 1880, 86 different groups were taking water from the Kern River. Ten years later, 15 major canals provided water to thousands of acres in Kern County.

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

Three competing partnerships developed during this period which had a great impact on control of water, land reclamation and ultimately agricultural development in the San Joaquin Valley: Livermore and Chester, Haggin and Carr, and Miller and Lux, perhaps the most famous of the enterprises. Livermore and Chester were responsible, among other things, for developing the large Hollister plow (three feet wide by two feet deep), pulled by a 40 mule team, which was used for ditch digging. Haggin and Carr were largely responsible for reclaiming the beds of the Buena Vista and Kern lakes, and for creating the Calloway Canal, which drained through the Rosedale area in Bakersfield to Goose Lake (Morgan 1914). Miller and Lux ultimately became one of the biggest

private property holders in the country, controlling the rights to over 22,000 square miles, and their impacts were widespread. They recognized early-on that control of water would have important economic implications, and they played a major role in the water development of the state. They controlled, for example, over 100 miles of the San Joaquin River with the San Joaquin and Kings River Canal and Irrigation System (http://en.wikipedia.org/wiki/Henry_Miller(rancher). 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 (http://exiledonline.com/california-class-war-history-meet-the-oligarch-family-thats-been-scamming-taxpayers-for-150-years-and-counting/).

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

The census-designated community of Teviston originated in the 1930s during the Dust Bowl migration of "Okies" to California. Initially it was a "black [i.e., African-American] okie" residential community, reflecting the influx of African-Americans in search of work as farm laborers during this same period. A significant African-American population continued to reside in the hamlet into the 1960s (http://ernestlowe.com/teviston-a-black-okie-community/; accessed on 1/8/2020). According to Eissinger (n.d.a, n.d.b), Teviston grew organically over time and, unlike much better known historical African-American town of Allensworth, it was never a planned community or colony. Since the 1960s the African-American population has been almost entirely replaced by Hispanic residents. In 2017, over 80% of the community residents were Hispanic, with about 14% white/non-Hispanic and only approximately 4% African American (Tulare County 2017). The community continues to be tied to agricultural labor.

2.5.1 Significant Themes and Associated Property Types

Approaches to historical Euro-American archaeological research relevant to the region have been summarized by Caltrans (1999, 2000, 2007, 2008). These concern the general topics of historical landscapes, agriculture and farming, irrigation (water conveyance systems), and mining. Because of the potential variety of historical remains that could occur in any area, Caltrans has identified a series of general research issues along with an evaluation matrix aiding determinations of eligibility. The identified research issues include site structure and land-use (lay-out, land use, feature function); economics (self-sufficiency, consumer behavior, wealth indicators); agricultural technology and science (innovations, methods); ethnicity and cultural diversity (religion, race); household composition and lifeways (gender, children); and labor relations. Principles useful for

determining the research potential of an individual site or feature are conceptualized in terms of the mnemonic AIMS-R, as follows:

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

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

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

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

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

In general terms, historical Euro-American archaeological sites would be evaluated for NRHP eligibility under Criterion D, research potential. Given the location of the current Project APE, in a historically African-American residential community, cultural diversity/ethnicity would potentially be an important area of research.

3. ARCHIVAL RECORDS SEARCH

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

According to the IC records, only one previous study had been completed within a portion of the study area (TU-00551; Archaeological Reconnaissance of Pixley Irrigation District) by Porterville College in 1984. No resources of any kind were recorded or are known to exist within the Project APE. An additional four previous archaeological surveys had been conducted within 0.5-mi of the Project APE (Table 1), resulting in the recording of two cultural resources within that 0.5-mi radius (Table 2). A map of previous reports and recorded cultural resources in and around the APE is included in Confidential Appendix A.

Table 1. Survey reports within 0.5-miles of the APE

Report No.	Year	Author (s)/Affiliation	Title
TU-00102	1995	B Hatoff et al/ Woodward-Clyde Consultants	Cultural Resources Inventory Report for the Proposed Mojave Northward Expansion Project
TU-01011	1999	D Laylander et al/ Applied EarthWorks, Inc.	Negative Archaeological Survey Report to Install Traffic Surveillance Stations at 21 Locations in Kern, Kings, and Tulare Counties
TU-01324	2004	R Baloain/ Applied EarthWorks, Inc.	Cultural Resources Survey of a Proposed School Site Near Porterville In Tulare County, California

