

Palo Verde Union Elementary School District Water System Improvement Project

Draft Initial Study / Mitigated Negative Declaration

April 2021

Prepared for:
Palo Verde Union Elementary School

Prepared by:
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Acronyms and Abbreviations

APE	Area of Potential Effect
AQP	Air Quality Plan
BAAQMD.....	Bay Area Air Quality Management District
BAU	business as usual
BPS	Best Performance Standards
Cal EPA	California Environmental Protection Agency
Cal/OSHA	California Occupational Safety and Health Administration
CalEEMod	California Emissions Estimator Modeling (software)
CAP	Climate Action Plan
CCAP.....	Climate Change Action Plan
CDFW	California Fish and Wildlife
CESA	California Endangered Species Act
CNDDB.....	California Natural Diversity Data Base
County	Tulare County
DDW	Division of Drinking Water
DOC	California Department of Conservation
DOGGR	Division of Oil, Gas and Geothermal Resources
DTSC.....	(California) Department of Toxic Substances Control
DWR.....	Department of Water Resources
EA	Environmental Assessment
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
FEMA.....	Federal Emergency Management Agency
FMMP.....	Farmland Mapping and Monitoring Program
GAMAQI.....	Guidelines for Assessing and Mitigating Air Quality Impacts
GC	Government Code
GHG.....	Greenhouse Gas
GIS	Geographic Information System
gpm	gallons per minute
HUC.....	Hydrologic Unit Code
IS	Initial Study
IS/MND.....	Initial Study/Mitigated Negative Declaration

Palo Verde Union Elementary School District Water System Improvement Project

km	.....kilometers
MBTA	.....Migratory Bird Treaty Act
MMRP	.....Mitigation Monitoring and Reporting Program
MND	.....Mitigated Negative Declaration
MTCO _{2e}	.....Metric tons of carbon dioxide equivalent
NAAQS	.....National Ambient Air Quality Standards
NAHC	.....Native American Heritage Commission
ND	.....Negative Declaration
NHPA	.....National Historic Preservation Act
NO _x	.....Nitrogen oxides
NRCS	.....Natural Resources Conservation Service
NRHP	.....National Register of Historic Places
O ₃	.....Ozone
Pb	.....Lead
PM ₁₀	.....particulate matter 10 microns in size
PM _{2.5}	.....particulate matter 2.5 microns in size
ppb	.....parts per billion
ppm	.....parts per million
Project	.....Water System Improvement Project
PVUESD	.....Palo Verde Union Elementary School District
Reclamation	.....United States Bureau of Reclamation
ROG	.....Reactive Organic Gases
SB	.....Senate Bill
SJVAB	.....San Joaquin Valley Air Basin
SJVAPCD	.....San Joaquin Valley Air Pollution Control District
SMARA	.....Surface Mining and Reclamation Act
SO ₂	.....Sulfur Dioxide
SO _x	.....sulfur oxide
SR	.....State Route
SWPPP	.....Storm Water Pollution Prevention Plan
SWRCB	.....State Water Resources Control Board
TAC	.....Toxic Air Contaminants
USDA	.....United States Department of Agriculture
USFWSUnited States Fish and Wildlife Service
µg/m ³	micrograms per cubic meter

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Chapter 1 Introduction

Provost & Pritchard Consulting Group (Provost & Pritchard) has prepared this Initial Study/Mitigated Negative Declaration (IS/MND) on behalf of Palo Verde Union Elementary School District 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 Section 21000 *et seq.* The District is the CEQA lead agency for this proposed Project.

The site and the proposed Project are described in detail in the **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 proposed Project under review may have a significant effect on the environment and should be further analyzed to determine mitigation measures or project alternatives that might avoid or reduce project impacts to less than significant levels. A negative declaration (ND) may be prepared instead if the lead agency finds that there is no substantial evidence in light of the whole record that the project may have a significant effect on the environment. An ND is a written statement describing the reasons why a proposed Project, not otherwise exempt from CEQA, would not have a significant effect on the environment and, therefore, why it would not require the preparation of an EIR (CEQA Guidelines Section 15371). According to CEQA Guidelines Section 15070, a ND or *mitigated* ND shall be prepared for a project subject to CEQA when either:

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

1.2 Document Format

This IS/MND contains four chapters and four appendices, **Chapter 1 Introduction**, provides an overview of the proposed Project and the CEQA process. **Chapter 2 Project Description**, provides a detailed description of proposed Project components and objectives. **Chapter 3 Impact Analysis**, presents the CEQA checklist and environmental analysis for all impact areas, mandatory findings of significance, and feasible mitigation measures. If the proposed Project does not have the potential to significantly impact a given issue area, the relevant section provides a brief discussion of the reasons why no impacts are expected. If the proposed 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 3** concludes with the Lead Agency's determination based upon this initial evaluation. **Chapter 4 Mitigation Monitoring and Reporting Program** (MMRP), provides the proposed mitigation measures, implementation timelines, and the entity/agency responsible for ensuring implementation.

Chapter 1 Introduction

Water System Improvement Project

The Air Pollutant and Greenhouse Gas CalEEMod Output Files, Biological Resources Evaluation Reports, Cultural Resources Evaluation Reports, and NRCS Soil Resource Report are provided as technical **Appendix A, Appendix B, Appendix C** and **Appendix D**, respectively, at the end of this document.

Chapter 2 Project Description

2.1 Project Background and Objectives

2.1.1 Project Title

Palo Verde Union Elementary School District Water System Improvement Project (Project)

2.1.2 Lead Agency Name and Address

Palo Verde Union Elementary School District
9637 Avenue 196
Tulare, CA 93274-9529

2.1.3 Contact Person and Phone Number

Lead Agency Contact
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(559) 688-0648

CEQA Consultant
Provost & Pritchard Consulting Group
Mary E. Beatie, Senior Planner
Project Manager
(559) 636-1166

2.1.4 Project Location

The Project would be located within the Palo Verde Union Elementary School (school) campus. Which is located in the central-western portion Tulare County, California, approximately 206 miles south of Sacramento and 55 miles north of Bakersfield (see **Figure 2-1**) along State Route 99 (SR 99). The Project would be located on Assessor's Parcel Numbers 174-150-025. The Area of Potential Effect (APE), as well as the proposed placement of Project components are shown on **Figure 2-2**.

2.1.5 Latitude and Longitude

The centroid of the Project area, including the new well and water storage tank, is 36.144796, -119.355811

2.1.6 General Plan Designation

Agriculture

2.1.7 Zoning

Exclusive Agriculture, 40-Acre Minimum (AE-40)

2.1.8 Description of Project

2.1.8.1 Project Background and Purpose

The school currently has two wells on site. One 80 gallons per minute (gpm) domestic well (Well No. 1), and a newer 200 gpm domestic well (Well No. 2). Well No. 1 does not produce enough water to meet the domestic, fire flow and irrigation needs of the school. Well No. 2 was drilled when the new gymnasium was being built in order to assist with fire flow and irrigation needs. Unfortunately, this well has been found to be contaminated and cannot be used for domestic water. It is currently used as back up for fire flow. The school is currently in the process of applying for a grant for a new domestic standard well that will meet the State standards for drinking water and fire flow. When this Project was originally undertaken a portion of the layout was different. Biological and cultural subconsultant assessments were completed in 2018 by Odell Planning and Research, Inc., and Sierra Valley Cultural Planning (under contract to Odell Planning and Research) but the CEQA document was never finished or adopted. The Project approach was updated in 2020 and a portion of the Project APE was outside of what the subconsultants originally assessed. Kleinfelder was hired in 2020 to provide supplemental assessments to the original biological and cultural assessments to include the portion of the Project site that was outside of the original survey area. Both the original assessments and the supplemental assessments are included in their respective appendices at the end of this document.

2.1.8.2 Project Description

The Project proposes to drill and construct a new domestic standard well (Well No. 3) for the school at the location illustrated in . The new well is expected to yield about 300 gpm. In addition to the construction of Well No. 3, the following items will also be constructed:

- A 10,000-gallon pressure tank. The pressure tank will measure approximately 20 feet in height and approximately 30 feet in diameter and will be located at the new well site.
- A gate valve with valve box
- Backflow preventer
- 15hp booster pump
- 6 ft high chain link fence around new well and appurtenant facilities, with a 30-ft wide double drive gate.
- 166 linear feet (LF) of new water distribution line (using open-trench method of construction installation)
- 500-LF of new irrigation main to all valve boxes from the well.

These Project components contained within the APE as defined above, are illustrated in **Figure 2-2**. In addition to constructing a well, associated infrastructure, and water pressure tank, the Project proposes to abandon the Well No. 1, per Tulare County standards and remove the associated existing 10,000 gal. water pressure tank, pump and electrical service.

2.1.8.3 Construction

Construction of the Project is anticipated to be completed within three months, which will include the demolition of Well No.1, drilling and installation of Well No. 3, construction of a water storage tank, booster pumps, and associated infrastructure, and connection to the existing distribution system. Construction equipment will likely include a drilling rig, excavator, graders, backhoes, skidsteers, loaders, and hauling trucks. The Project will involve approximately 0.25 acres of ground disturbance.

Generally, construction will occur between the hours of 7am and 5pm, Monday through Friday, excluding holidays. Post-construction activities will include system testing, commissioning, and site clean-up. Construction will require temporary staging and storage of materials and equipment. Staging areas will be located onsite.

Although construction is not expected to generate hazardous waste, field equipment used during construction has the potential to contain various hazardous materials such as diesel fuel, hydraulic oil, grease, solvents, adhesives, paints, and other petroleum-based products.

2.1.8.4 Operation and Maintenance

Operation and maintenance of the water system will continue to be performed by the school's existing maintenance staff.

2.1.9 Site and Surrounding Land Uses and Setting

Land uses in the vicinity of the Project consist of active farmland, scattered rural residences, and vacant/fallow land typical of rural areas in the Central Valley. The Project site is within the school campus. The Project and the surrounding lands are zoned as AE-40, Exclusive Agricultural Zone, 40-Acre Minimum, by Tulare County. Properties directly surrounding the school are actively farmed and include row crops and orchards. The school is located on the Valley floor east of the Coast Ranges and west of the Sierra Nevada Mountain Range. Topographically, the proposed Project area is at an elevation of approximately 345 feet above mean sea level.

2.1.10 Other Public Agencies Whose Approval May Be Required

- State Water Resources Control Board, Division of Drinking Water (DDW) – Water Supply Permit
- San Joaquin Valley Air Pollution Control District, (Regulation VIII Fugitive Dust Control, Rule 9510 Indirect Source Review,
- County of Tulare, Building Permit
- County of Tulare, Environmental Health Services Division- Well Construction and Destruction Permits
- California Division of the State Architect (DSA)

2.1.11 Consultation with California Native American Tribes

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

Palo Verde Union Elementary School District has not received any written correspondence from a Tribe pursuant to Public Resources Code Section 21080.3.1 requesting notification of proposed project.

Chapter 2 Project Description

Water System Improvement Project

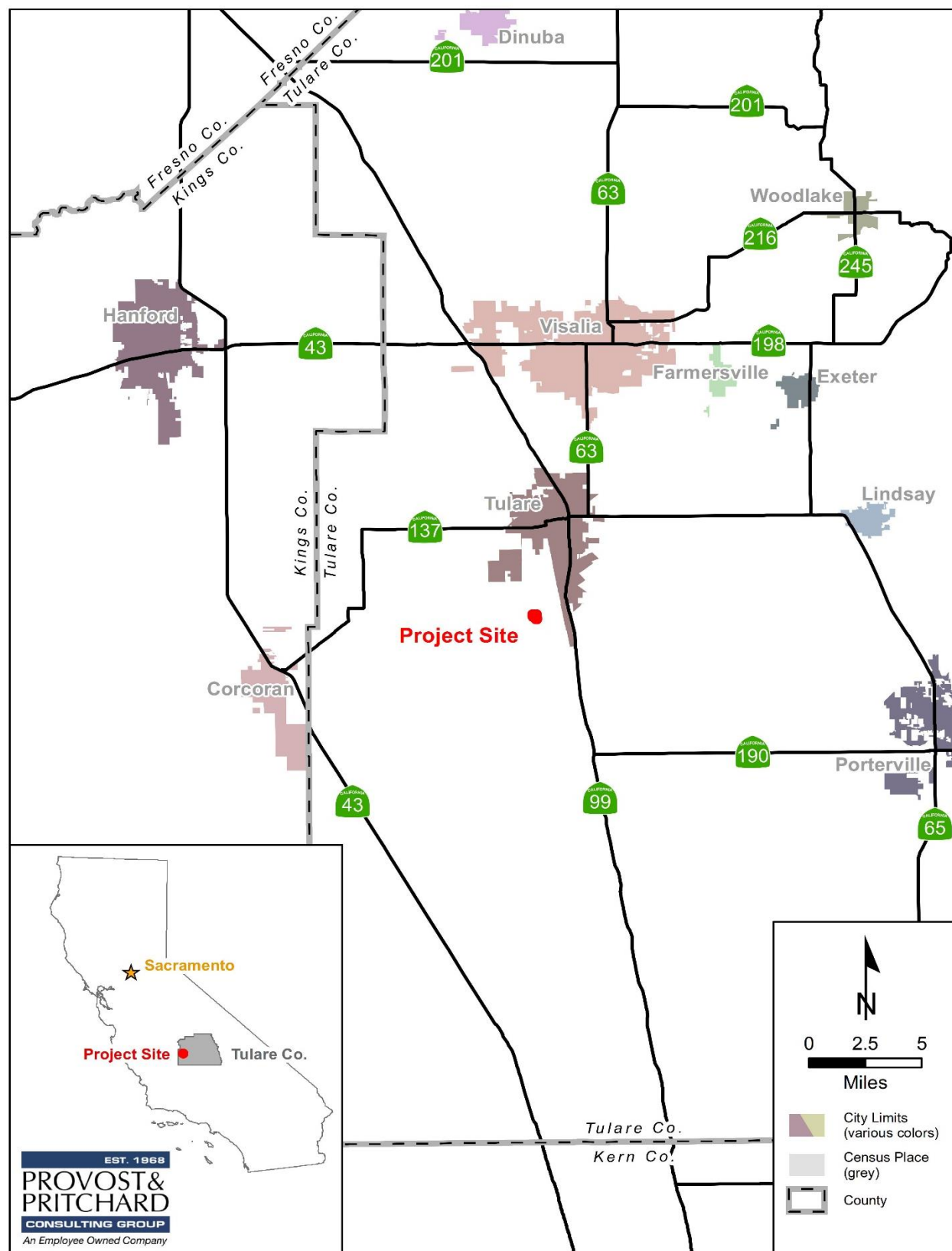


Figure 2-1. Regional Location



Figure 2-2. Area of Potential Effect - Aerial Map

Chapter 2 Project Description

Water System Improvement Project

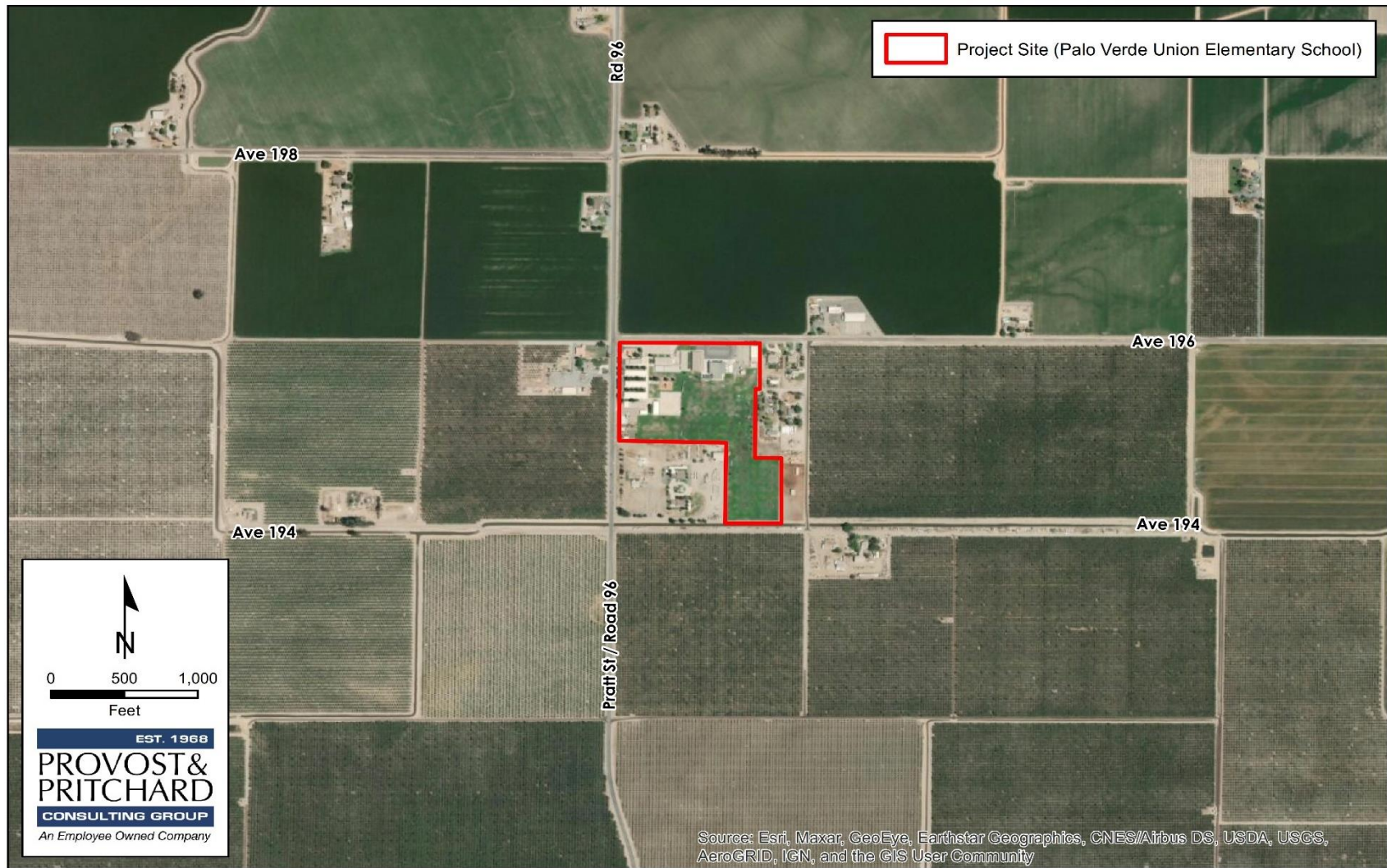


Figure 2-3. Project Location Map - Aerial

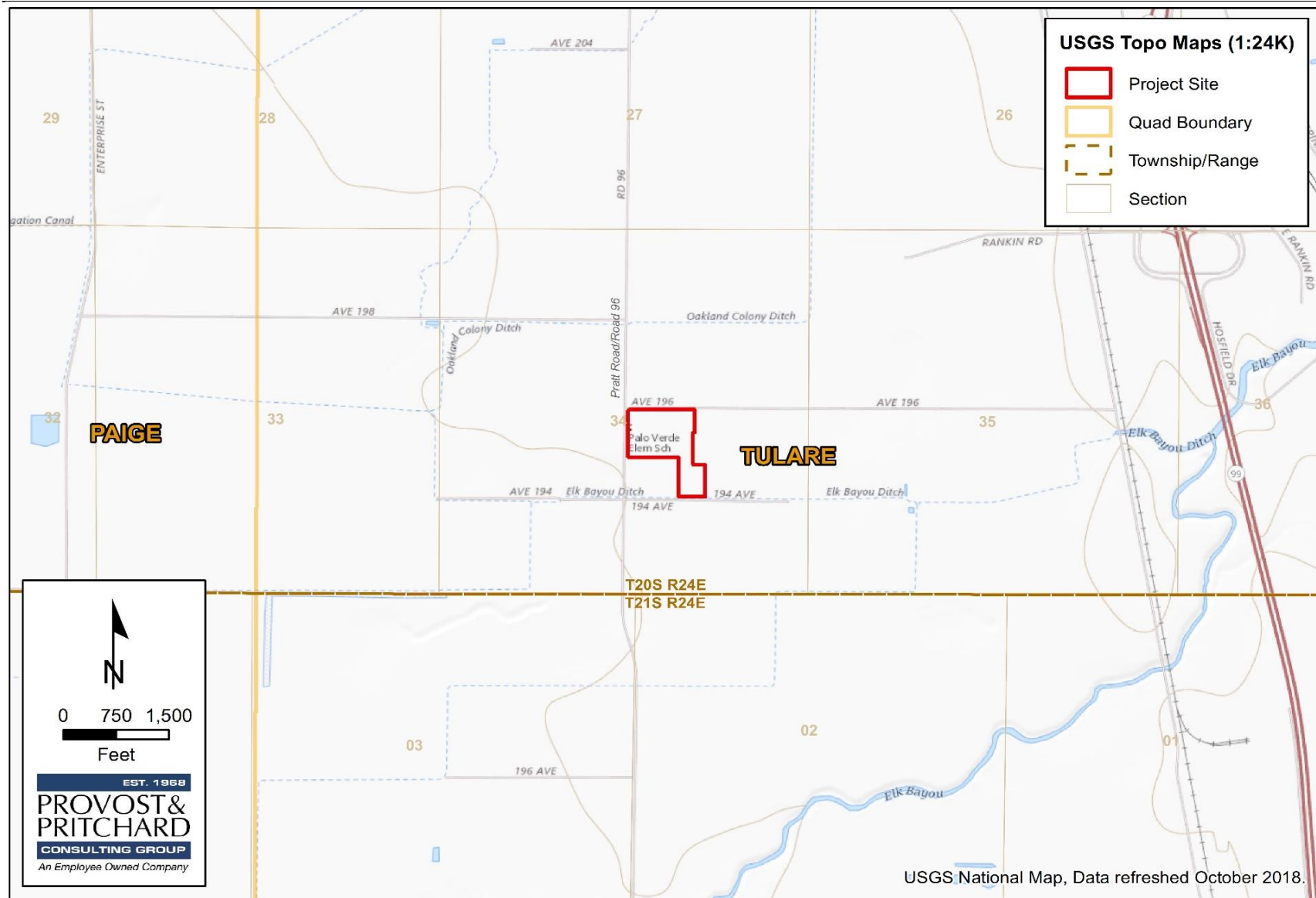


Figure 2-4. Topographic Quadrangle Map

Chapter 2 Project Description

Water System Improvement Project

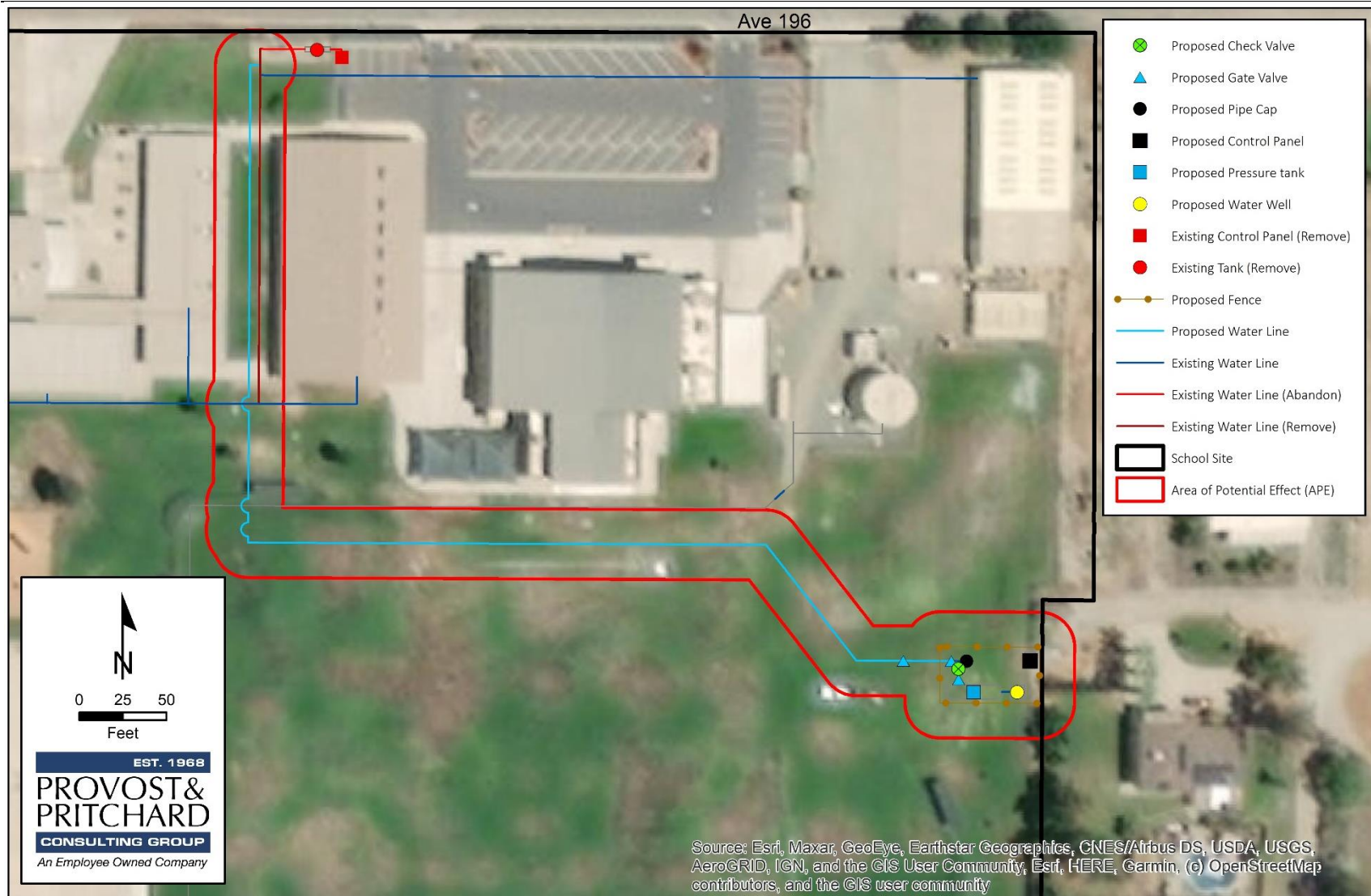


Figure 2-5. Site Plan Map

Chapter 3 Impact Analysis

3.1 Environmental Factors Potentially Affected

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

- | | | |
|--|---|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture & Forestry Resources | <input type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources | <input type="checkbox"/> Energy |
| <input type="checkbox"/> Geology/Soils | <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Hazards & Hazardous Materials |
| <input type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Land Use/Planning | <input type="checkbox"/> Mineral Resources |
| <input type="checkbox"/> Noise | <input type="checkbox"/> Population/Housing | <input type="checkbox"/> Public Services |
| <input type="checkbox"/> Recreation | <input type="checkbox"/> Transportation | <input checked="" type="checkbox"/> Tribal Cultural Resources |
| <input type="checkbox"/> Utilities/Service Systems | <input type="checkbox"/> Wildfire | <input type="checkbox"/> Mandatory Findings of Significance |

The analyses of environmental impacts here in **Chapter 4 Mitigation Monitoring and Reporting Program** 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 proposed Project would result in impacts below the threshold of significance, and no mitigation measures are required.

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

3.2 Aesthetics

Table 3-1. Aesthetics Impacts

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

3.2.1 Environmental Setting and Baseline Conditions

The Project is located in the central-western part of Tulare County in the Central San Joaquin Valley. Land in the vicinity consists of relatively flat irrigated farmland and rural residences. Agricultural practices in the vicinity consist of row crops and orchard cultivation. Although they are located approximately 19 miles east, the foothills of the Sierra Nevada Mountains are not typically visible from the vantage point of the Project site, even on a clear day. 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 water infrastructure associated with the Project is consistent with other development existing on the Project site and with the aesthetics of the area.

3.2.2 Impact Assessment

a) Would the project have a substantial adverse effect on a scenic vista?

No Impact. The Project will include construction of above and below-ground facilities. The above-ground facilities will not exceed the mass or profile of any existing structures on the site and therefore will not materially change any existing viewsheds including the site, nor will they impede significantly any viewsheds from the site. Belowground facilities will have no effect on aesthetics or views. There would be no impact.

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

No Impact. According to Caltrans Scenic Highway System Map, there are no Officially Designated State Scenic Highways in Tulare County¹. There would be no impact.

¹ Caltrans Scenic Highways <https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways>. Accessed January 2021

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

No Impact. The Project is within the Palo Verde Union Elementary School site which is surrounded by agricultural row crops and orchards, and rural infrastructure such as irrigation standpipes, wells, and ponding basins. The new well, water pressure tank and related infrastructure, are consistent with existing surrounding infrastructure and the Project will not substantially degrade the visual character of the area. There would be no impact.

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

No Impact. The Project is primarily surrounded by agriculture and other rural uses. No additional onsite lighting is proposed as part of the Project. Vehicular traffic after construction will return to baseline conditions relative to normal daytime maintenance and monitoring activities. Therefore, the Project will not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area or be inconsistent with existing conditions, there would be no impact.

3.3 Agriculture and Forestry Resources

Table 3-2. Agriculture and Forest Impacts

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

3.3.1 Environmental Setting and Baseline Conditions

The Project's setting is a rural elementary school, surrounded by irrigated farmland. The Project's surrounding area is planted in row crops and orchards. The school site and surrounding lands are zoned for agricultural use, with adjacent properties covered under Williamson Act contracts and designated as Farmland of State Importance, Prime Farmland, Rural Residential and Urban and Built-Up Land.

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.

The California DOC's 2012 FMMP is a non-regulatory program that produces "Important Farmland" maps and statistical data used for analyzing impacts on California's agricultural resources. The Important Farmland maps identify eight land use categories, five of which are agriculture related: prime farmland, farmland of statewide importance, unique farmland, farmland of local importance, and grazing land – rated according to soil quality and irrigation status. Each is summarized below²:

² ² California Department of Conservation. FMMP – Report and Statistics.
<https://www.conservation.ca.gov/dlrp/fmmp/Pages/Important-Farmland-Categories.aspx> Accessed November 2020.

- **PRIME FARMLAND (P):** Farmland with the best combination of physical and chemical features able to sustain long term agricultural production. This land has the soil quality, growing season, and moisture supply

needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

- **FARMLAND OF STATEWIDE IMPORTANCE (S):** Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture.

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

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

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

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

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

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

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

As demonstrated in **Figure 3-1**, the FMMP for Tulare County designates the school site as Urban and Built-Up Land.

3.3.2 Impact Assessment

a) Would the project 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 Urban and Built-Up Land and surrounding areas as Urban Built-Up Land and Rural Residential as shown in **Figure 3-1**. The Project involves water system improvements for an existing elementary school 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.

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b) Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. Although the site is currently zoned for agricultural use, it has not been used for agricultural production since the school was founded many years ago to serve the rural population in the area. As stated above, the FMMP for Tulare County designates the site as Urban and Built-Up Land and surrounding areas as Urban Built-Up Land and Rural Residential as shown in **Figure 3-1**. Two adjacent parcels are covered under a Williamson Act contract. The Project involves water system improvements for an existing elementary school and will not result in any type of land use conversion, nor will it conflict with Williamson Act contracts of the adjacent parcels. There will be no impact.

c) Would the project 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) Would the project 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 within the Project or its vicinity. Furthermore, as stated above, the Project does not propose any type of land use conversion. There will be no impact.

e) Would the project 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 a-d, the Project involves water system improvements for an existing elementary school and will not result in any type of land use conversion, either directly or indirectly. There will be no impact.

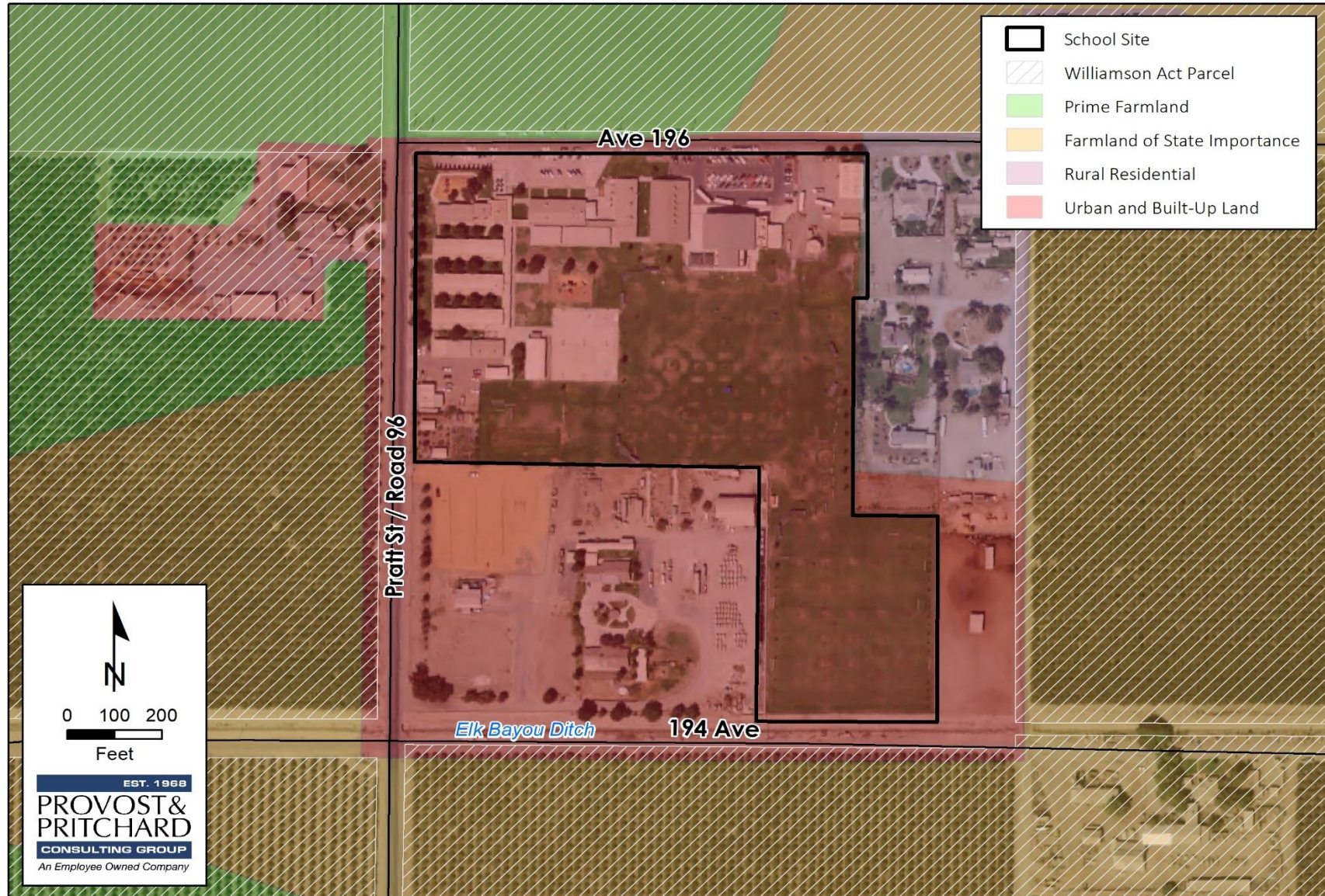


Figure 3-1. Williamson Act Map

3.4 Air Quality

Table 3-3. Air Quality Impacts

Air Quality Impacts				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.4.1 Environmental Setting and Baseline Conditions

The Project is located in the San Joaquin Valley Air Basin (SJVAB or air basin). The San Joaquin Valley Air Pollution Control District (SJVAPCD) provides Guidelines for Assessing and Mitigating Air Quality Impacts (GAMAQI) for quantification of emissions and evaluation of potential impacts to air resources³ and Guidance for Land-Use Agencies in addressing greenhouse gas (GHG) Emission Impacts for New Projects under CEQA.⁴

3.4.1.1 Regulatory Attainment Designations

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

The EPA designates areas for ozone, CO, and NO₂ as “does not meet the primary standards,” “cannot be classified,” or “better than national standards.” For SO₂, 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,

³ SJVAPCD GAMAQI <https://www.valleyair.org/transportation/GAMAQI-2015/FINAL-DRAFT-GAMAQI.PDF>. Accessed July 2020.

⁴ Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA. <http://www.valleyair.org/Programs/CCAP/12-17-09/3%20CCAP%20-%20FINAL%20LU%20Guidance%20-%20Dec%2017%202009.pdf> Accessed September 2020.

EPA assigned new nonattainment designations to areas that had previously been classified as Group I, II, or III for PM₁₀ based on the likelihood that they would violate national PM₁₀ standards. All other areas are designated “unclassified.”

The State and national attainment status designations pertaining to the SJVAB are summarized in **Appendix A**. The SJVAB is currently designated as a nonattainment area with respect to the State PM₁₀ standard, ozone, and PM_{2.5} standards. The SJVAB is designated nonattainment for the NAAQS 8-hour ozone and PM_{2.5} standards. On September 25, 2008, the EPA re-designated the San Joaquin Valley to attainment status for the PM₁₀ NAAQS and approved the PM₁₀ Maintenance Plan.

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

Pollutant	Averaging Time	California Standards*		National Standards*	
		Concentration*	Attainment Status	Primary	Attainment Status
Ozone (O ₃)	1-hour	0.09 ppm	Nonattainment/ Severe	–	No Federal Standard
	8-hour	0.070 ppm	Nonattainment	0.075 ppm	Nonattainment (Extreme)**
Particulate Matter (PM ₁₀)	AAM	20 µg/m ³	Nonattainment	–	Attainment
	24-hour	50 µg/m ³		150 µg/m ³	
Fine Particulate Matter (PM _{2.5})	AAM	12 µg/m ³	Nonattainment	12 µg/m ³	Nonattainment
	24-hour	No Standard		35 µg/m ³	
Carbon Monoxide (CO)	1-hour	20 ppm	Attainment/ Unclassified	35 ppm	Attainment/ Unclassified
	8-hour	9 ppm		9 ppm	
	8-hour (Lake Tahoe)	6 ppm		–	
Nitrogen Dioxide (NO ₂)	AAM	0.030 ppm	Attainment	53 ppb	Attainment/ Unclassified
	1-hour	0.18 ppm		100 ppb	
Sulfur Dioxide (SO ₂)	AAM	–	Attainment	--	Attainment/ Unclassified
	24-hour	0.04 ppm		--	
	3-hour	–		0.5 ppm	
	1-hour	0.25 ppm		75 ppb	
Lead (Pb)	30-day Average	1.5 µg/m ³	Attainment	–	No Designation/ Classification
	Calendar Quarter	–		--	
	Rolling 3-Month Average	–		0.15 µg/m ³	
Sulfates (SO ₄)	24-hour	25 µg/m ³	Attainment	No Federal Standards	
Hydrogen Sulfide (H ₂ S)	1-hour	0.03 ppm (42 µg/m ³)	Unclassified		
Vinyl Chloride (C ₂ H ₃ Cl)	24-hour	0.01 ppm (26 µg/m ³)	Attainment		
Visibility-Reducing Particle Matter	8-hour	Extinction coefficient: 0.23/km-visibility of 10 miles or more due to particles when the relative humidity is less than 70%.	Unclassified		

* For more information on standards visit: <https://ww3.arb.ca.gov/research/aqs/aqs2.pdf>

** No Federal 1-hour standard. Reclassified extreme nonattainment for the Federal 8-hour standard September 2020.

***Secondary Standard

Source: CARB 2015; SJV-APCD 2015

3.4.2 Methodology of Determining the Significance of Air Quality Impacts

Conclusions in this Air Quality Impact Assessment rely on modeling calculations from the CalEEMod version 2016.3.2) Output Files ([Appendix A](#)). The sections below summarize the results of the model run and utilize its conclusions in the impact determinations.

To assist local jurisdictions in the evaluation of air quality impacts, the SJVAPCD published the GAMAQI. 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 included in [Table 3-7](#) through [Table 3-8](#) to provide for a comparative significance determination.

Assessment of the significance of project air quality impacts may be considered on a regional or localized level. Determination of project impacts on achieving the goal of air quality plans and evaluating impacts related to emissions of criteria pollutants are considered on both regional and localized levels in this analysis. Evaluation of impacts to sensitive receptors considers the project's localized criteria pollutant emissions in this analysis. Sources of the project's localized criteria pollutant emissions would include: reactive organic gases (ROG), Nitrogen oxides (NO_x), PM_{2.5}, PM₁₀, CO, NO₂, and Toxic Air Contaminants (TACs) which include acetaldehyde, benzene, 1,3 butadiene, carbon tetrachloride, hexavalent chromium, paradichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel particulate matter a complex mixture of substances.

3.4.2.1 Short-Term Construction-Generated Emissions

Short-term construction emissions associated with the Project were estimated using CalEEMod. The emissions modeling includes emissions generated by construction and grading equipment most commonly associated with the site work, equipment delivery, and vehicle, equipment, and worker fuel usage. Emissions were quantified based on anticipated construction schedules and construction equipment requirements that would occur over approximately three months. All remaining assumptions were based on the default parameters contained in the model. Modeling assumptions and output files are included in [Appendix A](#).

The SJVAPCD is responsible for controlling emissions primarily from stationary sources. However, the SJVAPCD also coordinates with the APCD's eight county Councils of Government (COGs) or Metropolitan Planning Organizations (MPOs) that are responsible for regional transportation planning and funding programs. The COG and MPO Transportation Planning Programs are used by SJVAPCD in its responsibilities in developing, updating, and implementing air quality attainment plans for the air basin. The SJVAPCD has adopted ozone plans and particulate matter plans for purposes of controlling harmful emissions and achieving attainment of state and national attainment standards. A project that would exceed established thresholds for criteria pollutants would be considered to have a significant impact on the implementation of air quality plans and would also constitute a cumulatively considerable net increase of criteria pollutants for which the air basin is in non-attainment.

Construction of the Project is expected to begin after Project approval with full buildout completed in 2021. The results of the emissions modeling for the Project are presented in [Table 3-5](#).

Table 3-5 Short-Term - Construction-Generated Emissions of Criteria Air Pollutants

Year	Annual Emissions (Tons/Year)				
	ROG	NO _x	CO	PM ₁₀	PM _{2.5}
2021	0.0230	0.2180	0.2130	0.0159	0.0122
<i>SJVAPCD Significance Thresholds:</i>	10	10	100	15	15
<i>Exceed SJVAPCD Thresholds?</i>	No	No	No	No	No

3.4.2.2 Long-Term - Operational Emissions

The unmitigated long-term operational emissions for the Project are listed in **Table 3-6**. Operational emissions would occur over the lifetime of the Project and are estimated to be minimal in nature. Maintenance would be provided on an as needed basis by District staff that is already on site and would result in negligible emissions. Energy source emissions would be from things on the site that require additional power, it is anticipated that additional power usage would result in negligible emissions, due to the fact that Well No. 3 is replacing Well No. 1. Completion of the Project is expected in 2021 and was used as the Project buildout modeling year as a conservative assumption. The SJVAPCD considers construction and operational assumptions separately when making significance determinations. Modeling assumptions and output files are included in **Appendix A**.

Table 3-6. Unmitigated Long-Term Operational Emissions

Source	Annual Emissions (Tons/Year)				
	ROG	NO _x	CO	PM ₁₀	PM _{2.5}
Area	<0.01	<0.01	<0.01	0.00	0.00
<i>Energy:</i>	0.00	0.00	0.00	0.00	0.00
<i>Mobile</i>	0.00	0.00	0.00	0.00	0.00
Highest Operational Emissions Any Year	<0.01	0.00	0.00	0.00	0.00
<i>SJVAPCD Significance Thresholds:</i>	10	10	100	15	15
<i>Exceed SJVAPCD Thresholds?</i>	No	No	No	No	No

3.4.3 Screening Thresholds for Determining Impacts to Sensitive Receptors

Impacts to sensitive receptors would occur primarily during Project construction. Construction activities could produce short-term emissions that have the potential in large concentrations to contribute to cancer risk over a 70-year exposure period. The Air Quality and GHG reports (**Appendix A**) provide technical information on the types of pollutants that have the potential to affect sensitive receptors.

The SJVAB includes screening thresholds for identifying projects that need detailed analysis for localized impacts. Projects with on-site emission increases from construction activities that exceed the 100 pounds per day screening level of any criteria pollutant after compliance with Rule 9510 and implementation of all applicable mitigation measures would require preparation of an ambient air quality analysis. The criteria pollutants of concern are NO_x, CO, PM₁₀, and PM_{2.5}. There is no localized emission standard for ROG and most types of ROG are not toxic and have no health-based standard, however, ROG was included for informational purposes only.

Table 3-7 lists the maximum daily air pollutant emissions generated by the Project during construction.

Table 3-7. Maximum Daily Air Pollutant Emissions During Construction

Maximum Daily Emissions by Year	Emissions (Pounds/Daily)				
	ROG	NO _x	CO	PM ₁₀	PM _{2.5}
Construction 2021	0.8630	8.2147	8.0630	1.2886	0.8370
SJVAPCD Screening Thresholds	100	100	100	100	100

Operational emission would begin to accrue upon completion of the project. The Project is anticipated to be completed in 2021. **Table 3-8** lists the maximum daily air pollutant emissions generated by the Project during its operation.

Table 3-8. Maximum Daily Air Pollutant Emissions During Operation

Maximum Daily Emissions	Emissions (Pounds/Daily)				
	ROG	NO _x	CO	PM ₁₀	PM _{2.5}
Area	<0.01	0.00	<0.01	0.00	<0.01
Energy	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00
Total Daily Emissions	<0.01	0.00	<0.01	0.00	0.00
SJVAPCD Screening Thresholds	100	100	100	100	100
Exceed SJVAPCD Thresholds?	No	No	No	No	No

Table 3-7 and **Table 3-8** demonstrate the Project's impacts as evaluated against SJVAPCD screening thresholds for criteria pollutant emissions used to determine significance in accordance with health-based standards would not exceed and would be considerably below the significance thresholds.

3.4.4 Impact Assessment

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

Less than Significant Impact. The CEQA Guidelines indicate that a significant impact would occur if the Project would conflict with or obstruct implementation of the applicable air quality plan. The GAMAQI does not provide specific guidance on analyzing conformity with the Air Quality Plan (AQP). Therefore, the Air Quality and GHG report (Appendix A) assumed the following criteria for determining Project consistency with the current AQPs:

1. Will the project result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQPs?

Whether this criterion is met is determined by comparison of Project emissions to the regional and localized thresholds identified by the SJVAPCD for regional and local air pollutants.

2. Will the project comply with applicable control measures set forth in the AQPs?

The primary control measures applicable to development projects in the SJVAPCD is the required compliance with *Regulation VIII-Fugitive PM₁₀ Prohibitions* and *Rule 9510-Indirect Source Review*.

Regional air quality impacts and attainment of standards are the result of cumulative impacts of all emission sources within the air basin. Individual projects are generally not large enough to contribute measurably to an existing violation of air quality standards. Therefore, the cumulative impact of the Project is important because it is based on its cumulative contribution combined with one or more other closely related past, present, and reasonably foreseeable probably future projects emitting similar emissions. Because of the region's non-attainment status for ozone, PM_{2.5}, and PM₁₀, if Project generated emission of either of the ozone precursor pollutants ROG, NO_x, PM₁₀, or PM_{2.5} would exceed the SJVAPCD's significance thresholds, then the Project would be considered to contribute to violations of the applicable standards and conflict with the attainment plans. As demonstrated in **Table 3-5** for construction-generated emissions, and in **Table 3-6**, operational emissions of criteria pollutants would not exceed the SJVAPCD's significance thresholds. Therefore, the Project will not contribute to air quality violations in conflict with attainment plans.

As stated in No. 2 above, the AQP contains a number of control measures, including *Regulation VIII-Fugitive* and *PM₁₀ Prohibitions* which are applicable to the Project. Both of these are adopted by the SJVAPCD and constitute enforceable requirements with which the Project must comply. The Project is expected to comply with all applicable SJVAPCD rules and regulations; therefore, the Project complies with the criterion and would not conflict with or obstruct implementation of the applicable air quality attainment plans and the impact would be less than significant.

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

Less than Significant Impact. To result in a less than significant impact, the following criteria recommended by the SJVAPCD in its GAMAQI must be true:

1. Regional analysis: emission of non-attainment pollutants must be below the SJVAPCD's regional significance thresholds.
2. Summary of projections: consistent with Section 15130(b) of the CEQA Guidelines the project must be consistent with current air quality attainment plans including control measures and regulations.
3. Cumulative health impacts: consistent with the court decision in *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1219-20 correlating the significance of the regional analysis with health effects, the project must result in less than significant cumulative health effects from the non-attainment pollutants.

As discussed in impact question a) above, Project generated emissions are below the SJVAPCD's regional significance thresholds and the Project is consistent with current air quality attainment plans including control measures and regulations.

With respect to cumulative health impacts, the air basin is in non-attainment for ozone, PM_{2.5}, and PM₁₀ (state only), which means that the background levels of those pollutants are at times higher than the ambient air quality standards. The air quality standards were set to protect public health, including the health of sensitive individuals (such as children, the elderly, and persons with pre-existing respiratory or cardiovascular illnesses (the infirm)). Therefore, when the concentration of those pollutants exceeds the standard, it is likely that some sensitive individuals in the population would experience adverse health effects. Since the air basin is already in non-attainment, it is considered to have an existing significant cumulative health impact without the Project. The issue is whether the Project's contribution to the existing violation of air quality standards is cumulatively considerable.

The SJVAPCD through its GAMAQI has determined that projects that exceed regional thresholds would have a cumulatively considerable health impact. As demonstrated in **Table 3-7** and **Table 3-8**, the project would not exceed the SJVAPCD's significance thresholds and its cumulatively considerable impacts would be less than significant.

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

Less than Significant Impact. Sensitive receptors are those who are sensitive to air pollution, including children, the elderly, and the infirm. The SJVAPCD considers a sensitive receptor a location that houses or attracts children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Examples of sensitive receptors include hospitals, residences, convalescent facilities, and schools. The Project site is within a school site. The closest existing off-site sensitive receptors are rural residences located on adjacent properties.

As demonstrated in **Table 3-7** and **Table 3-8**, the Project would not exceed the SJVAPCD's thresholds established in accordance with health-based standard for determining significance of criteria pollutant emissions. Therefore, in accordance with these standards, the Project would have a less than significant impact related to exposure of sensitive receptors to substantial pollutant concentrations.

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

No Impact. Land uses that are typically identified as sources of objectionable odors include landfills, transfer stations, sewage treatment plants, wastewater pump stations, composting facilities, feed lots, coffee roaster, asphalt batch plants, and rendering plants, among other uses. The Project does not include any of these types of activities or land uses. The Project would therefore have no impact with respect to generation of emissions leading to odors or other adverse or objectionable emissions.

3.5 Biological Resources

Table 3-9. Biological Resources Impacts

Biological Resources Impacts				
Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.5.1 Environmental Setting and Baseline Conditions

The Project site is entirely within the existing school campus. It is flat, surrounded by rural residential, agricultural, and industrial uses, and is heavily disturbed due to mowing and school maintenance activities. Therefore, the habitat of the Project site is developed. The vegetation on the school campus consists mostly of either landscaped shrubs, trees, turf (non-native perennial grass), and/or non-native grasses and ruderal (weedy) plants.

3.5.2 Impact Assessment

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

Less than Significant Impact with Mitigation Incorporated.

Biological resources assessment reports (**Appendix B**) indicate that no wetlands, waters, sensitive communities, or migratory corridors exist in the Project Area. Database queries indicated 28 animals and 12 plant species with special status occur or have historically occurred within the search area. Many of the species from the generated list either were historic, extirpated occurrences, or were species with very specialized habitat requirements that were not present on the site or within the vicinity. Therefore, the majority of the species were determined to have no potential to occur within the study area. Based on the habitat types present within the study area, six special-status avian species (Swainson's hawk, white-tailed kite, loggerhead shrike, tricolored blackbird, mountain plover and burrowing owl) have the potential to nest and/or forage within the study area. Construction related disturbance within the Project area could result in nest abandonment or direct mortality of eggs, chicks, and/or fledglings. This type of impact to migratory birds, including special-status bird species, would be considered take under the Migratory Bird Treaty Act (MBTA) and California Endangered Species Act (CESA), and therefore, is a potentially significant impact. In order to avoid impacts to avian species, nests and nesting habitat should not be disturbed or destroyed. Measures were identified in the biological resource assessments for implementation to avoid and reduce any potential impacts to avian species protected under the MBTA and CESA to a less than significant level.

No additional field surveys were completed in 2020 due to the highly disturbed nature of the project area and lack of suitable habitat for listed species reported in the 2018 biological resources assessment reports.

No changes to the Project site or surrounding areas were noted in Google Earth, and a field survey conducted by KLF/GANDA cultural personnel on November 23, 2020 reported no significant changes to the additional APE or adjacent parcels. Refer to Appendix D (of **Appendix B** to this IS/MND) for photographs of the project area taken during the field survey. A search of the California Natural Diversity Data Base, National Wetland Inventory, and USFWS Critical Habitat database was completed on December 2, 2020. No additional records were located of any federal or state listed species within a 10-mile radius of the additional APE after the date of the initial CNDDDB search completed in 2018. The search also included unprocessed data from CNDDDB field forms. A search of the USFWS Critical Habitat database revealed that no new critical habitat was designated within the additional APE or adjacent parcels since the issuance of the supplemental biological resources assessment. A search of the National Wetland Inventory (NWI) reported that no new wetlands or riparian areas were designated within the additional APE or surrounding areas since the issuance of the supplemental biological resources assessment.

Special Status Plants

Of the 12 potentially occurring special status plant species, none were found within the Project site. Although the site survey was not conducted at the peak blooming period for some potentially occurring special status plants, all plants could be ruled out because their elevation range, required habitat, and/or soil type differed from the site conditions. Therefore, the project will not impact any special status plant species.

Special Status Animals

Of the 28 potentially occurring special status animals, six special status avian species (Swainson's hawk, white-tailed kite, loggerhead shrike, tricolored blackbird, mountain plover and burrowing owl) have the potential to nest and/or forage within the study area. Greater detail regarding life history requirements of these birds is provided in **Appendix B**. Swainson's hawk and white-tailed kite could nest in the large trees within and adjacent to the study area and forage in open fields. Loggerhead shrike could nest in shrubs or trees within and adjacent

to the study area and forage in the open fields. Tricolored blackbirds could establish a nesting colony in adjacent row crop fields and forage on the school yard. Mountain plover do not nest in California; however, they do use short grasslands, freshly plowed fields, sprouting grain fields, and sod farms for winter foraging on the south west side of the San Joaquin Valley, so they could forage in the study area and vicinity. Although none were detected during reconnaissance survey, burrowing owls could move into the area prior to construction, and occupy any newly built large burrows during the nesting and wintering seasons.

Noise and human disturbance during project activities could directly impact nesting bird species. Since CDFW usually requires a various sized “no disturbance” buffers around nesting sites for these species, construction-related disturbance could be considered take of protected avian species under CESA and MBTA. Specific impacts to burrowing owl according to the Staff Report on Burrowing Owl Mitigation (**Appendix B**) include any “disturbance within 50 meters (approx. 160 ft) [75 m (250 ft) during breeding season] which may result in harassment of owls at occupied burrows; destruction of natural and artificial burrows (culverts, concrete slabs and debris piles that provide shelter to burrowing owls); and destruction and/or degradation of foraging habitat adjacent (within 100 m) of an occupied burrow(s)”.

In addition, other migratory birds will likely be nesting in the study area and vicinity, most of which are protected by the Migratory Bird Treaty Act (**Appendix B**). Both construction related disturbance within the project area could result in nest abandonment or direct mortality of eggs, chicks, and/or fledglings. This type of impact to migratory birds, including special status bird species, would be considered take under the MBTA and CESA, and therefore, is a potentially significant impact. In order to avoid impacts to avian species, nests and nesting habitat should not be disturbed or destroyed. The following measures will reduce potential impacts to a less than significant level.

Mitigation Measures for Special-status Wildlife Species

BIO-1: Avoidance:

If feasible, any vegetation removal or ground disturbance will take place between September 1 and February 1 to avoid impacts to nesting birds in compliance with the Migratory Bird Treaty Act. If vegetation removal must occur during the nesting season, project construction may be delayed due to actively nesting birds and their required protective buffers.

BIO-2: Pre-construction Surveys:

- a. If vegetation removal or ground disturbance will commence between February 1 and August 31, a qualified biologist will conduct a pre-construction survey for nesting birds within 14 days prior to the initiation of disturbance activities. This survey will cover:
 - i. Potential nest sites in trees, bushes, or grass within species-specific buffers of the project area (Swainson’s hawk – 0.5-mile, other raptor species such as white-tailed kite – 500 ft, non-raptor species (loggerhead shrike, tricolored blackbird. – 300 ft).
 - ii. Survey protocol developed by the Swainson’s Hawk Technical Advisory Committee (TAC) should be followed, which includes survey timing and requirements for repeated visits.
- b. Surveys for burrowing owl will occur within 14 days prior to any ground disturbance, no matter the season. This survey will cover potential burrowing owl burrows in the project area and suitable habitat within 150 m (500 ft). Evaluation of use by owls shall be in accordance with California Department of Fish and Wildlife survey guidelines (**Appendix B**). Surveys will document if burrowing owls are nesting or using habitat in or directly adjacent to the project area. Survey results will be valid only for the season (breeding (Feb 1-Aug 31) or non-breeding (Sept 1-Jan 31) during which the survey is conducted.

- c. If no active nests or burrows are detected during the pre-construction survey, then no further action is required. If an active nest or burrow is detected, then the following minimization measures will be implemented.

BIO-3: Minimization/Establish Buffers:

- a. Swainson's hawk, white-tailed kite, loggerhead shrike, tricolored blackbird and MBTA-protected species: If any active nests are discovered (and if construction will occur during bird breeding season), the USFWS and/or CDFW will be contacted to determine protective measures required to avoid take. These measures could include fencing off an area where a nest occurs, or shifting construction work temporally or spatially away from the nesting birds. Biologists are required on site to monitor construction while protected migratory birds are nesting in the project area to ensure that the buffer is adequate and that the nest is not stressed and/or abandoned. If an active nest is found after the completion of the pre-construction surveys and after construction begins, all construction activities will stop until a qualified biologist has evaluated the nest and erected the appropriate buffer around the nest.
- b. Burrowing owl: If burrowing owls are detected within the survey area, CDFW should be consulted to determine the suitable buffer. These buffers will consider the level of disturbance of the project activity, existing disturbance of the site (vehicle traffic, humans, pets, etc.), and time of year (nesting vs. wintering). If avoidance is not feasible, the District will work with CDFW to determine appropriate mitigation, such as passive exclusion or translocation, and associated mitigation land offset.

If avoidance is not feasible, a qualified biologist will develop appropriate mitigations that will reduce project impacts to sensitive biological resources to a less than significant level. The type and amount of mitigation will depend on the resources impacted, the extent of the impacts, and the quality of habitats to be impacted. Mitigations may include but are not limited to: 1) Compensation for lost habitat in the form of preservation or creation of in-kind habitat protected by conservation easement; 2) Purchase of appropriate credits from an approved mitigation bank or land trust servicing the Tulare County Area; 3) Payment of in-lieu fees. (**Appendix B**)

Implementation of the above mitigation measures will reduce the Project's potential impacts to special status species to a less than significant level and will ensure compliance with local, State, and federal policies and regulations protecting these species.

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

No Impact. There are no riparian or sensitive natural communities within the project area as identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U. S. Wildlife Service. Therefore, there would be no impact.

c) Would the project 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. There are no federally protected wetlands as defined by Section 404 of the Clean Water Act within the project area. Implementation of typical ground disturbance and erosion control Best Management Practices (BMPs) and compliance with grading permits will insure that there is no impact to storm drainage facilities or nearby canals. Therefore, there would be no impact.

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

Less than Significant Impact. The Project site does not appear to constitute a “movement corridor” for native wildlife (USFWS 1998) that would attract wildlife to move through the site any more than the surrounding developed and agricultural lands. The Project is bordered by busy streets as well as residential, industrial and agricultural development, which restricts access for wildlife. The Project site itself likely poses a barrier to wildlife movement due to the layers of chain link fence surrounding the various yards of the school and its facilities. In addition, adjacent properties (residences and construction yard) are also fenced with chain link, concrete barriers, and wood fences. Wildlife species that can gain access to the school yard are not expected to be further inhibited by the project since it is temporary in nature. Therefore, the project will have a less than significant effect on regional wildlife movements.

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

No Impact. The Project appears to be consistent with relevant biological resources policies of the County of Tulare, in particular, ERM 1.1 Protection of Rare and Endangered Species, and would not conflict with local policies or ordinances protecting biological resources. Therefore, there would be no impact.

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

No Impact. There are no Habitat Conservation Plans (HCP) or Natural Community Conservation Plans that cover the Project location within Tulare County, so the project would not conflict any provisions of any local, regional or state habitat conservation plan. All existing HCPs in Tulare County are project-specific HCPs and not overarching for the County (**Appendix B**). Therefore, there would be no impact.

3.6 Cultural Resources

Table 3-10. Cultural Resources Impacts

Cultural Resources Impacts				
Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3.6.1 Environmental Setting and Baseline Conditions

The Project area is located within a rural residential and agricultural area south of the City of Tulare in western Tulare County at an elevation of approximately 246 feet above mean sea level. The project area is entirely within the existing school campus, is flat, surrounded by rural residential, agricultural, and industrial uses, and is heavily disturbed due to mowing and school maintenance activities. Vegetation on the school campus consists mostly of either landscaped shrubs, trees, turf (non-native perennial grass), and/or non-native grasses and ruderal (weedy) plants. (See [Appendix C](#))

3.6.2 Impact Assessment

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

No Impact. On November 23, 2020, Kleinfelder archaeologists conducted an supplemental evaluation to the Odell cultural resources evaluation performed in 2018 in order to perform a pedestrian survey of the additional APE to identify cultural resources and assess sensitivity for buried resources. The entirety of the additional APE was surveyed in 15-meter-wide or less transects. The background research and field survey did not find any cultural resources within the added APE and consistent with the previously prepared cultural resources assessment (see [Appendix C](#)) and findings regarding the original APE common to the current Project. It should be noted that the school campus appears to be historical in age (See [Appendix C](#)), but the planned Project would not entail any modification to the buildings; therefore, the resource was not recorded or evaluated for the California Register of Historic Places, as the proposed Project would have no impact to this resource. Therefore, there will be no impact to historical resources.

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

Less than Significant Impact with Mitigation Incorporated. Based on the results of the cultural resources evaluation reports, no resources were identified with the Project APE. In the unlikely event that previously unknown cultural resources are discovered during the development, all project activities must cease in the area of the find and a qualified archaeologist must be notified to evaluate the discovery and implement pursuant to the below-recommended Mitigation Measure.

Chapter 3 Impact Analysis – Cultural Resources

Water System Improvement Project

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. Palo Verde Union Elementary School 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.

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

Less than Significant Impact with Mitigation Incorporated. No formal cemeteries or other places of human internment are known to exist on the APE; 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 Lead Agency will be required to treat the remains.

3.7 Energy

Table 3-11. Energy Impacts

Energy Impacts				
Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3.7.1 Environmental Setting and Baseline Conditions

Southern California Edison provides electric service to Tulare County residents. Natural gas service is primarily provided by the Southern California Gas Company. There are three major companies that provide communications services in Tulare County: AT&T, Sprint, and Verizon.

3.7.2 Impact Assessment

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

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

Less than Significant Impact. As part of this Project Well No.1 and the associated water pressure tank are being abandoned and removed from the site. Operation of the new Well No. 3 and associated equipment would be anticipated to be more energy efficient than the older facilities being abandoned and removed. Thus, energy use during operation would be similar to, or less than, existing conditions. Construction of the Project would require energy use, but this use would not be wasteful or inefficient, nor would it require new or expanded electric power or natural gas facilities. No features of the Project would conflict with or obstruct state or local plans for renewable energy or energy efficiency. The Project would not require the relocation or construction of new or expanded electric power or natural gas facilities. The impact on energy use and energy plans would be less than significant.

3.8 Geology and Soils

Table 3-12. Geology and Soils Impacts

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

3.8.1 Environmental Setting and Baseline Conditions

A USDA NRCS soil survey report prepared for the Project site, is provided in **Appendix D**. As shown in the report, the site consists of mostly Crosscreek-Kai association, 0-2% slopes, and a small portion of Colpien loam, 0-2% slopes. The soils are well-drained and moderately well drained with rare frequency of flooding and a low to medium runoff class.

3.8.1.1 Geology and Soils

The Project is located in central-western Tulare County, in the southern section of California's Great Valley Geomorphic Province, or Central Valley. The Sacramento Valley makes up the northern third and the San Joaquin Valley makes up the southern two-thirds of the geomorphic province. Both valleys are watered by large rivers flowing west from the Sierra Nevada Range, with smaller tributaries flowing east from the Coast Ranges. Most of the surface of the Great Valley is covered by Quaternary (present day to 1.6 million years ago) alluvium. The sedimentary formations are steeply upturned along the western margin due to the uplifted Sierra Nevada Range.⁵ 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.

3.8.1.2 Faults and Seismicity

The Project 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 60 miles southwest of the Project. 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 Fault is approximately 27 miles south of the site and an unnamed fault is approximately 20 miles southeast.

3.8.1.3 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 Crosscreek-Kai association, 0-2% slopes and well-drained, and a small amount of Colpien loam, 0-2% slopes and moderately well drained.

3.8.1.4 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 Crosscreek-Kai association, with a low to moderate risk of subsidence.

3.8.1.5 Dam and Levee Failure

Terminus Dam at Lake Kaweah is located approximately 27 miles northeast of the Project; the Project, in its entirety, is inside of the inundation zone for Terminus Dam mapped by US Army Corp of Engineers.

⁵ Harden, D.R. 1998, California Geology, Prentice Hall, 479 pages

3.8.2 Impact Assessment

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

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. And;

a-ii) Strong seismic ground shaking?

Less Than Significant Impact. The Project and its vicinity are located in an area of California 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 60 miles southwest of the Project. A smaller fault zone, the Poso Fault, is approximately 27 miles south of the site and an unnamed fault approximately 20 miles southeast. The Project involves water system improvements at an existing elementary school and does not include development of habitable residential, agricultural, commercial or industrial structures. Operation of the proposed 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.

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

a-iv) Landslides?

No Impact. As the proposed 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 more than ten miles from the foothills and the local topography is essentially flat and level. There will be no impact.

b) Would the project 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 as approximately 0.25 acres. Since ground disturbance will be less than one-acre, a SWPPP is not required; however, 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). These regulations will ensure that there will not be substantial soil erosion or loss of topsoil. Impacts will be less than significant.

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

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

Less Than Significant Impact. Soil onsite is Crosscreek-Kai association, 0-2% slopes and Colpien loam, 0-2% slopes. (See Custom Soil Resource Report in **Appendix D**) The soils are well-drained and moderately well drained with rare frequency of flooding and a low to medium runoff class. The Project 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.

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

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

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

Less than Significant Impact. No known paleontological resources exist within the Project area. The Project is at a school site and has been previously disturbed. With the exception of the well drilling, construction activities associated with the Project are not expected to be conducted more than 4 feet below grade, at a level where they would have the potential to disturb any previously unknown paleontological resources or geologic features. Impacts would be less than significant.

3.9 Greenhouse Gas Emissions

Table 3-13. Greenhouse Gas Emissions Impacts

Greenhouse Gas Emissions Impacts				
Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3.9.1 Environmental Setting and Baseline Conditions

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 2015.⁶ 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.

3.9.1.1 Greenhouse Gases

Carbon dioxide (CO₂) is an odorless, colorless natural greenhouse gas. CO₂ 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 (CH₄) 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 (N₂O), 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.

⁶ 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 December 2020.

Ozone (O₃) 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 (SF₆) 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.

3.9.1.2 Effects of Climate Change

It is unknown whether impacts of climate change have yet to fully manifest. A warming planet is believed to be 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 (CO₂e), 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 CH₄ has the same contribution to the greenhouse effect as approximately 21 tons of CO₂. Therefore, CH₄ is a much more potent GHG than CO₂.

3.9.2 Methodology

An Air Quality and Greenhouse Gas Emissions Report ([Appendix A](#)) was prepared in December 2020. The sections below detail the methodology of the report and its conclusions.

3.9.2.1 Short-Term Construction-Generated Emissions

Short-term construction emissions associated with the Project were calculated using CalEEMod, Version 2016.3.2. Emissions' modeling was assumed to occur over an approximate three-month period and covering a site area of approximately 0.25 acres. Remaining assumptions were based on the default parameters contained in the model. Modeling assumptions and output files are included in [Appendix A](#).

Chapter 3 Impact Analysis – Greenhouse Gas Emissions

Water System Improvement Project

3.9.2.2 Long-Term Operational Emissions

Long-term operational emissions associated with the Project are estimated to be minimal in nature. Well No. 3 is replacing Well No. 1, and it is anticipated that emissions from energy use during operation would be similar to, or less than, existing conditions. Modeling assumptions and output files are included in **Appendix A**.

3.9.3 Impact Assessment

3.9.3.1 Thresholds of Significance

In accordance with SJVAPCD's *CEQA Greenhouse Gas Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects*⁷, proposed projects complying with Best Performance Standards (BPS) would be determined to have a less-than-significant impact. Projects not complying with BPS would be considered less than significant if operational GHG emissions would be reduced or mitigated by a minimum of 29 percent, in comparison to business-as-usual (year 2004) conditions. In addition, project-generated emissions complying with an approved plan or mitigation program would also be determined to have a less-than-significant impact.

Bay Area Air Quality Management District's Thresholds for Significance: Bay Area Air Quality Management District's (BAAQMD) 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 proposed 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, are scientifically supported and are more appropriate to assess potential impacts related to GHG emissions. For land use development projects, the threshold is compliance with a qualified GHG Reduction Strategy or annual emissions less than 1,100 metric tons per year (MT/yr) of CO₂e. For stationary source projects, such as those requiring a permit from a local air district to operate, the threshold is 10,000 MT/yr of CO₂e. Although the BAAQMD thresholds are generally intended for ongoing sources of emissions (e.g., manufacturing facilities, refineries), their use in CEQA is appropriate for construction projects that occur over a relatively short period and contribute a relatively low total amount of GHGs, as compared to a land use development project that would generate substantial annual emissions indefinitely.

- a) **Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? And;**
- b) **Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?**

Less than Significant Impact.

Short-Term Construction-Generated Emissions

Estimated construction-generated emissions are summarized in **Table 3-14**. As indicated, construction of the Project would generate maximum annual emissions of approximately 31.2855 MT/CO₂e. Construction-related production of GHGs would be temporary and last approximately three months. These emissions are totaled and amortized over 30 years and added to the operational emissions in **Table 3-15** below.

⁷ Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA. <http://www.valleyair.org/Programs/CCAP/12-17-09/3%20CCAP%20-%20FINAL%20LU%20Guidance%20-%20Dec%2017%202009.pdf> Accessed September 2020

Table 3-14. Short-Term Construction-Generated GHG Emissions

Year	Emissions (MT CO ₂ e) ⁽¹⁾
2021	31.2855
Amortized over 30 years	2.6071

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.

Long-Term Operational Emissions

Long-term operational emissions associated with the Project are estimated to be minimal in nature. Well No. 3 is replacing Well No. 1, and it is anticipated that emissions from energy use during operation would be similar to, or less than, existing conditions. Estimated long-term operational emissions are summarized in **Table 3-15**.

Table 3-15. Long-Term Operational GHG Emissions

	Emissions (MT CO ₂ e) ⁽¹⁾
Estimated Annual Operation CO ₂ e Emissions	0.00
Amortized Construction Emissions	2.6071
Total Estimated Annual Operational CO ₂ e Emissions	2.6071
AB 32 Consistency Threshold for Land-Use Development Projects*	1,100
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 September 2020.

The County does not have an adopted GHG plan or MT/yr thresholds for CO₂e. The San Joaquin Valley Air Pollution Control District (SJVAPCD) CEQA guidance for GHG emissions recommends that a project not be considered to have a significant impact if it complies with an applicable air quality plan, results in a 29% reduction from business as usual (BAU) GHG emissions (2004 levels), or implements applicable Best Performance Standards (BPS). The SJVAPCD metrics (reduction from BAU, implementation of BPS) are not appropriate for this Project. The thresholds provided by the Bay Area Air Quality Management District, while not in our area, are very stringent and based on Statewide AB 32 objectives. Because they are designed to avoid significant impacts from global climate change, which occurs at a global scale, they do not depend on site-specific characteristics. PVUESD has determined that the Bay Area Air Quality Management District's thresholds are the most appropriate threshold for this Project, which has predominantly short-term construction emissions, and negligible operational emissions. Any impacts would be less than significant.

3.10 Hazards and Hazardous Materials

Table 3-16. Hazards and Hazardous Materials Impacts

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

3.10.1 Environmental Setting and Baseline Conditions

3.10.1.1 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.⁸ 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 EnviroStor⁹ database provides DTSC's component

⁸ <https://calepa.ca.gov/sitecleanup/corteselist/> Accessed December 2020

⁹ EnviroStor Database. [EnviroStor Database \(ca.gov\)](https://envirostor.ca.gov/) Accessed December 2020.

of Cortese List data (DTSC, 2010). In addition to the EnviroStor database, the State Water Resources Control Board (SWRCB) Geotracker¹⁰ 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 24, 2020 determined that there are no known active hazardous waste generators or hazardous material spill sites within the Project site or immediate surrounding vicinity.

The school site was involved in a school site investigation (60001252), but it was determined that based on the results of the previous Preliminary Environmental Assessment and the Supplemental Site Investigation, neither an actual or potential release of hazardous materials nor the presence of a naturally occurring hazardous material, which would pose a threat to human health or the environment under the unrestricted land use, was indicated at the site.

3.10.1.2 Airports

The Visalia Municipal Airport is located approximately 12.1 miles northeast and Mefford Field Airport is located approximately 1.75 miles northeast of the project.

3.10.1.3 Emergency Response Plan

Tulare County has prepared a Multi-Hazard Functional Plan to serve as the County's emergency response plan. The plan addresses responses to various emergency incidents, responsibilities of various agencies, and sources of outside assistance¹¹.

3.10.1.4 Sensitive Receptors

The Project is located within Palo Verde Union Elementary School campus, which is considered to be a sensitive receptor during operational hours.

3.10.2 Impact Assessment

- a) **Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? And;**
- b) **Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? And;**
- c) **Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?**

Less than Significant Impact. The Project is located within Palo Verde Union Elementary School grounds. Implementation of the Project would correct existing water quality issues affecting students and staff of Palo Verde Union Elementary School. Construction of the Project proposes an approximate area of ground disturbance of 0.25 acres, and therefore does not require implementation of a Stormwater Pollution Prevention Plan (SWPPP). However, 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. The operational phase of the Project will involve the use of chlorine, which is required for sanitation of drinking water. Storage, handling, and distribution of chlorine will be monitored and comply with all regulations set forth by DDW and County of Tulare. Impacts will be less than significant.

¹⁰ GeoTracker Database. [GeoTracker \(ca.gov\)](https://www.geo-tracker.ca.gov/) Accessed December 2020.

¹¹ Tulare County General Plan Draft EIR, page 3.8-5. [Tulare County General Plan Recirculated Draft EIR](#) Accessed February 2021.

Chapter 3 Impact Analysis – Hazards and Hazardous Materials

Water System Improvement Project

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

No Impact. The Project does not involve land that is listed as 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 24, 2020 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.

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? And;

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

No Impact. The Project is located within an airport land use plan for Mefford Field, which is located approximately 1.75 miles from the Project. Construction of a new well and implementation of associated water system improvements would not exceed the height of existing structures at the school and would not be habitable and therefore would not be a flight safety hazard or expose new people to excessive noise due to the nearby airport. There would be no impact.

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

No Impact. The Project does not provide any physical barriers or disturb or alter any roadways that would impede emergency or hazards response; therefore, the proposed Project would not interfere with implementation of an emergency response plan or evacuation plan.

3.11 Hydrology and Water Quality

Table 3-17. Hydrology and Water Quality Impacts

Hydrology and Water Quality Impacts				
Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i) result in substantial erosion or siltation on- or off-site;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.11.1 Environmental Setting and Baseline Conditions

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.

Chapter 3 Impact Analysis – Hydrology and Water Quality

Water System Improvement Project

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. Elk Bayou is approximately 1.3 miles east and Elk Bayou Ditch is approximately 894 feet south of the Project site, respectively.

According to the U.S. Geological Survey (USGS) classification system, the Project is located within the Upper Tule watershed; Hydrologic Unit Code (HUC): 18030006.¹²

The Project lies entirely within the Kaweah Groundwater Subbasin of the San Joaquin Valley Groundwater Basin.¹³

3.11.2 Impact Assessment

a) Would the project 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 two wells: Well No. 1 and Well No. 2. Well No. 1 cannot meet the capacity requirements for fire flow, and Well No. 2, is contaminated and cannot be used for domestic water. The Project proposes demolition of Well No. 1 and development of a new well (Well No. 3) to replace it. Well No. 2 would stay online for fire flow only.

Implementation of the Project would correct existing water quality issues affecting students and staff of Palo Verde Union Elementary School. 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.

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

Less than Significant Impact. As stated above, the existing water system consists of two wells: Well No. 1 and Well No. 2. Well No. 1 cannot meet capacity needs, and the Project proposes permitted demolition of this well and associated infrastructure. Well No. 2 does not meet current water quality standards, and it is currently only used for fire flow needs. In addition to the demolition of Well No. 1, the Project proposes development of a new well, water pressure tank, and associated infrastructure. Well No. 2 will remain onsite as an emergency back-up system for fire flow.

A hydrogeologic evaluation was performed in May 2017, which concluded that groundwater of adequate quantity and quality is present beneath Palo Verde Union Elementary School. A test well was drilled and sampled at the School property in xxxx. Based on the test well results, the production well is expected to yield about 300 gallons per minute which substantially exceeds the current demand of 90 gallons per minute.

There is no anticipated increase in water demand resulting from implementation of the Project. Well No. 3 will utilize the existing distribution system and continue to provide water for Palo Verde Union Elementary School students and staff. It will not interfere substantially with groundwater recharge, nor would the Project interfere substantially with the production rate of pre-existing nearby wells. Well No. 3 and its pumping rate were designed to not interfere with the drawdown of nearby wells. Therefore, the existing land use and planned uses for the vicinity will not be significantly impacted by implementation of the proposed Project. Any impacts would be less than significant.

¹² USGS Watershed Maps. [Science in Your Watershed - HUC 18030006 \(usgs.gov\)](https://science.inyourwatershed.org/HUC/18030006) Accessed December 2020.

¹³ DWR Bulletin 118. BBAT. <https://gis.water.ca.gov/app/bbat/> Accessed December 2020.

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

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

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

c-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

c-iv) impede or redirect flood flows?

Less than Significant Impact. The Project will not substantially alter an existing drainage pattern of the site or area. In order to minimize runoff and erosion during construction activities the contractor shall be required to comply with all Cal/OSHA regulation regarding regular inspection of equipment, spill prevention, and spill remediation in order to reduce the potential for incidental release of pollutants or hazardous substances onsite. The new well site will be designed so as not to substantially increase the rate or amount of surface runoff. Stormwater flows would be directed into the existing storm drainage basin. The Project would not impede or redirect flood flows. Impacts resulting from alterations to drainage patterns would be less than significant.

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

Less than Significant Impact. The Project is a new well and associated infrastructure and does not involve any habitable structures or the storing of any pollutants. The Project would not have the potential to release pollutants due to inundations. Any impacts would be less than significant.

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

No Impact. The Project will not conflict with or obstruct implementation of any water quality control plan or sustainable groundwater management plan. There will be no impact.



Figure 3-2. FEMA Map

3.12 Land Use and Planning

Table 3-18. Land Use and Planning Impacts

Land Use and Planning Impacts				
Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.12.1 Environmental Setting and Baseline Conditions

The Project site is contained entirely within and surrounded by Palo Verde Union Elementary School. The Project and the surrounding lands are designated by the Tulare County General Plan as Agriculture within the Rural Valley Lands Plan and located within the AE-40, Exclusive Agriculture, zone district (see **Figure 3-4**). The FMMP for Tulare County designates the site as Urban and Built-Up Land and surrounding areas as Urban and Built-Up Land, Farmland of State Importance, Rural Residential and Prime Farmland as shown in **Figure 3-1**. Land uses in the vicinity of the Project consist of active farmland and scattered rural residences. Palo Verde Union Elementary School is located on the Valley floor east of the Coast Ranges and west of the Sierra Nevada Mountain Range.

3.12.2 Impact Assessment

a) Would the project physically divide an established community? And;

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

No Impact. Palo Verde Union Elementary School has provided education for the children of the adjacent rural agricultural community at the same location since it was founded in 1949. The Project proposes water system improvements for the school. 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.

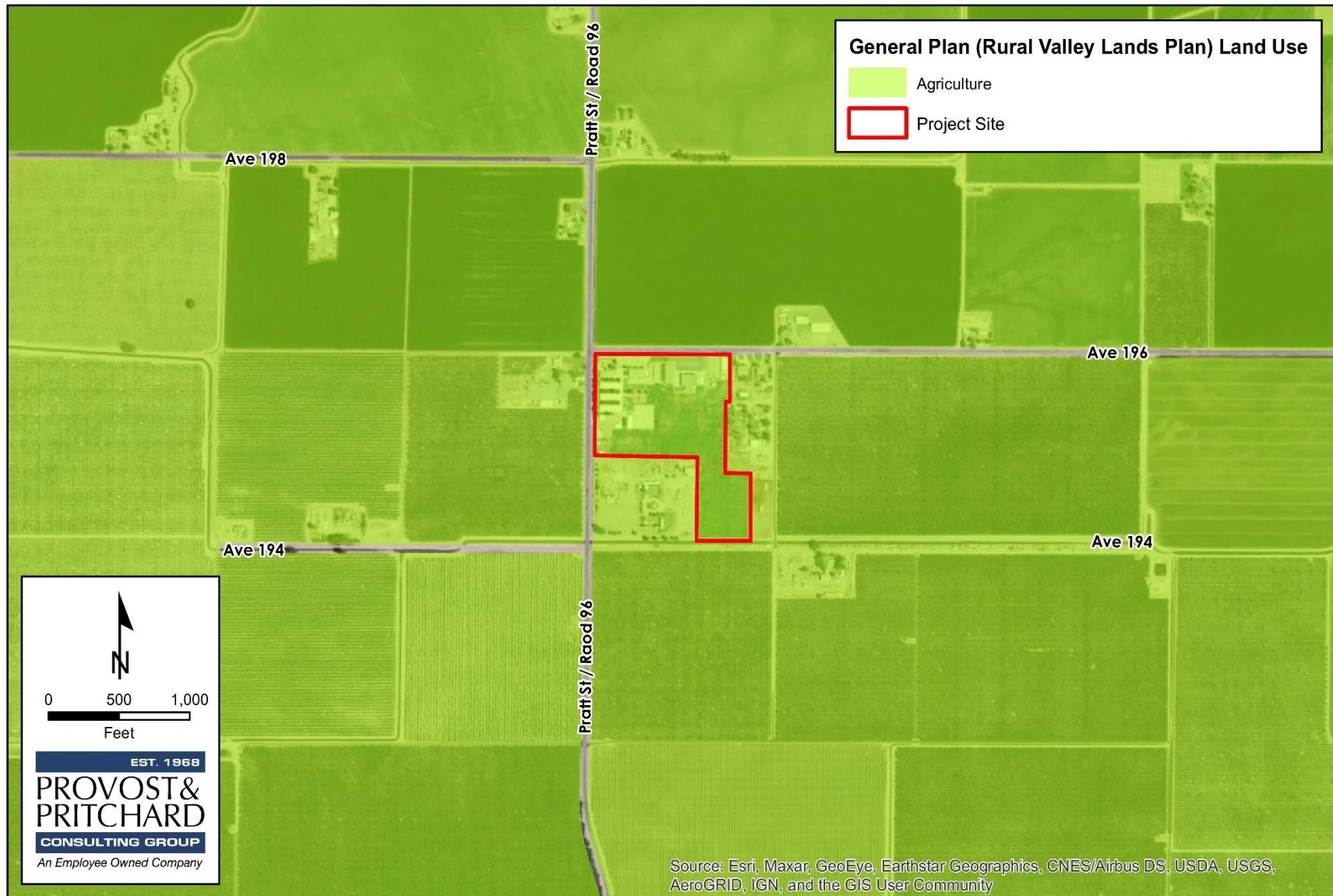


Figure 3-3. General Plan Land Use Map

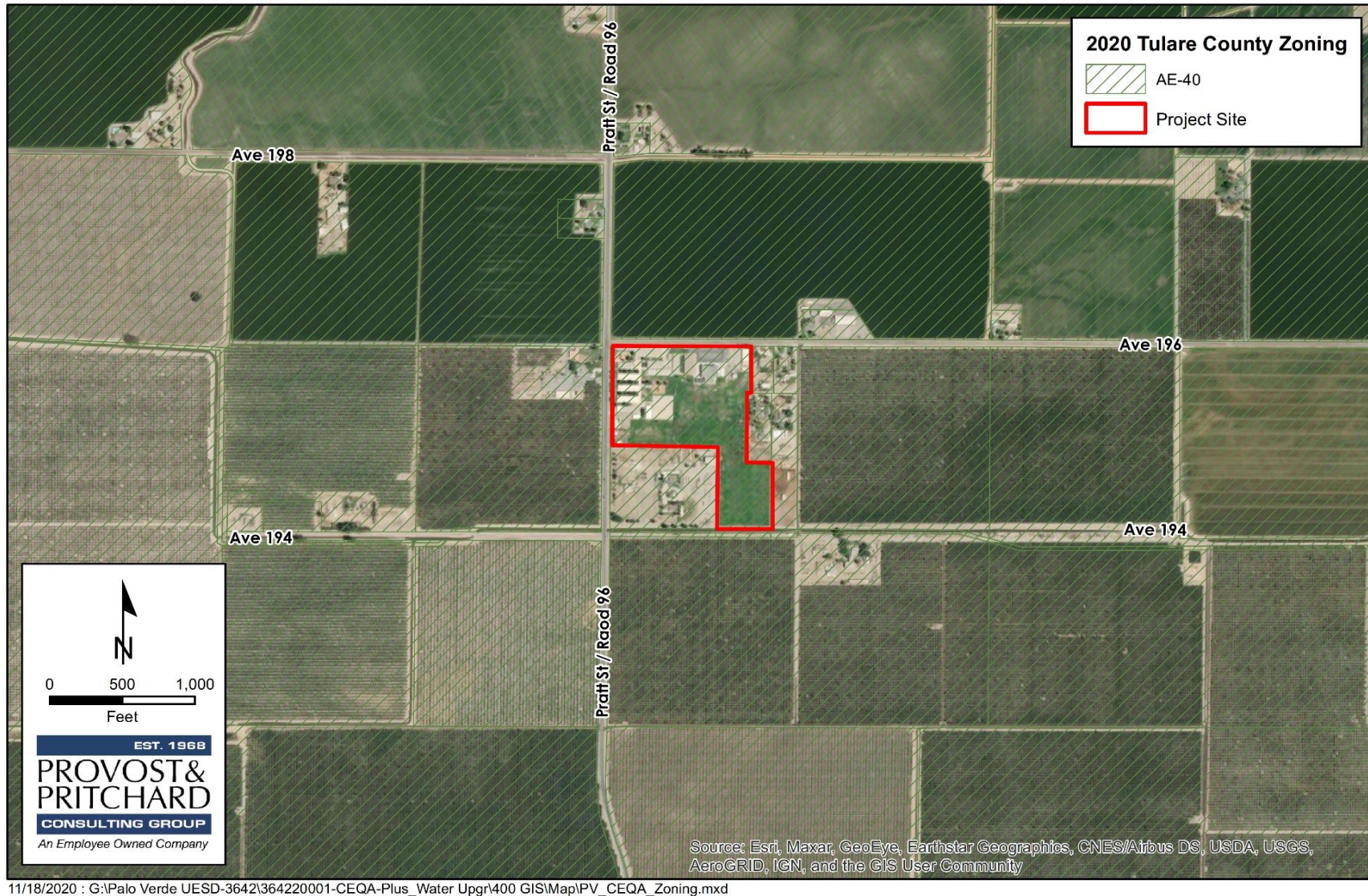


Figure 3-4. Zoning Map

3.13 Mineral Resources

Table 3-16. Mineral Resources Impacts

Mineral Resources Impacts				
Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.13.1 Environmental Setting and Baseline Conditions

The bulk of Tulare County's mineral extraction activities focus on aggregate (sand, gravel, and crushed stone), which is primarily used in building materials. Historically, the Kaweah River, Lewis Creek, and the Tule River have provided the main sources of high-quality sand and gravel in Tulare County. The highest quality deposits are located at the Kaweah and Tule Rivers. According to the Tulare County General Plan Background Report, all of the known potential mineral resource locations are mapped within the foothills and/or along major watercourses. Similarly, the only active oil and gas fields are located in the foothills along Deer Creek. As of 2006, there were a total of 65 oil wells, 3 of which are located on North Deer Creek ¹⁴

The Project is located on the already disturbed and developed Palo Verde Union Elementary School grounds. There are no known mineral resources that occur on the Project site.

3.13.2 Impact Assessment

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

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

No Impact. The California Geological Survey Division of Mines and Geology has not classified the proposed 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 on the site.¹⁵ No known mineral resources are within the Project area. Therefore, construction and 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.

¹⁴ Tulare County General Plan Background Report. <http://generalplan.co.tulare.ca.us/documents/GeneralPlan2010/BackgroundReport.pdf> Accessed 14 December 2020.

¹⁵ California's Division of Oil, Gas and Geothermal Resources, Well Finder CalGEM GIS. <https://maps.conservation.ca.gov/doggr/wellfinder/#/-119.34747/36.14523/15> Accessed 14 December 2020.

3.14 Noise

Table 3-19. Noise Impacts

Noise Impacts				
Would the project result in:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Generation of excessive ground borne vibration or ground borne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3.14.1 Environmental Setting and Baseline Conditions

The Project and surrounding area is designated as part of the Rural Valley Lands Plan by the Tulare County General Plan. The residences in the vicinity of the Project are comprised of scattered rural farmhouses on large lots of agricultural land. The Project is located within the grounds of Palo Verde Union Elementary School, an unincorporated area southwest of the City of Tulare. State Route 99 is located approximately 1.4-miles east of the Project.

The Project is situated within a region dominated by agricultural uses. Surrounding land uses include agricultural uses and related water infrastructure. Noise levels around the Project area are therefore associated with farm equipment and associated activities, as well as rural traffic noise. 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. Due to the seasonal nature of the agricultural industry, there are often extended periods of time when little to no noise is generated in the Project area, followed by short-term periods of intensive mechanical equipment usage and corresponding noise generation. The Tulare County General Plan identifies the normally acceptable noise range for agricultural land uses between 50 and 75 dB.¹⁶

¹⁶ 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 14 December 2020.

3.14.2 Impact Assessment

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

Less than Significant Impact. The construction phase of the Project will involve temporary noise sources, originating predominately from off-road equipment, such as backhoes, drilling rigs, scrapers, and tractors. Noise from construction activities would not exceed Tulare County Noise Element standards of 60 decibels adjusted (dBA). The Project is located within agricultural lands, accustomed to noises associated with farm equipment. Operational maintenance activities would continue to be on an as-needed basis with routine monitoring performed by existing staff and would not generate significant new noise. Any impacts would be mild and temporary and therefore, less than significant.

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

Less than Significant Impact. The construction phase of the Project will have excavation and grading as part of development of the new well and water storage tank, pump station and related infrastructure for a duration of approximately three months. 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 construction activities would not vary substantially from the baseline conditions routinely experienced onsite by Palo Verde Union Elementary School students and staff. Impacts would be less than significant.

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

Less than Significant Impact. The Mefford Field Airport is located approximately 1.75-miles northeast of the Project and provides a fixed base of operation for the Tulare Mosquito Abatement District and seven aviation related commercial enterprises. Visalia Municipal Airport is located approximately 12.1-miles north of the Project. Palo Verde Union Elementary School is an existing, developed site and already accustomed to any noise levels experienced from Mefford Field Airport. Any noise levels created by Project-related construction activities would be temporary and not expose staff or students to any excessive noises similar to existing conditions. Impacts would be less than significant.

3.15 Population and Housing

Table 3-20. Population and Housing Impacts

Population and Housing Impacts				
Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.15.1 Environmental Setting and Baseline Conditions

The immediate area surrounding the Project consists of the school campus, beyond that the surrounding land uses are primarily agriculturally-productive lands, associated agricultural-support facilities, and scattered rural infrastructure. A variety of water-related facilities and structures exist within the Project vicinity including drainage ditches, irrigation basins, wells, pipelines, and associated appurtenances. Properties within the immediate vicinity of the Project are designated and zoned AE-40 “Exclusive Agriculture.”

Tulare County’s population according to 2010 Census data was 442,179 with an estimated percent population change from 2010 to 2019 of 5.4 percent. As of 2015 to 2019, there was an average of 138,238 households with an average of 3.30 persons per household.¹⁷

3.15.2 Impact Assessment

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

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

No Impact. The Project involves construction of a new well, a water storage tank and associated infrastructure on the grounds of Palo Verde Union Elementary School. The Project would not encourage 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.

¹⁷ U.S. Census data. <https://www.census.gov/quickfacts/fact/table/tularecountycalifornia/POP010210#viewtop> Accessed 14 December 2020.

3.16 Public Services

Table 3-21. Public Services Impacts

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

3.16.1 Environmental Setting and Baseline Conditions

Fire Protection: The Project is served by the Tulare County Fire Department Battalion 2 Pixley Fire Station 27 located approximately 6.3 miles west-southwest of the site. Palo Verde Union Elementary School is not currently equipped with fire hydrants.

Police Protection: Police protection is provided by the Tulare County Sheriff. The closest patrol substation is located in Pixley approximately 6.3 miles west-southwest of the Project.

Schools: Public The Project is located within PVUESD. PVUESD is comprised entirely of Palo Verde Union Elementary School, which contains the Project site.

Parks: The closest park to the site is the Elk Bayou Park located approximately 1.45-miles east of the Project.

3.16.2 Impact Assessment

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

No Impact. The proposed Project would not require the addition or alteration of any public services. The site is within the central-western portion of Tulare County and would utilize existing services provided by the County. There would be no impact.

Fire Protection – The proposed Project area would continue to be served by the Tulare County Fire Department Battalion 1 Tulare Fire Station 25 located approximately 3.5-miles to the northeast. Existing Well No. 2 and the adjacent water storage tank are equipped to handle fire flow. All site improvements related to fire protection will be performed pursuant to regulations governed by the Tulare County Fire Department. There would be no impact to public fire services.

Police Protection – Tulare County would continue provide sheriff protection services to the site upon implementation of the proposed Project. Emergency response is adequate to the Project. The closest patrol substation is located in approximately 12.4-miles southeast of the Project. No residential or office construction is proposed for this proposed Project and no additional police protection would be required. There would be no impact.

Schools – The proposed Project is located on the grounds of Palo Verde Union Elementary School. Implementation would not include construction of any residential structures. The proposed Project would not result in an increase of population that would require additional school facilities; therefore, there would be no impact.

Parks and other public facilities –As the proposed Project would not induce population growth, the Project would not create a need for additional park or recreational services. The nearest park is the Elk Bayou Park located approximately 1.45-miles east of the Project. No additional public facilities would be impacted by this Project. There would be no additional public wastewater facility or increased electrical needs generated by this Project. There would be no impact.

3.17 Recreation

Table 3-22. Recreation Impacts

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

3.17.1 Environmental Setting and Baseline Conditions

As noted in [Section 3.16](#), the nearest park is the Center for Natural Lands Management, Elk Bayou Park located approximately 1.45-miles east of the Project. Additional parks in the vicinity include Tulare Cycle Park located 3.7-miles northwest, Cypress Park located 5.1-miles northeast and Mulchay Park located 4.2-miles northwest of the Project.

3.17.2 Impact Assessment

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

No Impact. The proposed Project includes the construction and operation of a new well, pump station, water pressure tank and related infrastructure, on the grounds of Palo Verde Union Elementary School. 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 proposed Project or be necessitated by the Project. There would be no impact.

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

No Impact. The proposed Project does not include recreational facilities or any related components. As there is no population growth, either directly or indirectly, associated with the proposed Project, construction or expansion of nearby recreational facilities would not be necessary. There would be no impact.

3.18 Transportation

Table 3-23. Transportation Impacts

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

3.18.1 Environmental Settings and Baseline Conditions

The school campus is surrounded by agriculture, related water infrastructure and scattered rural farmhouses. The proposed Project is located on the school campus and will not result in a significant increase in staff or students. The Visalia Municipal Airport is located approximately 12.1-miles north and the Mefford Field Airport is 1.75 miles northeast of the proposed Project.

3.18.2 Impact Assessment

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

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

No Impact. Construction traffic associated with the proposed Project would be minimal and temporary, lasting approximately three months. Operational traffic would be negligible as operational maintenance would be conducted by onsite maintenance staff. The proposed Project does not involve the construction of or connection to any roadways. Therefore, the proposed Project would not induce any additional operational trips to the school site, and would not conflict with any ordinance or policy addressing circulation systems. There would be no impact.

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

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

d) Would the project result in inadequate emergency access?

No Impact. No roads would be modified as a result of the proposed Project; therefore, there would be no impact to any emergency access on local roadways.