Report No.	Year	Author (s)/Affiliation	Title
TU-01594	2008	H Switalksi/ AMEC Earth and Environmental, Inc	Archaeological Survey Report for the Southern California Edison Company Replacement of 11 Deteriorated Power Poles on the Blinker 12 kV, Capanero 12 kV, Carver 12 kV, Doran 12 kV, Jordan 12 kV, Pond 12 kV, Skinkle 12 kV, and Weston 12 kV Distribution Circuits (DWO 6051-4800, AI W4829, 7-4812, 7-4819, and 7-4820), Kern and Tulare Counties, California

Table 2. Resources within 0.5 miles of the APE

Primary #	Type	Description
P-54-002190	Structure	Historic
P-54-004626	Structure	Historic Southern Pacific Railroad

A records search was also conducted at the Native American Heritage Commission (NAHC) Sacred Lands File (Confidential Appendix A). No sacred sites or tribal cultural resources were known in or in the vicinity of the study area. Outreach letters were then sent to the tribal contact list provided by the NAHC. No responses have been received from any of the contacts, presumably indicating that there are no additional tribal concerns over the Project.

A review of the USGS 1929 (1 : 31,680 scale), and 1950 and 1954 (both 1 : 24,000) topographical quadrangles indicates that the initial settlement in Teviston occurred along the railroad tracks/current route of Highway 99 in the southern half of Section 16, southeast of the Project APE. Development within the APE occurred between 1950 and 1954 and consisted of what appear to be single-family residences located following the current street grid-pattern. No earlier structures appear to have been constructed within the APE. The 1950s development within the APE correlates with the creation of the TCSD, which occurred during the late 1950s.

4. METHODS AND RESULTS

The Project consists of the abandonment of two existing wells ("South Well" and "North Well"), construction of a new well, the installation of new water wells upgrades at these locations (Figure 2 and 3), and upgrades to water main connecting pipes (Figure 4 and 5). The APE was surveyed by ASM Associate Archaeologist Rob Azpitarte, B.A. Fieldwork was conducted in December, 2019. The APE was examined with the archaeologist walking parallel transects along the pipeline route and proposed well upgrade locations spaced at 15-meter intervals, in order to identify surface artifacts, archaeological indicators (e.g., shellfish or animal bone), and/or archaeological deposits (e.g., organically enriched midden soil). Special attention was paid to rodent burrow back dirt piles, in the hope of identifying sub-surface soil conditions that might be indicative of archaeological features or remains.

A buffer 50-feet wide was included on each side of the pipeline route and the proposed well construction/upgrade locations. Because the route primarily follows existing paved and unpaved roads, this resulted in survey on both sides of the roads. Adjacent to the proposed pipe corridors were residential front yards with planted grass; paved parking lots, undeveloped portions of private property, and agricultural land consisting primarily of active almond orchards. Surface visibility was moderate to excellent throughout the Project APE, though planted lawn and paved areas restricted surface visibility in some areas. Roads lack curbing and sidewalks, however, providing surface visibility in most portions of the pipeline route. Careful attention was paid to any exposed ground-surface (e.g., in planters or road shoulders) immediately adjacent to paved or lawn areas to ensure survey coverage. Soils throughout the study area are sandy-silty alluvium with very few lithic clasts, reflecting a soils origin in deltaic processes.

No cultural resources of any kind were identified within the proposed Project APE.

Figure 2. Overview of the "North Well" location, looking northwest.

Figure 3. Overview of the "South Well" and "Well 3" location, looking southwest.

Figure 4. Overview of proposed pipe corridor showing survey conditions at the southernmost pipe corridor extent (Rd. 132) in Teviston, looking north.

Figure 5. Overview of proposed pipe corridor showing survey conditions at the approximate center of Teviston, looking north.

5. SUMMARYAND RECOMMENDATIONS

A Class III inventory/Phase I cultural resources survey was completed for the approximately 54-acres Teviston CSD Water System Improvement Project APE. Records searches were conducted at the CSUB CHRIS Information Center and the Native American Heritage Commission Sacred Land Files. No previously recorded cultural or tribal resources were known within or adjacent to the Project APE. Letters and follow-up calls were also made to tribal organizations on the NAHC contact list. No additional tribal cultural resources or concerns were identified by that effort.

Intensive survey of the Project APE did not result in the identification of cultural resources of any kind.

Development of the APE therefore does not have the potential to result in adverse effects or impacts to historic properties or significant or unique cultural resources, and a determination of no effect is recommended for the Project. In the unlikely event that cultural resources are uncovered during the construction or use of the APE, however, it is recommended that an archaeologist be contacted to evaluate the discovery.

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CONFIDENTIAL APPENDIX A:

Records Search and Native American Heritage Commission Outreach