3.19 Tribal Cultural Resources

Table 3-24. Tribal Cultural Resources Impacts

Tribal Cultural Resources Impacts				
Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3.19.1 Environmental Setting and Baseline Conditions

Prior to Euro American exploration and settlement in the region, the central San Joaquin Valley was extensive grassland covered with spring-flowering herbs. Stands of trees -- sycamore, cottonwoods, box elders and willows -- lined the stream and river courses with groves of valley oaks in well-watered localities with rich soil. Rivers yielded fish, mussels, and pond turtles; migratory waterfowl nested in the dense tules along the river sloughs downstream. When the Spanish first set foot in the area, they found the deer and tule elk trails to be so broad and extensive that they first supposed that the area was occupied by cattle. Grizzly bears occupied the open grassland and riparian corridors on the valley floor and adjacent foothills. Smaller mammals and birds, including jackrabbits, ground squirrels, and quail were abundant. Native Americans occupants of the region describe abundant sedge beds, along with rich areas of deer grass, plants that figure prominently in the construction of Native American basketry items.

The project area is located within a rural residential area south of the City of Tulare in western Tulare County at an elevation of approximately 246 feet above mean sea level. The project area is entirely within the existing school campus, is flat, surrounded by rural residential, agricultural, and industrial uses, and is heavily disturbed due to mowing and school maintenance activities. Vegetation on the school campus consists mostly of either landscaped shrubs, trees, turf (non-native perennial grass), and/or non-native grasses and ruderal (weedy) plants.

3.19.2 Impact Assessment

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

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

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. The School District, as a public lead agency has not received any formal requests for notification from any State tribes, pursuant to AB52. However, on May 2, 2018, Sierra Valley Cultural Planning (SVCP) archaeologists completed a reconnaissance level archaeological survey of the Project APE. The APE includes the proposed location of the new well and the access and staging areas needed for construction. An additional supplemental cultural resource assessment was performed by Kleinfelder in November 2020 to cover the additional APE to identify cultural resources assess sensitivity. The results of both assessments were consistent with each other and came to the same conclusions regarding the proposed Project.

In addition to the record search of the Sacred Lands File requested in June 2018, NAHC provided a list of six local Native American Tribes who may have knowledge of cultural resources in the vicinity or general interest in the Project. The following six Tribes were contacted in writing via U.S. Mail with a letter dated September 19, 2018 informing them of the proposed Project.

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

No comments were received in response to the letters. A copy of Tribal correspondence can be found in **Appendix C**.

No archaeological or other cultural resources were identified as a result of either cultural resources assessment. No Native American areas of concern were identified as a result of consultation with the Native American Heritage Commission and local Native American groups. Analysis of soil characteristics for the proposed sites suggest there is a low probability of buried archaeological deposits within the APE. Therefore, it is unlikely that the proposed Project will have an effect on important archaeological, historical, or other cultural resources. In the unlikely event that buried archaeological deposits are encountered within the project area, the finds must be evaluated by a qualified archaeologist.

Therefore, it is concluded, barring evidence to the contrary, that there is little or no chance the proposed 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 3.6**, are recommended in the event cultural materials or human remains are unearthed during excavation or construction.

Mitigation Measure

Refer to CUL-1 and CUL-2 in **Section 3.6**

3.20 Utilities and Service Systems

Table 3-25. Utilities and Service Systems Impacts

Utilities and Service Systems Impacts				
Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.20.1 Environmental Setting and Baseline Conditions

3.20.1.1 Water Supply

The Project 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.

3.20.1.2 Wastewater Collection and Treatment

No wastewater will be generated during Project construction or operation.

3.20.1.3 Landfills

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

3.20.2 Impact Assessment

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

No Impact. The proposed Project would not exceed wastewater treatment requirements or require new facilities. The proposed Project will not generate wastewater or require expansion of existing facilities. There would be no impact.

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

Less than Significant Impact. The construction of Well No. 3 will replace Well No. 1. There are no additional water users being added to the water system. Therefore, existing entitlements and resources are sufficient. Impacts would be less than significant.

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

No Impact. The proposed Project will create no wastewater demand on any wastewater treatment provider, nor will it require any wastewater treatment facilities at the Project site, so there will be no need for any sort of capacity determination by a wastewater treatment provider. There would be no impact.

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

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

No Impact. Implementation of the proposed Project involves water system improvements and is not anticipated to produce any solid waste. Furthermore, the proposed Project would continue to comply with any federal, State, and local regulations regarding solid waste. There would be no impact.

3.21 Wildfire

Table 3-26. Wildfire Impacts

Wildfire Impacts				
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrollable spread of wildfire?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.21.1 Environmental Setting and Baseline Conditions

The proposed Project is located within the school campus in Tulare County. It is within the jurisdiction of the County of Tulare and the County of Tulare Fire Department.

The school campus is surrounded by flat, non-urbanized agricultural land and rural residences. The Project and the adjacent lands are located in a Tulare County Fire Department Local Responsibility Area for Non-Wildland, Non-Urban area. The APE is served by the Tulare County Fire Department, Battalion 1-Tulare Station No. 25, located just 3.5-miles northeast of the Project.

3.21.2 Impact Assessment

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

- 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?

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Water System Improvement Project

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. No habitable structures are being constructed as part of the proposed Project however, ground-mounted equipment such as the well, pump station, water storage tank and related infrastructure will be constructed/present. The proposed Project will occur on essentially flat land located on the developed Palo Verde Union Elementary School site. The nearest State Responsibility zone classified as a Very High Fire Hazard Severity Zone (FHSZ) by the California Department of Forestry and Fire Protection (CALFIRE), is located 17.9-miles east of the proposed Project. The proposed Project would not impair any emergency response plan set forth in the Tulare County Wildfire Protection Plan, nor exacerbate fire risks due to wildfires. Further analysis of the proposed Projects potential impacts to wildfire are not warranted. There would be no impacts.

3.22 CEQA Mandatory Findings of Significance

Table 3-27. Mandatory Findings of Significance Impacts

Mandatory Findings of Significance Impacts				
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3.22.1 Impact Assessment

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

Less than Significant Impact with Mitigation Incorporated. The analysis conducted in this Initial Study/Mitigated Negative Declaration results in a determination that the proposed Project, with incorporation of mitigation measures, will have a less than significant effect on the environment. The potential for impacts to biological resources and cultural resources from the implementation of the proposed Project will be less than significant with the incorporation of the mitigation measures discussed in **Chapter 4 Mitigation Monitoring and Reporting Program**. Accordingly, the proposed 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.

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

Less than Significant Impact. CEQA Guidelines Section 15064(i) States that a Lead Agency shall consider whether the cumulative impact of a project is significant and whether the effects of the project are cumulatively considerable. The assessment of the significance of the cumulative effects of a project must, therefore, be conducted in connection with the effects of past projects, other current projects, and probable future projects. The proposed Project would include the construction a new well and associated infrastructure to correct water quality issues experienced by students and staff at Palo Verde Union Elementary School. No additional roads would be constructed as a result of the Project, nor would any additional public services be required. The proposed Project is intended to improve water quality and would not result in direct or indirect population growth. Therefore, implementation of the proposed Project would not result in significant cumulative impacts and all potential impacts would be reduced to less than significant through the implementation of mitigation measures and basic regulatory requirements incorporated into future Project design.

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

Less than Significant Impact. The proposed Project would include the permitted demolition of an inactive well, construction of a new well, storm drainage basin, water storage tank, and associated infrastructure. The proposed Project in and of itself would not create a significant hazard to the public or the environment. On the contrary, implementation of the Project would correct water quality issues experienced by students and staff at Palo Verde Union Elementary School. Construction-related air quality/dust exposure impacts could occur temporarily as a result of project construction. However, implementation of basic regulatory requirements identified in this IS/MND would ensure that impacts are less than significant. Therefore, the proposed Project would not have any direct or indirect adverse impacts on humans. This impact would be less than significant.

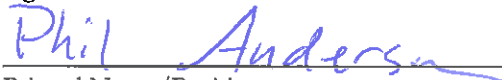
3.23 Determination: (To be completed by the Lead Agency)

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



Printed Name/Position

Date

4-1-21

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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 Initial Study/Mitigated Negative Declaration (IS/MND) for the ~ (Project) in the unincorporated community outside of Tulare. 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 proposed Project. Each mitigation measure is numbered with a symbol indicating the topical section to which it pertains, a hyphen, and the impact number. For example, AIR-2 would be the second mitigation measure identified in the Air Quality analysis of the IS/MND.

The first column of **Table 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 CCSD to ensure that individual mitigation measures have been complied with and monitored.

Chapter 4 Mitigation Monitoring and Reporting Program

Water System Improvement Project

Table 4-1 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					
Special Status Birds					
BIO-1 (Avoidance)					
If feasible, any vegetation removal or ground disturbance will take place between September 1 and February 1 to avoid impacts to nesting birds in compliance with the Migratory Bird Treaty Act. If vegetation removal must occur during the nesting season, project construction may be delayed due to actively nesting birds and their required protective buffers.	Prior to the start of construction activities	Prior to ground disturbing activities and the start of construction	PVUESD with assistance of a qualified biological subconsultant	By subconsultant report to PVUESD	
BIO-2 (Pre-construction Surveys)					
<p>a. If vegetation removal or ground disturbance will commence between February 1 and August 31, a qualified biologist will conduct a pre-construction survey for nesting birds within 14 days prior to the initiation of disturbance activities. This survey will cover:</p> <ul style="list-style-type: none"> i. Potential nest sites in trees, bushes, or grass within species-specific buffers of the project area (Swainson's hawk – 0.5-mile, other raptor species such as white-tailed kite – 500 ft, non-raptor species (loggerhead shrike, tricolored blackbird. – 300 ft). ii. Survey protocol developed by the Swainson's Hawk Technical Advisory Committee (TAC) should be followed (CDFG 2000), which includes survey timing and requirements for repeated visits. 	February 1 and August 31, a qualified biologist will conduct a pre-construction survey for nesting birds within 14 days prior to the initiation of disturbance activities	Prior to ground disturbing activities and the start of construction	PVUESD with assistance of a qualified biological subconsultant	By subconsultant report to PVUESD	
b. Surveys for burrowing owl will occur within 14 days prior to any ground disturbance, no matter the season. This survey will cover potential burrowing owl burrows in the project area and suitable habitat within 150 m (500 ft). Evaluation of use by owls shall be in accordance with California Department of Fish and Wildlife survey guidelines (CBOC 1993, CDFG 1995, CDFG 2012). Surveys will document if burrowing owls are nesting or using habitat in or directly adjacent to the project area. Survey results will be valid only for the season (breeding (Feb 1-Aug 31) or non-breeding (Sept 1-Jan 31) during which the survey is conducted.	A qualified biologist will conduct a pre-construction survey for nesting birds within 14 days prior to the initiation of disturbance activities no matter the season	Prior to ground disturbing activities and the start of construction	PVUESD with assistance of a qualified biological subconsultant	By subconsultant report to PVUESD	

Mitigation Measure/Condition of Approval	When Monitoring is to Occur	Frequency of Monitoring	Agency Responsible for Monitoring	Method to Verify Compliance	Verification of Compliance
c. If no active nests or burrows are detected during the pre-construction survey, then no further action is required. If an active nest or burrow is detected, then the following minimization measures will be implemented.					
BIO-3 (Minimization/Establish Buffers)					
a. Swainson's hawk, white-tailed kite, loggerhead shrike, tricolored blackbird and MBTA-protected species: If any active nests are discovered (and if construction will occur during bird breeding season), the USFWS and/or CDFW will be contacted to determine protective measures required to avoid take. These measures could include fencing off an area where a nest occurs, or shifting construction work temporally or spatially away from the nesting birds. Biologists are required on site to monitor construction while protected migratory birds are nesting in the project area to ensure that the buffer is adequate and that the nest is not stressed and/or abandoned. If an active nest is found after the completion of the pre-construction surveys and after construction begins, all construction activities will stop until a qualified biologist has evaluated the nest and erected the appropriate buffer around the nest.	Prior to initiating any construction-related site disturbance	Once prior to initiating any ground disturbances	PVUESD with assistance of a qualified biological subconsultant	Written reporting/photos to PVUESD and CDFW, if required by biologist in accordance with requirements of CDFW	
b. Burrowing owl: If burrowing owls are detected within the survey area, CDFW should be consulted to determine the suitable buffer. These buffers will consider the level of disturbance of the project activity, existing disturbance of the site (vehicle traffic, humans, pets, etc.), and time of year (nesting vs. wintering). If avoidance is not feasible, the District will work with CDFW to determine appropriate mitigation, such as passive exclusion or translocation, and associated mitigation land offset. If avoidance is not feasible, a qualified biologist will develop appropriate mitigations that will reduce project impacts to sensitive biological resources to a less than significant level. The type and amount of mitigation will depend on the resources impacted, the extent of the impacts, and the quality of habitats to be impacted. Mitigations may include but are not limited to: 1) Compensation for lost habitat in the form of preservation or creation of in-kind habitat protected by conservation easement; 2) Purchase of appropriate	Prior to initiating any construction-related site disturbance	Once prior to initiating any ground disturbances	PVUESD with assistance of a qualified biological subconsultant	Written reporting/photos to PVUESD and CDFW, if required by biologist in accordance with requirements of CDFW	

Chapter 4 Mitigation Monitoring and Reporting Program

Water System Improvement Project

Mitigation Measure/Condition of Approval	When Monitoring is to Occur	Frequency of Monitoring	Agency Responsible for Monitoring	Method to Verify Compliance	Verification of Compliance
credits from an approved mitigation bank or land trust servicing the Tulare County Area; 3) Payment of in-lieu fees.					
Cultural					
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. PVUESD 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.	In the event archaeological resources are uncovered	During excavation	PVUESD	Report from qualified archaeologist	Site visits and review of construction reports
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	PVUESD	Report from qualified archaeologist	Site visits and review of construction reports

Appendix A

Air Quality and Greenhouse Gas CalEEMod Output Files

PVUESD Water Upgrade Project - Tulare County, Annual

PVUESD Water Upgrade Project
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	0.25	Acre	0.25	10,890.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	51
Climate Zone	3			Operational Year	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Approximately 0.25 acres of ground disturbance.

Construction Phase - Construction will take place over 3 months.

PVUESD Water Upgrade Project - Tulare County, Annual

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	34.00
tblConstructionPhase	NumDays	5.00	9.00
tblConstructionPhase	PhaseEndDate	11/17/2021	8/17/2021
tblConstructionPhase	PhaseEndDate	11/24/2021	8/30/2021
tblConstructionPhase	PhaseStartDate	11/18/2021	8/18/2021
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

2.0 Emissions Summary

PVUESD Water Upgrade Project - Tulare County, Annual

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	0.0230	0.2180	0.2130	3.6000e-004	4.0500e-003	0.0118	0.0159	1.2500e-003	0.0110	0.0122	0.0000	31.0820	31.0820	8.1400e-003	0.0000	31.2855
Maximum	0.0230	0.2180	0.2130	3.6000e-004	4.0500e-003	0.0118	0.0159	1.2500e-003	0.0110	0.0122	0.0000	31.0820	31.0820	8.1400e-003	0.0000	31.2855

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	0.0230	0.2180	0.2130	3.6000e-004	4.0500e-003	0.0118	0.0159	1.2500e-003	0.0110	0.0122	0.0000	31.0820	31.0820	8.1400e-003	0.0000	31.2855
Maximum	0.0230	0.2180	0.2130	3.6000e-004	4.0500e-003	0.0118	0.0159	1.2500e-003	0.0110	0.0122	0.0000	31.0820	31.0820	8.1400e-003	0.0000	31.2855

[illegible]

PVUESD Water Upgrade Project - Tulare County, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-14-2021	9-13-2021	0.2401	0.2401
		Highest	0.2401	0.2401

2.2 Overall Operational

Unmitigated Operational

[illegible]

PVUESD Water Upgrade Project - Tulare County, Annual

2.2 Overall Operational**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	9.3000e-004	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	9.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

PVUESD Water Upgrade Project - Tulare County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/14/2021	6/25/2021	5	10	
2	Site Preparation	Site Preparation	6/26/2021	6/28/2021	5	1	
3	Grading	Grading	6/29/2021	6/30/2021	5	2	
4	Building Construction	Building Construction	7/1/2021	8/17/2021	5	34	
5	Paving	Paving	8/18/2021	8/30/2021	5	9	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.25

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

OffRoad Equipment

PVUESD Water Upgrade Project - Tulare County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	5.00	2.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

PVUESD Water Upgrade Project - Tulare County, Annual

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	3.9800e-003	0.0363	0.0379	6.0000e-005		2.0400e-003	2.0400e-003		1.9400e-003	1.9400e-003	0.0000	5.2047	5.2047	9.7000e-004	0.0000	5.2289
Total	3.9800e-003	0.0363	0.0379	6.0000e-005		2.0400e-003	2.0400e-003		1.9400e-003	1.9400e-003	0.0000	5.2047	5.2047	9.7000e-004	0.0000	5.2289

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	3.0000e-004	2.1000e-004	2.0800e-003	1.0000e-005	6.2000e-004	0.0000	6.2000e-004	1.6000e-004	0.0000	1.7000e-004	0.0000	0.5101	0.5101	1.0000e-005	0.0000	0.5104
Total	3.0000e-004	2.1000e-004	2.0800e-003	1.0000e-005	6.2000e-004	0.0000	6.2000e-004	1.6000e-004	0.0000	1.7000e-004	0.0000	0.5101	0.5101	1.0000e-005	0.0000	0.5104

PVUESD Water Upgrade Project - Tulare County, Annual

3.2 Demolition - 2021**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	3.9800e-003	0.0363	0.0379	6.0000e-005		2.0400e-003	2.0400e-003		1.9400e-003	1.9400e-003	0.0000	5.2047	5.2047	9.7000e-004	0.0000	5.2289
Total	3.9800e-003	0.0363	0.0379	6.0000e-005		2.0400e-003	2.0400e-003		1.9400e-003	1.9400e-003	0.0000	5.2047	5.2047	9.7000e-004	0.0000	5.2289

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	3.0000e-004	2.1000e-004	2.0800e-003	1.0000e-005	6.2000e-004	0.0000	6.2000e-004	1.6000e-004	0.0000	1.7000e-004	0.0000	0.5101	0.5101	1.0000e-005	0.0000	0.5104
Total	3.0000e-004	2.1000e-004	2.0800e-003	1.0000e-005	6.2000e-004	0.0000	6.2000e-004	1.6000e-004	0.0000	1.7000e-004	0.0000	0.5101	0.5101	1.0000e-005	0.0000	0.5104

PVUESD Water Upgrade Project - Tulare County, Annual

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					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2000e-004	3.9100e-003	2.0100e-003	0.0000		1.5000e-004	1.5000e-004		1.4000e-004	1.4000e-004	0.0000	0.4276	0.4276	1.4000e-004	0.0000	0.4310
Total	3.2000e-004	3.9100e-003	2.0100e-003	0.0000	2.7000e-004	1.5000e-004	4.2000e-004	3.0000e-005	1.4000e-004	1.7000e-004	0.0000	0.4276	0.4276	1.4000e-004	0.0000	0.4310

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	1.0000e-005	1.0000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0255	0.0255	0.0000	0.0000	0.0255
Total	2.0000e-005	1.0000e-005	1.0000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0255	0.0255	0.0000	0.0000	0.0255

PVUESD Water Upgrade Project - Tulare County, Annual

3.3 Site Preparation - 2021**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2000e-004	3.9100e-003	2.0100e-003	0.0000		1.5000e-004	1.5000e-004		1.4000e-004	1.4000e-004	0.0000	0.4276	0.4276	1.4000e-004	0.0000	0.4310
Total	3.2000e-004	3.9100e-003	2.0100e-003	0.0000	2.7000e-004	1.5000e-004	4.2000e-004	3.0000e-005	1.4000e-004	1.7000e-004	0.0000	0.4276	0.4276	1.4000e-004	0.0000	0.4310

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	1.0000e-005	1.0000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0255	0.0255	0.0000	0.0000	0.0255
Total	2.0000e-005	1.0000e-005	1.0000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0255	0.0255	0.0000	0.0000	0.0255

PVUESD Water Upgrade Project - Tulare County, Annual

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					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.0000e-004	7.2500e-003	7.5700e-003	1.0000e-005		4.1000e-004	4.1000e-004		3.9000e-004	3.9000e-004	0.0000	1.0409	1.0409	1.9000e-004	0.0000	1.0458
Total	8.0000e-004	7.2500e-003	7.5700e-003	1.0000e-005	7.5000e-004	4.1000e-004	1.1600e-003	4.1000e-004	3.9000e-004	8.0000e-004	0.0000	1.0409	1.0409	1.9000e-004	0.0000	1.0458

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	4.2000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1020	0.1020	0.0000	0.0000	0.1021
Total	6.0000e-005	4.0000e-005	4.2000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1020	0.1020	0.0000	0.0000	0.1021

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3.4 Grading - 2021**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.0000e-004	7.2500e-003	7.5700e-003	1.0000e-005		4.1000e-004	4.1000e-004		3.9000e-004	3.9000e-004	0.0000	1.0409	1.0409	1.9000e-004	0.0000	1.0458
Total	8.0000e-004	7.2500e-003	7.5700e-003	1.0000e-005	7.5000e-004	4.1000e-004	1.1600e-003	4.1000e-004	3.9000e-004	8.0000e-004	0.0000	1.0409	1.0409	1.9000e-004	0.0000	1.0458

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	4.2000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1020	0.1020	0.0000	0.0000	0.1021
Total	6.0000e-005	4.0000e-005	4.2000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1020	0.1020	0.0000	0.0000	0.1021

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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	0.0132	0.1357	0.1235	1.9000e-004		7.6100e-003	7.6100e-003		7.0000e-003	7.0000e-003	0.0000	17.0140	17.0140	5.5000e-003	0.0000	17.1515
Total	0.0132	0.1357	0.1235	1.9000e-004		7.6100e-003	7.6100e-003		7.0000e-003	7.0000e-003	0.0000	17.0140	17.0140	5.5000e-003	0.0000	17.1515

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	1.0000e-004	3.6200e-003	6.9000e-004	1.0000e-005	2.0000e-004	1.0000e-005	2.1000e-004	6.0000e-005	1.0000e-005	7.0000e-005	0.0000	0.8372	0.8372	4.0000e-005	0.0000	0.8382
Worker	5.1000e-004	3.5000e-004	3.5400e-003	1.0000e-005	1.0500e-003	1.0000e-005	1.0600e-003	2.8000e-004	1.0000e-005	2.9000e-004	0.0000	0.8671	0.8671	2.0000e-005	0.0000	0.8677
Total	6.1000e-004	3.9700e-003	4.2300e-003	2.0000e-005	1.2500e-003	2.0000e-005	1.2700e-003	3.4000e-004	2.0000e-005	3.6000e-004	0.0000	1.7043	1.7043	6.0000e-005	0.0000	1.7059

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3.5 Building Construction - 2021**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	0.0132	0.1357	0.1235	1.9000e-004		7.6100e-003	7.6100e-003		7.0000e-003	7.0000e-003	0.0000	17.0139	17.0139	5.5000e-003	0.0000	17.1515
Total	0.0132	0.1357	0.1235	1.9000e-004		7.6100e-003	7.6100e-003		7.0000e-003	7.0000e-003	0.0000	17.0139	17.0139	5.5000e-003	0.0000	17.1515

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	1.0000e-004	3.6200e-003	6.9000e-004	1.0000e-005	2.0000e-004	1.0000e-005	2.1000e-004	6.0000e-005	1.0000e-005	7.0000e-005	0.0000	0.8372	0.8372	4.0000e-005	0.0000	0.8382
Worker	5.1000e-004	3.5000e-004	3.5400e-003	1.0000e-005	1.0500e-003	1.0000e-005	1.0600e-003	2.8000e-004	1.0000e-005	2.9000e-004	0.0000	0.8671	0.8671	2.0000e-005	0.0000	0.8677
Total	6.1000e-004	3.9700e-003	4.2300e-003	2.0000e-005	1.2500e-003	2.0000e-005	1.2700e-003	3.4000e-004	2.0000e-005	3.6000e-004	0.0000	1.7043	1.7043	6.0000e-005	0.0000	1.7059

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3.6 Paving - 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	3.2500e-003	0.0302	0.0319	5.0000e-005		1.5900e-003	1.5900e-003		1.4800e-003	1.4800e-003	0.0000	4.2266	4.2266	1.2300e-003	0.0000	4.2574
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	3.2500e-003	0.0302	0.0319	5.0000e-005		1.5900e-003	1.5900e-003		1.4800e-003	1.4800e-003	0.0000	4.2266	4.2266	1.2300e-003	0.0000	4.2574

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	4.9000e-004	3.4000e-004	3.3700e-003	1.0000e-005	1.0000e-003	1.0000e-005	1.0100e-003	2.7000e-004	1.0000e-005	2.7000e-004	0.0000	0.8263	0.8263	2.0000e-005	0.0000	0.8269
Total	4.9000e-004	3.4000e-004	3.3700e-003	1.0000e-005	1.0000e-003	1.0000e-005	1.0100e-003	2.7000e-004	1.0000e-005	2.7000e-004	0.0000	0.8263	0.8263	2.0000e-005	0.0000	0.8269

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3.6 Paving - 2021**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	3.2500e-003	0.0302	0.0319	5.0000e-005		1.5900e-003	1.5900e-003		1.4800e-003	1.4800e-003	0.0000	4.2266	4.2266	1.2300e-003	0.0000	4.2574
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	3.2500e-003	0.0302	0.0319	5.0000e-005		1.5900e-003	1.5900e-003		1.4800e-003	1.4800e-003	0.0000	4.2266	4.2266	1.2300e-003	0.0000	4.2574

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	4.9000e-004	3.4000e-004	3.3700e-003	1.0000e-005	1.0000e-003	1.0000e-005	1.0100e-003	2.7000e-004	1.0000e-005	2.7000e-004	0.0000	0.8263	0.8263	2.0000e-005	0.0000	0.8269
Total	4.9000e-004	3.4000e-004	3.3700e-003	1.0000e-005	1.0000e-003	1.0000e-005	1.0100e-003	2.7000e-004	1.0000e-005	2.7000e-004	0.0000	0.8263	0.8263	2.0000e-005	0.0000	0.8269

4.0 Operational Detail - Mobile

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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

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	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

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

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.516727	0.033517	0.172440	0.141085	0.022326	0.005434	0.020884	0.078233	0.001822	0.001311	0.004327	0.001132	0.000761

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5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

[illegible]

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5.2 Energy by Land Use - NaturalGas

Unmitigated

[illegible]

Mitigated

[illegible]

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5.3 Energy by Land Use - Electricity**Unmitigated**

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

Mitigated

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

6.0 Area Detail**6.1 Mitigation Measures Area**

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[illegible]

6.2 Area by SubCategory

Unmitigated

[illegible]

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6.2 Area by SubCategory**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.3000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.0000e-004					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	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	9.3000e-004	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

7.0 Water Detail**7.1 Mitigation Measures Water**

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	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

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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

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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
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

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

Equipment Type	Number
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11.0 Vegetation

Appendix B

Biological Resources Evaluation Reports

**Supplemental Biological Resource Assessment for the Palo Verde Union Elementary
School Water System Improvement Project, Kleinfelder, December 14, 2020**



December 14, 2020
Project No.: 20212760.001A
Ms. Mary E. Beatie,
Senior Planner
Provost & Pritchard Consulting Group
130 N. Garden Street
Visalia, CA 93291-6362

SUBJECT: Supplemental Biological Resource Assessment for the Palo Verde School Well Project, Palo Verde Union Elementary School District, 9637 Avenue 196, Tulare, Tulare County, California.

Dear Ms. Beatie:

Kleinfelder has prepared the following biological resources letter report for proposed well upgrade project (Project) at the Palo Verde Union Elementary School at 9637 Avenue 196 in Tulare, Tulare County, California. This Project Area has expanded since the initial Biological Assessment (BA) and Biological Resources Assessment (BRA) studies were prepared in November 2018 for this Project. Kleinfelder has been hired to support Provost & Pritchard Consulting Group (Client) with assessing this additional area for biological resources to satisfy California Environmental Quality Act (CEQA). This letter report is an addendum to the previous reports completed by Odell Planning and Inc. Resource: *Draft Biological Assessment, Palo Verde School Well Project, Palo Verde Union Elementary School District, 9637 Avenue 196, Tulare County, California* and *Biological Resources Assessment, Palo Verde School Well Project, Palo Verde Union Elementary School District, 9637 Avenue 196, Tulare County, California* (Odell Planning and Research Inc 2018a and b). The Area of Potential Effect (APE) has been expanded adjacent and west of the original APE (also referred to the Action Area in the BA), and the regulatory context has been reduced to CEQA-only from the original assessment (Odell Planning and Research Inc. 2018a, b). The current letter report is intended to document biological resources identification efforts and recommendations of the additional APE. The Project description; regulatory context; literature review; USFWS Information for Planning and Conservation (iPAC) search results; CNDDB records search results; avoidance and minimization measures; and results of the previous survey and recommendations for the initial APE are found in Odell Planning and Research Inc. (2018a, b).

Project Overview

The Project, as proposed, is to replace the existing well with a new one that would accommodate existing and future water needs for school operations. The original APE measures approximately 1.18 acres. The Project is located entirely within the Palo Verde Union Elementary School campus, at approximately 246 feet above mean sea level, and is located in a portion of Section 34, Township 20 South, Range 24 East, Mount Diablo Base and Meridian as shown on the Tulare, California Quadrangle 7.5 Minute Series USGS Map (1969). (Appendix A).

The additional APE measures 0.80 acre and is also located entirely within the Palo Verde Union Elementary School campus, adjacent and west of the original APE described in Odell Planning and Research Inc. (2018a, b). The original Project description has been modified to include water distribution facilities supporting the existing school buildings. (Appendix B).

A significant portion of the additional APE for the 2020 Project (0.47 acre) overlaps with the original APE and study area buffer for the project assessed in the 2018 BA (Appendix C). The portion of the additional APE for the Project that is outside the original APE and study area consists of an extension of 0.325 acre into turf playing field and existing school buildings and is entirely within the existing school campus. The additional APE is bounded on the west by additional playing fields and existing school buildings, to the south by existing playing fields, to the north by the school's maintenance area, gymnasium and bus barn facilities, and to the east by rural residential homes. The existing school campus, is flat, surrounded by rural residential and agricultural uses, and is heavily disturbed due to mowing and school maintenance and sport/play activities. Therefore, the habitat of the new proposed APE is developed and highly disturbed.

Overview of Previous Biological Reports

Biological Assessment

A biological assessment for the then proposed Palo Verde Well Project (PVWP) was prepared on November 17, 2018 by Odell Planning and Research, Inc. Reconnaissance-level biological surveys were conducted to identify any federally-listed plant or wildlife species or suitable habitat for these species, and characterize habitats present within the Action Area. Data was recorded on the vegetation types and on dominant and characteristic species, as well as basic ecological factors, including topography, hydrologic regime, suitable habitats, soils, elevation range, currently known geographic range and evident disturbance.

The U.S. Fish and Wildlife Service (Service) generated a trust resource report from the USFWS iPAC website and provided an official species list for the project on May 29, 2018. The official species list included the following:

- San Joaquin kit fox (*Vulpes macrotis mutica*), federal endangered
- Tipton kangaroo rat (*Dipodomys nitraoides nitraoides*), federal endangered
- Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), federal threatened
- California red-legged frog (*Rana draytonii*), federal threatened
- California tiger salamander (*Ambystoma californiense*), federal threatened
- Blunt-nosed leopard lizard (*Gambelia sila*), federal endangered
- Giant garter snake (*Thamnophis gigas*), federal threatened
- Delta smelt (*Hypomesus transpacificus*), federal threatened
- Vernal pool fairy shrimp (*Branchinecta lynchi*), federal threatened
- California jewel-flower (*Caulanthus californicus*), federal endangered
- San Joaquin Adobe Sunburst (*Pseudobahia peirsonii*), federal threatened

No suitable habitat was found to be present within the 2018 Action Area for any species identified in the official species list. As such, the BA concluded that the proposed action will have no effect on any federally-listed, candidate, or proposed species under the federal Endangered Species Act.

Biological Resources Assessment

A biological resources assessment (BRA) for the then proposed PVWP was prepared on November 17, 2018 by Odell Planning and Research, Inc. On May 6, 2018, a reconnaissance-level site visit was conducted within the project footprint and a 200-foot radius buffer (study area), where accessible, to assess potential special status biological resources. The BRA reported that the proposed project will not result in impacts to any sensitive biological resources. No wetlands, waters, sensitive communities, or migratory corridors exist in the Project Area. Database queries indicated 28 animals and 12 plant species with special status occur or have historically occurred within the search area. Many of the species from the generated list either were historic, extirpated occurrences, or were species with very

specialized habitat requirements that were not present on the site or within the vicinity. Therefore, the majority of the species were determined to have no potential to occur within the study area. Based on the habitat types present within the study area, six special-status avian species (Swainson's hawk, white-tailed kite, loggerhead shrike, tricolored blackbird, mountain plover and burrowing owl) have the potential to nest and/or forage within the study area. Construction related disturbance within the project area could result in nest abandonment or direct mortality of eggs, chicks, and/or fledglings. This type of impact to migratory birds, including special-status bird species, would be considered take under the Migratory Bird Treaty Act (MBTA) and California Endangered Species Act (CESA), and therefore, is a potentially significant impact. In order to avoid impacts to avian species, nests and nesting habitat should not be disturbed or destroyed. Measures were identified in the BRA for implantation to avoid and reduce any potential impacts to avian species protected under the MBTA and CESA to a less than significant level.

Survey Methods

Using the previous evaluations prepared by Odell Planning and Research Inc., KLF/GANDA biologist reviewed proposed project modifications to affect biological resources, focusing on species that are subject to state or federal regulation. This evaluation included a review of onsite conditions as reported by Google Earth, and a review of the following online data sources:

- California Natural Diversity Data Base

- National Wetland Inventory

- USFWS Critical Habitat

No additional field surveys were completed in 2020 due to the highly disturbed nature of the project area and lack of suitable habitat for listed species reported in the 2018 BA and BRA.

Results

No changes to the additional APE or surrounding areas were noted in Google Earth, and a field survey conducted by KLF/GANDA cultural personnel on November 23, 2020 reported no significant changes to the additional APE or adjacent parcels. Refer to Appendix D for photographs of the project area taken during the field survey.

A search of the California Natural Diversity Data Base, National Wetland Inventory, and USFWS Critical Habitat database was completed on December 2, 2020. No additional records were located of any federal or state listed species within a 10-mile radius of the additional APE after the date of the initial CNDDDB search completed in 2018. The search also included unprocessed data from CNDDDB field forms. A search of the USFWS Critical Habitat database revealed that no new critical habitat was designated within the additional APE or adjacent parcels since the issuance of the BA/BRA. A search of the National Wetland Inventory (NWI) reported that no new wetlands or riparian areas were designated within the additional APE or surrounding areas since the issuance of the BA/BRA.

Conclusions and Recommendations

The results of the current assessment of the additional APE are consistent with the previous biological assessment and biological resources assessment (Odell Planning and Research Inc. 2018a, b). The BA reported that no suitable habitat was present within the original APE for any species identified in the official species list. As such, the BA concluded that the original project would have no effect on any federally-listed, candidate, or proposed species under the federal Endangered Species Act. The additional APE will be completed almost entirely within the 2018 APE and study area buffer, and no significant changes have occurred within the APE or surrounding parcels since the issuance of the BA.

The portion of the additional APE that is outside 2018 APE and study area buffer is developed and highly disturbed. Therefore, it is concluded that there is no suitable habitat for listed species within the proposed additional areas and that the proposed additions will have no effect on any federally listed, candidate, or proposed species under the federal Endangered Species Act.

The BRA reported that six special-status avian species (Swainson's hawk, white-tailed kite, loggerhead shrike, tricolored blackbird, mountain plover, and burrowing owl) have the potential to nest and/or forage within the study area. Swainson's hawk and white-tailed kite could nest in the large trees within and adjacent to the study area and forage in open fields. Loggerhead shrike could nest in shrubs or trees within and adjacent to the study area and forage in the open fields. Tricolored blackbird could establish a nesting colony in adjacent row crop fields and forage on the school yard. Mountain plover do not nest in California; however, they do use short grasslands, freshly plowed fields, sprouting grain fields, and sod farms for winter foraging on the south west side of the San Joaquin Valley, so they could forage in the study area and vicinity. Although none were detected during reconnaissance survey completed by Odell Planning and Research Inc. on May 6, 2018, burrowing owl could move into the area prior to construction, and occupy any newly built large burrows during the nesting and wintering seasons. The BRA found that construction related disturbance within the project area could result in nest abandonment or direct mortality of eggs, chicks, and/or fledglings, including among the six state-listed avian species mentioned above.

The APE extension occurs in manicured turf/playing area and includes existing schoolhouse structures and is considered low quality nesting and foraging habitat for the six listed species. The surrounding areas within 0.5 miles of the APE continue to provide potential suitable nesting and foraging habitat for the state-listed avian species and other species protected under the Migratory Bird Treaty Act (MBTA). Potential impacts to these species are satisfactorily addressed in the avoidance and minimization measures recommended in the BRA, and no additional measures are warranted based on the proposed changes described herein. If implemented, the proposed avoidance and minimization measures will reduce potential impacts to less than significant levels under CEQA.

Citations

Odell Planning and Research, Inc

2018a. DRAFT Biological Assessment, Palo Verde School Well Project, Palo Verde Union Elementary School District, 9637 Avenue 196, Tulare County, California.

Odell Planning and Research, Inc

2018b. Biological Resource Assessment, Palo Verde School Well Project, Palo Verde Union Elementary School District, 9637 Avenue 196, Tulare County, California.

Sincerely,

Katherine Gray



Wildlife Biologist

KLEINFELDER

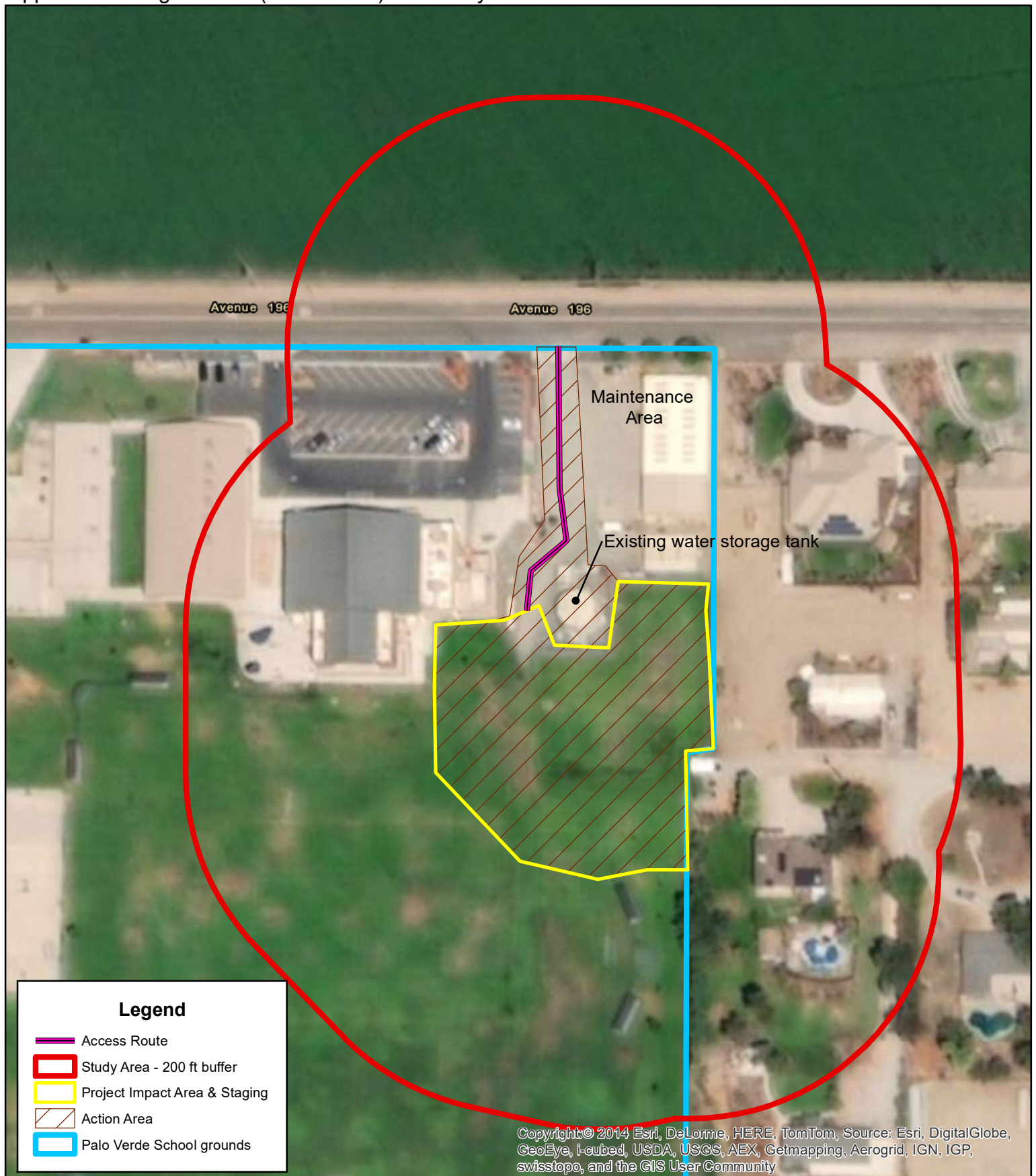
Appendices

Appendix A: Original APE (Action Area) and Study Area

Appendix B: Additional APE

Appendix C: Additional APE and Original APE/Study Area

Appendix D: Photographs



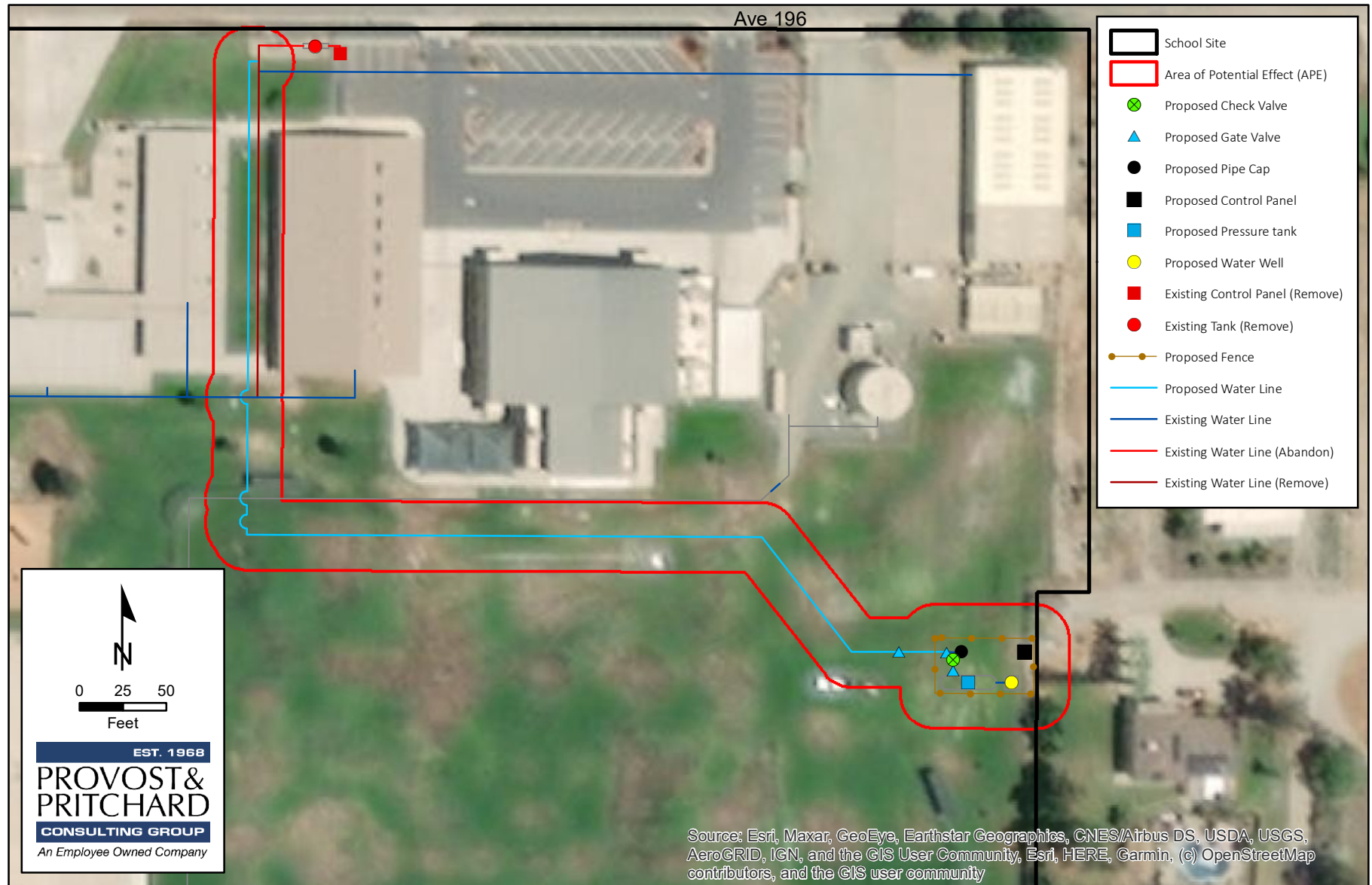
Source: Palo Verde USD, ESRI. Map date: Nov 12, 2018

Action Area and Study Area Map

Figure 1

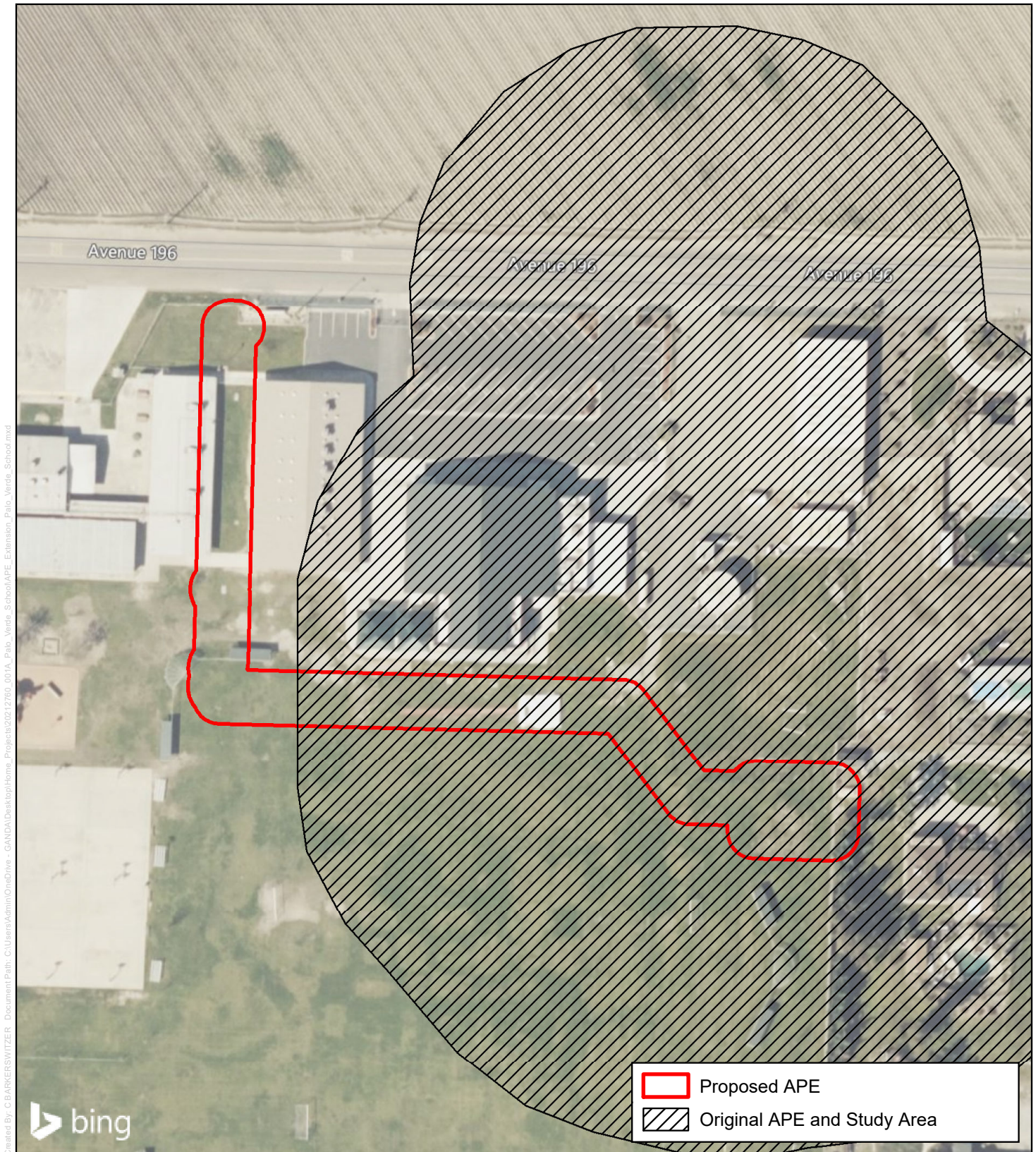
Palo Verde School Well Project
Palo Verde Union Elementary School District

Appendix B. Additional APE for the 2020 Project



11/17/2020 : G:\Palo Verde UESD-3642\364220001-CEQA-Plus_Water Upgr\400 GIS\Map\PV_CEQA_SitePlan.mxd

Appendix C. Additional APE and original APE/study area.



Source: Bing Maps

0 50 100
0 15 30
Feet
Meters

N
Scale 1:1,200
1 in = 100 feet

Area of Potential Effect
Palo Verde Union Elementary
School Project Tulare County,
California



Appendix D



Photo 1: APE Overview, facing south.



Photo 2: APE overview, facing north.



Photo 3: APE overview, facing west



Photo 4: APE overview, facing east.

**Biological Resources Assessment (State) Palo Verde Union Elementary
School Water System Improvement Project, Odell Planning & Research,
Inc., November 17, 2018**

Biological Resources Assessment
Palo Verde School Well Project
Palo Verde Union Elementary School District

Prepared by

ODELL *Planning*  *Research, Inc.*

Environmental Planning • School Facility Planning • Demographics

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November 17, 2018

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Executive Summary

The Palo Verde Union Elementary School District is proposing construction of the Palo Verde School Well Project (proposed project), which consists of constructing a new water well on the existing school campus in Tulare County. The proposed new well would replace an existing well and would accommodate existing and future water needs for school operations. The proposed project is located at 9637 Ave. 196, Tulare, California, 93274. The Project Area is approximately 1.18-acres, and encompasses the proposed location of the new well and the access and staging areas needed for construction. The Project Area is part of the existing school and maintenance yard.

The U.S. Fish and Wildlife Service (Service) provided an official species list for the project on May 29, 2018 (see Appendices). No suitable habitat is present within the Project Area for any species identified in the official species list. A Biological Assessment was also completed for the Project (under separate cover).

The proposed project will not result in impacts to any sensitive biological resources. No wetlands, waters, sensitive communities, or migratory corridors exist in the Project Area. Six special status avian species (Swainson's hawk, white-tailed kite, loggerhead shrike, tricolored blackbird, mountain plover and burrowing owl) have the potential to nest and/or forage within the study area. Construction related disturbance within the project area could result in nest abandonment or direct mortality of eggs, chicks, and/or fledglings. This type of impact to migratory birds, including special status bird species, would be considered take under the MBTA and CESA, and therefore, is a potentially significant impact. In order to avoid impacts to avian species, nests and nesting habitat should not be disturbed or destroyed. Implementation of the measures identified will avoid and reduce any potential impacts to avian species protected under the MBTA and CESA to a less than significant level.

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Purpose of the Study

The purpose of this assessment is to determine if the project may have a significant impact on the biological resources in the vicinity and to identify design, operational, or other measures that may be available to reduce or avoid the impacts. The following biological resources report consists of a description of the results of the assessment, including habitat types present, species descriptions for special status species that have the potential to occur, potential significant impacts the project could have on these species and their habitats, recommendations for further focused species surveys, if necessary, and avoidance or minimization measures that would reduce or eliminate any project impacts on these species.

Project Description and Background

Project Description

The proposed project consists of constructing a new water well for school district use on the existing Palo Verde Elementary School site, within the fenced, landscaped turf area, located in rural Tulare County, California. The proposed project would accommodate existing and future potable water needs for students and faculty on the Pre-Kindergarten through 8th grade campus. The proposed project is located on an approximately 1.18-acre area of the existing school grounds parcel (9637 Ave. 196, Tulare, California 93274) in Tulare County, California (Project Area) (Figures 1 -3).

Project Area

The 1.18-acre Project Area consists of the project impact area (where actual work will take place), staging and equipment access route to the proposed water well site through an existing maintenance yard. The Project Area is part of the existing elementary school site, within the turf/playing field area and is bounded to the west by additional playing fields and existing school buildings, to the south existing playing fields, to the north by the school's maintenance area/facilities and Avenue 196, and to the east by rural residential homes (Figure 3). The Project Area is entirely within the existing school campus, is flat, surrounded by rural residential, agricultural, and industrial uses, and is heavily disturbed due to mowing and school maintenance activities. Therefore, the habitat of the Project Area is developed. The approximate elevation of the proposed project site is 246 feet above mean sea level. The project is located at approximately 246 feet above mean sea level and is located in a portion of Section 34, Township 20 South, Range 24 East, M.D.B. & M., as shown on the Tulare, California Quadrangle 7.5 Minute Series USGS Map (Topographic).

The vegetation on the school campus consists mostly of either landscaped shrubs, trees, turf (non-native perennial grass), and/or non-native grasses and ruderal (weedy) plants.

Utilities

Domestic Water

Being a rural school, the school district must provide its own domestic water source. The domestic water source provides water for the interior (domestic) uses, industrial processes (maintenance facilities), and landscape irrigation. New water system piping would be installed, connecting the well to the existing water storage tank immediately adjacent to the proposed well location.

Site Fencing

The entire school is enclosed by chain link fencing for student safety and security. The Project Area is behind 2-3 chain link fences on some sides, since the proposed well site is within the existing playing fields/turf area, which is separated off from maintenance, parking, and some other buildings.

Construction Schedule and Equipment

Construction of the proposed project is expected to occur over a period of 3 months, beginning during summer 2019 while students are on summer recess. Construction would be limited to weekdays between the hours of 8 AM to 5 PM (no night-time construction).

In support of these activities and for the assumptions for this document, the types of equipment that may be used at any one time during construction may include, but not be limited to:

- Water Well Drilling Rig
- Backhoe

Staging areas for storage of construction equipment and other materials would be located within the existing maintenance area.

Assessment Methods

A background search and literature review of all existing data pertaining to biological resources within the area was conducted. This included searching *California Natural Diversity Data Base* (CDFW 2018), the *Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2018), the U.S. Fish and Wildlife Service *IPac Trust Resource List* (see Appendices), other available CEQA/NEPA documents, herbaria records, maps, and photographs. To ensure completeness of the search, a nine-quad radius was used for database queries, centered on the Tulare 7.5" USGS Quadrangle (Figure 4). From this review, a list of potentially occurring special status species was compiled for the project (see Appendices). Special status biological resources include special-status plant and wildlife species (including State or Federally designated, rare, threatened, endangered, Migratory Bird Treaty Act species, species of concern, or unique species); potential wetland/riparian habitats; sensitive plant communities; and other environmentally sensitive habitat areas.

On May 6, 2018, a reconnaissance-level site visit was conducted within the project footprint and a 200-foot radius buffer (study area), where accessible, to assess potential special status biological resources. The project site was surveyed on foot and evaluated to determine its ability to support the special status species under consideration. A vehicle was used to assess the vicinity and locations of nearby biological resources, such as large mature trees, ponding basins, and riparian corridors. Wildlife observations, plant species, and habitat types encountered were documented. Focus was placed on searching for large burrows or burrow complexes and any potential wetland features, as well as potential wildlife corridors.

Regulatory Setting

Regulatory authority over biological resources is shared by federal, state, and local authorities under a variety of legislative acts. The following section summarizes the federal, state, and local regulations for special status species, jurisdiction waters of the United States (U.S.) and State of California (State), and other sensitive biological resources. Only select regulations will be applicable to this project.

Federal Endangered Species Act

The U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) implement the Federal Endangered Species Act (FESA) of 1973 (16 USC Section 1531 et seq.). Under the FESA, threatened and endangered species on the federal list and their habitats (50 CFR Subsection 17.11, 17.12) are protected from "take" (i.e., activities that harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect) as well as any attempt to engage in any such conduct, unless a Section 10 Permit is granted to an individual or a Section 7 consultation and a Biological Opinion with incidental take provisions

are rendered from the lead federal agency. Pursuant to the requirements of FESA, an agency reviewing a Proposed Project within its jurisdiction must determine whether any federally listed species may be present within the project site and vicinity and determine whether the Proposed Project will have a potentially significant impact upon such species. Under the FESA, habitat loss is considered to be an impact to the species. In addition, the agency is required to determine whether the project is likely to jeopardize the continued existence of any species proposed to be listed under the FESA or result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC Section 1536[3], [4]). Therefore, project-related impacts to these species, or their habitats, would be considered significant and require mitigation.

Under the FESA, critical habitat may be designated by the Secretary of the Interior for any listed species. The term "critical habitat" for a threatened or endangered species refers to the following: specific areas within the geographical range of the species at the time it is listed that contain suitable habitat for the species, which may require special management considerations or protection; and specific areas outside the geographical range of the species at the time it is listed that contain suitable habitat for the species and is determined to be essential for the conservation of the species. Under Section 7 of the FESA, all federal agencies (including the USFWS and the NMFS) are required to ensure that any action they authorize, fund, or carry out will not likely jeopardize the continued existence of a listed species or modify their critical habitat.

Migratory Bird Treaty Act

Most bird species, (especially those that are breeding, migrating, or of limited distribution) are protected under federal and/or state regulations. Under the Migratory Bird Treaty Act of 1918 (MBTA) (16 USC Subsection 703-712), migratory bird species, their nests, and their eggs are protected from injury or death, as well as any project-related disturbances during the nesting cycle. The MBTA of 1918 prohibits killing, possessing, or trading migratory birds except in accordance with regulation prescribed by the Secretary of the Interior. Most actions that result in taking or in permanent or temporary possession of a protected species constitute violations of the MBTA. The USFWS is responsible for overseeing compliance with the MBTA and implements Conventions (treaties) between the United States and four countries for the protection of migratory birds – Canada, Mexico, Japan, and Russia. The USFWS maintains a list of migratory bird species that are protected under the MBTA.

Bald and Golden Eagle Protection Act

The Bald Eagle Protection Act was originally enacted in 1940 to protect bald eagles and was later amended to include golden eagles (16 USC Subsection 668-668). This Bald Eagle Protection Act prohibits the taking or possession of, and commerce in, bald and golden eagles, parts, feathers, nests, or eggs with limited exceptions. The definition of take includes pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb. Bald eagles may not be taken for any purpose unless a permit is issued prior to the taking. Activities which can be authorized by permit are: scientific collecting/research, exhibition, tribal religious, depredation, falconry, and the taking of inactive golden eagle nests, which interfere with resource development or recovery operations. The statute imposes criminal and civil sanctions as well as an enhanced penalty provision for subsequent offenses.

Wetlands and Waters of the U.S.

The U.S. Army Corps of Engineers (USACE) has primary federal responsibility for administering regulations that concern Waters of the U.S. (including wetlands), under Section 404 of the Clean Water Act (CWA). Section 404 of the CWA regulates the discharge of dredged or fill material into waters of the U.S. The USACE requires that a permit be obtained if a project proposes the placement of structures within, over, or under navigable waters and/or discharging dredged or fill material into waters below the ordinary high water mark (OHWM). The USACE has established a series of nationwide permits (NWP) that authorize certain activities in waters of the U.S.

Waters of the U.S. are defined as: *All waters used in interstate or foreign commerce; all interstate waters including interstate wetlands; all other waters such as intrastate lakes, rivers, streams (including intermittent and ephemeral streams), mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes or natural ponds, where the use, degradation, or destruction of which could affect interstate commerce; and impoundments of these waters, tributaries of these waters, or wetlands adjacent to these waters* (Section 404 of the CWA; 33 CFR Part 328). The limit of USACE jurisdiction for non-tidal waters (including non-tidal perennial and intermittent watercourses and tributaries to such watercourses) in the absence of adjacent wetlands is defined by the OHWM.

The OHWM is defined as: *The line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas* (Section 404 of the CWA; 33 CFR Part 328).

Wetlands are defined as: *Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions* (Section 404 of the CWA; 33 CFR Part 328).

In addition, a Section 401 Water Quality Certification Permit was established to comply with CWA Sections 301, 302, 303, 306, and 307 and is regulated by the Regional Water Quality Control Board (RWQCB). Anyone that proposes to conduct a project that may result in a discharge to U.S. surface waters and/or “waters of the state” including wetlands (all types) year round and seasonal streams, lakes and all other surface waters would require a federal permit. At a minimum, any beneficial uses lost must be replaced by a mitigation project of at least equal function, value, and area. Waste Discharge Requirements Permits are required pursuant to California Water Code Section 13260 for any persons discharging or proposing to discharge waste, including dredge/fill, that could affect the quality of the waters of the state.

California Endangered Species Act

The State of California enacted the CESA in 1984. The CESA is similar to the FESA but pertains to state-listed endangered and threatened species. Under the CESA, the CDFW has the responsibility for maintaining a list of threatened and endangered species designated under state law (California Fish and Game Code [CFGF] 2070). Section 2080 of the CFGF prohibits “Take” of any species that the commission determines to be an endangered or threatened species. “Take” is defined in Section 86 of the CFGF as “to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.”

The State and federal lists of threatened and endangered species are generally similar; however, a species present on one list may be absent from the other. CESA regulations are also somewhat different from the FESA in that the State regulations included threatened, endangered, and candidate plants on non-federal lands within the definition of “Take.” CESA allows for “Take” incidental to otherwise lawful development projects.

Pursuant to the requirements of the CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed endangered or threatened species may be present in the project area and determine whether the proposed project will have a potentially significant impact on such species. Project-related impacts to species on the CESA endangered or threatened list (or, in addition, designated by the CDFW as a “Species of Special Concern,” which is a level below threatened or endangered status) would be considered significant and would require mitigation.

As a trustee agency under CEQA, CDFW reviews potential project impacts to biological resources, including wetlands. In accordance with the CEQA thresholds of significance for biological resources, areas

that meet the state criteria of wetlands and could be impacted by a project must be analyzed. Pursuant to CFGC Section 2785, CDFW defines wet areas as “lands which may be covered periodically or permanently with shallow water and which include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, fens, and vernal pools.” Wet areas are determined by CDFW by the presence of one of the three-wetland indicators (hydrophytic vegetation, hydric soils, or wetland hydrology).

Fully Protected Species and Species of Special Concern

The classification of “fully protected” was the CDFW’s initial effort to identify and provide additional protection to those animals that were rare or faced with possible extinction. Lists were created for fish, amphibian and reptiles, birds, and mammals. Most of the species on these lists have subsequently been listed under CESA and/or FESA. The CFGC sections (fish at Sec. 5515, amphibian and reptiles at Sec. 5050, birds at Sec. 3511, and mammals at Sec. 4700) dealing with “fully protected” species states that these species “...may not be taken or possessed at any time and no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected species,” although “Take” may be authorized for necessary scientific research. This language makes the “fully protected” designation the strongest and most restrictive regarding the “Take” of these species. In 2003, the code sections dealing with fully protected species were amended to allow the CDFW to authorize “Take” resulting from recovery activities for state-listed species.

Species of Special Concern (SSC) are broadly defined as animals not listed under the CESA, but which are nonetheless of concern to the CDFW because they are declining at a rate that could result in listing or historically occurred in low numbers and known threats to their persistence currently exist. This designation is intended to result in special consideration for these animals by the CDFW, land managers, consulting biologists, and others, and is intended to focus attention on the species to help avert the need for costly listing under CESA and cumbersome recovery efforts that might ultimately be required. This designation also is intended to stimulate collection of additional information on the biology, distribution, and status of poorly known at-risk species, and focus research and management attention on them. Although these species generally have no special legal status, they are given special consideration under CEQA during project review.

CEQA Guidelines Section 15380

Several federal and state statutes protect rare, threatened, and endangered species. The CEQA *Guidelines* Article 20, Section 15380 provides that a species not listed on the federal or state list of protected species may be considered rare, threatened, or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definitions of endangered, rare, or threatened provided in the FESA and the CESA. This section of the *Guidelines* provides public agencies with the ability to protect a species from any potential impacts of proposed projects until the respective government agency has the opportunity to designate (list) that species as protected, if warranted.

California Fish and Game Code Sections 1600-1616

Under Sections 1600-1616, the CDFW regulates activities that would alter the flow, bed, channel, or bank of streams and lakes. It derives this jurisdiction under the CESA because the CDFW is responsible for the protection of fish or wildlife resources and their habitats (including wetlands). The CDFW provides comments on USACE Section 404 and 401 permits under the Fish and Wildlife Coordination Act, last amended in 1995. The CDFW is authorized under the California Fish and Game Code Sections 1600- 1616 to develop mitigation measures and enter into Streambed Alteration Agreements with applicants whose proposed projects would obstruct the flow of, or alter the bed, channel, or bank of a river or stream in which there is a fish or wildlife resource, including intermittent and ephemeral streams and wetlands. Biological components of rivers, streams, or lakes may include aquatic and riparian vegetation, aquatic animals and fish, amphibians, reptiles, invertebrates, and terrestrial species that derive benefits from the stream system.

California Fish and Game Code Sections 3503 and 3513

According to Section 3503 of the CFGC it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird (except house sparrows (*Passer domesticus*) and European starlings [*Sturnus vulgaris*], and other non-native species). Section 3503.5 specifically protects birds in the orders Falconiformes and Strigiformes (birds-of-prey). Section 3513 essentially overlaps with the MBTA, prohibiting the “Take” or possession of any migratory non-game bird. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered “Take” by the CDFW.

California Native Plant Society

The California Native Plant Society (CNPS) maintains an extensive list of plant species native to California whose members exist in significantly reduced populations from historical levels, occur in limited distribution, or are otherwise threatened with extinction. Several of which have no designated status or protection under federal or state endangered species legislation. This information is published in the Inventory of Rare and Endangered Plants of California (CNPS 2018). Impacts to CNPS listed species (e.g., CNPS list 1B and 2) are considered during CEQA environmental review.

Environmental Setting

Existing Conditions

The Project Area and study area are located on the San Joaquin Valley floor, within San Joaquin Valley subregion of the California Floristic Province (Baldwin et al. 2012). The San Joaquin Valley is bounded by the Coast Range to the west, the Sierra Nevada range to the east and the Tehachapi range to the south. The Tule River runs west from the Sierra Nevada through Porterville in Tulare County and historically emptied into Tulare Lake. However, the Tule River currently only reaches Tulare Lake during floods due to water diversion for agriculture irrigation. Tulare Lake is the terminal sink or basin that historically also received the Kaweah and Kern Rivers as well as southern tributaries of the Kings River.

Located between the Coast Range and the Sierra Nevada, the San Joaquin Valley has dry, hot summers and cool winters. The Visalia/Tulare area has a mean annual rainfall of 10 inches and average temperatures of 63 °F (Average range: 49-77 °F) (Western Regional Climate Center 2018).

Topography of the vicinity is relatively flat, without large elevation changes. There is only one soil type within the project area, Crosscreek-Kai association, 0 to 2 percent slopes (NRCS 2018). This soil type is typically found on remnant fans and valleys. The parent material was formed by the chemical and mechanical alteration of the Kai series which originally formed in alluvium derived from granitic rock. This soil type is well drained and not hydric and rarely ponds. Due to human land alteration within the project area and vicinity (road construction, intensive agriculture, residential development), the native soils have been altered resulting in the absence of some of the typical characteristics, or possibility of hydric components.

In general, this area of Tulare County has been developed with intensive agriculture (orchards and row crops) for more than half a century, however rural residential uses remain in the vicinity. With the development of the area, more urban influences also are prevalent, including frequent human disturbance, feral animals, rodent poisoning, and debris. Adjacent land uses include a construction yard and orchards to the south, rural residential to the east, and agricultural land (orchards, row crops) and rural residential to the east and north. Elk Bayou and its associated mature riparian corridor, which drains to the Tule River is approximately 1 mile to the south.

The approximately 1.18-acre project area consisted of school playing field turf and a maintenance facility for the school vehicles. The project is regularly mowed and sprayed for vegetation control. Dirt and gravel access road and parking lot will be the access to the proposed well site. No aquatic features were present. Habitat present within the project footprint was classified as developed (school). An existing water storage

tank is also within the project area, as the new well will be connected to the existing water infrastructure. The water tank is located between the maintenance yard and the turf (Figure 3).

Vegetation

Ruderal/disturbed/developed habitat was the only vegetation type observed within the Project Area and study area (Figure 3). Ruderal areas are those areas which have been developed or have been subject to historic and ongoing disturbance by human activities (e.g., existing roads or agricultural areas) and are devoid of vegetation or impacted by non-native and/or invasive weed species. Developed habitat are areas where the native vegetation has been cleared for residential, commercial, industrial, transportation, or recreational structures. Developed areas include areas that have structures, paved surfaces, horticultural plantings, and lawns. This habitat type is considered to have low biological value, as it is dominated generally by non-native plant species and consists of relatively low-quality habitat from a wildlife perspective. The majority of the Project Area and study area is developed with an existing school and its maintenance facilities. The remainder of the study area consisted of additional school facilities, rural residential, intensive agriculture (corn, walnuts, almonds, a small dairy), and a light industrial construction yard. Plant species observed included burclover (*Medicago polymorpha*), rose clover (*Trifolium hirtum*), Bermuda grass (*Cynodon dactylon*), bluegrass (*Poa* sp.), common dandelion (*Taraxacum officinale* ssp. *officinale*), puncturevine (*Tribulus terrestris*), prostrate knotweed, (*Polygonum aviculare*), bristly ox tongue (*Helminthotheca echioides*), cheeseweed (*Malva parviflora*), melilot (*Melilotus* sp.), prickly sow thistle (*Sonchus asper*), stinging nettle (*Urtica dioica*) foxtail barley (*Hordeum murinum* ssp. *leporinum*), and filaree (*Erodium* sp.), in part. Introduced trees and shrubs, such as Eucalyptus spp., fan palm, fruit trees, azalea, oleander, conifers such as Italian cypress trees (*Cupressus sempervirens*), etc., are also within the study area, associated with the school grounds and adjacent rural residences.

Wildlife

The immediate site vicinity is visited frequently by humans (students, vehicles, residents, farmers). Therefore, wildlife species that are sensitive to human disturbance are less likely to use the project site. A few common wildlife species or their sign were observed during the surveys (Table 1). Only one small mammal burrow, a gopher (*Thomomys* sp), was observed within the study area, likely due to active rodent management at the school by groundskeepers. Common wildlife species that do well in urbanized and disturbed areas that may occur within the study area include California ground squirrel, raccoon (*Procyon lotor*), skunk (*Mephitis mephitis*), American crow (*Corvus brachyrhynchos*), scrub jay (*Aphelocoma californica*), European starling (*Sturnus vulgaris*), northern mockingbird (*Mimus polyglottos*), fence lizard (*Sceloporus occidentalis*), and rock dove (*Columba livia*).

Busy roadways, landscaped areas, residential areas, and agricultural fields ordinarily provide low to marginal habitat for some terrestrial wildlife, primarily due to the amount of regular ground disturbance, pesticide/herbicide use, heavy foot and vehicle traffic, and feral or domestic animal presence. Wildlife species and sign (tracks and scat) observed on or near the project site during the visit included species from various taxa (Table 1).

Table 1. Wildlife species observed during surveys conducted on May 6, 2018.

SPECIES NAME	COMMON NAME
BIRDS (ALL PROTECTED BY THE MIGRATORY BIRD TREATY ACT*)	
<i>Agelaius phoeniceus</i>	Red-winged blackbird
<i>Charadrius vociferus</i>	killdeer
<i>Columba livia</i>	Rock dove
<i>Corvus brachyrhynchos</i>	American crow
<i>Euphagus cyanocephalus</i>	Brewer's blackbird
<i>Haemorhous mexicanus</i>	House finch
<i>Mimus polyglottos</i>	Northern mockingbird
<i>Passer domesticus</i>	House sparrow*
<i>Sayornis nigricans</i>	Black phoebe
<i>Streptopelia decaocto</i>	Eurasian collared-dove*
<i>Sturnus vulgaris</i>	European starling*
<i>Tyrannus verticalis</i>	Western kingbird
<i>Zenaida macroura</i>	Mourning dove
MAMMALS	
<i>Felis catus</i>	Domestic cat
<i>Sylvilagus</i> sp.	cottontail
<i>Thomomys</i> sp.	Gopher (mounds/holes)
<i>Bos taurus</i>	Domestic cow
<i>Capra hircus</i>	Domestic goat
REPTILES	
<i>Sceloporus occidentalis</i>	Fence lizard

*denotes a non-native species, not protected by MBTA

Wildlife species which may occur or use the project site for foraging or breeding include:

- bird species such as European starlings (*Sturnus vulgaris*), American crow (*Corvus brachyrhynchos*), black phoebe (*Sayornis nigricans*), mourning dove (*Zenaida macroura*), northern mockingbird (*Mimus polyglottos*), killdeer (*Charadrius vociferus*), great blue heron (*Ardea herodias*), great horned owl (*Bubo virginianus*), and various passerine species;
- small mammals such as California ground squirrel (*Spermophilus beecheyi*), desert cottontail (*Sylvilagus audubonii*), fox squirrel (*Sciurus niger*), Botta's pocket gopher (*Thomomys bottae*), broad-handed mole (*Scapanus latimanus*), deer mouse (*Peromyscus maniculatus*), California vole (*Microtus californicus*), old-world rats (*Rattus* sp.), and house mouse (*Mus musculus*).
- various bat species may forage on insects above the landscaped areas, near street lights, and possibly roost in crevices of houses or in large trees at neighboring residences;
- medium-sized mammals accustomed to human disturbance which seek rodent prey such as raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), feral and domestic cats (*Felis domesticus*);
- and reptile and amphibian species western fence lizard (*Sceloporus occidentalis*) and Sierran treefrog (*Pseudocris sierra*).

Potential Direct and Indirect Project Impacts

The project site consisted of an existing school yard and maintenance area. As such, the project site has been disturbed from its natural state for many decades. Although temporary loss of turfed areas may result in decreased foraging area for some species for a few months, such land is of limited habitat value for sensitive plant and wildlife species, especially due to the amount of disturbance from humans, vehicles, and domestic animals in the vicinity on a regular basis. The direct impacts of the proposed well will be a very minimal loss of marginal habitat and possible direct mortality for any animals in the path of construction equipment. Direct mortality could occur to common fossorial or slow-moving mammals and reptiles within the project area. Direct take could also occur for bird eggs and nestlings within the project area if vegetation removal or ground disturbance occur during the nesting season, generally February 1 through August 31. In addition to Migratory Bird Treaty Act (MBTA)-covered bird species, other special status bird species that could occur in the vicinity include Swainson's hawk (*Buteo swainsoni*), white-tailed kite (*Elanus leucurus*), loggerhead shrike (*Lanius ludovicianus*), tricolored blackbird (*Agelaius tricolor*), mountain plover (*Charadrius montanus*), and burrowing owl (*Athene cunicularia*) (Appendix A). The project is not expected to result in direct take of any special status plant species (Appendix B). Indirect impacts to species that may still use the area after construction area likely to remain unchanged from the current impacts to wildlife that may use the school - decreased dispersal, increased mortality and injury, and increased debris that through ingestion or physical contact can be harmful to wildlife. All these impacts are caused by the increase in human disturbance (fences, vehicles, people, and pets). However, impacts to special status species can be minimized to a less than significant impact with the incorporation of avoidance and minimization measures. (CEQA-Less than significant with Mitigation incorporation)

Special Status Species Impacts and Avoidance Measures

Database queries indicated 28 animals and 12 plant species with special status occur or have historically occurred within the 9-quad search area (Appendices A and B). Many of the species from the generated list either were historic, extirpated occurrences, or were species with very specialized habitat requirements that were not present on the site or within the vicinity. Therefore, the majority of the species were "ruled out". Based on the habitat types present within the study area, 6 special status wildlife species have the potential to occur on the site.

Special Status Mammals

The San Joaquin kit fox (SJKF, *Vulpes macrotis mutica*) is discussed below due to occurrences in the region; however, it is unlikely to occur within the study area.

The SJKF was listed as a federally endangered species on March 11, 1967 (32 FR 4001). Its present range extends from the southern end of the San Joaquin Valley, north to Stanislaus County along the east, and along the interior Coast Range valleys and foothills to central Contra Costa County (Thacker and Flinders 1999). Critical habitat has not been designated for the San Joaquin kit fox. SJKF occur in relatively low numbers within their range in California (Zeiner et al. 1990). They can be locally common in some areas of their range but are typically rare, particularly in the northern portion of their range (Contra Costa County) (USFWS 1998, Zeiner et al. 1990).

The SJKF typically inhabits valley alkaline scrub, valley and foothill grasslands, and open oak woodlands of low to moderate relief along the Central Valley floor and surrounding foothills. SJKF also utilizes open scrublands and oak woodlands in various portions of California. SJKF are known to occupy human-altered habitats, such as vineyards, orchards, and petroleum fields, where denning opportunities and suitable prey are available. San Joaquin kit foxes are primarily carnivorous with a diet consisting of black-tailed jackrabbits, desert cottontails, rodents (especially ground squirrels and kangaroo rats), reptiles, small birds, bird eggs, insects, and certain types of vegetation (Laughrin 1970, Morrell 1972, Orloff et. al. 1986). Man-made features, such as culverts in roadbeds and pipes, are frequently used in developed landscapes in the

southern range of the SJKF. SJKF are thought to be weak excavators and largely dependent on rodent burrows, which they enlarge as den sites. Friable soils appear to be an important characteristic of suitable SJKF habitat (USFWS 1998). Studies of SJKF in the northern part of their range support this presumption, as SJKF are largely dependent on California ground squirrel burrows for the creation of den sites.

In the course of a year, up to 70 different dens may be used by a single individual. Mating occurs from December to February with pups born between February and late March. Pups emerge above ground, and are fed primarily by the male adult, at approximately one month old. Pups are fed 4 to 5 months, after which, the pups begin to forage independently. Juveniles disperse as far as 19 kilometers (11.08 miles) away from natal dens. Home ranges vary in size, depending on prey availability, from 1 square mile to 12 square miles (Spiegel and Bradbury 1992).

Primary threats for this species include habitat conversion to urban development and large-scale habitat fragmentation (Service 1998). Rodent control is believed to have a negative impact on SJKF. Other confounding factors also contribute to significant threats for kit fox population maintenance, including rabies, vehicle-induced mortality, predation from larger canids, and oil development (Zeiner et al. 1990, USFWS 1998). Habitat protection around critical populations is an important management goal for the Service (USFWS 1998). Reduction in exotic species introductions and removal of exotic species sympatric with SJKF (e.g., feral dogs and non-native red fox) may also increase habitat suitability (USFWS 1998).

Impact

No evidence of kit foxes (foxes, sign, or suitable sized burrows) was detected during the project site survey.

SJKF sightings have not recently occurred - No SJKF have been recorded within 10 miles since 1992 and the majority of occurrences are over 40 years old (1972-1975) (CDFW 2018). The CNDDDB identifies 13 occurrences within 10 miles of the Project Area (Figure 5) and 25 occurrences within the 9 quadrangles reviewed (Figure 4), the nearest of which is located approximately 2.4 miles southwest from the Project Area. This occurrence record is from 1973 and identifies that one SJKF was observed as roadkill. Most other occurrences within 10 miles are from 1972-1975, and one occurrence is from 1992, given as the generalized "Tulare" location.

No suitable habitat for SJKF is present within the Project Area based on several factors, including access barriers (several well-maintained chain link fences and busy roads surround the proposed project), disturbance regime, human and domestic dog presence, lack of prey base and suitable den habitat, combined with the presence of the surrounding agricultural development. Although a few small mammal (gopher) burrows were observed within the study area, no burrows of sufficient size to support this species were observed. The school actively controls rodents on the school grounds, eliminating prey base and potential for burrowing animals to create potential den sites. Use of agricultural lands by kit foxes appears quite limited (occasional foraging), and only when such lands are adjacent to natural habitat (Cypher et al. 2012). In addition, compared to the surrounding agricultural areas, which consist of fewer boundaries for their access, SJKF would have an extremely difficult time attempting to access the school grounds, due to several chain link fence barriers including the school boundary, inner school facilities/yards, and neighboring residences and construction yard adjacent. Additional barriers include frequently traveled roads, especially Avenue 196 for primary access to the school. Suitable prey base is absent due to school grounds maintenance and rodent control and human disturbance is high within the study area. No dens or potential dens were observed in the study area. Although SJKF are known to utilize developed areas in Bakersfield, Kern County, urban environments are not their preferred habitat type. Therefore, it is determined that implementing the proposed project will not impact San Joaquin kit fox, as the species is unlikely to occur in the Project Area.

Avoidance and Minimization Measures

None required.

Special Status Birds

Six special status avian species (Swainson's hawk, white-tailed kite, loggerhead shrike, tricolored blackbird, mountain plover and burrowing owl) have the potential to nest and/or forage within the study area. Greater detail regarding life history requirements of these birds is provided in Appendix A. Swainson's hawk and white-tailed kite could nest in the large trees within and adjacent to the study area and forage in open fields. Loggerhead shrike could nest in shrubs or trees within and adjacent to the study area and forage in the open fields. Tricolored blackbirds could establish a nesting colony in adjacent row crop fields and forage on the school yard. Mountain plover do not nest in California; however, they do use short grasslands, freshly plowed fields, sprouting grain fields, and sod farms for winter foraging on the south west side of the San Joaquin Valley, so they could forage in the study area and vicinity. Although none were detected during reconnaissance survey, burrowing owls could move into the area prior to construction, and occupy any newly built large burrows during the nesting and wintering seasons.

Impact

Noise and human disturbance during project activities could directly impact nesting bird species. Since CDFW usually requires a various sized "no disturbance" buffers around nesting sites for these species, construction-related disturbance could be considered take of protected avian species under CESA and MBTA. Specific impacts to burrowing owl according to the *Staff Report on Burrowing Owl Mitigation* (CDFG 1995) include any "disturbance within 50 meters (approx. 160 ft) [75 m (250 ft) during breeding season] which may result in harassment of owls at occupied burrows; destruction of natural and artificial burrows (culverts, concrete slabs and debris piles that provide shelter to burrowing owls); and destruction and/or degradation of foraging habitat adjacent (within 100 m) of an occupied burrow(s)".

In addition, other migratory birds will likely be nesting in the study area and vicinity, most of which are protected by the Migratory Bird Treaty Act (USCA 1918). Both construction related disturbance within the project area could result in nest abandonment or direct mortality of eggs, chicks, and/or fledglings. This type of impact to migratory birds, including special status bird species, would be considered take under the MBTA and CESA, and therefore, is a potentially significant impact. In order to avoid impacts to avian species, nests and nesting habitat should not be disturbed or destroyed. The following measures will reduce potential impacts to a less than significant level..

Avoidance and Minimization Measures

1. Avoidance. If feasible, any vegetation removal or ground disturbance will take place between September 1 and February 1 to avoid impacts to nesting birds in compliance with the Migratory Bird Treaty Act. If vegetation removal must occur during the nesting season, project construction may be delayed due to actively nesting birds and their required protective buffers.
2. Pre-construction Surveys.
 - a. If vegetation removal or ground disturbance will commence between February 1 and August 31, a qualified biologist will conduct a pre-construction survey for nesting birds within 14 days prior to the initiation of disturbance activities. This survey will cover:
 - i. Potential nest sites in trees, bushes, or grass within species-specific buffers of the project area (Swainson's hawk – 0.5-mile, other raptor species such as white-tailed kite – 500 ft, non-raptor species (loggerhead shrike, tricolored blackbird. – 300 ft).
 - ii. Survey protocol developed by the Swainson's Hawk Technical Advisory Committee (TAC) should be followed (CDFG 2000), which includes survey timing and requirements for repeated visits.

- b. Surveys for burrowing owl will occur within 14 days prior to any ground disturbance, no matter the season. This survey will cover potential burrowing owl burrows in the project area and suitable habitat within 150 m (500 ft). Evaluation of use by owls shall be in accordance with California Department of Fish and Wildlife survey guidelines (CBOC 1993, CDFG 1995, CDFG 2012). Surveys will document if burrowing owls are nesting or using habitat in or directly adjacent to the project area. Survey results will be valid only for the season (breeding (Feb 1-Aug 31) or non-breeding (Sept 1-Jan 31) during which the survey is conducted.
 - c. If no active nests or burrows are detected during the pre-construction survey, then no further action is required. If an active nest or burrow is detected, then the following minimization measures will be implemented.
3. Minimization/Establish Buffers.
- a. Swainson's hawk, white-tailed kite, loggerhead shrike, tricolored blackbird and MBTA-protected species: If any active nests are discovered (and if construction will occur during bird breeding season), the USFWS and/or CDFW will be contacted to determine protective measures required to avoid take. These measures could include fencing off an area where a nest occurs, or shifting construction work temporally or spatially away from the nesting birds. Biologists are required on site to monitor construction while protected migratory birds are nesting in the project area to ensure that the buffer is adequate and that the nest is not stressed and/or abandoned. If an active nest is found after the completion of the pre-construction surveys and after construction begins, all construction activities will stop until a qualified biologist has evaluated the nest and erected the appropriate buffer around the nest.
 - b. Burrowing owl:

If burrowing owls are detected within the survey area, CDFW should be consulted to determine the suitable buffer. These buffers will consider the level of disturbance of the project activity, existing disturbance of the site (vehicle traffic, humans, pets, etc.), and time of year (nesting vs. wintering). If avoidance is not feasible, the District will work with CDFW to determine appropriate mitigation, such as passive exclusion or translocation, and associated mitigation land offset (CDFG 2012).
4. If avoidance is not feasible, a qualified biologist will develop appropriate mitigations that will reduce project impacts to sensitive biological resources to a less than significant level. The type and amount of mitigation will depend on the resources impacted, the extent of the impacts, and the quality of habitats to be impacted. Mitigations may include but are not limited to: 1) Compensation for lost habitat in the form of preservation or creation of in-kind habitat protected by conservation easement; 2) Purchase of appropriate credits from an approved mitigation bank or land trust servicing the Tulare County Area; 3) Payment of in-lieu fees.

Special Status Plants Impact

Of the 12 potentially occurring special status plant species, none were found within the project area. Although the site survey was not conducted at the peak blooming period for some potentially occurring special status plants, all plants could be ruled out because their elevation range, required habitat, and/or soil type differed from the site conditions. Therefore, the project will not impact any special status plant species.

Effects on Riparian Habitats and Other Sensitive Natural Communities

There are no riparian or sensitive natural communities within the project area as identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U. S. Wildlife Service. (CEQA – No Impact)

Effects on Federally Protected Wetlands

There are no federally protected wetlands as defined by Section 404 of the Clean Water Act within the project area. Implementation of typical ground disturbance and erosion control Best Management Practices (BMPs) and compliance with grading permits will insure that there is no impact to storm drainage facilities or nearby canals. (CEQA – No Impact)

Movement Corridors and Nursery Sites for Resident or Migratory Fish or Wildlife Species

The site does not appear to constitute a “movement corridor” for native wildlife (USFWS 1998) that would attract wildlife to move through the site any more than the surrounding developed and agricultural lands. The project site is bordered by busy streets as well as residential, industrial and agricultural development, which restricts access for wildlife. The Project Area itself likely poses a barrier to wildlife movement due to the layers of chain link fence surrounding the various yards of the school and its facilities. In addition, adjacent properties (residences and construction yard) are also fenced with chain link, concrete barriers, and wood fences. Wildlife species that can gain access to the school yard are not expected to be further inhibited by the project since it is a temporary action. Therefore, the project will have a less than significant effect on regional wildlife movements (MO). (CEQA – Less than Significant)

Conflicting Local Policies or Ordinances Protection Biological Resources

The project appears to be consistent with relevant biological resources policies of the County of Tulare, in particular, *ERM 1.1 Protection of Rare and Endangered Species*, and would not conflict with local policies or ordinances protecting biological resources (Tulare County 2012). (CEQA – No Impact)

Conflicting Habitat Conservation Plans, Natural Conservation Community Plans, or other Approved Plans

There are no HCPs or NCCPs that cover the Project Area location within Tulare County, so the project would not conflict any provisions of any local, regional or state habitat conservation plan (MO, USFWS 1998, 2005). All existing HCPs in Tulare County are project-specific HCPs and not overarching for the County (USFWS 2018b). (CEQA – No Impact)

Cumulative Impact

The small, temporary loss of developed school yard will not substantially contribute to the cumulative loss of habitat or the decline of special-status species. Therefore, implementation of the proposed project would not result in significant cumulative impacts to biological resources. (CEQA – No Impact)

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Site Photos – May 6, 2018



Project area within the Palo Verde school grounds and proposed new well location at center. Existing fences, rural residences, and associated mature trees in background. Looking southeast.



Typical habitat in the project area (developed school). Parking lot, access to Project Area at left, and existing building (potential bird nesting habitat, previous mud nests detected). Looking south from Avenue 196.



Project area looking northeast towards existing water tank and maintenance yard portions of Project Area. Also, adjacent rural residences and associated fences (movement barriers) at right.



School Maintenance Area, note layers of chain link fence (wildlife movement barrier). Looking northeast from within Project Area.

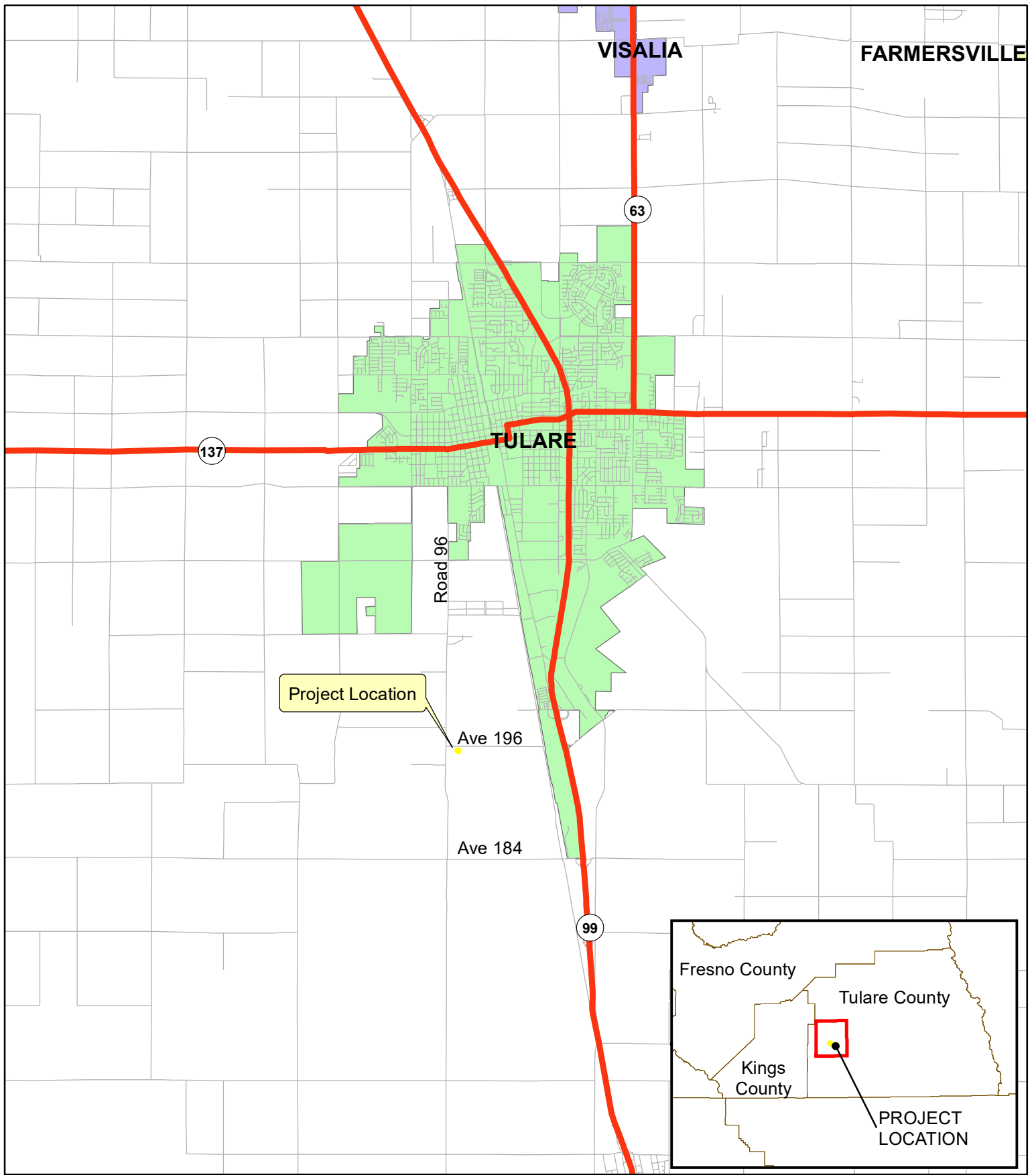


Adjacent rural residence and associated trees (nesting bird habitat) and fencing (wildlife barrier) on east side of Project Area. Project Area in foreground. Looking east.



Row crops (corn) and mature trees on adjacent land to north of Project Area across Avenue 196. Looking north.

Appendices and Maps



Source: County of Tulare, ESRI

Regional Location

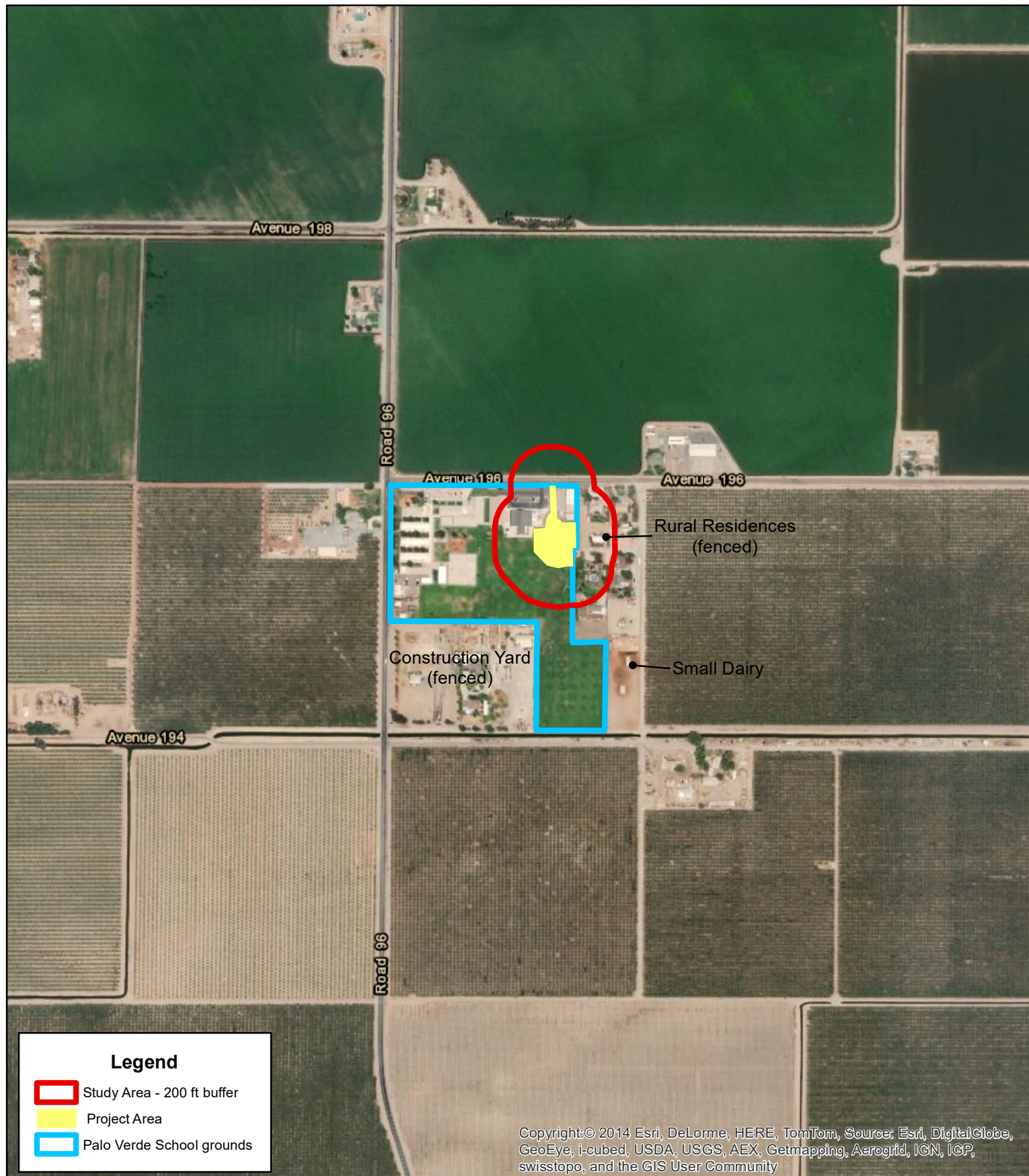
Palo Verde School Well Project
Palo Verde Union Elementary School District

ODELL *Planning & Research, Inc.*

Figure 1



0 0.5 1 2 3 4 Miles

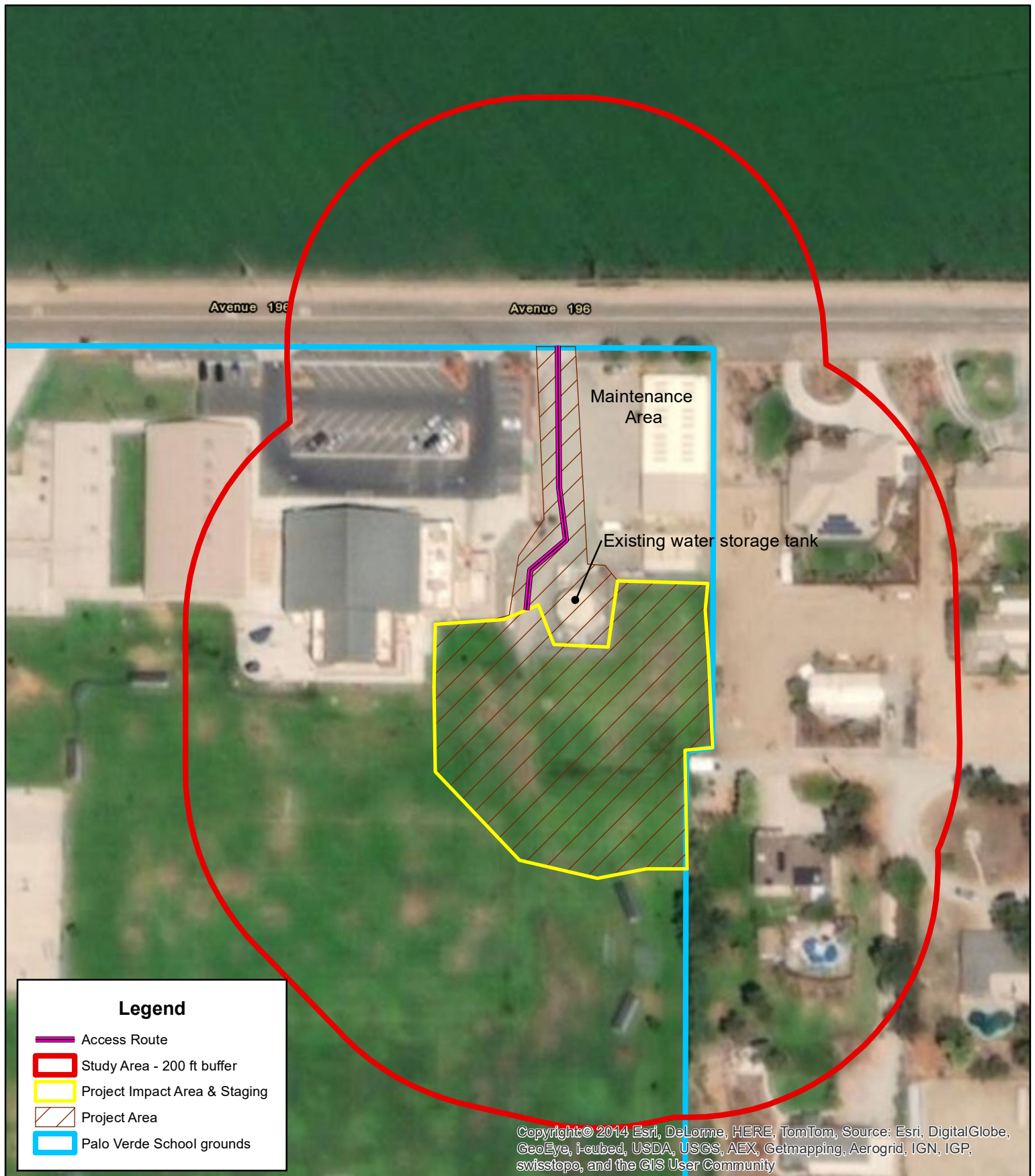


Source: Palo Verde USD, ESRI. Map date: Nov 12, 2018

Project Vicinity Map

Figure 2

Palo Verde School Well Project
Palo Verde Union Elementary School District

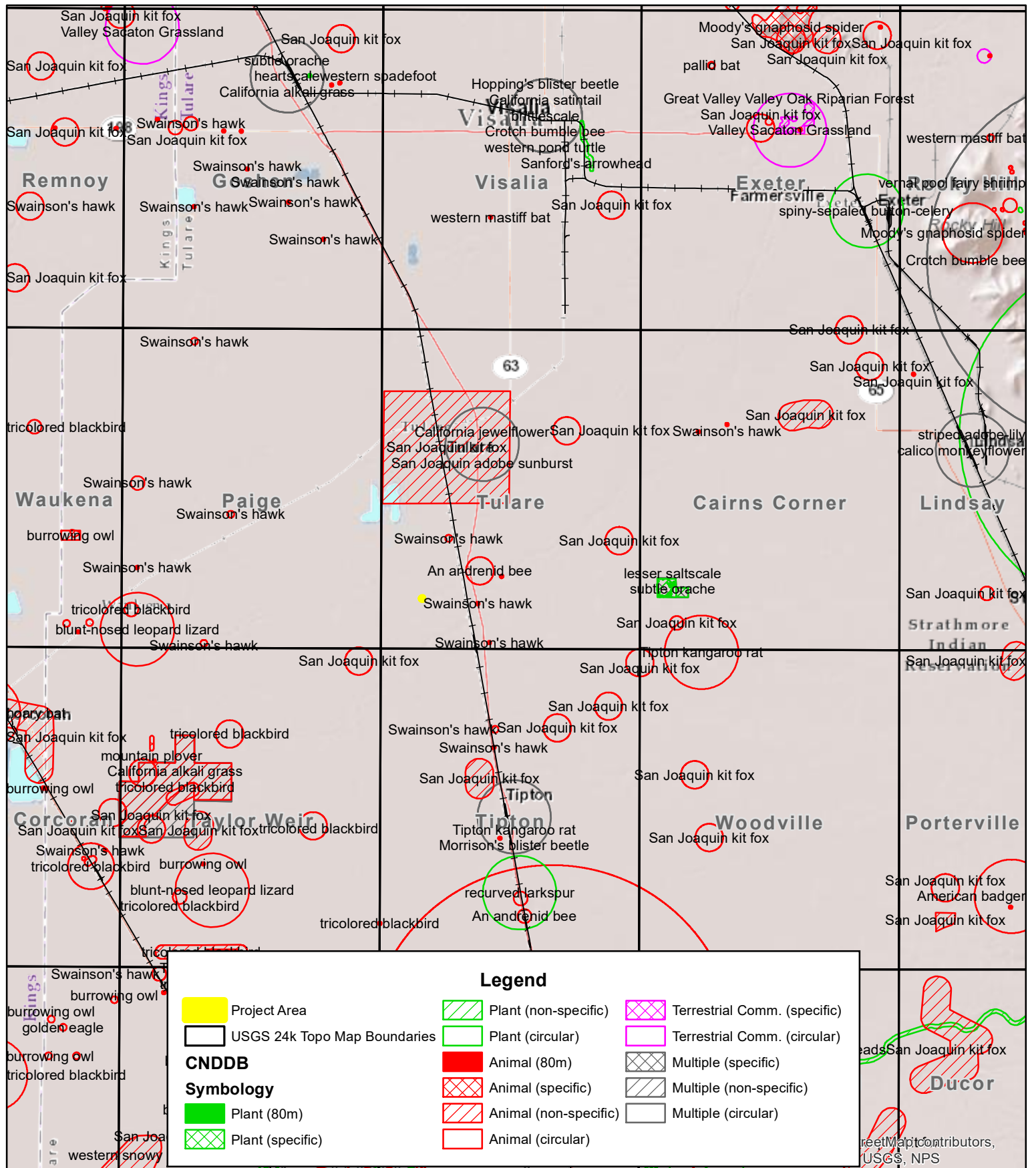


Source: Palo Verde USD, ESRI. Map date: Nov 12, 2018

Project Area and Study Area Map

Figure 3

Palo Verde School Well Project
Palo Verde Union Elementary School District

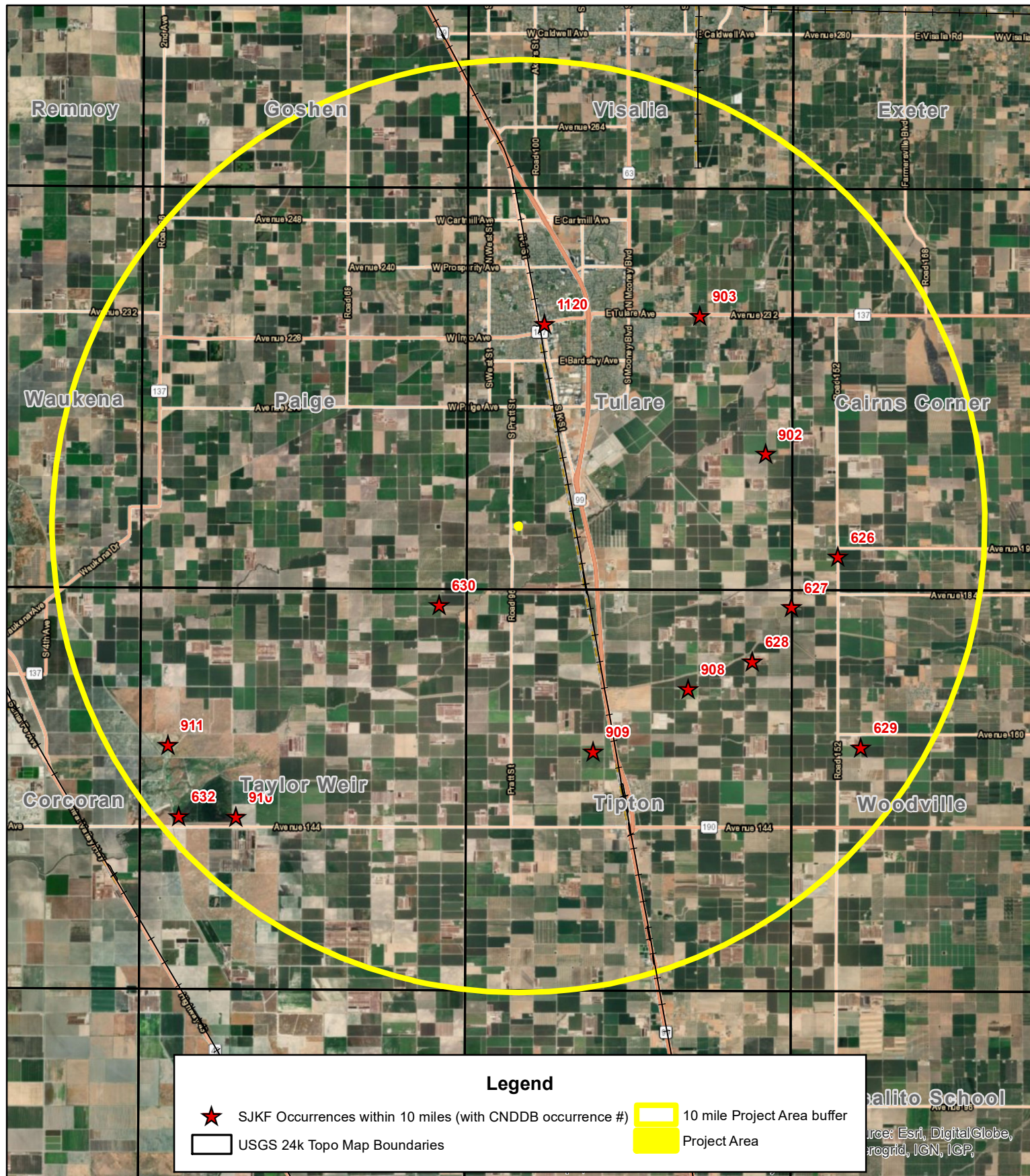


Source: CDFW, ESRI. Map date: Nov 12, 2018

California Natural Diversity Database (CNDDDB) Map

Figure 4

Palo Verde School Well Project
Palo Verde Union Elementary School District



San Joaquin Kit Fox Occurences in the Project Vicinity

Figure 5

Palo Verde School Well Project
Palo Verde Union Elementary School District



Appendix A. Special status animal species known from the vicinity of the Palo Verde School Well Project.

Status*					
Name	State	Federal	Description of Habitat Required ^{c, e, f}	Historic 9 Quad Presence ^a	Potential to Occur in Study Area ^{a,b,d}
MAMMALS					
Pallid bat (<i>Antrozous pallidus</i>)	SSC	FSC	Deserts, grasslands, scrublands, woodlands and open forests. Most common in open, dry habitats with rocky areas for roosting. Bridges, buildings, and exfoliating tree bark or hollows are frequently used for roost sites (H.T. Harvey 2004). Species very sensitive to roost disturbance.	Exeter	Unlikely. No bat sign observed on or near buildings during reconnaissance surveys. Available roost sites very marginal due to frequent human disturbance in Project Area and neighboring residences, especially since species is extremely sensitive to roost disturbance. Species could forage over project area but no water available.
Tipton kangaroo rat (<i>Dipodomys nitratoides nitratoides</i>)	SE	FE	Habitat includes friable sandy or silty soils in areas with no to moderate shrub cover and scattered herbaceous plants; sparsely vegetated alkali sink communities, valley grassland, saltbush and sink scrub. Burrows are usually found in elevated soil mounds at the base of shrubs.	Tipton*, Taylor Weir, Woodville, Cairns Corner	Unlikely. No suitable habitat present. Species likely excluded from lands including adjacent parcels for several decades. No suitable/occupied habitat remains at Project Area or in adjacent parcels. No kangaroo rat burrows or sign observed during site reconnaissance surveys.
Western mastiff bat (<i>Eumops perotis californicus</i>)	SSC	None	Many open, semi-arid to arid habitats, including annual and perennial grasslands, among others. Usually present only where there are significant rock features offering suitable roosting habitat. Frequently roosts in crevices in cliff faces and rocks; high buildings are used rarely, and they are not known to use trees for roosts (H.T. Harvey 2004).	Visalia	Unlikely. There are no cliff faces or rock areas in the project vicinity; therefore, suitable roosting habitat is not present. Species could forage over project area, but no water available and no suitable roosting habitat is within the project area.
American badger (<i>Taxidea taxus</i>)	SSC	None	Herbaceous, shrub, and open stages of most habitats with dry, friable soils.	Exeter	Unlikely. No suitable habitat present. Species likely excluded from lands including adjacent parcels for several decades. No suitable/occupied habitat remains in Project Area or in adjacent parcels. No potential dens or sign observed during site reconnaissance surveys. Also, access is restricted to the Project Area due to several chain link fences surrounding the school and neighboring properties, frequently travelled streets and other development.

Name	Status*		Description of Habitat Required ^{c, e, f}	Historic 9 Quad Presence ^a	Potential to Occur in Study Area ^{a,b,d}
	State	Federal			
San Joaquin kit fox (<i>Vulpes macrotis mutica</i>)	ST	FE	Prefers large tracts of open, level areas with loose-textured soils supporting scattered, shrubby vegetation with little human disturbance. Live in annual grasslands or grassy open stages dominated by scattered brush, shrubs, and scrub. Some agricultural areas may support these foxes.	Goshen, Exeter, Cairns Corner, Tipton, Tulare, Taylor Weir, Visalia	Unlikely. No suitable habitat within the Project Area. No burrows of sufficient size to support this species were observed within the Project Area, and the movement into the school grounds is unlikely due to several chain link fences. Prey density on the school grounds is actively managed by maintenance personnel and no prey sign other than one gopher burrow and one cottontail was observed. The nearest CNDDB occurrence is approximately 2.4 miles southwest from the Project Area where one road killed individual was observed in 1973. Most (12 of 13 within 10 miles) local known occurrences are from 1972-1975, one is from 1992. The species may occasionally forage or disperse in adjacent marginal habitat (agricultural fields) in the vicinity, however, it would be difficult for the species to gain access to the school grounds given the layers of chain link fence, frequently travelled roads, and presence of humans.
BIRDS					
Tricolored blackbird (<i>Agelaius tricolor</i>)	SSC ST	FSC Under Review	Open grasslands and pasturelands associated with nesting cover (e.g., blackberry shrubs, wetland emergent vegetation, etc.). Breeds Mar 15 to Aug 10.	Taylor Weir, Paige, Woodville, Tipton	Possible. Possible foraging habitat in open school fields. Suitable aquatic nesting habitat is absent from the Project Area, but agricultural fields are within 300 feet of the Project Area. 300 ft is the recommended avoidance buffer for the species during construction activities (CDFW 2015).
Clark's grebe (<i>Aechmophorus clarkii</i>)	None	FSC	Breed on freshwater lakes and marshes with extensive open water bordered by emergent vegetation. During winter they move to saltwater or brackish bays, estuaries, or sheltered sea coasts and are less frequently found on freshwater lakes or rivers.	None	None, no habitat present.
Burrowing owl (<i>Athene cunicularia</i>)	SSC	FSC	Ground dweller of open country, golf courses, airports, etc. Often associated with California ground squirrel burrow complexes.	Taylor Weir	Possible. Marginally suitable breeding and foraging habitat present in the study area (adjacent agricultural land, construction yard, and residences).

Status*

Name	State	Federal	Description of Habitat Required ^{c, e, f}	Historic 9 Quad Presence ^a	Potential to Occur in Study Area ^{a,b,d}
					Although no suitably sized small mammal burrows were observed in the study area, they could be built between the time of survey and the time of well construction, especially on neighboring parcels. Fences are not large barriers for avian species.
Swainson's hawk (<i>Buteo swainsoni</i>)	ST	FSC	Open agricultural fields, grasslands, and low hills, with sparse trees. Nesting often associated with riparian areas.	Paige, Taylor Weir, Tulare, Tipton, Cairns Corner, Goshen	Possible. Foraging habitat in open fields and nesting habitat in adjacent large trees. Several recent local nesting occurrences.
Mountain Plover (<i>Charadrius montanus</i>)	SSC	FSC	Short grasslands, freshly plowed fields, sprouting grain fields, and sod farms. Seen in areas of short vegetation or bare ground in flat topography, often where grazing and mammal burrows are present. This species does not breed in California.	Taylor Weir	Possible. Winter foraging habitat in the open school fields and adjacent agricultural fields. Species only known from west side of San Joaquin Valley during winter months. Outside of current known range for breeding, so species will not be impacted by the project timing.
Western yellow-billed cuckoo (<i>Coccyzus americanus occidentalis</i>)	SE	FT	Occupies open woodlands and with shrubby vegetation. Nests in willow and cottonwood riparian forests with dense understory of shrubs and vines.	Visalia	None. No riparian habitat present.
White-tailed kite (nesting) (<i>Elanus leucurus</i>)	FP	None	Fairly common in grasslands, open agricultural fields and fallow highway median strips. Substantial groves of dense, broad-leaved deciduous trees used for nesting and roosting.	None	Possible. Could forage over vacant lots and open fields nearby. Could nest in trees adjacent to the project area.
Loggerhead shrike (<i>Lanius ludovicianus</i>)	SSC	FSC	Hunts in open or brushy areas, diving from low perch. Nests in dense shrubs or trees associated with foraging areas.	None	Possible. Could nest in trees and shrubs within the study area and forage over open areas.
Marbled godwit (<i>Limosa fedoa</i>) (wintering)	None	FSC	Occurs from mid-August to early May in estuarine habitats along coastal CA, and in the Grasslands Ecological Area in Merced County year-round. Foraging and roosting habitat include estuarine mudflats, sandy beaches, open shores, saline emergent wetlands, and	Not followed in CNDDB	Unlikely. Not within known range, and no wetland habitat present. Could forage in school yard during migration.

Status*

Name	State	Federal	Description of Habitat Required ^{c, e, f}	Historic 9 Quad Presence ^a	Potential to Occur in Study Area ^{a,b,d}
			adjacent wet upland fields. Nests in Canadian and extreme northern US, prairies.		
Short-billed dowitcher (<i>Limnodromus griseus</i>)	None	FSC	Mudflats, tidal marshes, pond edges. Migrants and wintering birds favor coastal habitats, especially tidal flats on protected estuaries and bays, also lagoons, salt marshes, sometimes sandy beaches. Migrants also stop inland on freshwater ponds with muddy margins. Breeds in far north, mostly in open bogs, marshes, and edges of lakes within coniferous forest zone. Breeds elsewhere.	Not followed in CNDDDB	Unlikely. Winter foraging/migration habitat is marginal due to frequent disturbance. No nesting habitat present – out of range.
Long-billed curlew (<i>Numenius americanus</i>) (wintering)	None	FSC	Breeds in sparse, short grasses, including shortgrass and mixed-grass prairies as well as agricultural fields of western North America. In winter they migrate to the coasts and to interior Mexico, and use wetlands, tidal estuaries, mudflats, flooded fields, and occasionally beaches. Breeds elsewhere.	Not followed in CNDDDB	Unlikely. No wetland habitat present. Could forage in school fields during migration.
Whimbrel (<i>Numenius phaeopus</i>)	None	FSC	Shores, mudflats, marshes, tundra. Found on a wide variety of habitats on migration. Most common on mudflats, but also found on rocky shores, sandy beaches, salt marshes, flooded agricultural fields, grassy fields near coast. In summer, breeds on Arctic tundra.	Not followed in CNDDDB	Unlikely. No wetland habitat present. Could forage in school fields during migration.
Willet (<i>Tringa semipalmata</i>)	None	FSC	Marshes, wet meadows, mudflats, beaches. Nests inland, around fresh marshes in open country, especially native grassland. In migration and winter, both forms occur on mudflats, tidal estuaries, sandy beaches. Breeds elsewhere.	Not followed in CNDDDB	Unlikely. No wetland habitat present. Could forage in school fields during migration.
REPTILES					

Status*

Name	State	Federal	Description of Habitat Required ^{c, e, f}	Historic 9 Quad Presence ^a	Potential to Occur in Study Area ^{a,b,d}
Northern California legless lizard (<i>Anniella pulchra</i>)	SSC	None	Sandy or loose loamy soils under sparse vegetation in chaparral, coastal dunes or coastal scrub. Soil moisture is essential. They prefer soils with a high moisture content.	Visalia, Exeter	Unlikely. Closest recent occurrence is at Kaweah Oaks Preserve, a valley oak riparian area. Suitable habitat not present.
Blunt-nosed leopard lizard (<i>Gambelia</i> (= <i>Crotaphytus sila</i>))	SE, FP	FE	Occurs in semi-arid grasslands, washes and alkali flats, with sandy/gravelly/loamy soils. Occurs with plants such as annual and bunch grasses and <i>Atriplex</i> sp. Small mammal burrows provide cover for this species.	Taylor Weir, Paige	Unlikely. Project Area is manicured turf. No suitable habitat present.
Western pond turtle (<i>Emys marmorata</i> aka <i>Actinemys marmorata</i>)	SSC	None	Aquatic turtle of ponds, lakes, marshes, rivers, streams, and irrigation ditches that typically have rocky or muddy bottom, with aquatic vegetation. Nests in uplands associated with wetland habitat.	Visalia	None. No habitat present.
Giant garter snake (<i>Thamnophis gigas</i>)	ST	FT	Marshes, sloughs, mud-bottom canals of rice farming areas, but occasionally slow streams. Bulrush and cattails typically present. Extremely aquatic. Found in areas with aquatic connectivity to San Joaquin River and Delta.	None	None. No habitat present.
AMPHIBIANS					
California tiger salamander (<i>Ambystoma californiense</i>)	ST, SSC	FT	Quiet water of ponds, reservoirs, lakes, vernal pools, streams, and stock ponds within annual grasslands, oak savannah, oak woodland and open chaparral.	None	None. No habitat present.
California red-legged frog (<i>Rana draytonii</i>)	SSC	FT	Chiefly lakes, ponds, and streams in coastal forest, inland woodlands, and valley grasslands where cattails, bulrush, or other plants provide dense cover. Aquatic sites need not be permanent.	None	None. No habitat present.
Western spadefoot (<i>Spea hammondi</i>)	SSC	None	Primarily a species of the lowlands, frequenting washes, river floodplains, alluvial fans, playas, alkali flats, but also foothills and mountains. Open vegetation and short grasses preferred, with sandy or gravelly soil. Valley and foothill	Goshen	None. No habitat present.

Name	Status*		Description of Habitat Required ^{c, e, f}	Historic 9 Quad Presence ^a	Potential to Occur in Study Area ^{a,b,d}
	State	Federal			
			grasslands, open chaparral, pine-oak woodlands. Often associated with vernal pools.		
FISH					
Delta smelt (<i>Hypomesus transpacificus</i>)	SE	FT	Found only from the Suisun Bay upstream through the Delta in Contra Costa, Sacramento, San Joaquin, Solano and Yolo counties. Typically found in estuarine waters-along the freshwater edge of the mixing zone (saltwater-freshwater interface), and upstream into river channels and tidally-influenced backwater sloughs. Most spawning happens in tidally-influenced backwater sloughs and channel edgewaters.	None	None. No habitat present.
INVERTEBRATES					
Vernal pool fairy shrimp (<i>Branchinecta lynchi</i>)	None	FT	Vernal pool habitats from small, clear, sandstone rock pools to large, turbid, alkaline, grassland valley floor pools. Tends to occur in smaller pools, most frequently pools measuring less than 0.05 acre often associated with mud bottomed swales, or basalt flow depression pools in unplowed grasslands.	Goshen, Taylor Weir	None. No habitat present.
Valley elderberry longhorn beetle (<i>Desmocerus californicus dimorphus</i>)	None	FT	Nearly always found on or close to its host plant, elderberry (<i>Sambucus</i> sp.). Inhabited shrubs typically have stems that are 1.0 inch or greater in diameter at ground level. Distribution is patchy throughout the remaining riparian forests of the Central Valley from Redding to Madera County.	Exeter	None. No habitat present or elderberry shrubs present.

* None = no special status granted or recognized by named party

BGEPA = Bald and Golden Eagle Protection Act; USFWS prohibits the taking, possession and commerce of such birds.

FC = Federal Candidate; USFWS/NOAA FISHERIES has enough information on biological vulnerability and threats to support a proposal to list as endangered or threatened.

FE = Federally Endangered; listed by USFWS as in danger of extinction throughout all or a significant portion of its range.

FT = Federally Threatened; listed by USFWS as likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

FSC = Federal Species of Concern, including Birds of Conservation Concern; provides no protection, but allows for awareness and research efforts that may keep species from being listed.

SCE = California Candidate for Endangered Status under the CESA.

SCT = California Candidate for Threatened Status under the CESA.

SE = California Endangered under the CESA.

ST = California Threatened under the CESA.

FP = Fully Protected under California Fish and Game Code (Sections 3511, 4700, 5050, and 5515)

SSC = California Species of Special Concern.

a = Based upon quad lists from query of California Natural Diversity Database (CNDDB) search, accessed May 2018.

b = Based upon planning survey conducted by Odell P&R on project site during May 2018.

c = USFWS Sacramento Fish and Wildlife Office's Endangered Species Program; <http://www.fws.gov/sacramento/es/>

d= Moyle, P.B. 2002. Inland fishes of California. University of California Press. Berkeley, CA

e= Zeiner, D.C., W.F.Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1988-1990. California's Wildlife. Vol. I-III. California Department of Fish and Game, Sacramento, California.

f = Shuford, W. D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.

Appendix B. Special status plant species known from the vicinity of the Pao Verde School Well Project.

Name	Status ^a		Description of Habitat Required ^b	Blooming Period	Historic 9 Quad Presence ^c	Potential to Occur in Study Area ^d
	State	Federal				
Heartscale (<i>Atriplex cordulata</i> var. <i>cordulata</i>)	1B.2	None	Occurs in chenopod scrub, meadows and seeps, and valley and foothill grassland in saline or alkaline soils at 0 to 560 meters elevation.	Apr-Oct	Goshen	Not present. Study area extremely disturbed – manicured turf of school yard.
Earlimart orache (<i>Atriplex cordulata</i> var. <i>erecticaulis</i>)	1B.2	None	Occurs in valley and foothill grassland in saline or alkaline soils at 40 to 100 meters elevation.	Aug-Nov	Goshen, Cairns Corner	Not present. Study area extremely disturbed – manicured turf of school yard.
Brittlescale (<i>Atriplex depressa</i>)	1B.2	None	Occurs in chenopod scrub, meadows and seeps, playas, valley and foothill grassland, and vernal pools on alkaline clay substrates. Known from elevations of 1-320 meters.	Apr-Oct	Visalia	Not present. Study area extremely disturbed – manicured turf of school yard.
Lesser saltscale (<i>Atriplex minuscula</i>)	1B.1	None	Occurs in chenopod scrub, playas, and valley and foothill grassland on alkaline and sandy substrates between 15-200 meters of elevation.	May-Oct	Goshen, Cairns Corner	Not present. Study area extremely disturbed – manicured turf of school yard.
Subtle orache (<i>Atriplex subtilis</i>)	1B.2	None	Occurs in valley and foothill grassland in saline or alkaline soils at 40 to 100 meters elevation.	June-Oct	Goshen, Cairns Corner	Not present. Study area extremely disturbed – manicured turf of school yard.
California jewel-flower (<i>Caulanthus californicus</i>)	SE, 1B.1	FE	Occurs in chenopod scrub, pinyon and juniper woodland, valley and foothill grassland often with sandy soil. 61-1000 meters elevation.	Feb-May	Tulare*	Not present. Study area extremely disturbed – manicured turf of school yard.
Recurved larkspur (<i>Delphinium recurvatum</i>)	1B.2	None	Occurs on alkaline substrates in chenopod scrub, cismontane woodland, and valley and foothill grassland between 3-750 meters elevation.	Mar-Jun	Tipton*, Cairns Corner	Not present. Study area extremely disturbed – manicured turf of school yard.
Spiny-sepaled button-celery (<i>Eryngium spinosepalum</i>)	1B.2	None	Vernal pools, valley and foothill grassland. Some sites on clay soil of granitic origin; vernal pools, within grassland. 100-420 meters.	Apr-May	Exeter	Not present. No vernal pool or grassland habitat present. Study area extremely disturbed – manicured turf of school yard.
California satintail (<i>Imperata brevifolia</i>)	2B.1	None	Occurs on mesic sites, alkali seeps, and riparian areas in chaparral, coastal scrub, Mojavean desert scrub, and meadows and seeps between 0-500 meters in elevation.	Sep-May	Visalia	Not Present. No habitat present. Site highly disturbed.
San Joaquin adobe sunburst (<i>Pseudobahia peirsonii</i>)	SE, 1B.1	FT	Valley and foothill grassland, cismontane woodland. Grassy valley floors and rolling foothills in heavy clay soil. 90-800 m.	Mar-Apr	Tulare*	Not present. Study area extremely disturbed – manicured turf of school yard.

Name	Status ^a		Description of Habitat Required ^b	Blooming Period	Historic 9 Quad Presence ^c	Potential to Occur in Study Area ^d
	State	Federal				
California alkali grass (<i>Puccinellia simplex</i>)	1B.2	None	Meadows and seeps, chenopod scrub, valley and foothill grasslands, vernal pools. Alkaline, vernal mesic. Sinks, flats, and lake margins. 1-915 m.	Mar-May	Goshen, Taylor Weir, Cairns Corner	Not present. Study area extremely disturbed – manicured turf of school yard.
Sanford's arrowhead (<i>Sagittaria sanfordii</i>)	1B.2	None	Occurs in standing or slow-moving freshwater ponds, marshes, swamps, ditches between 0-650 meters in elevation.	May-Oct	Visalia	Not present. Study area extremely disturbed – manicured turf of school yard.

a Status codes are as follows:

FC = Federal Candidate; USFWS/NOAA FISHERIES has enough information on biological vulnerability and threats to support a proposal to list as endangered or threatened.

FE = Federally Endangered; listed by USFWS as in danger of extinction throughout all or a significant portion of its range.

FT = Federally Threatened; listed by USFWS as likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

FSC = Federal Species of Concern; provides no protection, but allows for awareness and research efforts that may keep species from being listed.

SCE = California Candidate for Endangered Status under the CESA.

SCT = California Candidate for Threatened Status under the CESA.

ST = California Threatened under the CESA.

FP = Fully Protected under California Fish and Game Code (Sections 3511, 4700, 5050, and 5515)

SSC = California Species of Special Concern.

Rare = State listed as Rare

California Rare Plant Rank:

- 1A Presumed extinct in California
- 1B Rare or Endangered in California and elsewhere
- 2 Rare or Endangered in California, more common elsewhere
- 3 Plants for which we need more information - Review list
- 4 Plants of limited distribution - Watch list

California Native Plant Society Threat Codes:

- .1 Seriously Endangered in California (over 80% of occurrences Threatened / high degree and immediacy of threat)
- .2 Fairly Endangered in California (20-80% occurrences Threatened)
- .3 Not very Endangered in California (<20% of occurrences Threatened or no current threats known)

b Habitat information sources and blooming times - CNPS Inventory of Rare & Endangered Plants website (<http://cnps.web.aplus.net/cgi-bin/inv/inventory.cgi>) used for all plant species.

c Quad lists for plant species from May 2018 query of California Natural Diversity Database (CNDDB), supplemented for plants by the CNPS Inventory of Rare & Endangered Plants website, which notes quads species have been extirpated from (noted with an * in this table).

d Site survey from work conducted by Odell P&R on project site during May 2018.

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Tulare County, California



Local office

Sacramento Fish And Wildlife Office

☎ (916) 414-6600

📅 (916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.
2. [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.

The following species are potentially affected by activities in this location:

Mammals

NAME

STATUS

San Joaquin Kit Fox *Vulpes macrotis mutica*

Endangered

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/2873>Tipton Kangaroo Rat *Dipodomys nitratoide nitratoide*

Endangered

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/7247>

Reptiles

NAME

STATUS

Blunt-nosed Leopard Lizard *Gambelia silus*

Endangered

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/625>Giant Garter Snake *Thamnophis gigas*

Threatened

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/4482>

Amphibians

NAME

STATUS

California Red-legged Frog *Rana draytonii*

Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.<https://ecos.fws.gov/ecp/species/2891>California Tiger Salamander *Ambystoma californiense*

Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.<https://ecos.fws.gov/ecp/species/2076>

Fishes

NAME

STATUS

Delta Smelt *Hypomesus transpacificus*

Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.<https://ecos.fws.gov/ecp/species/321>

Crustaceans

NAME

STATUS

Vernal Pool Fairy Shrimp *Branchinecta lynchi*

Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.

<https://ecos.fws.gov/ecp/species/498>

Flowering Plants

NAME

STATUS

San Joaquin Adobe Sunburst *Pseudobahia peirsonii*

Threatened

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/2931>

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on

this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Clark's Grebe <i>Aechmophorus clarkii</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jan 1 to Dec 31
Long-billed Curlew <i>Numenius americanus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/5511	Breeds elsewhere
Marbled Godwit <i>Limosa fedoa</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9481	Breeds elsewhere
Short-billed Dowitcher <i>Limnodromus griseus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Song Sparrow <i>Melospiza melodia</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Feb 20 to Sep 5

Tricolored Blackbird *Agelaius tricolor*

Breeds Mar 15 to Aug 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/3910>

Whimbrel *Numenius phaeopus*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9483>

Willet *Tringa semipalmata*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (I)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [E-bird Explore Data Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look

carefully at the survey effort (indicated by the black vertical bar) and for the existence of the “no data” indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ “Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds” at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.



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:

May 29, 2018

Consultation Code: 08ESMF00-2018-SLI-2221

Event Code: 08ESMF00-2018-E-06514

Project Name: Palo Verde School Well 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: 08ESMF00-2018-SLI-2221

Event Code: 08ESMF00-2018-E-06514

Project Name: Palo Verde School Well Project

Project Type: WATER SUPPLY / DELIVERY

Project Description: Very small project (<2 acres including access points) - drilling of new well needed on existing elementary school site, in turf area.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/36.14476386077187N119.35516340029292W>



Counties: Tulare, CA

Endangered Species Act Species

There is a total of 9 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 Fisheries¹, 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.

-
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 <i>Vulpes macrotis mutica</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2873	Endangered
Tipton Kangaroo Rat <i>Dipodomys nitratoides nitratoides</i> 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 <i>Gambelia silus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/625	Endangered
Giant Garter Snake <i>Thamnophis gigas</i> 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 <i>Rana draytonii</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander <i>Ambystoma californiense</i> Population: U.S.A. (Central CA DPS) There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> 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
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> 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

Flowering Plants

NAME	STATUS
San Joaquin Adobe Sunburst <i>Pseudobahia peirsonii</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2931	Threatened

Critical habitats

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

**Biological Resources Assessment (Federal) Palo Verde Union Elementary
School Water System Improvement Project, Odell Planning & Research,
Inc., November 17, 2018**

Palo Verde School Well Project



Draft Biological Assessment

November 17, 2018

Prepared For:

Palo Verde Union Elementary School District
9637 Ave. 196
Tulare, California 93274
(559) 688-0648

Prepared By:

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Summary of Findings, Conclusions, and Determinations

The Palo Verde Union Elementary School District is proposing construction of the Palo Verde School Well Project (proposed action), which consists of constructing a new water well on the existing school campus in Tulare County. The proposed new well would replace an existing well and would accommodate existing and future water needs for school operations. The proposed action is located at 9637 Ave. 196, Tulare, California 93274. The Action Area is approximately 1.18-acres, and encompasses the proposed location of the new well and the access and staging areas needed for construction. The Action Area is part of the existing school and maintenance yard.

The U.S. Fish and Wildlife Service (Service) provided an official species list for the project on May 29, 2018 (**Appendix A**). No suitable habitat is present within the Action Area for any species identified in the official species list.

As such, the proposed action will have no effect on any federally-listed, candidate, or proposed species under the federal Endangered Species Act.

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[Appendix A – U.S. Fish and Wildlife Service IPaC Trust Resource Report \(generated May 29, 2018\) and Official Species List \(May 29, 2018\)](#)

[Appendix B – California Department of Fish and Wildlife’s California Natural Diversity Data Base \(CNDDB\) Species List and San Joaquin kit fox Occurrence Report \(generated May 29, 2018\)](#)

List of Abbreviated Terms

APN	Assessor's Parcel Number
BA	Biological Assessment
CDFW	California Department of Fish and Wildlife
CNDDDB	California Natural Diversity Data Base
CNPS	California Native Plant Society
EPA	Environmental Protection Agency
ESA	Federal Endangered Species Act
FR	Federal Register
Service	United States Fish and Wildlife Service
SJKF	San Joaquin Kit Fox
sq ft	square feet
USDA	United States Department of Agriculture
USGS	United States Geologic Survey

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Chapter 1. Introduction

The purpose of this Biological Assessment (BA) is to provide required information for consultation under Section 7 of the Endangered Species Act (ESA; 16 U.S. C 1536(c)), including technical information and review of the proposed project in sufficient detail to determine to what extent the proposed project may affect federally threatened, endangered, candidate, or proposed species; designated and proposed critical habitat; and avian species protected under the Migratory Bird Treaty Act (MBTA). The BA is prepared in accordance with legal requirements found in Section 7 (a)(2) of the ESA, and with U.S. Fish and Wildlife Service (Service). This BA, prepared by Odell Planning & Research, Inc., addresses the proposed action in compliance with Section 7 of the ESA. Section 7 assures that, through consultation (or conferencing for proposed species) with the Service, federal actions do not jeopardize the continued existence of any threatened, endangered or proposed species, or result in the destruction or adverse modification of critical habitat.

1.1. Purpose and Need of the Proposed Action

Purpose: The purpose of this project is to install a new well that provides potable water for existing and future students and staff at Palo Verde School, as well as for landscape irrigation.

Need: Palo Verde Union Elementary School is a rural, single-site school district encompassing approximately 20 square miles located just southwest of the city of Tulare. Approximately 610 prekindergarten through grade 8 students are served. Palo Verde School originated in 1949, and today's campus encompasses 19.75 acres. There are 24 permanent classrooms and 10 portable classrooms in use on the campus. The current water well is aged, and replacement is required to provide continued reliable drinking water to students and staff, and water for playfields and landscaping.

1.2. Threatened, Endangered, Proposed Threatened or Proposed Endangered Species, Critical Habitat

A species list (official letter) was provided by the U.S. Fish and Wildlife Service for the action area of this project (see Appendix A). The following listed species were identified on the federal species list and California Natural Diversity Data Base (CNDDB) (California Department of Fish and Wildlife (CDFW); Appendix B) and considered during this analysis:

- San Joaquin kit fox (*Vulpes macrotis mutica*), federal endangered
- Tipton kangaroo rat (*Dipodomys nitraoides nitraoides*), federal endangered
- Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), federal threatened
- California red-legged frog (*Rana draytonii*), federal threatened
- California tiger salamander (*Ambystoma californiense*), federal threatened
- Blunt-nosed leopard lizard (*Gambelia sila*), federal endangered
- Giant garter snake (*Thamnophis gigas*), federal threatened
- Delta smelt (*Hypomesus transpacificus*), federal threatened
- Vernal pool fairy shrimp (*Branchinecta lynchi*), federal threatened
- California jewel-flower (*Caulanthus californicus*), federal endangered
- San Joaquin Adobe Sunburst (*Pseudobahia peirsonii*), federal threatened

Candidate Species

No federal candidate species will be affected by the proposed action.

Critical Habitat

No critical habitat is present within or in proximity to the action area

1.3. Description of the Action and Action Area

Project Description

The proposed project consists of constructing a new water well for school district use on the existing Palo Verde Elementary School site, within the fenced, landscaped turf area, located in rural Tulare County, California. The proposed project would accommodate future water needs for students and faculty on the Pre-Kindergarten through 8th grade campus. The proposed project is located on an approximately 1.18-acre area of the existing school grounds parcel (9637 Ave. 196, Tulare, California 93274) in Tulare County, California (Action Area) (Figures 1 -3).

Action Area Definition

The Action Area of the project consists of the project impact area (where actual work will take place), staging and equipment access route to the proposed water well site through an existing maintenance yard. The Action Area was developed by considering potential effects of the proposed action and the land use types surrounding the project site. The Action Area is part of the existing elementary school site, within the turf/playing field area and is bounded to the west by additional playing fields and existing school buildings, to the south existing playing fields, to the north by the school's maintenance area/facilities, and to the east by rural residential homes (Figure 3). The Action Area is entirely within the existing school campus, is flat, surrounded by rural residential, agricultural, and industrial uses, and is heavily disturbed due to mowing and school maintenance activities. Therefore, the habitat of the Action Area is developed. The approximate elevation of the proposed project site is 246 feet above mean sea level.

The vegetation on the school campus consists mostly of either landscaped shrubs, trees, turf (non-native perennial grass), and/or non-native grasses and ruderal (weedy) plants.

Utilities

Domestic Water

Being a rural school, the school district must provide its own domestic water source. The domestic water source provides water for the interior (domestic) uses, industrial processes (maintenance facilities), and landscape irrigation. New water system piping would be installed, connecting the well to the existing water storage tank immediately adjacent to the proposed well location.

Site Fencing

The entire school is enclosed by chain link fencing for student safety and security. The Action Area is behind 2-3 chain link fences on some sides, since the proposed well site is within the existing playing fields/turf area, which is separated off from maintenance, parking, and some other buildings.

Construction Schedule and Equipment

Construction of the proposed project is expected to occur over a period of 3 months,

beginning during summer 2019 while students are on summer recess. Construction would be limited to weekdays between the hours of 8 AM to 5 PM (no night-time construction).

In support of these activities and for the assumptions for this document, the types of equipment that may be used at any one time during construction may include, but not be limited to:

- Water Well Drilling Rig
- Backhoe

Staging areas for storage of construction equipment and other materials would be located within the existing maintenance area.

1.4 Best Management Practices

Construction and operation of the proposed action would incorporate a variety of industry standard Best Management Practices (BMPs) for erosion prevention and storm water management.

1.5. Conservation Measures

No Conservation Measures are required for the proposed action.

1.6. Interrelated and Interdependent Actions

Interrelated actions—Actions that are part of a larger action and depend on the larger action for their justification [50 CFR §402.02] (i.e., this project would not occur “but for” a larger project). Interrelated actions are typically associated with the proposed action. Interrelated actions are those that are part of a larger action and depend on the larger action for their justification.

Interdependent actions—Actions having no independent utility apart from the proposed action [50 CFR §402.02]. Interdependent actions are those that have no independent utility apart from the action under consideration.

There are no interrelated or interdependent actions associated with the proposed action.

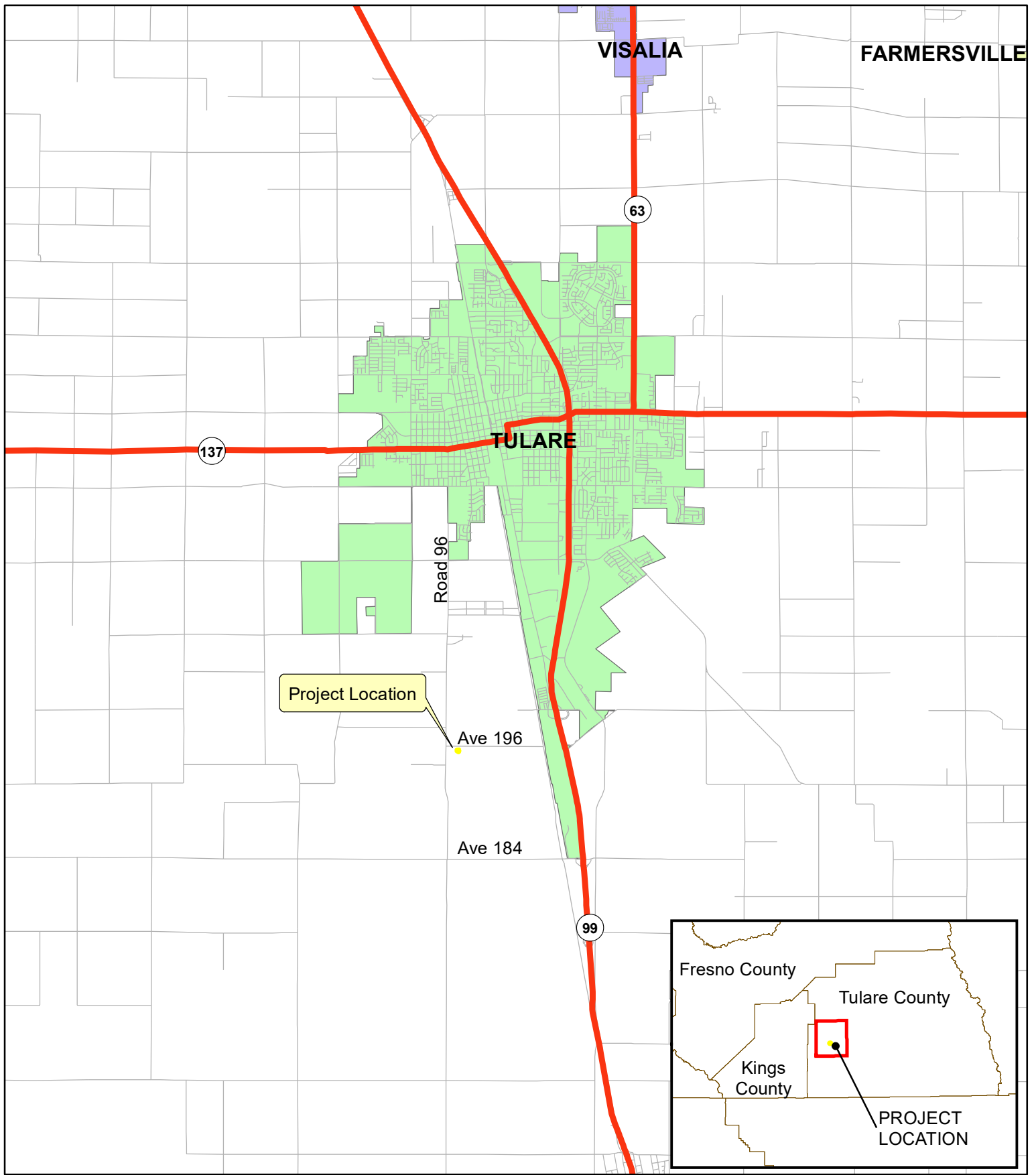
1.7. Summary of Consultation to Date

No consultation has occurred to date.

1.8. Document Preparation History

Odell Planning & Research, Inc. (Odell P&R) Senior Planner/Biologist, Melissa Odell, was the primary author of this BA. Ms. Odell coordinated with Odell P&R Principal Planner/President, Scott Odell, AICP. All Odell P&R staff may be reached at:

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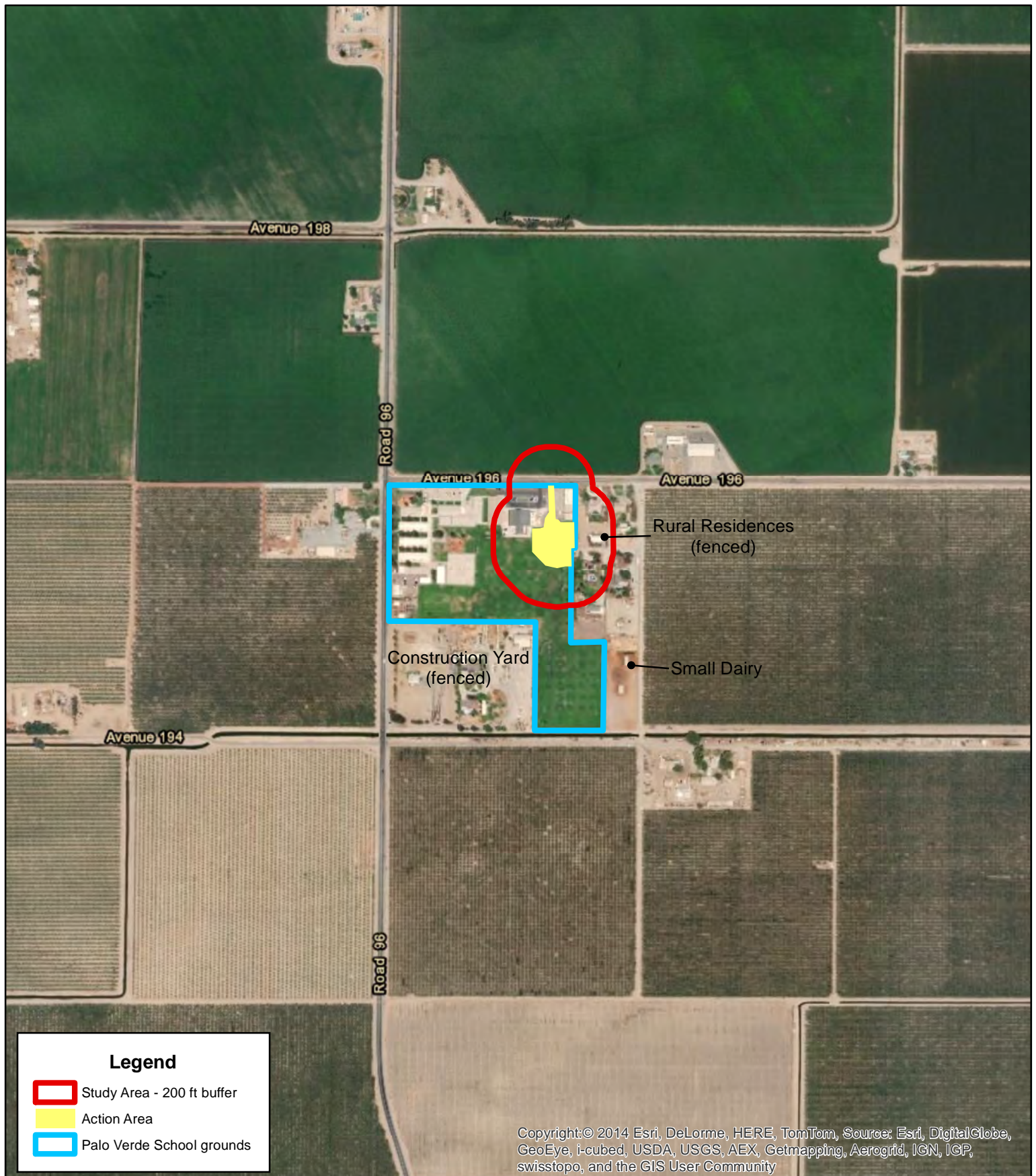


Source: County of Tulare, ESRI

Regional Location

Palo Verde School Well Project
Palo Verde Union Elementary School District

Figure 1

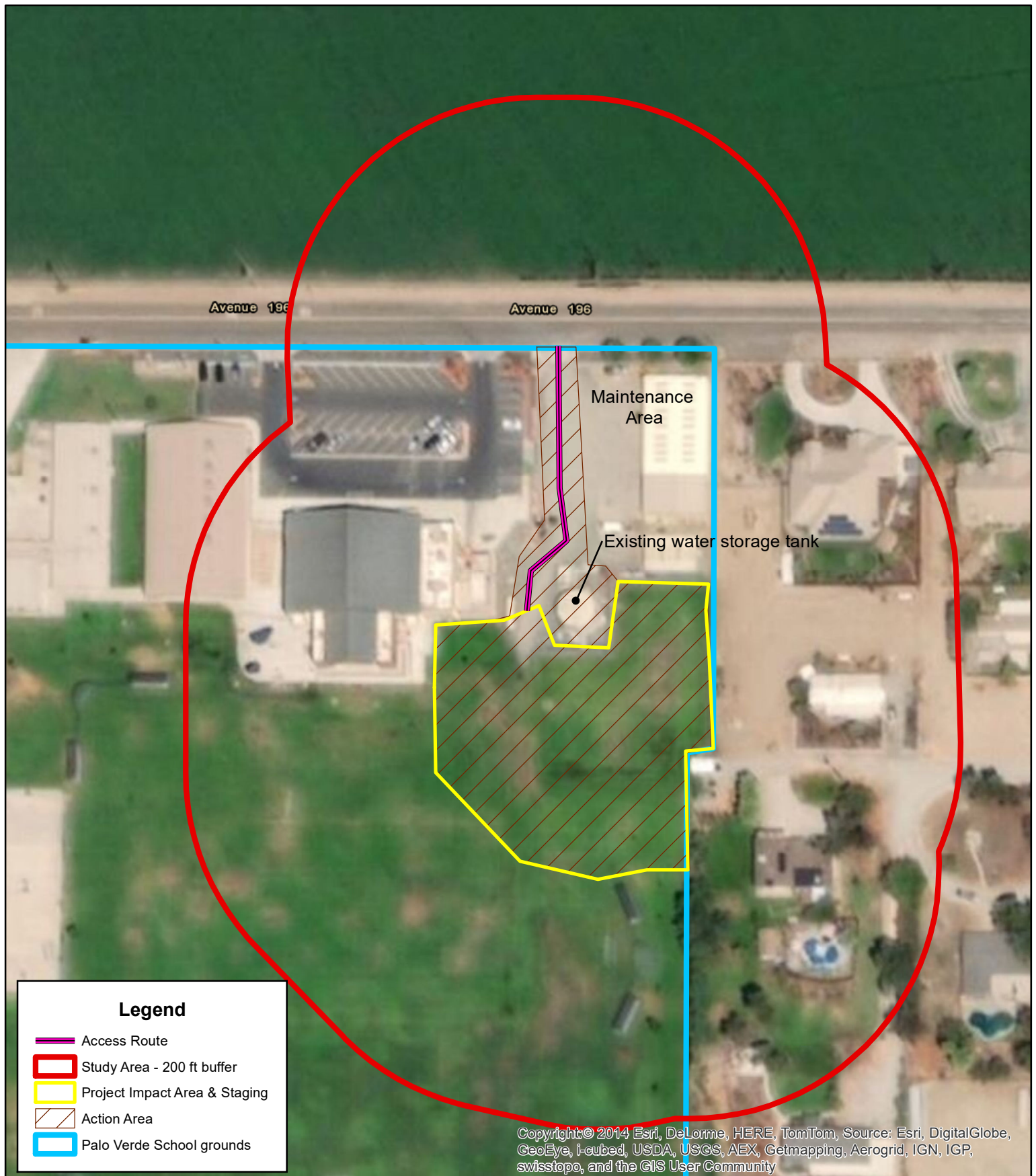


Source: Palo Verde USD, ESRI. Map date: Nov 12, 2018

Project Vicinity Map

Figure 2

Palo Verde School Well Project
Palo Verde Union Elementary School District



Source: Palo Verde USD, ESRI. Map date: Nov 12, 2018

Action Area and Study Area Map

Figure 3

Palo Verde School Well Project
Palo Verde Union Elementary School District

Chapter 2. Study Methods

The following sections discuss sources used to develop information on the proposed Action Area. Study methods and sources used consisted of a review of a list of Threatened and Endangered species with the potential to be affected by the project as provided by the Service (**Appendix A**), review of existing documentation relevant to the proposed project, field reconnaissance, and evaluation of impacts to identified resources.

The Action Area includes consists of approximately 1.18 acres of school turf/playing fields and maintenance area enclosed by chain link fences (**Figure 3**).

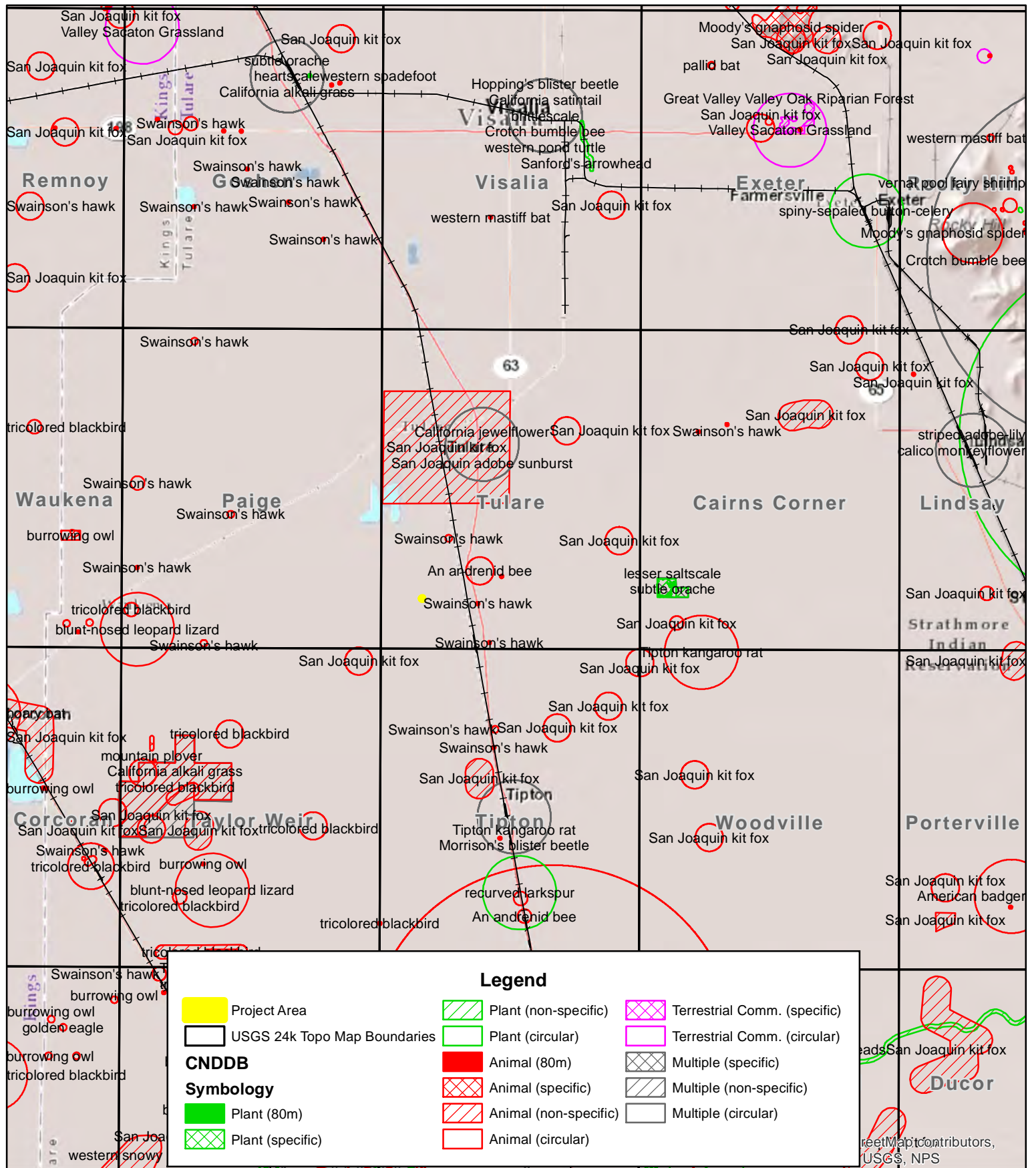
2.1. Listed, Candidate, and Proposed Species Potentially in the Action Area

In order to determine which federally-listed, candidate, or proposed species are known to, or have the potential to occur in the Action Area, a list of threatened and endangered species with the potential to be affected by the project was provided by the Service (**Appendix A**; Service 2018), the California Natural Diversity Data Base (CNDDB) occurrence reports and species lists (**Appendix B**; CDFW 2018), and other materials were reviewed. From these sources, a table of federally-listed or proposed species known, or with the potential to occur, in the Action Area was compiled. **Table 1** lists these species along with their legal status, habitat requirements, and a brief statement of their likelihood to occur within the Action Area. All species are assumed absent from the Action Area based on the species-specific reasons presented, primarily either due to the Action Area being located outside the species' range or suitable habitat is not present within the Action Area. They were therefore not considered in this analysis. The San Joaquin kit fox (SJKF, *Vulpes macrotis mutica*) is discussed in Section 4 of this BA due to occurrences in the region; however, it is unlikely to occur within the Action Area.

2.2. Studies Required

Literature Review

Literature and data sources reviewed include: current agency status information from the Service for species listed, proposed for listing, or candidates for listing as threatened or endangered under ESA (**Appendix A**, Service 2018) and the CNDDB occurrence reports (**Appendix B**; CDFW 2018). To ensure completeness of the search, a nine-quad radius was used for database queries, centered on the Tulare 7.5" USGS Quadrangle (Figure 4).



Source: CDFW, ESRI. Map date: Nov 12, 2018

California Natural Diversity Database (CNDDDB) Map

Figure 4

Palo Verde School Well Project
Palo Verde Union Elementary School District

Table 1. Listed, Candidate, and Proposed Species, and Critical Habitat Potentially Occurring or Known within the Study Area

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/Absent	Rationale for Presence/Absence finding
PLANTS					
California jewel-flower	<i>Caulanthus californicus</i>	E	Occurs in chenopod scrub, pinyon and juniper woodland, valley and foothill grassland often with sandy soil. 61-1000 meters elevation.	A	Action area extremely disturbed – manicured turf of school yard. Suitable habitat does not occur within the action area. Occurrence thought to be extirpated from Tulare USGS quad.
San Joaquin adobe sunburst	<i>Pseudobahia peirsonii</i>	T	Valley and foothill grassland, cismontane woodland. Grassy valley floors and rolling foothills in heavy clay soil. 90-800 m.	A	Action area extremely disturbed – manicured turf of school yard. Suitable habitat does not occur within the action area. Occurrence thought to be extirpated from Tulare USGS quad.
MAMMALS					
San Joaquin kit fox	<i>Vulpes macrotis mutica</i>	E	Prefers large tracts of open, level areas with loose-textured soils supporting scattered, shrubby vegetation with little human disturbance. Live in annual grasslands or grassy open stages dominated by scattered brush, shrubs, and scrub. Some agricultural areas may support these foxes.	A	No suitable habitat within the Action Area. No burrows of sufficient size to support this species were observed within the Action Area, and the movement into the school grounds is unlikely due to several chain link fences. Prey density on the school grounds is actively managed by maintenance personnel and no prey sign other than one gopher burrow was observed and one cottontail on an adjacent yard. The nearest CNDDDB occurrence is approximately 2.4 miles southwest from the Action Area where one road killed individual was observed in 1973. Most (12 of 13 within 10 miles) local known occurrences are from 1972-1975, one is from 1992. The species may occasionally forage or disperse in adjacent marginal habitat (agricultural fields) in the vicinity, however, it would be difficult for the species to gain access to the school grounds given the layers of chain link and presence of humans. Further discussed in Section 4.
Tipton kangaroo rat	<i>Dipodomys nitratoideus nitratoideus</i>	E	Habitat includes friable sandy or silty soils in areas with no to moderate shrub cover and scattered herbaceous plants; sparsely vegetated alkali sink communities, valley grassland, saltbush and sink scrub.	A	Species likely excluded from lands including adjacent parcels for several decades. No suitable/occupied habitat remains at Site or in adjacent parcels. No kangaroo rat burrows or sign observed during site reconnaissance surveys.
BIRDS					
Western yellow-billed cuckoo	<i>Coccyzus americanus occidentalis</i>	T	Occupies open woodlands and with shrubby vegetation. Nests in willow and cottonwood riparian forests with dense understory of shrubs and vines.	A	No riparian habitat present. Action Area and vicinity highly disturbed and no suitable habitat features present.

AMPHIBIANS					
California red-legged frog	<i>Rana draytonii</i>	T	Chiefly lakes, ponds, and streams in coastal forest, inland woodlands, and valley grasslands where cattails, bulrush, or other plants provide dense cover. Aquatic sites need not be permanent.	A	Area not within species range and no habitat present in the Action Area.
California tiger salamander	<i>Ambystoma californiense</i>	T	Quiet water of ponds, reservoirs, lakes, vernal pools, streams, and stock ponds within annual grasslands, oak savannah, oak woodland and open chaparral.	A	No habitat present. Action Area and vicinity highly disturbed and no suitable wetland features present.
REPTILES					
Blunt-nosed leopard lizard	<i>Gambelia sila</i>	E	Occurs in semi-arid grasslands, washes and alkali flats, with sandy/gravelly/loamy soils. Occurs with plants such as annual and bunch grasses and <i>Atriplex</i> sp. Small mammal burrows provide cover for this species.	A	No suitable habitat present. Action Area is manicured turf and disturbed maintenance yard. Habitat conversion has likely excluded any potentially present members of the species from the site and adjacent parcels for several decades.
Giant garter snake	<i>Thamnophis gigas</i>	T	Marshes, sloughs, mud-bottom canals of rice farming areas, but occasionally slow streams. Bulrush and cattails typically present. Extremely aquatic, needs near permanent water for survival. Found in areas with aquatic connectivity to San Joaquin River and Delta.	A	Not present. No habitat within the Action Area.
FISH					
Delta smelt	<i>Hypomesus tranpacificus</i>	T	Found only from the Suisun Bay upstream through the Delta in Contra Costa, Sacramento, San Joaquin, Solano and Yolo counties. Typically found in estuarine waters-along the freshwater edge of the mixing zone (saltwater-freshwater interface), and upstream into river channels and tidally-influenced backwater sloughs. Most spawning happens in tidally-influenced backwater sloughs and channel edgewater.	A	The Action Area is not within nor upstream of the species range.
INVERTEBRATES					
Vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	E	Require ephemeral pools with no flow. Associated with vernal pools/grasslands from near Red Bluff (Shasta County), through the central valley, and into the south Coast Mountains region.	A	Not present. No vernal pools within the Action Area.
Definitions: E = species listed as Endangered under the federal Endangered Species Act T = species listed as Threatened under the federal Endangered Species Act CH = critical habitat has been designated for this species (the Action Area is not necessarily located within critical habitat) A = Habitat Absent HP = Habitat Present P = Species Present					

Botanical Resources

The following materials were reviewed in order to determine if federally-listed plant species have the potential to occur within the Action Area: the California Native Plant Society (CNPS) *Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2018) and CNDDB occurrences (CDFW 2018). The final classification and characterization of the vegetation within the Action Area and surrounding vicinity is based on reconnaissance-level field observations. Vegetation types identified in *A Manual of California Vegetation* (Sawyer et.al. 2009) were utilized to determine if vegetation types identified as sensitive on CDFW's *List of Vegetation Alliances and Associations* (CDFW 2010) are present within the Action Area. Scientific nomenclature for plant species identified within this document follows *The Jepson Manual: Vascular Plants of California, Edition 2* (Baldwin et al. 2012).

Wildlife Resources

The following literature and data sources were reviewed to determine which federally-listed wildlife species have the potential to occur within the Action Area: CNDDB occurrences (CDFW 2018), CDFW reports on special-status wildlife (Remsen 1978; Williams 1986; Jennings and Hayes 1994), California Wildlife Habitat Relationships Program species-habitat models (CDFW 2008; Zeiner et al. 1988 and 1990), and general wildlife references (Stebbins 1985).

Survey Methods

Reconnaissance-level biological surveys were conducted to identify any federally-listed plant or wildlife species or suitable habitat for these species, and characterize habitats present within the Action Area. Data was recorded on the vegetation types and on dominant and characteristic species, as well as basic ecological factors, including topography, hydrologic regime, suitable habitats, soils, elevation range, currently known geographic range and evident disturbance.

To date, no specific botanical surveys have been conducted on the project site because the area is highly disturbed. A list of common species was made during the site visit by an Odell P&R biologist. No habitat for special-status plant species occurs within the Action Area.

No focused surveys for sensitive wildlife species were conducted as a part of this survey effort.

2.3. Personnel and Survey Dates

Reconnaissance-level biological surveys were conducted by Odell P&R Senior Biologist, Melissa Odell, on May 6, 2018.

2.4. Limitations That May Influence Results

Protocol-level surveys for federally-listed plant and wildlife species were not necessary based on the lack of potential habitat, the range of the species, or other reasons identified in **Table 1**. Reconnaissance-level surveys were not conducted during the blooming period for San Joaquin adobe sunburst (*Pseudobahia peirsonii*); however, surveys for this species were not necessary based on the lack of potential habitat and the currently known range of the species as identified in **Table 1**. Full access to adjacent privately-owned land was not provided for the survey. Therefore, these areas were surveyed to the best of the biologist's abilities using binoculars.

Chapter 3. Results: Environmental Setting

3.1. Description of Existing Biological and Physical Conditions

Action Area

The Action Area (1.18 acres) is located southwest of the city of Tulare. The Action Area is bordered by Road 96 to the west, and Avenue 196 to the north (**Figure 2**). The Action Area is developed and includes a mixture of existing school maintenance facilities and turfed playing fields. Some edges of these facilities have been subject to ongoing disturbance that results in minimal areas of bare ground or ruderal, weedy vegetation. Almost all vegetation within the Action Area has been introduced or planted.

Physical Conditions

The Action Area and study area are located on the San Joaquin Valley floor. The San Joaquin Valley is bounded by the Coast Range to the west, the Sierra Nevada range to the east and the Tehachapi range to the south. The Tule River runs west from the Sierra Nevada through Porterville in Tulare County and historically emptied into Tulare Lake. However, the Tule River currently only reaches Tulare Lake during floods due to water diversion for agriculture irrigation. Tulare Lake is the terminal sink or basin that historically also received the Kaweah and Kern Rivers as well as southern tributaries of the Kings River.

Soils

Soils within the Action Area are highly disturbed due to development of the Palo Verde School. The Tulare County Soil Survey indicates one mapping unit within the Action Area: Crosscreek-Kai association, 0 to 2 percent slopes (USDA-Natural Resources Conservation Service [NRCS] 2018). The Crosscreek series consists of well drained soils found on remnant fans and valleys, of which the parent material was formed by the chemical and mechanical alteration of the Kai series which originally formed in alluvium derived from granitic rock. The surface layer is loam, approximately 11 inches thick, underlain by gravely loam and sandy loam, extending to a depth of 55 inches or more. This soil rarely floods or ponds and is not hydric. Due to human land alteration within the action area and vicinity (road construction, intensive agriculture, school and residential development), the native soils have been altered resulting in the absence of some of the typical characteristics, or possibility of hydric components.

Hydrology

The USGS National Hydrography Dataset does not identify any hydrologic features within the Action Area (USGS 2018). Hydrologic input within the Action Area is solely from school grounds irrigation, precipitation and runoff, and hydrologic output is percolation and runoff. The site is relatively flat, and no depressions or drainages were observed during the field surveys. Elk Bayou is located approximately 1 mile south of the Action Area and is associated with a mature riparian corridor.

Biological Conditions in the Study Area

Vegetation

Ruderal/disturbed/developed habitat was the only vegetation type observed within the Action

Area and study area (**Figure 3**). Ruderal areas are those areas which have been developed or have been subject to historic and ongoing disturbance by human activities (e.g., existing roads or agricultural areas) and are devoid of vegetation or impacted by non-native and/or invasive weed species. Developed habitat are areas where the native vegetation has been cleared for residential, commercial, industrial, transportation, or recreational structures. Developed areas include areas that have structures, paved surfaces, horticultural plantings, and lawns. This habitat type is considered to have low biological value, as it is dominated generally by non-native plant species and consists of relatively low-quality habitat from a wildlife perspective. The majority of the Action Area and study area is developed with an existing school and its maintenance facilities. The remainder of the study area consisted of additional school facilities, rural residential, intensive agriculture (corn, walnuts, almonds, a small dairy), and a light industrial construction yard. Plant species observed included burclover (*Medicago polymorpha*), rose clover (*Trifolium hirtum*), Bermuda grass (*Cynodon dactylon*), bluegrass (*Poa* sp.), common dandelion (*Taraxacum officinale* ssp. *officinale*), puncturevine (*Tribulus terrestris*), prostrate knotweed, (*Polygonum aviculare*), bristly ox tongue (*Helminthotheca echinoides*), cheeseweed (*Malva parviflora*), melilot (*Melilotus* sp.), prickly sow thistle (*Sonchus asper*), stinging nettle (*Urtica dioica*) foxtail barley (*Hordeum murinum* ssp. *leporinum*), and filaree (*Erodium* sp.), in part. Introduced trees and shrubs, such as Eucalyptus spp, fan palm, fruit trees, azalea, oleander, conifers such as Italian cypress trees (*Cupressus sempervirens*), etc., are also within the study area, associated with the school grounds and adjacent rural residences.

Wildlife

A few common wildlife species or their sign were observed during the surveys (Table 2). Only one small mammal burrow, a gopher (*Thomomys* sp), was observed within the study area. Common wildlife species that do well in urbanized and disturbed areas that may occur within the study area include California ground squirrel, raccoon (*Procyon lotor*), skunk (*Mephitis mephitis*), American crow (*Corvus brachyrhynchos*), scrub jay (*Aphelocoma californica*), European starling (*Sturnus vulgaris*), northern mockingbird (*Mimus polyglottos*), fence lizard (*Sceloporus occidentalis*), and rock dove (*Columba livia*).

Table 2. Wildlife species observed in the study area during surveys conducted on May 6, 2018.

SPECIES NAME	COMMON NAME
BIRDS (ALL PROTECTED BY THE MIGRATORY BIRD TREATY ACT*)	
<i>Agelaius phoeniceus</i>	Red-winged blackbird
<i>Charadrius vociferus</i>	killdeer
<i>Columba livia</i>	Rock dove
<i>Corvus brachyrhynchos</i>	American crow
<i>Euphagus cyanocephalus</i>	Brewer's blackbird
<i>Haemorhous mexicanus</i>	House finch
<i>Mimus polyglottos</i>	Northern mockingbird
<i>Passer domesticus</i>	House sparrow*
<i>Sayornis nigricans</i>	Black phoebe
<i>Streptopelia decaocto</i>	Eurasian collared-dove*

SPECIES NAME	COMMON NAME
<i>Sturnus vulgaris</i>	European starling*
<i>Tyrannus verticalis</i>	Western kingbird
<i>Zenaida macroura</i>	Mourning dove
MAMMALS	
<i>Felis catus</i>	Domestic cat
<i>Sylvilagus</i> sp.	cottontail
<i>Thomomys</i> sp.	Gopher (mounds/holes)
<i>Bos taurus</i>	Domestic cow
<i>Capra hircus</i>	Domestic goat
REPTILES	
<i>Sceloporus occidentalis</i>	Fence lizard

*denotes a non-native species, not protected by MBTA

Chapter 4. Results: Biological Resources, Discussion of Impacts and Mitigation

4.1. Federally-Listed, Candidate, or Proposed Plant Species

No federally-listed or proposed plant species were identified within the study area during surveys in May 2018. The project will not affect federally-listed or proposed plant species.

4.2. Federally-Listed, Candidate, or Proposed Animal Species

Of the federally-listed species in **Table 1**, none have the potential to occur within the Action Area and/or to be affected by the project. The rationale for determination of presence or absence within the study area and Action Area is based on local occurrence data and the habitat features documented to occur within the study area and Action Area. All federally-listed or proposed wildlife species are assumed absent for the species-specific reasons presented in **Table 1** and therefore, will not be affected by the proposed project. The SJKF is discussed below due to occurrences in the region; however, it is unlikely to occur within the study area.

Discussion of San Joaquin Kit Fox

The SJKF was listed as a federally endangered species on March 11, 1967 (32 FR 4001). Its present range extends from the southern end of the San Joaquin Valley, north to Stanislaus County along the east, and along the interior Coast Range valleys and foothills to central Contra Costa County (Thacker and Flinders 1999). Critical habitat has not been designated for the San Joaquin kit fox. SJKF occur in relatively low numbers within their range in California (Zeiner et al. 1990). They can be locally common in some areas of their range but are typically rare, particularly in the northern portion of their range (Contra Costa County) (Service 1998, Zeiner et al. 1990).

The SJKF typically inhabits valley alkaline scrub, valley and foothill grasslands, and open oak woodlands of low to moderate relief along the Central Valley floor and surrounding foothills. SJKF also utilizes open scrublands and oak woodlands in various portions of California. SJKF are known to occupy human-altered habitats, such as vineyards, orchards, and petroleum fields, where denning opportunities and suitable prey are available. San Joaquin kit foxes are primarily carnivorous with a diet consisting of black-tailed jackrabbits, desert cottontails, rodents (especially ground squirrels and kangaroo rats), reptiles, small birds, bird eggs, insects, and certain types of vegetation (Laughrin 1970, Morrell 1972, Orloff et. al. 1986). Man-made features, such as culverts in roadbeds and pipes, are frequently used in developed landscapes in the southern range of the SJKF. SJKF are thought to be weak excavators and largely dependent on rodent burrows, which they enlarge as den sites. Friable soils appear to be an important characteristic of suitable SJKF habitat (Service 1998). Studies of SJKF in the northern part of their range support this presumption, as SJKF are largely dependent on California ground squirrel burrows for the creation of den sites.

In the course of a year, up to 70 different dens may be used by a single individual. Mating occurs from December to February with pups born between February and late March. Pups emerge above ground, and are fed primarily by the male adult, at approximately one month old. Pups are fed 4 to 5 months, after which, the pups begin to forage independently. Juveniles disperse as far as 19 kilometers (11.08 miles) away from natal dens. Home ranges

vary in size, depending on prey availability, from 1 square mile to 12 square miles (Spiegel and Bradbury 1992).

Primary threats for this species include habitat conversion to urban development and large-scale habitat fragmentation (Service 1998). Rodent control is believed to have a negative impact on SJKF. Other confounding factors also contribute to significant threats for kit fox population maintenance, including rabies, vehicle-induced mortality, predation from larger canids, and oil development (Zeiner et al. 1990, Service 1998). Habitat protection around critical populations is an important management goal for the Service (Service 1998). Reduction in exotic species introductions and removal of exotic species sympatric with SJKF (e.g., feral dogs and non-native red fox) may also increase habitat suitability (Service 1998).

Survey Results

No evidence of kit foxes (foxes, sign, or suitable sized burrows) was detected during the project site survey.

The CNDDDB identifies 13 occurrences within 10 miles of the Action Area (Figure 5) and 25 occurrences within the 9 quadrangles reviewed (Figure 4), the nearest of which is located approximately 2.4 miles southwest from the Action Area. This occurrence record is from 1973 and identifies that one SJKF was observed as roadkill. Most other occurrences within 10 miles are from 1972-1975, and one occurrence is from 1992, given as the generalized "Tulare" location.

No suitable habitat for SJKF is present within the Action Area based on several factors including access barriers (several well-maintained chain link fences and busy roads surround the proposed action), disturbance regime, human and domestic dog presence, lack of prey base and suitable den habitat, combined with the presence of the surrounding agricultural development. Although a few small mammal (gopher) burrows were observed within the study area, no burrows of sufficient size to support this species were observed. The school actively controls rodents on the school grounds, eliminating prey base and potential for burrowing animals to create potential den sites. As such, SJKF is unlikely to occur within the Action Area.

Critical Habitat

No critical habitat has been designated for SJKF.

Avoidance and Minimization Efforts

None required.

Project Effects

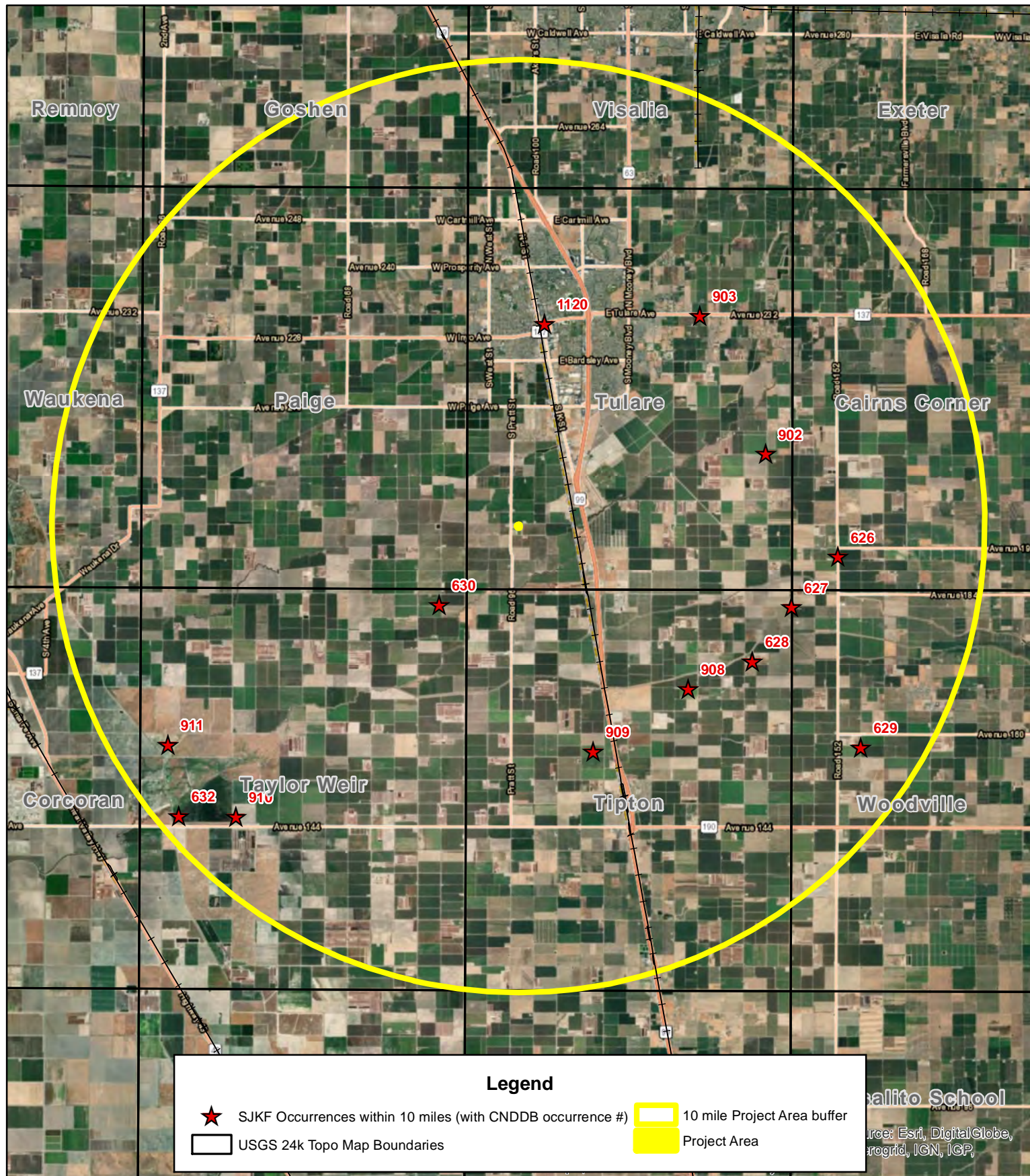
The proposed action will not result in impacts to SJKF or result in habitat loss for this species. No direct or indirect effects would occur due to the proposed action.

Modifications to the Project to Mitigate Effects

No modifications to the project to mitigate effects to individual SJKF are necessary as SJKF are unlikely to occur within the Action Area.

Cumulative Effects

No cumulative effects to SJKF will result from the proposed project.



San Joaquin Kit Fox Occurences in the Project Vicinity

Figure 5

Palo Verde School Well Project
Palo Verde Union Elementary School District

ODELL Planning & Research, Inc.
School Facility Planning • Environmental Analysis • Demographics

0 0.5 1 2 3 4
Miles



Chapter 5. Conclusions and Determination

5.1. Determination

The official Service species list for the project was received on May 29, 2018. No suitable habitat is present within the Action Area for any species identified in the official species list. As such, the project will have **no effect** on any of the following federally-listed, candidate, or proposed species under the ESA or their Critical Habitat:

- San Joaquin kit fox
- Tipton kangaroo rat
- Western yellow-billed cuckoo
- California red-legged frog
- California tiger salamander
- Blunt-nosed leopard lizard
- Giant garter snake
- Delta smelt
- Vernal pool fairy shrimp
- California jewel-flower
- San Joaquin Adobe Sunburst

5.2. Discussion supporting Determination for SJKF

SKJF sightings have not recently occurred - No SJKF have been recorded within 10 miles since 1992 and the majority of occurrences are over 40 years old (1972-1975) (CDFW 2018). Use of agricultural lands by kit foxes appears quite limited (occasional foraging), and only when such lands are adjacent to natural habitat (Cypher et al. 2012). In addition, compared to the surrounding agricultural areas, which consist of fewer boundaries for their access, SJKF would have an extremely difficult time attempting to access the Action Area and school grounds, due to several chain link fence barriers including the school boundary, inner school facilities/yards, and neighboring residences and construction yard adjacent. Additional barriers include frequently traveled roads, especially the Avenue 196 to access the school. Suitable prey base is absent due to school grounds maintenance and rodent control and human disturbance is high within the study area. No dens or potential dens were observed in the study area. Although SJKF are known to utilize developed areas in Bakersfield, Kern County, urban environments are not their preferred habitat type. Therefore, it is determined that implementing the proposed action will have **no effect** on the San Joaquin kit fox.

Chapter 6. References

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Site Photos – May 6, 2018



Action Area within the Palo Verde school grounds and proposed new well location at center. Existing fences, rural residences, and associated mature trees in background. Looking southeast.



Typical habitat in the Action Area (developed school). Parking lot, access to Action Area at left, and existing building (potential bird nesting habitat, previous mud nests detected). Looking south from Avenue 196.



Action Area looking northeast towards existing water tank and maintenance yard portions of Action Area. Also, adjacent rural residences and associated fences (movement barriers) at right.



School Maintenance Area, note layers of chain link fence (wildlife movement barrier). Looking northeast from within Action Area.



Adjacent rural residence and associated trees (nesting bird habitat) and fencing (wildlife barrier) on east side of Action Area. Action Area in foreground. Looking east.



Row crops (corn) and mature trees on adjacent land to north of Action Area across Avenue 196. Looking north.

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**Appendix A – U.S. Fish and Wildlife Service IPaC
Trust Resource Report (generated May 29, 2018) and
Official Species List (May 29, 2018)**

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IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Tulare County, California



Local office

Sacramento Fish And Wildlife Office

☎ (916) 414-6600

📅 (916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.
2. [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.

The following species are potentially affected by activities in this location:

Mammals

NAME

STATUS

San Joaquin Kit Fox *Vulpes macrotis mutica*

Endangered

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/2873>Tipton Kangaroo Rat *Dipodomys nitratoide nitratoide*

Endangered

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/7247>

Reptiles

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

Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i>	Threatened
There is final critical habitat for this species. Your location is outside the critical habitat.	
https://ecos.fws.gov/ecp/species/2891	
California Tiger Salamander <i>Ambystoma californiense</i>	Threatened
There is final critical habitat for this species. Your location is outside the critical habitat.	
https://ecos.fws.gov/ecp/species/2076	

Fishes

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

Crustaceans

NAME	STATUS
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Vernal Pool Fairy Shrimp *Branchinecta lynchi*

Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.

<https://ecos.fws.gov/ecp/species/498>

Flowering Plants

NAME

STATUS

San Joaquin Adobe Sunburst *Pseudobahia peirsonii*

Threatened

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/2931>

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on

this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Clark's Grebe <i>Aechmophorus clarkii</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jan 1 to Dec 31
Long-billed Curlew <i>Numenius americanus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/5511	Breeds elsewhere
Marbled Godwit <i>Limosa fedoa</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9481	Breeds elsewhere
Short-billed Dowitcher <i>Limnodromus griseus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Song Sparrow <i>Melospiza melodia</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Feb 20 to Sep 5

Tricolored Blackbird *Agelaius tricolor*

Breeds Mar 15 to Aug 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/3910>

Whimbrel *Numenius phaeopus*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9483>

Willet *Tringa semipalmata*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (I)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [E-bird Explore Data Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look

carefully at the survey effort (indicated by the black vertical bar) and for the existence of the “no data” indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ “Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds” at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.



United States Department of the Interior



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

In Reply Refer To:

May 29, 2018

Consultation Code: 08ESMF00-2018-SLI-2221

Event Code: 08ESMF00-2018-E-06514

Project Name: Palo Verde School Well 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: 08ESMF00-2018-SLI-2221

Event Code: 08ESMF00-2018-E-06514

Project Name: Palo Verde School Well Project

Project Type: WATER SUPPLY / DELIVERY

Project Description: Very small project (<2 acres including access points) - drilling of new well needed on existing elementary school site, in turf area.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/36.14476386077187N119.35516340029292W>



Counties: Tulare, CA

Endangered Species Act Species

There is a total of 9 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 Fisheries¹, 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.

-
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 <i>Vulpes macrotis mutica</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2873	Endangered
Tipton Kangaroo Rat <i>Dipodomys nitratoides nitratoides</i> 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 <i>Gambelia silus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/625	Endangered
Giant Garter Snake <i>Thamnophis gigas</i> 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 <i>Rana draytonii</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander <i>Ambystoma californiense</i> Population: U.S.A. (Central CA DPS) There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> 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
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> 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

Flowering Plants

NAME	STATUS
San Joaquin Adobe Sunburst <i>Pseudobahia peirsonii</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2931	Threatened

Critical habitats

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

**Appendix B – California Department of Fish and
Wildlife’s California Natural Diversity Data Base
(CNDDB) Species List and San Joaquin kit fox
Occurrence Report (generated May 29, 2018)**

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Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad IS (Tulare (3611923) OR Paige (3611924) OR Taylor Weir (3611914) OR Tipton (3611913) OR Woodville (3611912) OR Cairns Corner (3611922) OR Visalia (3611933) OR Goshen (3611934) OR Exeter (3611932))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Agelaius tricolor</i> tricolored blackbird	ABPBXB0020	None	Candidate Endangered	G2G3	S1S2	SSC
<i>Andrena macswaini</i> An andrenid bee	IIHYM35130	None	None	G2	S2	
<i>Anniella pulchra</i> northern California legless lizard	ARACC01020	None	None	G3	S3	SSC
<i>Antrozous pallidus</i> pallid bat	AMACC10010	None	None	G5	S3	SSC
<i>Athene cunicularia</i> burrowing owl	ABNSB10010	None	None	G4	S3	SSC
<i>Atriplex cordulata</i> var. <i>cordulata</i> heartscale	PDCHE040B0	None	None	G3T2	S2	1B.2
<i>Atriplex cordulata</i> var. <i>erecticaulis</i> Earlimart orache	PDCHE042V0	None	None	G3T1	S1	1B.2
<i>Atriplex depressa</i> brittlescale	PDCHE042L0	None	None	G2	S2	1B.2
<i>Atriplex minuscula</i> lesser saltscale	PDCHE042M0	None	None	G2	S2	1B.1
<i>Atriplex subtilis</i> subtle orache	PDCHE042T0	None	None	G1	S1	1B.2
<i>Bombus crotchii</i> Crotch bumble bee	IIHYM24480	None	None	G3G4	S1S2	
<i>Branchinecta lynchi</i> vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
<i>Buteo swainsoni</i> Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
<i>Caulanthus californicus</i> California jewelflower	PDBRA31010	Endangered	Endangered	G1	S1	1B.1
<i>Charadrius montanus</i> mountain plover	ABNNB03100	None	None	G3	S2S3	SSC
<i>Coccyzus americanus occidentalis</i> western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
<i>Delphinium recurvatum</i> recurved larkspur	PDRAN0B1J0	None	None	G2?	S2?	1B.2
<i>Desmocerus californicus dimorphus</i> valley elderberry longhorn beetle	IICOL48011	Threatened	None	G3T2	S2	
<i>Dipodomys nitratoideus nitratoideus</i> Tipton kangaroo rat	AMAFD03152	Endangered	Endangered	G3T1T2	S1S2	



Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Emys marmorata</i> western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
<i>Eryngium spinosepalum</i> spiny-sepaled button-celery	PDAP10Z0Y0	None	None	G2	S2	1B.2
<i>Eumops perotis californicus</i> western mastiff bat	AMACD02011	None	None	G5T4	S3S4	SSC
<i>Gambelia sila</i> blunt-nosed leopard lizard	ARACF07010	Endangered	Endangered	G1	S1	FP
Great Valley Valley Oak Riparian Forest Great Valley Valley Oak Riparian Forest	CTT61430CA	None	None	G1	S1.1	
<i>Imperata brevifolia</i> California satintail	PMPOA3D020	None	None	G4	S3	2B.1
<i>Lytta hoppingi</i> Hopping's blister beetle	IICOL4C010	None	None	G1G2	S1S2	
<i>Lytta morrisoni</i> Morrison's blister beetle	IICOL4C040	None	None	G1G2	S1S2	
<i>Pseudobahia peirsonii</i> San Joaquin adobe sunburst	PDAST7P030	Threatened	Endangered	G1	S1	1B.1
<i>Puccinellia simplex</i> California alkali grass	PMPOA53110	None	None	G3	S2	1B.2
<i>Sagittaria sanfordii</i> Sanford's arrowhead	PMALI040Q0	None	None	G3	S3	1B.2
<i>Spea hammondi</i> western spadefoot	AAABF02020	None	None	G3	S3	SSC
<i>Talanites moodyae</i> Moody's gnaphosid spider	ILARA98020	None	None	G1G2	S1S2	
<i>Taxidea taxus</i> American badger	AMAJF04010	None	None	G5	S3	SSC
Valley Sacaton Grassland Valley Sacaton Grassland	CTT42120CA	None	None	G1	S1.1	
<i>Vulpes macrotis mutica</i> San Joaquin kit fox	AMAJA03041	Endangered	Threatened	G4T2	S2	

Record Count: 35



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 67386 **EO Index:** 67554
Key Quad: Cairns Corner (3611922) **Element Code:** AMAJA03041
Occurrence Number: 626 **Occurrence Last Updated:** 2007-01-17

Scientific Name: *Vulpes macrotis mutica* **Common Name:** San Joaquin kit fox
Listing Status: **Federal:** Endangered **Rare Plant Rank:**
State: Threatened **Other Lists:**
CNDDDB Element Ranks: **Global:** G4T2
State: S2

General Habitat: ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.
Micro Habitat: NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1975-07-XX **Occurrence Type:** Natural/Native occurrence
Last Survey Date: 1975-07-XX **Occurrence Rank:** Unknown
Owner/Manager: UNKNOWN **Trend:** Unknown
Presence: Presumed Extant

Location:
ABOUT 3.4 MI NW OF WOODVILLE, S OF INTERSECTION OF STRATHMORE RD (AVE 192) AND BLISS LANE (RD 152).

Detailed Location:

Ecological:

Threats:

General:

KIT FOX OBSERVATION(S) IN 1973. ROAD KILL FROM 1972 THROUGH JUL 1975.

PLSS: T21S, R25E, Sec. 01 (M) **Accuracy:** 1/5 mile **Area (acres):** 0
UTM: Zone-11 N4001279 E299138 **Latitude/Longitude:** 36.13544 / -119.23227 **Elevation (feet):** 310

County Summary: **Quad Summary:**
Tulare Cairns Corner (3611922)

Sources:

MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX
SWI73R0001 SWICK, C.D. - DETERMINATION OF SAN JOAQUIN KIT FOX RANGE IN CCA, SJQ, ALA & TUL COUNTIES, CDFG 1973-XX-XX



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 67387 **EO Index:** 67555
Key Quad: Woodville (3611912) **Element Code:** AMAJA03041
Occurrence Number: 627 **Occurrence Last Updated:** 2007-01-17

Scientific Name: *Vulpes macrotis mutica* **Common Name:** San Joaquin kit fox
Listing Status: **Federal:** Endangered **Rare Plant Rank:**
State: Threatened **Other Lists:**
CNDDDB Element Ranks: **Global:** G4T2
State: S2

General Habitat: ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.
Micro Habitat: NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1973-XX-XX **Occurrence Type:** Natural/Native occurrence
Last Survey Date: 1973-XX-XX **Occurrence Rank:** Unknown
Owner/Manager: UNKNOWN **Trend:** Unknown
Presence: Presumed Extant

Location:
ABOUT 3.3 MI NW OF WOODVILLE, S OF INTERSECTION OF AVE 184 & ROAD 144.

Detailed Location:

Ecological:

Threats:

General:

SIGHTING, ROAD KILL OR DEN PRIOR TO 1972. KIT FOX OBSERVATION(S) IN 1973.

PLSS: T21S, R25E, Sec. 11 (M) **Accuracy:** 2/5 mile **Area (acres):** 0
UTM: Zone-11 N3999585 E297501 **Latitude/Longitude:** 36.11984 / -119.25002 **Elevation (feet):** 300

County Summary:

Tulare

Quad Summary:

Woodville (3611912), Tipton (3611913), Cairns Corner (3611922), Tulare (3611923)

Sources:

MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX
SWI73R0001 SWICK, C.D. - DETERMINATION OF SAN JOAQUIN KIT FOX RANGE IN CCA, SJQ, ALA & TUL COUNTIES, CDFG 1973-XX-XX



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 67388 **EO Index:** 67557
Key Quad: Tipton (3611913) **Element Code:** AMAJA03041
Occurrence Number: 628 **Occurrence Last Updated:** 2006-12-13

Scientific Name: *Vulpes macrotis mutica* **Common Name:** San Joaquin kit fox
Listing Status: **Federal:** Endangered **Rare Plant Rank:**
State: Threatened **Other Lists:**
CNDDDB Element Ranks: **Global:** G4T2
State: S2

General Habitat: ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.
Micro Habitat: NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1973-XX-XX **Occurrence Type:** Natural/Native occurrence
Last Survey Date: 1973-XX-XX **Occurrence Rank:** Unknown
Owner/Manager: UNKNOWN **Trend:** Unknown
Presence: Presumed Extant

Location:
ABOUT 3.7 MI WNW OF WOODVILLE, JUST N OF INTERSECTION OF AVENUE 168 AND ROAD 136.

Detailed Location:

Ecological:

Threats:

General:

KIT FOX OBSERVATION(S) IN 1973.

PLSS: T21S, R25E, Sec. 15 (M) **Accuracy:** 2/5 mile **Area (acres):** 0
UTM: Zone-11 N3997727 E296105 **Latitude/Longitude:** 36.10281 / -119.26504 **Elevation (feet):** 290

County Summary:

Tulare Tipton (3611913)

Sources:

SWI73R0001 SWICK, C.D. - DETERMINATION OF SAN JOAQUIN KIT FOX RANGE IN CCA, SJQ, ALA & TUL COUNTIES, CDFG 1973-XX-XX



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 67390 **EO Index:** 67561
Key Quad: Woodville (3611912) **Element Code:** AMAJA03041
Occurrence Number: 629 **Occurrence Last Updated:** 2007-01-17

Scientific Name: *Vulpes macrotis mutica* **Common Name:** San Joaquin kit fox
Listing Status: **Federal:** Endangered **Rare Plant Rank:**
State: Threatened **Other Lists:**
CNDDDB Element Ranks: **Global:** G4T2
State: S2

General Habitat: ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.
Micro Habitat: NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1972-XX-XX **Occurrence Type:** Natural/Native occurrence
Last Survey Date: 1972-XX-XX **Occurrence Rank:** Unknown
Owner/Manager: UNKNOWN **Trend:** Unknown
Presence: Presumed Extant

Location:
ABOUT 1.7 MI SW OF WOODVILLE, SE OF INTERSECTION OF ROAD 152 AND AVE 160.

Detailed Location:

Ecological:

Threats:

General:

1 ACTIVE DEN OBSERVED IN 1970. SIGHTING, ROAD KILL OR DEN PRIOR TO 1972.

PLSS: T21S, R25E, Sec. 25 (M) **Accuracy:** 2/5 mile **Area (acres):** 0
UTM: Zone-11 N3994673 E299784 **Latitude/Longitude:** 36.07606 / -119.22343 **Elevation (feet):** 320

County Summary: **Quad Summary:**
Tulare Woodville (3611912)

Sources:

MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX
SWI73R0001 SWICK, C.D. - DETERMINATION OF SAN JOAQUIN KIT FOX RANGE IN CCA, SJQ, ALA & TUL COUNTIES, CDFG 1973-XX-XX



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 67392 **EO Index:** 67562
Key Quad: Taylor Weir (3611914) **Element Code:** AMAJA03041
Occurrence Number: 630 **Occurrence Last Updated:** 2007-01-23

Scientific Name: *Vulpes macrotis mutica* **Common Name:** San Joaquin kit fox
Listing Status: **Federal:** Endangered **Rare Plant Rank:**
State: Threatened **Other Lists:**
CNDDDB Element Ranks: **Global:** G4T2
State: S2

General Habitat: ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.
Micro Habitat: NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1975-07-XX **Occurrence Type:** Natural/Native occurrence
Last Survey Date: 1975-07-XX **Occurrence Rank:** Unknown
Owner/Manager: UNKNOWN **Trend:** Unknown
Presence: Presumed Extant

Location:
ABOUT 6.4 MI SSW OF TULARE, SE OF INTERSECTION OF OCTOL AVE (AVE 184) AND ELK BAYOU AVE (ROAD 80).

Detailed Location:

Ecological:

Threats:

TRAFFIC.

General:

ROAD KILL OBSERVED IN 1973. ROAD KILL SOMETIME FROM 1972 THROUGH JUL 1975.

PLSS: T21S, R24E, Sec. 09 (M) **Accuracy:** 2/5 mile **Area (acres):** 0
UTM: Zone-11 N3999907 E285305 **Latitude/Longitude:** 36.12012 / -119.38552 **Elevation (feet):** 250

County Summary: **Quad Summary:**
Tulare Taylor Weir (3611914), Paige (3611924)

Sources:

MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX
SWI73R0001 SWICK, C.D. - DETERMINATION OF SAN JOAQUIN KIT FOX RANGE IN CCA, SJQ, ALA & TUL COUNTIES, CDFG 1973-XX-XX



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 67396 **EO Index:** 67563
Key Quad: Corcoran (3611915) **Element Code:** AMAJA03041
Occurrence Number: 631 **Occurrence Last Updated:** 2006-12-13

Scientific Name: *Vulpes macrotis mutica* **Common Name:** San Joaquin kit fox
Listing Status: **Federal:** Endangered **Rare Plant Rank:**
State: Threatened **Other Lists:**
CNDDDB Element Ranks: **Global:** G4T2
State: S2

General Habitat: ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.
Micro Habitat: NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1973-XX-XX **Occurrence Type:** Natural/Native occurrence
Last Survey Date: 1973-XX-XX **Occurrence Rank:** Unknown
Owner/Manager: UNKNOWN **Trend:** Unknown
Presence: Presumed Extant

Location:
ABOUT 4.2 MI SE OF CORCORAN, 1.2 MI NE OF INTERSECTION OF HWY 43 & AVE 144, DEEP CREEK.

Detailed Location:

Ecological:

Threats:

General:

SPOTLIGHTED IN 1973.

PLSS: T21S, R23E, Sec. 32 (M) **Accuracy:** 2/5 mile **Area (acres):** 0
UTM: Zone-11 N3993549 E274490 **Latitude/Longitude:** 36.06040 / -119.50378 **Elevation (feet):** 220

County Summary:

Tulare

Quad Summary:

Taylor Weir (3611914), Corcoran (3611915)

Sources:

SWI73R0001 SWICK, C.D. - DETERMINATION OF SAN JOAQUIN KIT FOX RANGE IN CCA, SJQ, ALA & TUL COUNTIES, CDFG 1973-XX-XX



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 67397 **EO Index:** 67564
Key Quad: Taylor Weir (3611914) **Element Code:** AMAJA03041
Occurrence Number: 632 **Occurrence Last Updated:** 2006-12-13

Scientific Name: *Vulpes macrotis mutica* **Common Name:** San Joaquin kit fox
Listing Status: **Federal:** Endangered **Rare Plant Rank:**
State: Threatened **Other Lists:**
CNDDDB Element Ranks: **Global:** G4T2
State: S2

General Habitat: ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.
Micro Habitat: NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1973-XX-XX **Occurrence Type:** Natural/Native occurrence
Last Survey Date: 1973-XX-XX **Occurrence Rank:** Unknown
Owner/Manager: UNKNOWN **Trend:** Unknown
Presence: Presumed Extant

Location:
ABOUT 5.2 MI SE OF CORCORAN, 2 MI E OF INTERSECTION OF HWY 43 & AVE 144.

Detailed Location:

Ecological:

Threats:

General:

SIGHTINGS AND ACTIVE DENS OBSERVED IN 1973.

PLSS: T21S, R23E, Sec. 33 (M) **Accuracy:** 2/5 mile **Area (acres):** 0
UTM: Zone-11 N3992800 E276153 **Latitude/Longitude:** 36.05403 / -119.48511 **Elevation (feet):** 220

County Summary: **Quad Summary:**
Tulare Taylor Weir (3611914)

Sources:

SWI73R0001 SWICK, C.D. - DETERMINATION OF SAN JOAQUIN KIT FOX RANGE IN CCA, SJQ, ALA & TUL COUNTIES, CDFG 1973-XX-XX



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 67779 **EO Index:** 67931
Key Quad: Tulare (3611923) **Element Code:** AMAJA03041
Occurrence Number: 902 **Occurrence Last Updated:** 2007-01-17

Scientific Name: *Vulpes macrotis mutica* **Common Name:** San Joaquin kit fox
Listing Status: **Federal:** Endangered **Rare Plant Rank:**
State: Threatened **Other Lists:**
CNDDDB Element Ranks: **Global:** G4T2
State: S2

General Habitat: ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.
Micro Habitat: NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1975-07-XX **Occurrence Type:** Natural/Native occurrence
Last Survey Date: 1975-07-XX **Occurrence Rank:** Unknown
Owner/Manager: UNKNOWN **Trend:** Unknown
Presence: Presumed Extant

Location:
ALONG OAKDALE AVE. ABOUT 5.6 MI SE OF TULARE, 1 ROAD MI N OF INTERSECTION OF HOSFIELD RD AND OAKDALE AVE.

Detailed Location:

Ecological:

Threats:

General:

ROAD KILL SOMETIME FROM 1972 THROUGH JUL 1975.

PLSS: T20S, R25E, Sec. 21 (M) **Accuracy:** 2/5 mile **Area (acres):** 0
UTM: Zone-11 N4004900 E296710 **Latitude/Longitude:** 36.16755 / -119.26018 **Elevation (feet):** 300

County Summary:

Tulare

Quad Summary:

Tulare (3611923)

Sources:

MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 67780 **EO Index:** 67932
Key Quad: Tulare (3611923) **Element Code:** AMAJA03041
Occurrence Number: 903 **Occurrence Last Updated:** 2007-01-17

Scientific Name: *Vulpes macrotis mutica* **Common Name:** San Joaquin kit fox
Listing Status: **Federal:** Endangered **Rare Plant Rank:**
State: Threatened **Other Lists:**
CNDDDB Element Ranks: **Global:** G4T2
State: S2

General Habitat: ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.
Micro Habitat: NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1975-07-XX **Occurrence Type:** Natural/Native occurrence
Last Survey Date: 1975-07-XX **Occurrence Rank:** Unknown
Owner/Manager: UNKNOWN **Trend:** Unknown
Presence: Presumed Extant

Location:
ALONG LINDSAY HWY, ABOUT 3.4 MI E OF TULARE, NEAR INTERSECTION OF TULARE LINDSAY HWY AND BATES SLOUGH.

Detailed Location:

Ecological:

Threats:

General:

ROAD KILL SOMETIME FROM 1972 THROUGH JUL 1975.

PLSS: T20S, R25E, Sec. 08 (M) **Accuracy:** 2/5 mile **Area (acres):** 0
UTM: Zone-11 N4009717 E294536 **Latitude/Longitude:** 36.21049 / -119.28560 **Elevation (feet):** 300

County Summary: **Quad Summary:**
Tulare Tulare (3611923)

Sources:

MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 67785 **EO Index:** 67937
Key Quad: Tipton (3611913) **Element Code:** AMAJA03041
Occurrence Number: 908 **Occurrence Last Updated:** 2007-01-17

Scientific Name: *Vulpes macrotis mutica* **Common Name:** San Joaquin kit fox
Listing Status: **Federal:** Endangered **Rare Plant Rank:**
State: Threatened **Other Lists:**
CNDDDB Element Ranks: **Global:** G4T2
State: S2

General Habitat: ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.
Micro Habitat: NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1975-07-XX **Occurrence Type:** Natural/Native occurrence
Last Survey Date: 1975-07-XX **Occurrence Rank:** Unknown
Owner/Manager: UNKNOWN **Trend:** Unknown
Presence: Presumed Extant

Location:
ABOUT 2.7 MI NE OF TIPTON, JUST S OF SORTH BRANCH TULE RIVER.

Detailed Location:

Ecological:

Threats:

General:

SIGHTING SOMETIME FROM 1972 THROUGH JUL 1975.

PLSS: T21S, R25E, Sec. 20 (M) **Accuracy:** 2/5 mile **Area (acres):** 0
UTM: Zone-11 N3996831 E293858 **Latitude/Longitude:** 36.09426 / -119.28975 **Elevation (feet):** 280

County Summary:

Tulare

Quad Summary:

Tipton (3611913)

Sources:

MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 67786
Key Quad: Tipton (3611913)
Occurrence Number: 909
EO Index: 67938
Element Code: AMAJA03041
Occurrence Last Updated: 2007-01-17

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox
Listing Status:
Federal: Endangered
State: Threatened
Rare Plant Rank:
Other Lists:
CNDDDB Element Ranks:
Global: G4T2
State: S2

General Habitat: ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.
Micro Habitat: NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1975-07-XX
Last Survey Date: 1975-07-XX
Owner/Manager: UNKNOWN
Presence: Presumed Extant
Occurrence Type: Natural/Native occurrence
Occurrence Rank: Unknown
Trend: Unknown

Location:
ABOUT 1 MI WNW TO 1.7 MI NNW OF TIPTON, 0.5 MI W OF I-99.

Detailed Location:

Ecological:

Threats:

General:

SIGHTING AT DEN SOMETIME FROM 1972 THROUGH JUL 1975.

PLSS: T21S, R24E, Sec. 25 (M) **Accuracy:** nonspecific area **Area (acres):** 440
UTM: Zone-11 N3994732 E290528 **Latitude/Longitude:** 36.07464 / -119.32615 **Elevation (feet):** 270

County Summary:

Tulare

Quad Summary:

Tipton (3611913)

Sources:

MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 67787 **EO Index:** 67939
Key Quad: Taylor Weir (3611914) **Element Code:** AMAJA03041
Occurrence Number: 910 **Occurrence Last Updated:** 2007-01-17

Scientific Name: *Vulpes macrotis mutica* **Common Name:** San Joaquin kit fox
Listing Status: **Federal:** Endangered **Rare Plant Rank:**
State: Threatened **Other Lists:**
CNDDDB Element Ranks: **Global:** G4T2
State: S2

General Habitat: ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.
Micro Habitat: NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1975-07-XX **Occurrence Type:** Natural/Native occurrence
Last Survey Date: 1975-07-XX **Occurrence Rank:** Unknown
Owner/Manager: UNKNOWN **Trend:** Unknown
Presence: Presumed Extant

Location:
ABOUT 6.3 MI SE OF CORCORAN, N OF POPLAR AVE, NEAR OLD CHANNEL TULE RIVER.

Detailed Location:

Ecological:

Threats:

General:

SIGHTING AT DEN SOMETIME FROM 1972 THROUGH JUL 1975.

PLSS: T21S, R23E, Sec. 35 (M) **Accuracy:** nonspecific area **Area (acres):** 419
UTM: Zone-11 N3992725 E278142 **Latitude/Longitude:** 36.05381 / -119.46303 **Elevation (feet):** 220

County Summary: **Quad Summary:**
Tulare Taylor Weir (3611914)

Sources:

MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 67788 **EO Index:** 67940
Key Quad: Taylor Weir (3611914) **Element Code:** AMAJA03041
Occurrence Number: 911 **Occurrence Last Updated:** 2007-01-17

Scientific Name: *Vulpes macrotis mutica* **Common Name:** San Joaquin kit fox
Listing Status: **Federal:** Endangered **Rare Plant Rank:**
State: Threatened **Other Lists:**
CNDDDB Element Ranks: **Global:** G4T2
State: S2

General Habitat: ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.
Micro Habitat: NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1975-07-XX **Occurrence Type:** Natural/Native occurrence
Last Survey Date: 1975-07-XX **Occurrence Rank:** Unknown
Owner/Manager: UNKNOWN **Trend:** Unknown
Presence: Presumed Extant

Location:
ABOUT 4.3 MI ESE OF CORCORAN, 0.7 MI SE OF INTERSECTION OF LAKELAND CANAL AND DEEP CREEK.

Detailed Location:

Ecological:

Threats:

General:

SIGHTING SOMETIME FROM 1972 THROUGH JUL 1975.

PLSS: T21S, R23E, Sec. 28 (M) **Accuracy:** 2/5 mile **Area (acres):** 0
UTM: Zone-11 N3995253 E275829 **Latitude/Longitude:** 36.07606 / -119.48940 **Elevation (feet):** 220

County Summary: **Quad Summary:**
Tulare Taylor Weir (3611914)

Sources:

MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 69809
Key Quad: Tulare (3611923)
Occurrence Number: 1120

EO Index: 70631
Element Code: AMAJA03041
Occurrence Last Updated: 2007-08-27

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status:
Federal: Endangered
State: Threatened

CNDDDB Element Ranks:
Global: G4T2
State: S2

Rare Plant Rank:
Other Lists:

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

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

Last Date Observed: 1992-XX-XX
Last Survey Date: 1992-XX-XX
Owner/Manager: UNKNOWN
Presence: Presumed Extant

Occurrence Type: Natural/Native occurrence
Occurrence Rank: Unknown
Trend: Unknown

Location:
IN THE VICINITY OF TULARE.

Detailed Location:

Ecological:

Threats:

General:

A KIT FOX POPULATION WAS NOTED AS BEING PRESENT IN THE VICINITY OF TULARE BY GAIL PRESLEY (DFG).

PLSS: T20S, R24E, Sec. 11 (M)
UTM: Zone-11 N4009540 E289151

Accuracy: nonspecific area
Latitude/Longitude: 36.20774 / -119.34541

Area (acres): 6,611
Elevation (feet): 275

County Summary:
Tulare

Quad Summary:
Tulare (3611923)

Sources:
BEL94R0001 BELL, H.M. ET AL. - DISTRIBUTION AND ABUNDANCE OF SAN JOAQUIN KIT FOX. DRAFT FINAL REPORT TO THE DEPARTMENT OF FISH AND GAME. 1994-03-31

Appendix C

Cultural Resources Evaluation Reports

**Supplemental Cultural Resource Assessment for the Palo Verde Union
Elementary School Water System Improvement Project, Kleinfelder,
December 9, 2020**



December 9, 2020
Project No.: 20212760.001A
Ms. Mary E. Beatie,
Senior Planner
Provost & Pritchard Consulting Group
130 N. Garden Street
Visalia, CA 93291-6362

SUBJECT: Supplemental Cultural Resource Assessment for the Palo Verde School Well Project, Palo Verde Union Elementary School District, 9637 Avenue 196, Tulare, Tulare County, California.

Dear Ms. Beatie:

Kleinfelder has prepared the following cultural resources letter report for proposed well upgrade project (Project) at the Palo Verde Union Elementary School at 9637 Avenue 196 in Tulare, Tulare County, California. This Project Area has expanded since the initial cultural resources study was prepared in December 2018 for this Project. Kleinfelder has been hired to support Provost & Pritchard Consulting Group (Client) with assessing this additional area for cultural resources to satisfy California Environmental Quality Act (CEQA). This letter report is an addendum to the previous report completed by Sierra Valley Cultural Planning: *Cultural Resources Assessment, Palo Verde School Well Project, Palo Verde Union Elementary School District, 9637 Avenue 196, Tulare County, California* (Roper 2018). The Area of Potential Effect (APE) has been expanded adjacent and west of the original APE, and the regulatory context has been reduced to CEQA-only from the original assessment (Roper 2018). The current letter report is intended to document cultural resources identification efforts and recommendations of the additional APE. The Project description; regulatory context; environmental, prehistoric, ethnographic, and historic-period context; literature review; records search results; and results of the previous survey and recommendations for the initial APE are found in Roper 2018.

Project Overview

The Project, as proposed, is to replace the existing well with a new one that would accommodate existing and future water needs for school operations. The original APE measures approximately 1.18 acres. The Project is located entirely within the Palo Verde Union Elementary School campus, at approximately 246 feet above mean sea level, and is located in a portion of Section 34, Township 20 South, Range 24 East, Mount Diablo Base and Meridian as shown on the Tulare, California Quadrangle 7.5 Minute Series USGS Map (1969).

The additional APE measures 0.80 acres and is also located entirely within the Palo Verde Union Elementary School campus, adjacent and west of the original APE described in Roper 2018. The original Project description has been modified to include water distribution facilities supporting the existing school buildings. Refer to Appendix A for figures depicting the regional vicinity and APE extension. Refer to Appendix B for a figure depicting the proposed Project plans.

Survey Methods and Results

The results of the current assessment of the additional APE are consistent with the previous cultural resources assessment (Roper 2018). In that, the record search completed through the Southern San Joaquin Valley Information Center (SSJVIC) of the California Historical Resources Information System (CHRIS) of the APE and a 0.5-mile radius surrounding it includes the additional APE reviewed in this assessment. The SSJVIC results indicated no previous studies have been conducted within the APE, two previous studies have been conducted within the 0.5-mile radius (one of which is immediately adjacent to the APE), and no previously identified cultural resources are within the APE or surrounding 0.5-mile radius. Additionally, the previous study included outreach with the Native American Heritage Commission (NAHC) for a Sacred Lands Files (SLF) search and the results were negative, and no responses were received from tribes that were contacted (Roper 2018).

On November 23, 2020, Kleinfelder archaeologist Jessica Neal conducted a pedestrian survey of the additional APE to identify cultural resources and assess sensitivity. Jessica Neal is on the Register of Professional Archaeologists and meets the Secretary of the Interior's qualifications standards in archaeology. The entirety of the additional APE was surveyed in 15-meter-wide or less transects. Close inspection was given to exposed soil. The APE was photographed using a high-resolution camera (see Appendix C. Photographs) and field observations were captured in handwritten notes. Survey accuracy was maintained with an Apple iPad with ArcGIS Collector application. Soil consisted of light brown sandy loam. Ground visibility was less than 25 percent due to a lawn covering the entire area. The background research and field survey resulted in negative findings for cultural resources within the added APE. It should be noted that the Palo Verde Union Elementary School campus appears to be historical in age (USGS 1950 [edited 1971]), but the planned Project would not entail any modification to the structure of the building nor would it add any above ground features that would be visible from the structure; therefore, the resource was not recorded or evaluated for the California Register of Historic Places, as the proposed Project would have no impact to this resource.

Conclusions and Recommendations

The results of the current assessment of the additional APE are consistent with the previous cultural resources assessment (Roper 2018). Although the Palo Verde Union Elementary School campus appears to be historic period in age (USGS 1950 [edited 1971]), the Project would not entail any modification to the structure of the building nor would it add any above ground features that would be visible from the structure; therefore, the Project would have no impact to this building, as such it was not evaluated for the California Register of Historic Places. In conclusion, the assessment of the additional APE resulted in negative results for the presence of historical resources, archaeological resources, or human remains. However, should cultural resources be encountered during ground disturbing activities associated with the Project, then all work within the vicinity of the find shall halt until a qualified archaeologist can assess the significance of the find. Should human remains be encountered, Section 5097.99 of California Public Resource Code shall apply which requires immediately halting all construction in the vicinity of the find and contacting the County Coroner; if the remains are determined to be Native American, then the Coroner will notify the NAHC who will contact the Most Likely Descendant.

Citations

Roper, C. Kristina

2018. Cultural Resources Assessment, Palo Verde School Well Project, Palo Verde Union Elementary School District, 9637 Avenue 196, Tulare County, California.

United States Geological Survey

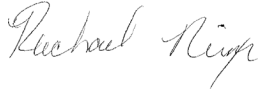
1950. Tulare, California. Scale 1:24,000. Edited 1971.

Sincerely,

KLEINFELDER



Samantha Dunham, B.A.
Archaeologist



Rachael Nixon, M.A., RPA
Senior Archaeologist.

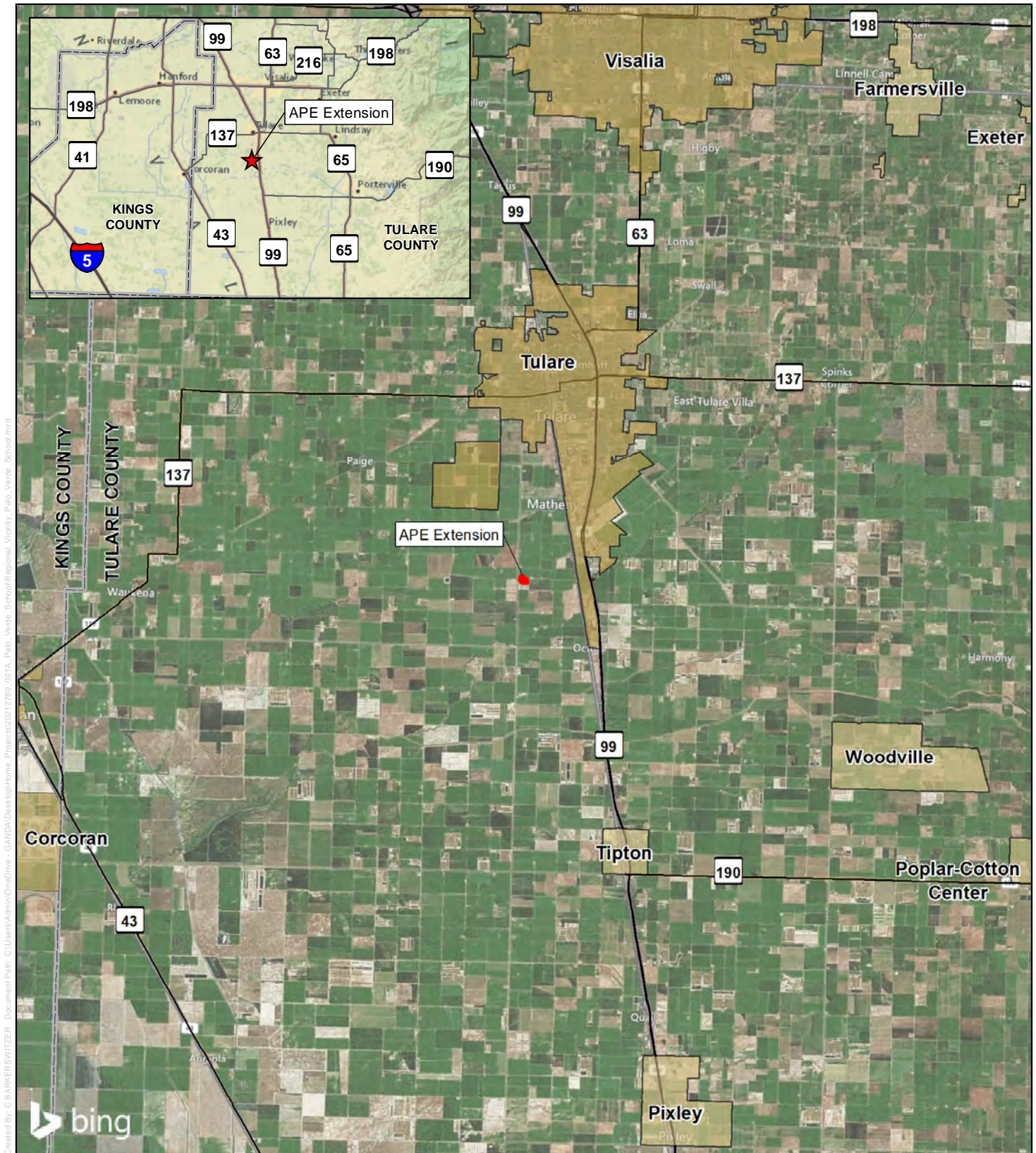
Appendices

Appendix A: Project Maps

Appendix B: Proposed Project Plans

Appendix C: Photographs

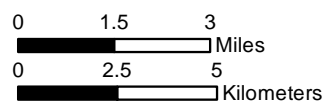
Appendix A: Project Maps



Created By: C.BARKER@SWITZER Document Path: C:\Users\Admin\OneDrive - GANDAI\Documents\Projects\2017\2017-01-10_Palo_Verde_School\Regional_Vicinity_Palo_Verde_School.mxd



Source: Bing Maps



N

Scale 1:190,080
1 in = 3 miles

Regional Vicinity of APE Extension
Palo Verde School Project
Tulare County, California



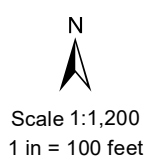
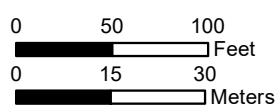
Created By: C.BARKER@SWITZER | Document Path: C:\Users\Admin\OneDrive - GANDAI\Desktop\Home - Projects\2021\760_001A_Palo_Verde_School\APE_Extension_Palo_Verde_School.mxd



 APE Extension



Source: Bing Maps



APE Extension
Palo Verde School Project
Tulare County, California



Appendix B: Proposed Project Plans

Appendix C: Project Photographs



Photo 1: APE Overview, facing south.



Photo 2: APE overview, facing north.



Photo 3: APE overview, facing west



Photo 4: APE overview, facing east.

**Cultural Resources Assessment Palo Verde Union Elementary School
Water System Improvement Project, Odell Planning & Research, Inc.,
December 11, 2018**



**CULTURAL RESOURCES ASSESSMENT, PALO VERDE SCHOOL
WELL PROJECT, PALO VERDE UNION ELEMENTARY SCHOOL
DISTRICT, 9637 AVENUE 196, TULARE COUNTY, CALIFORNIA**

Prepared for:

Mr. Scott Odell
Principal Planner/President
ODELL Planning & Research, Inc.
49346 Road 426, Suite 2
Oakhurst, CA 93644
(559) 472-7167

Prepared by:

C. Kristina Roper, M.A., RPA
Sierra Valley Cultural Planning
40854 Oak Ridge Drive
Three Rivers, California 93271
(559) 288-6375

December 11, 2018

Topographic Quadrangle: Tulare, 7.5' (1969)
Area: ~0.75 acres

(Keywords: *Tulare County, Township 20S, Range 24E, MDB&M,
Oakland Colony, Oakland Cooperative Fruit & Raisin Growing Company Koyeti Yokut*)

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SUMMARY OF FINDINGS

The Palo Verde Union Elementary School District is proposing construction of the Palo Verde School Well Project, which consists of construction of a new water well on the existing school campus in Tulare County. The proposed new well would replace an existing well and would accommodate existing and future water needs for school operations. The proposed project is located at 9637 Ave. 196, Tulare, California, 93274. The Project Area is approximately 1.18-acres, and encompasses the proposed location of the new well and the access and staging areas needed for construction. The Project Area is located in Township 20S, Range 24E, Section 34, MDB&M (see Maps 1-2).

ODELL Planning & Research, Inc., is preparing environmental documents necessary under the California Environmental Quality Act (CEQA). Provisions and implementing guidelines of the CEQA, as amended March 18, 2010, state that identification and evaluation of historical resources is required for any action that may result in a potential adverse effect on the significance of such resources, which include archaeological resources. The project is also subject to provisions of the National Historic Preservation Act (NHPA). Advisory Council of Historic Preservation regulations (36 CFR 800) for implementing Section 106 of the NHPA require that federal agencies take into consideration the potential effects of proposed projects on historic properties (i.e., cultural resources listed on, or determined eligible for listing in the National Register of Historic Places).

On May 2, 2018, Sierra Valley Cultural Planning (SVCP) archaeologist Douglas S. McIntosh completed a reconnaissance level archaeological survey of the project Area of Potential Effect (APE). The APE includes the proposed location of the new well and the access and staging areas needed for construction (see Map 3).

No archaeological or other cultural resources were identified as a result of this cultural resources assessment. No Native American areas of concern were identified as a result of consultation with the Native American Heritage Commission and local Native American groups. Analysis of soil characteristics for the proposed sites suggest there is a low probability of buried archaeological deposits within the APE. Therefore, it is unlikely that the proposed action will have an effect on important archaeological, historical, or other cultural resources. No further cultural resources investigation is therefore recommended. In the unlikely event that buried archaeological deposits are encountered within the project area, the finds must be evaluated by a qualified archaeologist. Should human remains be encountered, the County Coroner must be contacted immediately; if the remains are determined to be Native American, then the Native American Heritage Commission must be contacted as well.

INTRODUCTION

This report presents the findings of a cultural resources assessment of a proposed well site located on the campus of Palo Verde Elementary School at 9637 Ave. 196, Tulare, Tulare County, California (see Maps 1-3). The Palo Verde Union Elementary School District is proposing construction of the Palo Verde School Well Project, which consists of constructing a new water well on the existing school campus in Tulare County. The proposed new well would replace an existing well and would accommodate existing and future water needs for school operations.

ODELL Planning & Research, Inc., is preparing environmental documents necessary under the California Environmental Quality Act (CEQA). Provisions and implementing guidelines of the CEQA, as amended March 18, 2010, state that identification and evaluation of historical resources is required for any action that may result in a potential adverse effect on the significance of such resources, which include archaeological resources. The project is also subject to provisions of the National Historic Preservation Act (NHPA). Advisory Council of Historic Preservation regulations (36 CFR 800) for implementing Section 106 of the NHPA require that federal agencies take into consideration the potential effects of proposed projects on historic properties (i.e., cultural resources listed on, or determined eligible for listing in the National Register of Historic Places).

Sierra Valley Cultural Planning (SVCP) archaeologist Douglas S. McIntosh completed a reconnaissance level archaeological survey of the project Area of Potential Effect (APE). This report was completed by SVCP Principal Investigator C. Kristina Roper.

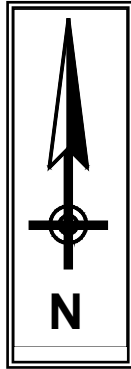
PROJECT LOCATION AND DESCRIPTION

The proposed project consists of construction of a new water well for school district use on the existing Palo Verde Elementary School site, located in rural Tulare County, California. The proposed project would accommodate existing and future potable water needs for students and faculty on the elementary school campus. The proposed project is located on an approximately 1.18-acre portion of the existing school grounds parcel (9637 Ave. 196, Tulare, California) in Tulare County, California (Maps 1-2).

The Project Area is part of the existing elementary school site, within the turf/playing field area, and is bounded to the west by additional playing fields and existing school buildings, to the south existing playing fields, to the north by the school's maintenance area/facilities and Avenue 196, and to the east by rural residential homes. The Project Area is entirely within the existing school campus, is flat, surrounded by rural residential, agricultural, and industrial uses, and is heavily disturbed due to mowing and school maintenance activities. The approximate elevation of the proposed project site is 246 feet above mean sea level. The project is located at approximately 246 feet above mean sea level and is located in a portion of Section 34, Township 20 South, Range 24 East, MDB&M, as shown on the Tulare, California Quadrangle 7.5 Minute Series USGS Map (1969).

The 1.18-acre Area of Potential Effects (APE) consists of the project impact area (where actual work will take place), staging and equipment access route to the proposed water well site through an existing maintenance yard (Map 3).

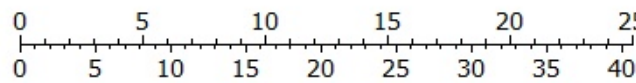
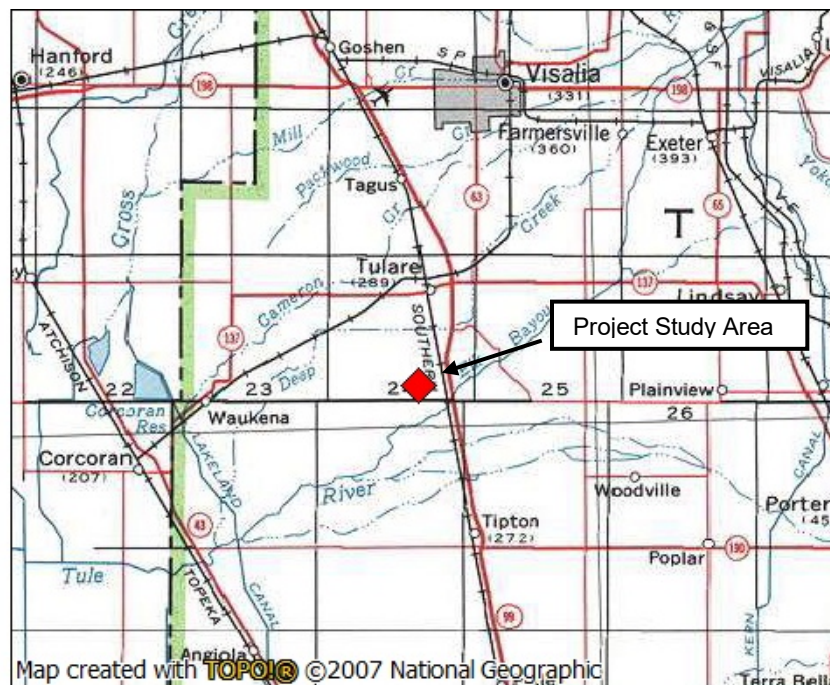
Construction of the proposed project is expected to occur over a period of three months, beginning during summer 2019 while students are on summer recess. Construction would be limited to weekdays between the hours of 8 AM to 5 PM (no night-time construction).



MAP 1. STUDY VICINITY

Palo Verde School Well Project

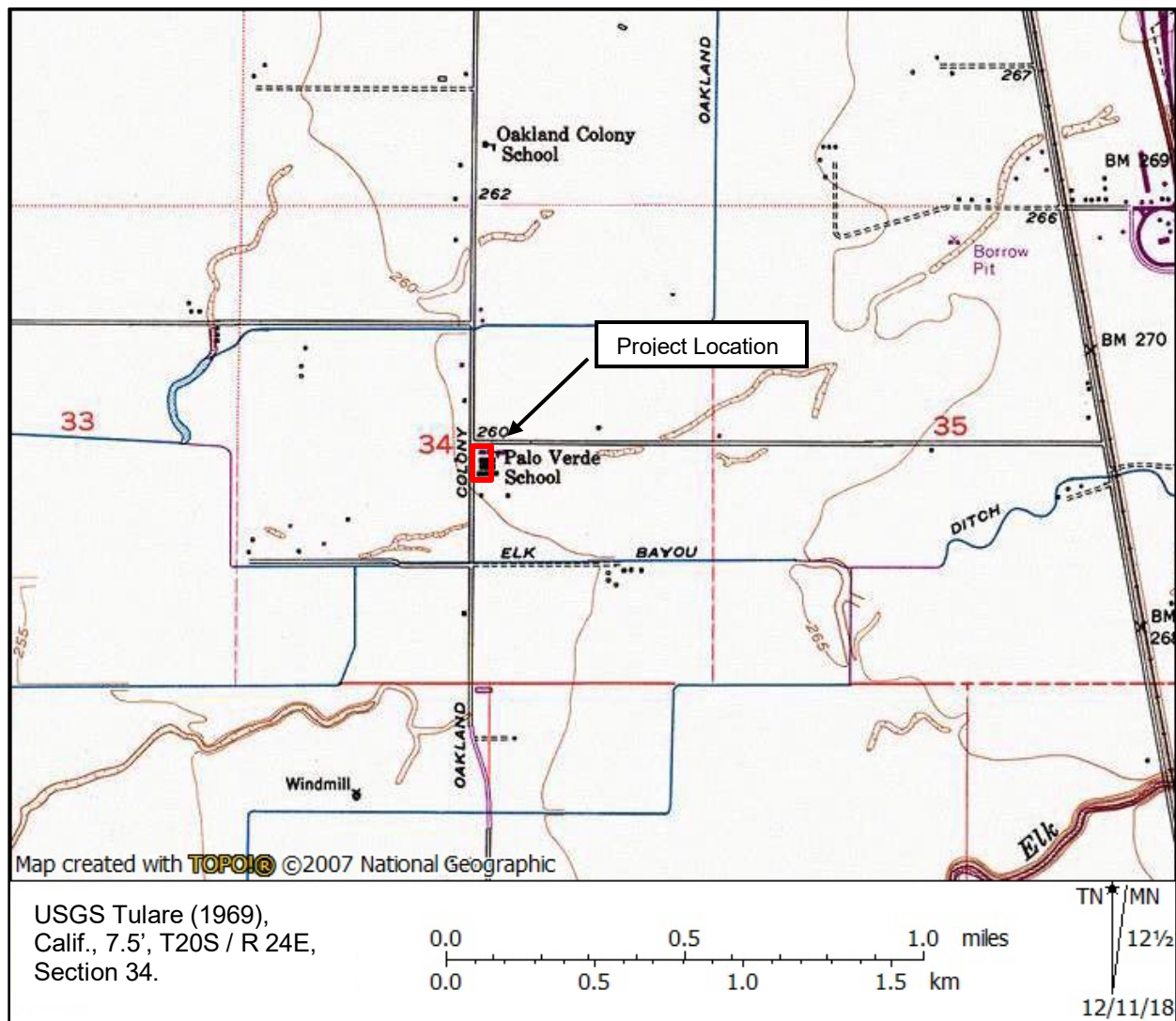
County of Tulare



TN MN
12 1/2
12/11/18

In support of these activities and for the assumptions for this document, the types of equipment that may be used at any one time during construction may include, but not be limited to a water well drilling rig and backhoe. Vertical depth of the well is to be 630 feet. No additional ground disturbance is anticipated to complete this project.

Staging areas for storage of construction equipment and other materials would be located within the existing maintenance area.



Map 2. Project Location, Palo Verde School Well Project, Tulare County, California.

REGULATORY FRAMEWORK

National Historic Preservation Act

The NHPA of 1966, as amended (16 United States Code 470 *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 (Section 301[7] 16 U.S.C. 470w[7]).



Map 3. Area of Potential Effects (APE), Palo Verde School Well Project, Tulare County, California.

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 Resource Protection Act (ARPA).

Compliance with Section 106 of the NHPA (36 CFR Part 800) follows a series of steps that are designed to identify and consult with interested parties, determine the area of potential effects (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 to 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, Reclamations’ 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.

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, feeling, and association as well as meet one of the following criteria to demonstrate its significance in American history, architecture, archaeology, 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 significance in our past; or
- (C) embody the distinct characteristics or a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction; or
- (D) have yielded, or may be likely to yield, information important in prehistory or history.

A site must have integrity and meet one of the four criteria of eligibility to demonstrate its historic associations in order to convey its significance. A property must be associated with one or more events important in history or prehistory in order to be considered for listing under Criterion A. Additionally, the specific association of the property, itself, must also be considered significant. Criterion B applies to properties associated with individuals whose specific contributions to history can be identified and documented. Properties significant for 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 the cultural resources. A property eligible under Criterion D must demonstrate the potential to contain information relevant to 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.

California Environmental Quality Act

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 (CR) (Title 14 CCR §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 CR are the definitive criteria for assessing the significance of historical resources for the purposes of CEQA (Office of Historic Preservation n.d.). Generally, a resource is considered "historically significant" if it meets one or more of the following criteria for listing on the CR:

- 1) is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage; or
- 2) is associated with the lives of persons important in our past; or
- 3) 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; or
- 4) has yielded, or may be likely to yield, information important in prehistory or history (PRC §5024.1[c]).

SOURCES CONSULTED

Prior to field inspection, a records search was conducted by the author at the Southern San Joaquin Valley Information Center of the California Historical Resources Information System to identify areas previously surveyed and identify known cultural resources present within or in close proximity to the study area. The records search included examination of the project APE as well as identification of resources and reports within a 1/2-mile radius of the APE; the records search is included as Attachment A. According to the Information Center records, one cultural resource study has been conducted immediately adjacent to the project APE (TU 103). One previous study has been conducted within 1/2-mile radius of the project APE (TU 1426). No cultural resources have been recorded within or adjacent to the project APE, and no resources were identified within a 1/2-mile radius of the APE. There are no resources within or in the immediate vicinity of the study area that are listed on the National Register of Historic Places (NRHP), the California Register of Historic Resources (Cal REG), California Points of Historical Interest (PHI), California State Historic Landmarks (SHL), or the California State Historic Resources Inventory (HRI; see Attachment A).

The Native American Heritage Commission (NAHC) was contacted on 18 June 2018 in order to determine whether Native American sacred sites have been identified either within or in close proximity to the project area. A response received 9 July 2018 indicated that while a record search of the sacred land file failed to indicate the presence of Native American cultural resources in the immediate project area, the absence of specific site information in the sacred lands file does not indicate the absence of cultural sources in any project area. The NAHC provided a list of 6 Native American tribes and individuals/organization that may have knowledge of cultural resources in or near the project area. Certified letters were written to these contacts on 21 September 2018, followed by phone calls on 22 October 2018. No responses were received as of 11 December 2018. Consultation correspondence is included in Attachment B.

SETTING AND BACKGROUND

The project study area is located within a rural residential area south of the City of Tulare in western Tulare County at an elevation of approximately 246 feet above mean sea level. The project study area is entirely within the existing school campus, is flat, surrounded by rural residential, agricultural, and industrial uses, and is heavily disturbed due to mowing and school maintenance activities. Vegetation on the school campus consists mostly of either landscaped shrubs, trees, turf (non-native perennial grass), and/or non-native grasses and ruderal (weedy) plants.

Prior to EuroAmerican exploration and settlement in the region, the central San Joaquin Valley was extensive grassland covered with spring-flowering herbs. Stands of trees -- sycamore, cottonwoods, box elders and willows -- lined the stream and river courses with groves of valley oaks in well-watered localities with rich soil. Rivers yielded fish, mussels, and pond turtles; migratory waterfowl nested in the dense tules along the river sloughs downstream. When the Spanish first set foot in the area, they found the deer and tule elk trails to be so broad and extensive that they first supposed that the area was occupied by cattle. Grizzly bears occupied the open grassland and riparian corridors on the valley floor and adjacent foothills. Smaller mammals and birds, including jackrabbits, ground squirrels, and quail were abundant. Native Americans occupants of the region describe abundant sedge beds, along with rich areas of deer grass, plants that figure prominently in the construction of Native American basketry items.

Prehistory

The San Joaquin Valley and adjacent Sierran foothills and Coast Range have a long and complex cultural history with distinct regional patterns that extend back more than 11,000 years (McGuire 1995). The first generally agreed-upon evidence for the presence of prehistoric peoples in the region is represented by the distinctive basally-thinned and fluted projectile points, found on the margins of extinct lakes in the San Joaquin Valley. These projectiles, often compared to Clovis points, have been found at three localities in the San Joaquin Valley including along the Pleistocene shorelines of former Tulare Lake. Based on evidence from these sites and other well-dated contexts elsewhere, these Paleo-Indian hunters who used these spear points existed during a narrow time range of 11,550 BP to 8,550 BP (Rosenthal et al. 2007).

As a result of climate change at the end of the Pleistocene, a period of extensive deposition occurred throughout the lowlands of central California, burying many older landforms and providing a distinct break between Pleistocene and subsequent occupations during the Holocene. Another period of deposition, also a product of climate change, had similar results around 7,550 BP, burying some of the oldest archaeological deposits discovered in California (Rosenthal and Meyer 2004).

The Lower Archaic (8,550-5,550 BP) is characterized by an apparent contrast in economies, although it is possibly they may be seasonal expressions of the same economy. Archaeological deposits which date to this period on the valley floor frequently include only large stemmed spear points, suggesting an emphasis on large game such as artiodactyls (Wallace 1991). Recent discoveries in the adjacent Sierra Nevada have yielded distinct milling assemblages which clearly indicate a reliance on plant foods. Investigations at Copperopolis (LaJeunesse and Pryor 1996) argue that nut crops were the primary target of seasonal plant exploitation. Assemblages at these foothill sites include dense accumulations of handstones, millingslabs, and various cobble-core tools, representing "frequently visited camps in a seasonally structured settlement system (Rosenthal et al. 2007:152). As previously stated, these may represent different elements of the seasonal round. Future investigations should address this question. What is known is that during the Lower Archaic, regional interaction spheres had been well established. Marine shell from the central California coast has been found in early Holocene

contexts in the great basin east of the Sierra Nevada, and eastern Sierra obsidian comprises a large percentage of flaked stone debitage and tools recovered from sites on both sides of the Sierra.

About 8,000 years ago, many California cultures shifted the main focus of their subsistence strategies from hunting to nut and seed gathering, as evidenced by the increase in food-grinding implements found in archeological sites dating to this period. This cultural pattern is best known for southern California, where it has been termed the Milling Stone Horizon (Wallace 1954, 1978a), but recent studies suggest that the horizon may be more widespread than originally described and is found throughout the region during the Middle Archaic Period. Radiocarbon dates associated with this period vary between 8,000 and 2,000 BP, although most cluster in the 6,000 to 4,000 BP range (Basgall and True 1985).

On the valley floor, early Middle Archaic sites are relatively rare. This changes significantly toward the end of the Middle Archaic. In central California late Middle Archaic settlement focused on river courses on the valley floor. "Extended residential settlement at these sites is indicated by refined and specialized tool assemblages and features, a wide range of nonutilitarian artifacts, abundant trade objects, and plant and animal remains indicative of year-round occupation" (Rosenthal et al. 2007:154). Again, climate change apparently influence this shift, with warmer, drier conditions prevailing throughout California. The shorelines of many lakes, including Tulare Lake, contracted substantially, while at the same time rising sea levels favored the expansion of the San Joaquin/Sacramento Delta region, with newly formed wetlands extending eastward from the San Francisco Bay.

In contrast, early Middle Archaic sites are relatively common in the Sierran foothills, and their recovered, mainly utilitarian assemblages recovered show relatively little change from the preceding period with a continued emphasis on acorns and pine nuts. Few bone or shell artifacts, beads, or ornaments have been recovered from these localities. Projectile points from this period reflect a high degree of regional morphological variability, with an emphasis on local toolstone material supplemented with a small amount of obsidian from eastern sources. In contrast with the more elaborate mortuary assemblages and extended burial mode documented at Valley sites, burials sites documented at some foothill sites such as CA-FRE-61 on Wahtoke Creek are reminiscent of "re-burial" features reported from Milling Stone Horizon sites in southern California. These re-burials are characterized by re-interment of incomplete skeletons often capped with inverted millingstones (McGuire 1995:57).

A return to colder and wetter conditions marked the Upper Archaic in Central California (2,500-1,000 BP). Previously desiccated lakes returned to spill levels and increased freshwater flowed in the San Joaquin and Sacramento watershed. Cultural patterns as reflected in the archeological record, particularly specialized subsistence practices, emerged during this period. The archeological record becomes more complex, as specialized adaptations to locally available resources were developed and valley populations expanded into the lower Sierran foothills. New and specialized technologies expanded distinct shell bead types occur across the region. The range of subsistence resources utilized and exchange systems expanded significantly from the previous period. In the Central Valley, archaeological evidence of social stratification and craft specialization is indicated by well-made artifacts such as charmstones and beads, often found as mortuary items.

The period between approximately 1,000 BP and Euro-American contact is referred to as the Emergent Period. The Emergent Period is marked by the introduction of bow and arrow technology which replaced the dart and atlatl at about 1,100 to 800 BP. In the San Joaquin region, villages and small residential sites developed along the many stream courses in the lower foothills and along the river channels and sloughs of the valley floor. A local form of pottery was developed

in the southern Sierran foothills along the Kaweah River. While many sites with rich archaeological assemblages have been documented in the northern Central Valley, relatively few sites have been documented from this period in the southern Sierran foothills and adjacent valley floor, despite the fact that the ethnographic record suggests dense populations for this region.

Ethnographic Summary

Prior to EuroAmerican settlement, speakers of Yokutsan languages occupied most of the San Joaquin Valley and the bordering foothills of the Sierra Nevada and Diablo Range. Most of the Valley Yokuts lived on the eastern side of the San Joaquin River. The Project Study Area falls within *Koyeti* Yokut territory. The *Koyeti* had villages on the south and east side of Porterville Rocky Hill in the Alta Vista area (Kroeber 1925:482). Their chief village, *Chokowesho*, was on the north bank of the Tule River. The *Koyeti* probably did not range further upstream than Chico Flats, a short distance west of Bartlett Park today (Latta 1999:22).

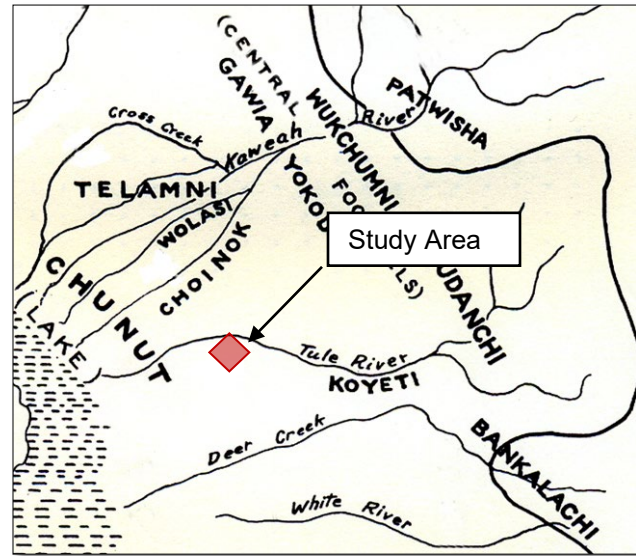


Figure 1. Southern Valley Yokuts Tribelet Locations (from Latta 1999).

Due to the abundance and diversity of wildlife habitats and plant communities within the Sierran foothills and nearby San Joaquin Valley and higher elevations of the Sierra Nevada, Native American population densities in the region were quite high (Baumhoff 1963). While the acorn was the dietary staple, the diversity of accessible natural resources provided an omnivorous diet. The reader is referred to Gayton (1948), Kroeber (1925), Latta (1999), and Wallace 1978b for additional information on pre-contact Yokuts subsistence and culture. Figure 1 depicts the territory of the *Koyeti* Yokut relative to the Project APE.

Historic Period Summary

The San Joaquin Valley was visited in the early 1800s by Spanish expeditions exploring the interior in search of potential mission sites. The Moraga (1806) expedition may have passed through *Koyeti* territory (Cook 1960; Smith 1939). In 1832-33 Colonel Jose J. Warner, a member of the Ewing-Young trapping expedition, passed through the San Joaquin Valley. Warner described Native villages densely packed along the valley waterways, from the foothills down into the slough area. The next year he revisited the area following a devastating malaria epidemic. Whereas the previous year the region had been densely occupied by Native peoples, during this trip not more than five Indians were observed between the head of the Sacramento Valley and the Kings River (Cook 1955).

EuroAmerican appreciation for the land did not include acceptance of its indigenous human populations, and pressure was exerted upon the US military to remove the Native population from the region, leaving the region open for American settlement and resource development. EuroAmerican settlement of the region began in 1851 with the establishment of Fort Miller on the San Joaquin River. Hostilities between Native inhabitants and American settlers initially prevented widespread settlement of the region; however, by 1860 such threats had been reduced and settlers began taking up large tracts in the region.

In late 1849 or early 1850, a party under the leadership of John Wood settled on the south bank of the Kaweah River, about seven miles east of the present city of Visalia (Hoover et al. 1990:508). In April, 1852, Tulare County was created, with the county seat initially located at Woodsville. In 1853 the county seat was removed to Fort Visalia, located in the area bounded by Oak, Center, Garden and Bridge streets.

Needs of a burgeoning California population for food gave the impetus which led to permanent development of the east side southern San Joaquin Valley. The long, dry, hot summer prompted irrigation of the lands. The year 1890 witnessed a general planting of fruit trees all over the county. Orsi colony of forty or fifty ten and twenty-acre tracts was launched; near Tulare the Oakland colony, the Bishop colony, the Chicago ranch, the Oakdale colony, the Emma orchard and numerous others were set out (Menefee & Dodge 1913:140)

Figure 2 provides a map of land ownership and development in the project area in 1892 (Thompson 1892). The study area falls within The Oakland Colony, specifically in Parcel 5 under the ownership of T. Bacigalupi. No structures are depicted on the property. Half a mile north are vineyards and orchards of the Oakland Cooperative Fruit & Raisin Growing Company.

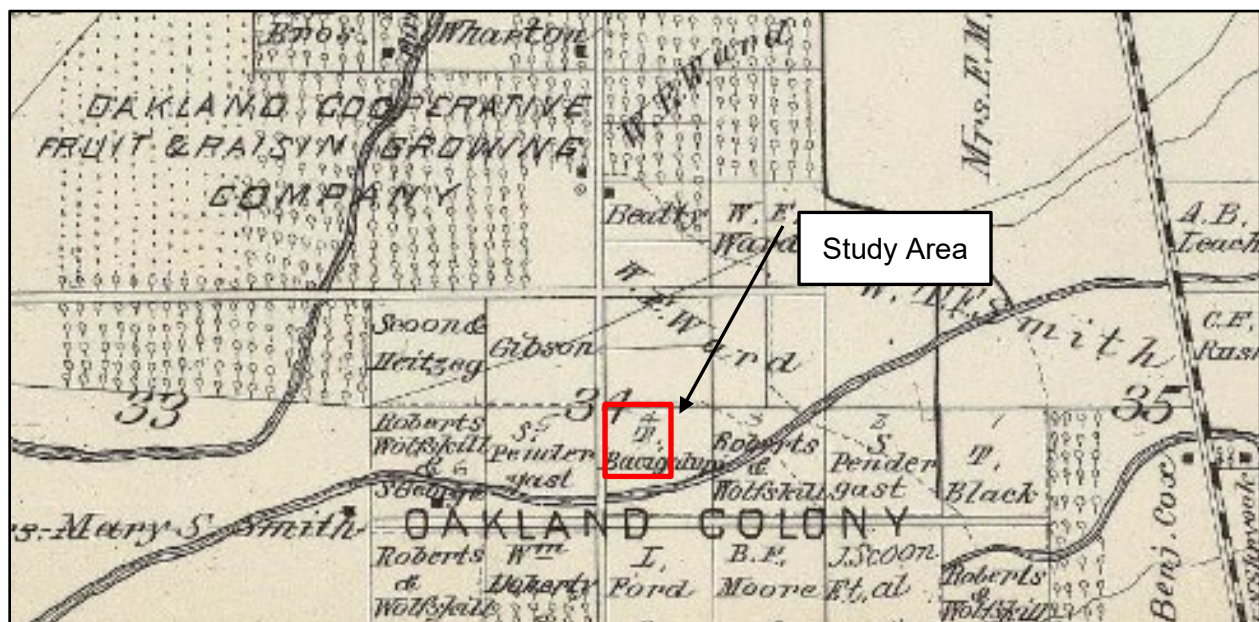


Figure 2. Land Ownership in 1892 (Thompson 1892).

SURVEY METHODS AND RESULTS

On May 2, 2018, Sierra Valley Cultural Planning (SVCP) archaeologist Douglas S. McIntosh completed a reconnaissance level archaeological survey of the project APE. The APE includes the project impact area (where actual work will take place), staging and equipment access route to the proposed water well site through an existing maintenance yard. No cultural resources were identified during surface inspection of the APE.

The project area is located within the northeast corner of an athletic field at the Palo Verde Union Elementary School campus. To the west and south of the subject location is an open athletic field. Along the northern boundary is an existing water well, pressure tank, water storage

tank and a maintenance yard. Along the eastern edge of the parcel are private residential parcels. The sports field is level and covered by a non-native turf/grasses. The area inspected as part of this pedestrian field survey measures approximately 220 foot north/south by 150 feet east/west (roughly 33,000 square feet or 0.75 acres). Nearly 80 percent of the inspected area is occupied by an earthen ponding basin. This "L" shaped basin has a general measurement of 160 feet north/south by 125 feet east/west and a depth of about 2 feet below the surrounding athletic field. The proposed well site is located just south of the ponding basin. Photos 1-4 provide a pictorial overview of the project area.

The survey sought to identify any archeological sites, features, and artifacts which might be present on the ground surface. Items such as chipped stone tools, grinding implements, hearths, and midden deposits are indicators of prehistoric activities. In addition, the survey also sought to identify any historic structures, features, and artifacts over fifty years old. The pedestrian survey entailed walking systematic north to south transects across the project area. These transects were spaced 10 to 12 meters apart. A Panasonic DMC-TS20 digital camera was used to photo-document the project setting. All photo information was recorded in the field on a photo-log. A hand held Magellan GPS unit was used to record UTM points at the proposed well location.

The proposed well location and the adjacent ponding area have been impacted by mechanical earthmoving and level activities. Ground surface visibility at the proposed well location was nearly 100 percent. The area is completely free of vegetation, as a result of exploratory work at the well location in November of 2017. Ground surface visibility within the ponding basin was less than 30 percent. The banks and interior of the ponding basin are covered by closely cropped non-native turf/grasses. At the northeast corner of the basin are excavated spoils from the November 2017 exploratory work at the subject well location. It was reported by school staff that this testing work reached a depth of 600 feet below surface. Surface soils at the proposed well location are a fine grain silty loam with a general Munsell color value of 10yr 4/3, brown (wet). Sampled spoils from the November 2017 test hole are fine to medium grain alluvial sands with a Munsell color value of 5y 5/2, olive gray (wet). Soils within the project study area are sandy loams included within the Crosscreek-Kai association on 0-2 percent slopes which were formed on late Pleistocene landforms from granitic-derived alluvium (USDA Natural Resources Conservation Service 2018). Buried cultural sites are therefore very unlikely in this area (Meyer et al. 2010).

FINDINGS AND RECOMMENDATIONS

No archaeological or other cultural resources were identified within the project APE as a result of this cultural resources survey. No Native American areas of concern were identified as a result of consultation with the Native American Heritage Commission and local Native American groups. Analysis of soil characteristics for the proposed sites suggest there is a moderately low probability of buried archaeological deposits within the APE. It is thus unlikely that the proposed action will have an effect on important archaeological, historical, or other cultural resources. No further cultural resources investigation is therefore recommended. In the unlikely event that buried archaeological deposits are encountered within the project area, the finds must be evaluated by a qualified archaeologist. Should human remains be encountered, the County Coroner must be contacted immediately; if the remains are determined to be Native American, then the Native American Heritage Commission must be contacted as well.



Photo 1. View south of access gate to project area.



Photo 2. View south from center of ponding basin.



Photo 3. View north from proposed well site.



Photo 4. Ground surface visibility at well location site.

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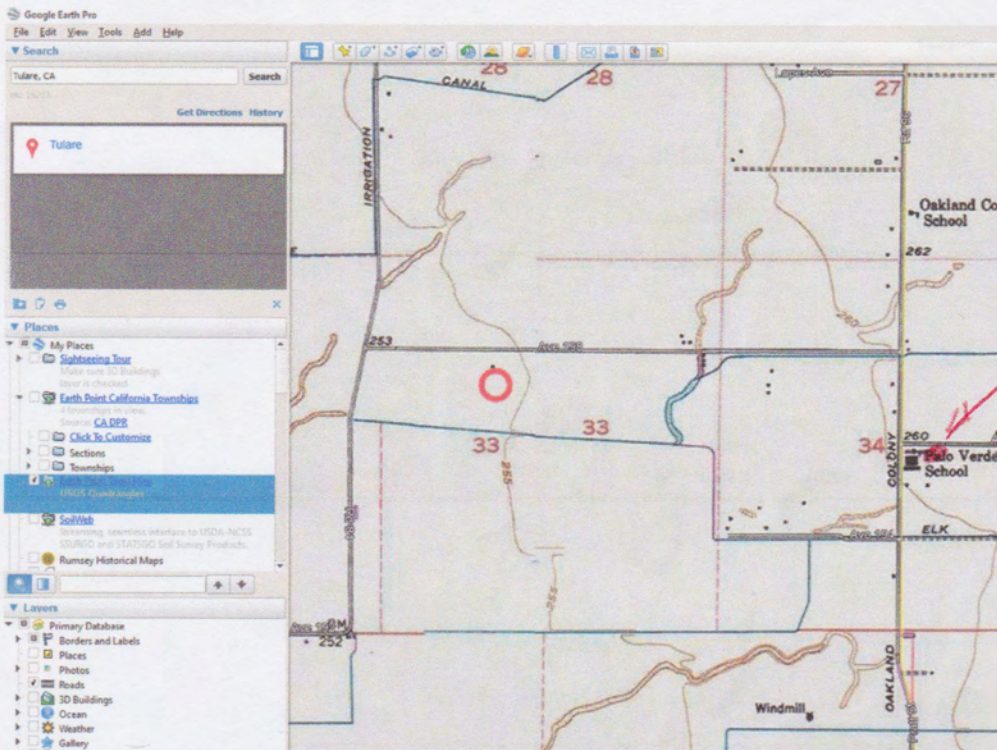
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PREPARER'S QUALIFICATIONS

Douglas S. McIntosh completed the archaeological survey of the Project APE. Mr. McIntosh has over 25 years of experience in California archaeology and has served as field crew chief and lead field assistant for both historical and prehistoric resource investigations, including tasks of surveying, field mapping, excavation, field graphics, soils descriptions, photography, and general site documentation. He has served as an archaeological monitor for various aspects of earthmoving and grading activities for cultural resources, and as Laboratory assistant for both historical and prehistoric resources which includes processing soil samples, cleaning and cataloging historical and prehistoric artifacts and collections, and artifact illustration. Mr. McIntosh has conducted historical research which involves records, maps and archival searches, oral interviews, and documentation of historical photographic collections.

C. Kristina Roper meets the Secretary of the Interior's Guidelines for archaeology. Ms. Roper has a B.A. in Anthropology from the University of California, Berkeley, and a M.A. in Cultural Resources Management from Sonoma State University. She has over 36 years of archaeological survey and excavation experience, including both prehistoric and historic sites, in California, Nevada, Oregon, and Idaho, and has produced over 300 professional reports. For the past 23 years Ms. Roper has served as a Lecturer in Anthropology at California State University, Fresno. Ms. Roper is a Registered Professional Archaeologist in good standing. As sole proprietor of a cultural resources management firm established in 1995, her responsibilities include all aspects of project management, from marketing and development, to project completion, and include NEPA, CEQA, and NHPA (Section 106) compliance.

ATTACHMENT A
RECORDS SEARCH



Project Location

Palo Verde Union School Test Well Project
 9637 Avenue 196, Tulare, Tulare County, CA
 USGS Tulare, CA 7.5' / Township 20S / Range 24E, Section 34

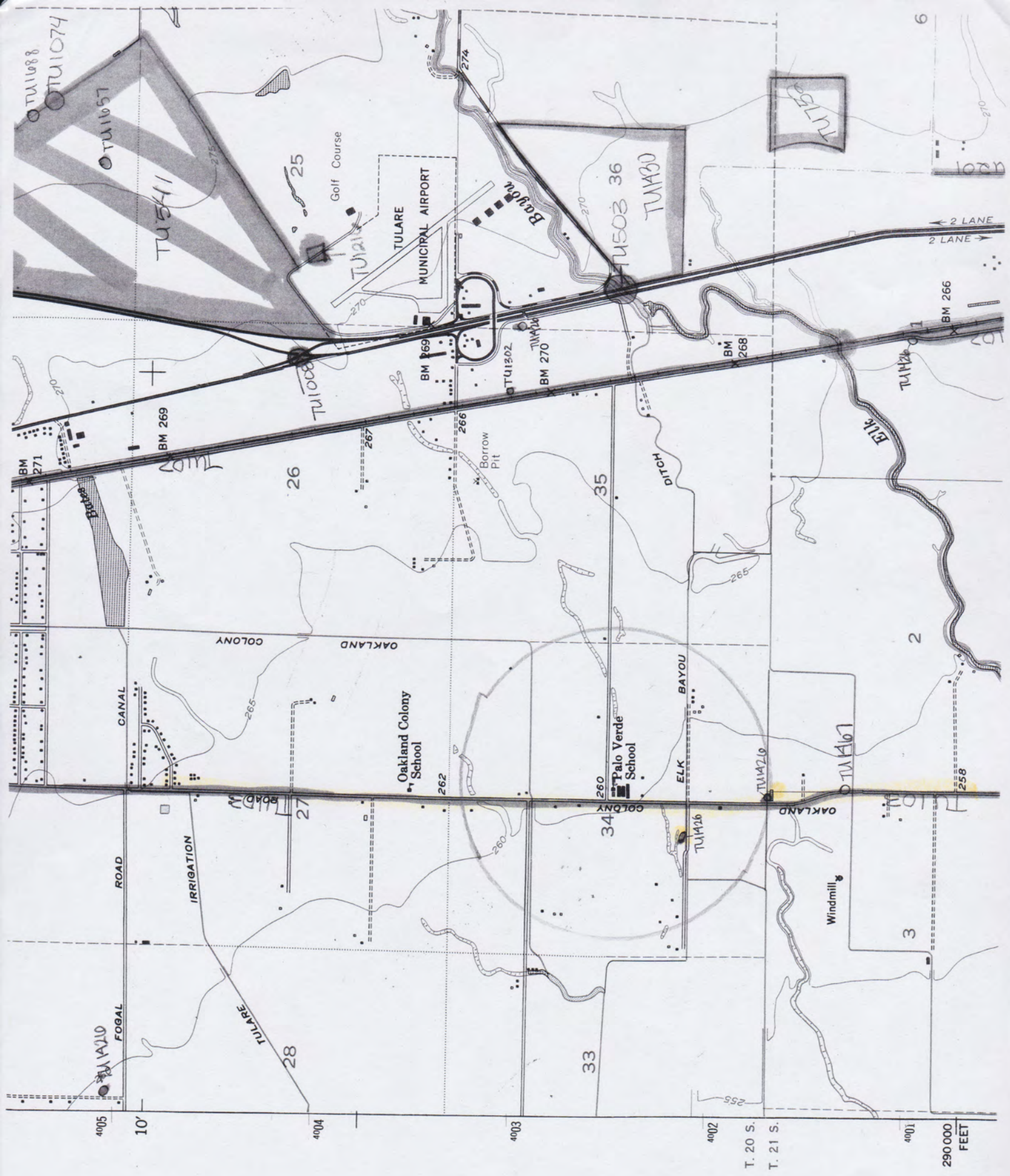
Reports

103 ✓

1426 ✓

Res.

NONE



290 000
FEET

T. 20 S.
T. 21 S.

4001

4002

4003

4004

4005

10'

Report List

Palo Verde Union School Test Well Project

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
TU-00103		1997	Wickstrom, Brian and Anderson, Emily	Cultural Resource Survey for the Selma to Bakersfield Fiberoptic Line, Southern San Joaquin Valley, California	KEA Environmental, Inc.	54-003608, 54-003914, 54-003915, 54-003916, 54-003917
TU-01426	Submitter - WO 6051- 4800; 0-4871 & E- 48/2	2010	Schmidt, James J.	Archaeological Letter Report: 2010 Deteriorated Pole Replacement Project; Logan, Windt, Wilbur, Elk, Sargent, Aurora, and Glover 12kV Distribution Lines, Tulare County, California	Compass Rose Archaeological, Inc.	

ATTACHMENT B
NATIVE AMERICAN CONSULTATION

Attachment B.

Native American Consultation – Communications Tracking Log

Affiliation	Name	Contact Date	Contact Type	Response
Native American Heritage Commission	Sharaya Souza	9 July 2018	Email Response	A record search of the Native American Heritage Commission (NAHC) Sacred Lands File was completed for the area of potential project effect (APE) with negative results; the Commission provided a list of six tribal representatives who might have knowledge of the area (see below).
Wuksache Indian Tribe/Eshom Valley Band	Kenneth Woodrow, Chairperson	19 September 2018	Certified Letter	none
		22 October 2018	Telephone	Left voice mail message requesting project input. No return call.
Tubatulabal Tribe of Kern River Valley	Robert L. Gomez, Jr., Chairperson	19 September 2018	Certified Letter	none
		22 October 2018	Telephone	Phone number has been disconnected. No new number and no email address provided by NAHC.
Kern Valley Indian Community	Robert Robinson, Chairperson	19 September 2018	Certified Letter	See below
		22 October 2018	Letter	Left voice mail message requesting project input. No return call.
Santa Rosa Indian Community of the Santa Rosa Rancheria	Rueben Barrios Sr., Chairperson	19 September 2018	Certified Letter	none
		22 October 2018	Telephone	Spoke with administrative assistant who said she would ask Chairperson Barrios if he had concerns and would call back. Did not receive a return phone call.
Kern Valley Indian Community	Julie Turner, Secretary	19 September 2018	Certified Letter	none
		22 October 2018	Telephone	Ms. Turner said the project is not within their area of interest. Advised me to contact Chairperson Robinson about any project-related concerns.
Tule River Indian Tribe	Neil Peyron, Chairperson	19 September 2018	Certified Letter	none
		22 October 2018	Telephone	Left voice mail message requesting project input. No return call.

Sacred Lands File & Native American Contacts List Request

Native American Heritage Commission

1550 Harbor Blvd, Suite 100

West Sacramento, CA 95691

916-373-3710

916-373-5471 – Fax

nahc@nahc.ca.gov

Information Below is Required for a Sacred Lands File Search

Project: Palo Verde Union Elementary School Test Well Construction

County: Tulare

USGS Quadrangle Name: Tulare

Township: 20S **Range:** 24E **Section(s):** 34

Company/Firm/Agency: Sierra Valley Cultural Planning

Street Address: 40854 Oak Ridge Drive

City: Three Rivers **Zip:** 93271

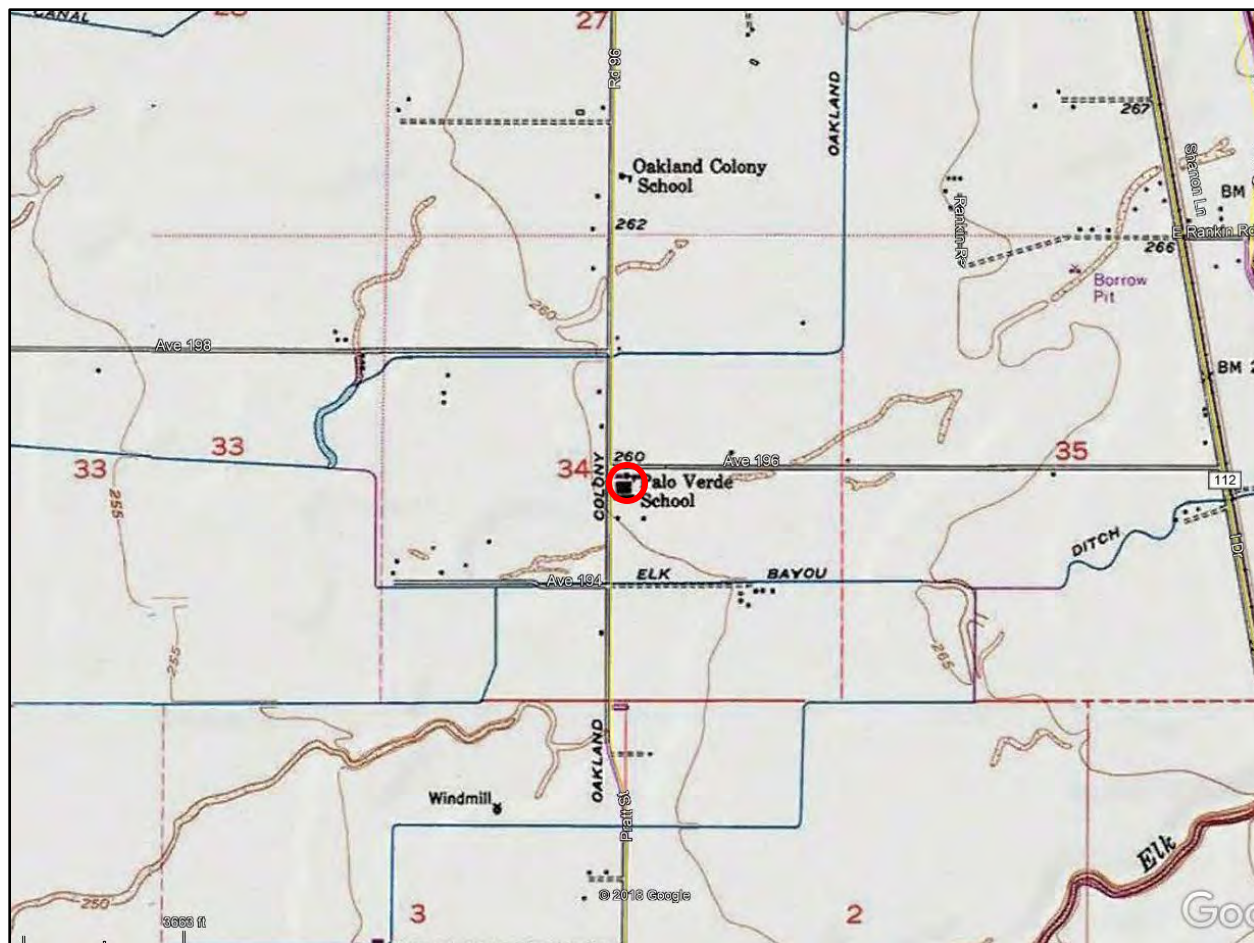
Phone: 559-288-6375

Fax: n/a

Email: kroper3r@gmail.com

Project Description:

Test Well Construction at Palo Verde Union Elementary School, 9637 Avenue 196, Tulare,
Tulare County, California



Palo Verde Union School Test Well Project

9637 Avenue 196, Tulare, Tulare County, CA

USGS Tulare, CA 7.5' / Township 20S / Range 24E, Section 34



The test well location is in the south part of the red circle. Probably good to just cover the area in the red circle more or less. I leave it to your judgement.

NATIVE AMERICAN HERITAGE COMMISSION

Environmental and Cultural Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710



July 9, 2018

Kristina Roper
Sierra Valley Cultural Planning

Sent by Email: Kristina.roper@dot.ca.gov
Number of Pages: 2

RE: Palo Verde Union Elementary School Test Well, Tulare County

Dear Ms. Roper:

A record search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed for the area of potential project effect (APE) referenced above with negative results. **Please note that the absence of specific site information in the *Sacred Lands File* does not indicate the absence of Native American cultural resources in any APE.**

I suggest you contact all of those listed, if they cannot supply information, they might recommend others with specific knowledge. The list should provide a starting place to locate areas of potential adverse impact within the APE. **By contacting all those on the list, your organization will be better able to respond to claims of failure to consult.** If a response has not been received within two weeks of notification, the NAHC requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact via email: Sharaya.Souza@nahc.ca.gov.

Sincerely,

A handwritten signature in blue ink, appearing to read "Sharaya Souza".

Sharaya Souza
Staff Services Analyst
(916) 573-0168

**Native American Heritage Commission
Native American Consultation List
7/6/2018**

Kern Valley Indian Community Julie Turner, Secretary P.O. Box 1010 Lake Isabella , CA 93240 (661) 340-0032 Cell	Kawaiisu Tubatulabal	Wuksache Indian Tribe/Eshom Valley Band Kenneth Woodrow, Chairperson 1179 Rock Haven Ct. Salinas , CA 93906 kwood8934@aol.com (831) 443-9702	Foothill Yokuts Mono Wuksache
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Kern Valley Indian Community Robert Robinson, Chairperson P.O. Box 1010 Lake Isabella , CA 93283 brobinson@iwvisp.com (760) 378-2915 Cell	Tubatulabal Kawaiisu
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Santa Rosa Rancheria Tachi Yokut Tribe Rueben Barrios Sr., Chairperson P.O. Box 8 Lemoore , CA 93245 (559) 924-1278 (559) 924-3583 Fax	Tache Tachi Yokut
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Tubatulabals of Kern Valley Robert L. Gomez, Jr., Tribal Chairperson P.O. Box 226 Lake Isabella , CA 93240 (760) 379-4590 (760) 379-4592 Fax	Tubatulabal
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Tule River Indian Tribe Neil Peyron, Chairperson P.O. Box 589 Porterville , CA 93258 neal.peyron@tulerivertribe-nsn.gov (559) 781-4271 (559) 781-4610 Fax	Yokuts
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This list is current only as of the date of this document and is based on the information available to the Commission on the date it was produced.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Code, or Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native American Tribes for the proposed:
Palo Verde Union Elementary School Test Well, Tulare County.

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

19 September 2018

Honorable Rueben Barrios, Sr., Chairperson
Santa Rosa Indian Community of the Santa Rosa Rancheria
P.O. Box 8
Lemoore, CA 93245

Subject: Notification of the Proposed Test Well Construction at Palo Verde Union Elementary School, 9637 Avenue 196, Tulare County, California

Dear Chairperson Barrios:

The Palo Verde Union School District is proposing to construct a test well on its elementary campus located at 9637 Avenue 196 just southwest of the Tulare city limits in unincorporated Tulare County, California. The Area of Potential Effects (APE) falls within the Tulare 7.5' United States Geographical Survey (USGS) topographic quadrangle within Section 34, of Township 20S, Range 24E (Figures 1-2).

The Palo Verde Union School District is seeking State Revolving Funds (SRF) from the State Water Resources Control Board (State Water Board) to assist in financing the Project. The State Water Board, Division of Financial Assistance, administers the State Revolving Fund (SRF) Program pursuant to 40 CFR Part 35. The SRF Program is partially funded by the United States Environmental Protection Agency (USEPA). Issuance of SRF funds by the State Water Board is considered equivalent to a federal undertaking, thereby necessitating compliance with Section 106. The USEPA has delegated lead agency responsibility to the State Water Board for carrying out the requirements of Section 106.

In anticipation of potentially receiving SRF funds, and as part of the environmental compliance for the project, your tribe has been identified as one that might attach religious and cultural significance to historic properties in the APE. We are seeking your assistance with the identification of sites of religious and cultural significance. Your participation in the early identification of cultural resources will ensure their consideration during the project planning phase. We welcome your recommendations regarding appropriate management or treatment of resources that occur within the project area.

If you have questions, need additional information, or wish to comment, please contact me at the address provided below, or call me at (559) 288-6375 or email at kroper3r@gmail.com.

Respectfully

A handwritten signature in black ink, appearing to read "C. Kristina Roper", with a stylized flourish at the end.

C. Kristina Roper
Principal Archaeologist / Owner

Enclosed: Figure 1

BY CERTIFIED MAIL

19 September 2018

Honorable Robert L. Gomez, Jr, Tribal Chairperson
Tubatulabal Tribe of Kern River Valley
P.O. Box 226
Lake Isabella, CA 93240

Subject: Notification of the Proposed Test Well Construction at Palo Verde Union Elementary School, 9637 Avenue 196, Tulare County, California

Dear Chairperson Gomez:

The Palo Verde Union School District is proposing to construct a test well on its elementary campus located at 9637 Avenue 196 just southwest of the Tulare city limits in unincorporated Tulare County, California. The Area of Potential Effects (APE) falls within the Tulare 7.5' United States Geographical Survey (USGS) topographic quadrangle within Section 34, of Township 20S, Range 24E (Figures 1-2).

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C. Kristina Roper
Principal Archaeologist / Owner

Enclosed: Figure 1

BY CERTIFIED MAIL

19 September 2018

Honorable Neil Peyron, Chairperson
Tule River Indian Tribe
P.O. Box 589
Porterville, CA 93258

Subject: Notification of the Proposed Test Well Construction at Palo Verde Union Elementary School, 9637 Avenue 196, Tulare County, California

Dear Chairperson Peyron:

The Palo Verde Union School District is proposing to construct a test well on its elementary campus located at 9637 Avenue 196 just southwest of the Tulare city limits in unincorporated Tulare County, California. The Area of Potential Effects (APE) falls within the Tulare 7.5' United States Geographical Survey (USGS) topographic quadrangle within Section 34, of Township 20S, Range 24E (Figures 1-2).

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19 September 2018

Honorable Robert Robinson, Chairperson
Kern Valley Indian Community
P.O. Box 1010
Lake Isabella, CA 93240

Subject: Notification of the Proposed Test Well Construction at Palo Verde Union Elementary School, 9637 Avenue 196, Tulare County, California

Dear Chairperson Robinson:

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Principal Archaeologist / Owner

Enclosed: Figure 1

BY CERTIFIED MAIL

19 September 2018

Julie Turner, Secretary
Kern Valley Indian Community
P.O. Box 1010
Lake Isabella, CA 93240

Subject: Notification of the Proposed Test Well Construction at Palo Verde Union Elementary School, 9637 Avenue 196, Tulare County, California

Dear Ms. Turner:

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Principal Archaeologist / Owner

Enclosed: Figure 1

BY CERTIFIED MAIL

19 September 2018

Honorable Kenneth Woodrow, Chairperson
Wuksache Indian Tribe/Eshom Valley Band
1179 Rock Haven Ct.
Salinas, CA 93906

Subject: Notification of the Proposed Test Well Construction at Palo Verde Union Elementary School, 9637 Avenue 196, Tulare County, California

Dear Chairperson Woodrow:

The Palo Verde Union School District is proposing to construct a test well on its elementary campus located at 9637 Avenue 196 just southwest of the Tulare city limits in unincorporated Tulare County, California. The Area of Potential Effects (APE) falls within the Tulare 7.5' United States Geographical Survey (USGS) topographic quadrangle within Section 34, of Township 20S, Range 24E (Figures 1-2).

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Chairperson
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Kern Valley Indian Community
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Tubatulabal Tribe of Kern River Valley
P.O. Box 226
Lake Isabella, CA 93240

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Honorable Rueben Barrios, Sr.
Chairperson
Santa Rosa Rancheria
P.O. Box 8Lemoore, CA 93245

for Instructions

Appendix D

NRCS Soils Report



United States
Department of
Agriculture

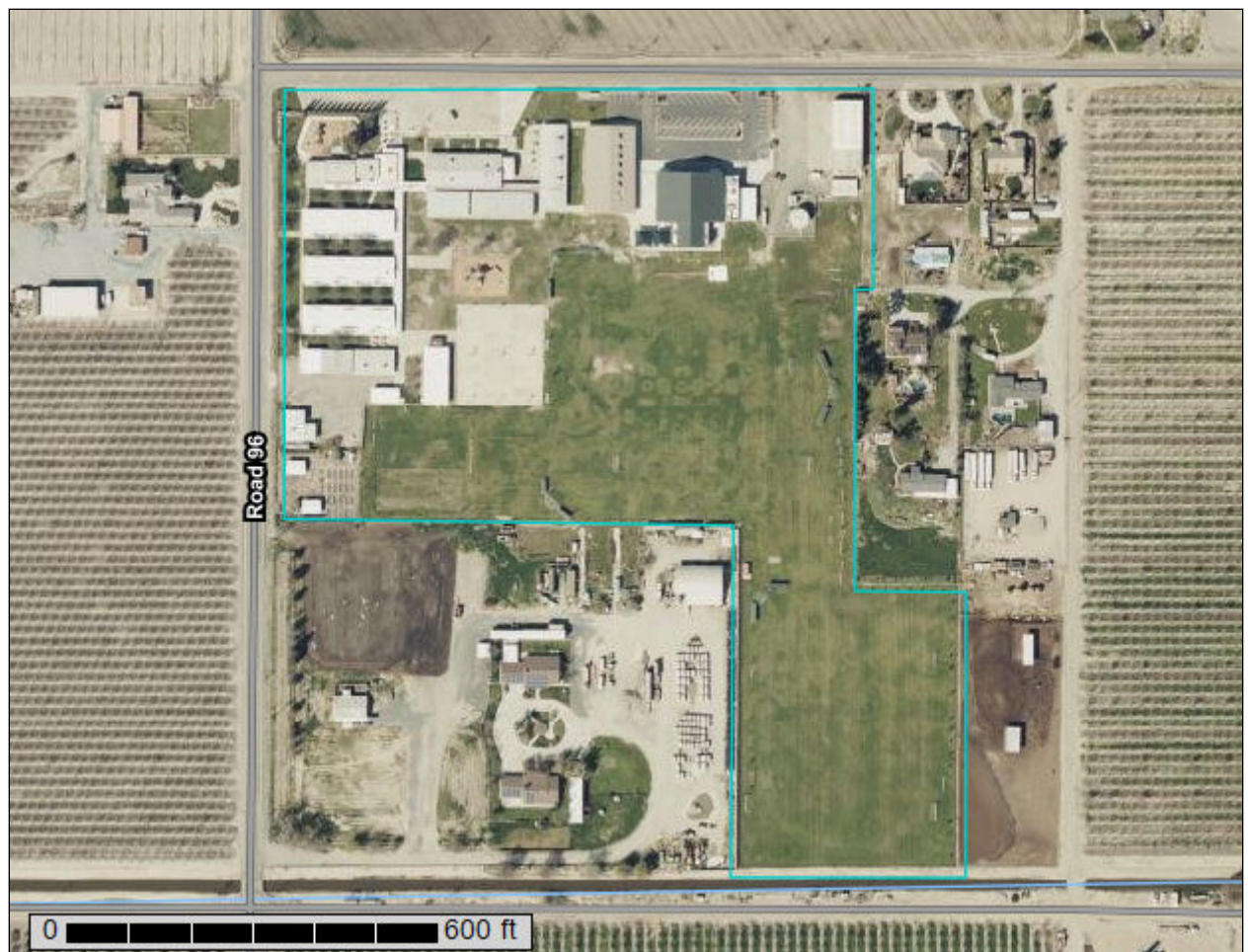
NRCS

Natural
Resources
Conservation
Service

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

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

Palo Verde Elementary USD



December 22, 2020

Preface

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

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

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

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

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

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

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How Soil Surveys Are Made

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

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

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

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

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

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

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

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

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

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

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

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

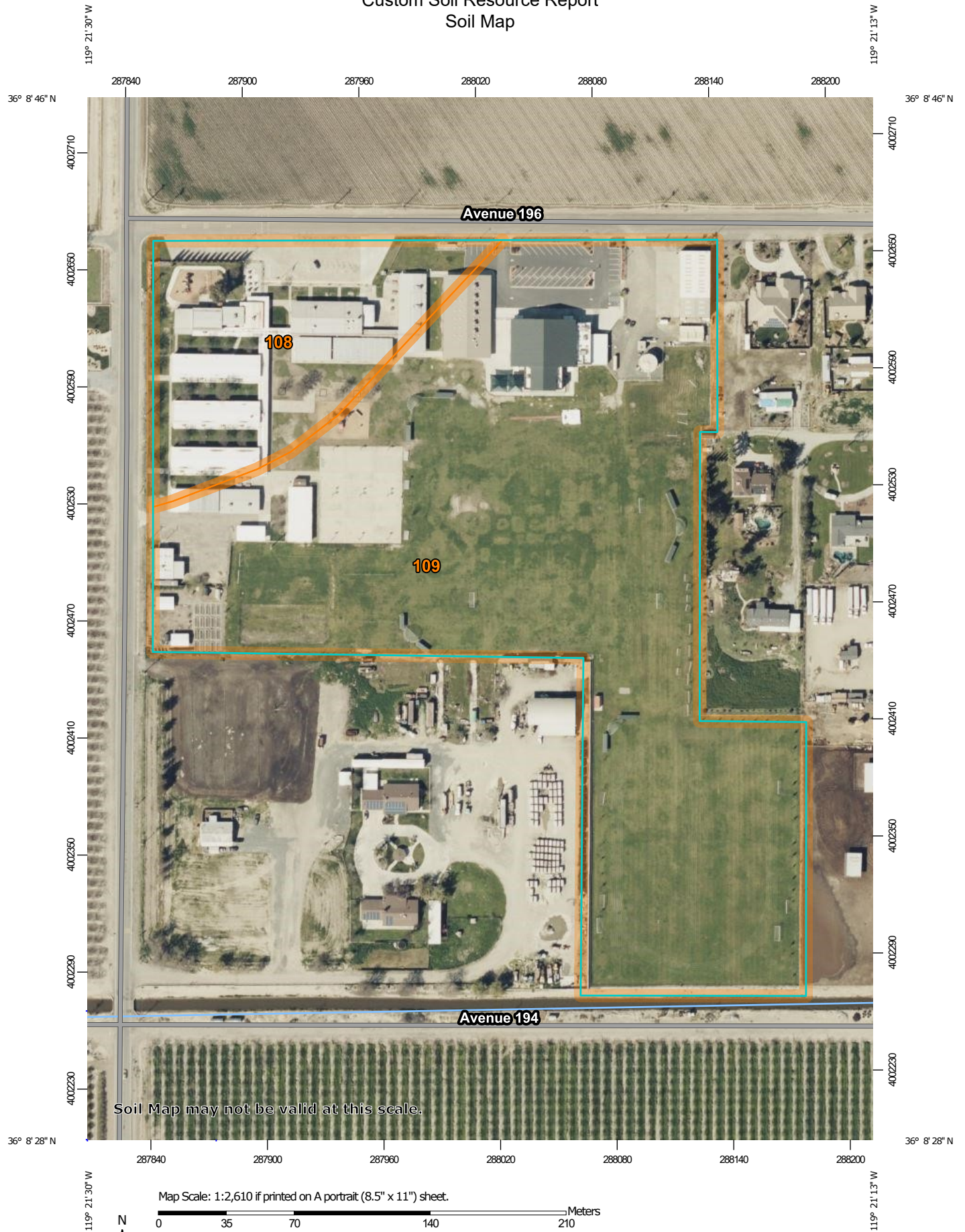
Custom Soil Resource Report

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



Custom Soil Resource Report


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 14, May 29, 2020

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

Date(s) aerial images were photographed: Mar 17, 2019—Mar 24, 2019

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
108	Colpien loam, 0 to 2 percent slopes	3.7	18.9%
109	Crosscreek-Kai association, 0 to 2 percent slopes	15.9	81.1%
Totals for Area of Interest		19.6	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

108—Colpien loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hp4b

Elevation: 220 to 550 feet

Mean annual precipitation: 8 to 12 inches

Mean annual air temperature: 63 to 64 degrees F

Frost-free period: 250 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

Colpien and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Colpien

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 6 inches: loam

Bt - 6 to 24 inches: loam

Btk - 24 to 60 inches: loam

C - 60 to 65 inches: sandy loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Runoff class: Low

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: Rare

Frequency of ponding: None

Calcium carbonate, maximum content: 5 percent

Maximum salinity: Nonsaline to slightly saline (0.5 to 4.0 mmhos/cm)

Sodium adsorption ratio, maximum: 12.0

Available water capacity: High (about 10.7 inches)

Interpretive groups

Land capability classification (irrigated): 1

Land capability classification (nonirrigated): 4c

Hydrologic Soil Group: C

Hydric soil rating: No

Minor Components

Gambogy

Percent of map unit: 3 percent
Landform: Flood plains, alluvial fans
Hydric soil rating: No

Hanford

Percent of map unit: 3 percent
Landform: Flood plains, alluvial fans
Hydric soil rating: No

Biggriz

Percent of map unit: 3 percent
Landform: Fan remnants
Hydric soil rating: No

Tujunga

Percent of map unit: 2 percent
Landform: Flood plains
Hydric soil rating: No

Nord

Percent of map unit: 2 percent
Landform: Flood plains, alluvial fans
Hydric soil rating: No

Akers, saline-sodic

Percent of map unit: 2 percent
Landform: Fan remnants
Hydric soil rating: No

109—Crosscreek-Kai association, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hp4c
Elevation: 230 to 400 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 63 to 64 degrees F
Frost-free period: 250 to 300 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Crosscreek and similar soils: 70 percent
Kai and similar soils: 15 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Crosscreek

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: Formed by the chemical and mechanical alteration of the kai series which originally formed in alluvium derived from granitic rock

Typical profile

Ap1 - 0 to 11 inches: loam

Ap2 - 11 to 17 inches: gravelly loam

Ap3 - 17 to 55 inches: sandy loam

2Bkqmb - 55 to 60 inches: cemented

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: 40 to 60 inches to duripan

Drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low (0.01 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: Very rare

Frequency of ponding: None

Calcium carbonate, maximum content: 10 percent

Gypsum, maximum content: 5 percent

Maximum salinity: Nonsaline to moderately saline (1.0 to 12.0 mmhos/cm)

Sodium adsorption ratio, maximum: 13.0

Available water capacity: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): 2s

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: C

Hydric soil rating: No

Description of Kai

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

A - 0 to 6 inches: loam

Btkn - 6 to 39 inches: loam

Bkqm - 39 to 46 inches: cemented

Btq - 46 to 65 inches: stratified sandy loam to silt loam

Properties and qualities

Slope: 0 to 2 percent

Custom Soil Resource Report

Depth to restrictive feature: 4 to 12 inches to natric; 20 to 40 inches to duripan

Drainage class: Moderately well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low
(0.01 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: Very rare

Frequency of ponding: None

Calcium carbonate, maximum content: 10 percent

Maximum salinity: Nonsaline to strongly saline (1.0 to 16.0 mmhos/cm)

Sodium adsorption ratio, maximum: 80.0

Available water capacity: Very low (about 0.9 inches)

Interpretive groups

Land capability classification (irrigated): 3s

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: C

Hydric soil rating: No

Minor Components

Quonal

Percent of map unit: 5 percent

Landform: Fan remnants

Hydric soil rating: No

Exeter

Percent of map unit: 4 percent

Landform: Fan remnants

Hydric soil rating: No

Calgro, saline-sodic

Percent of map unit: 3 percent

Landform: Fan remnants

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

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