

ARVIN-EDISON WATER STORAGE DISTRICT  
20401 BEAR MOUNTAIN BOULEVARD  
P.O. BOX 175  
ARVIN, CA 93203

# Sunset Groundwater Recharge Facility Project

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Draft Initial Study &  
Mitigated Negative Declaration

June 2020

Prepared by:



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## SECTION 1 – INTRODUCTION

Arvin-Edison Water Storage District (AEWSD) has prepared this Initial Study/Mitigated Negative Declaration (IS/MND) to address the potential environmental impacts of the proposed Sunset Groundwater Recharge Basin (Project). This document has been prepared in accordance with the California Environmental Quality Act (CEQA), Public Resources Code §21000 et seq. AEWSD is the CEQA lead agency for this Project.

The proposed Project will be located on jointly owned AEWSD and Kern Delta Water District (KDWD) property and includes the construction of groundwater recharge basins adjacent to KDWD's Eastside Canal. In addition to construction of recharge basins, the Project will also construction pumping facilities and pipeline to deliver water from the Eastside Canal into the Project site.

The proposed Project is described in detail in **Chapter 2: Project Description**. All of the proposed construction and operational activities associated with the implementation of the proposed Project are analyzed in this IS/MND pursuant to CEQA.

### DOCUMENT FORMAT

This IS/MND contains six sections, with four technical appendices. Section 1, Introduction, provides an overview of the Project and the CEQA environmental documentation process. Section 2, Project Description, provides a detailed description of Project objectives and components. Section 3, Initial Study, presents the CEQA checklist and environmental analysis for all impact areas, mandatory findings of significance, and feasible mitigation measures, if necessary. If the proposed Project does not have the potential to significantly impact a given resource, the relevant section provides a brief discussion of the reasons why no impacts are expected. If the Project could have a potentially significant impact on a given resource, the relevant section 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 thereby addressing any potential environmental issues. Section 4, Mitigation Monitoring and Reporting Program, provides the list of mitigation measures for the Project. Section 5 References, provides a list of reference materials used during the preparation of the IS/MND. Section 6, List of Preparers, provides a list of key personnel/agencies involved in the preparation of the IS/MND.

Appendices A through D respectively provide the output files from the CalEEMod Air Quality and Greenhouse Gas Emissions model run, Biological Resources Information, Cultural Resources Information, and the Natural Resource Conservation Service (NRCS) Soils Report.

Environmental impacts are separated into the following categories:

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

**Less Than Significant After Mitigation Incorporated.** This category applies where the incorporation of mitigation measures would reduce an effect from a "Potentially Significant Impact"

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to a “Less Than Significant Impact.” The lead agency must describe the mitigation measure(s), and briefly explain how they would reduce the effect to a less than significant level (mitigation measures from earlier analyses may be cross-referenced).

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

**No Impact.** This category applies when a project would not create an impact in the specific environmental 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.)

## **SECTION 2 – PROJECT DESCRIPTION**

### **PROJECT LOCATION**

The Project site (or area of potential effect) is approximately 150 acres in size and is located in central Kern County, California, 5.3 miles southeast of the City of Bakersfield. The Project site is located in an unincorporated rural area two miles northwest of the City of Arvin. The Project site is located north of Sunset Boulevard and west of S. Edison Rd (see Figure 1). The Project is located within the Weed Patch United States Geological Survey (USGS) 7.5 minute quadrangle, in the southwest quarter of Section 17, Township 31 South, Range 29 East, M. D. B & M.

Latitude: N 35° 13' 46.34"

Longitude: W 118° 52' 55.13"

The Project site is located on property AEWSD and KDWD jointly own, which are Kern County Assessor Parcel Numbers (APNs) 189-190-10, 189-200-02, and 189-200-04. The land is located 8.9 miles downstream of the intersection of the AEWSD's Forrest Frick Pipeline and the KDWD Eastside Canal. Much of KDWD's Eastside Canal serves as the westerly edge of AEWSD's boundary and the easterly edge of KDWD's boundary.

### **PROJECT BACKGROUND AND OBJECTIVES**

AEWSD and KDWD (together, the "Districts") share a common geographical boundary between their Districts, overlie a common groundwater basin in southeastern Kern County, and have constructed several interconnections and joint-use facilities to promote water management between the two Districts. In October 2001, AEWSD Board of Directors passed a resolution and in December 2001, KDWD responded with a letter of agreement to AEWSD, to further the Districts' partnership to: a) coordinate the use of their common groundwater basin, including joint operation of groundwater banking facilities, b) jointly share regulation of surface supplies via transfers and exchanges, and c) jointly use conveyance facilities and interconnections.

Both Districts are situated within the Central Valley Project (CVP) Place-of-Use. AEWSD is a long-term Central Valley Project (CVP) contractor and has access to other waters through transfers and exchanges. KDWD has entitlements to both State Water Project (SWP) and Kern River surface water supplies. KDWD has in the past entered into contracts with the Bureau of Reclamation (Reclamation) for CVP Section 215 non-storable surplus flows from Millerton Lake. Section 215 refers to a section in the Reclamation Reform Act of 1982, which defines temporary water supplies that are unusually large and not storable for Reclamation project purposes.

The Districts have historically participated in various joint water management activities to the benefit of both Districts' common water management elements such as water supply contracts, water management partners, recycled water opportunities, canal conveyance/transportation use, distribution systems, recharge basins, and groundwater wells. Both Districts also frequently engage in water management transfers and groundwater banking for others. Recently, the Districts jointly built bi-directional facilities connecting District canals, developed agreements as well as pursued funding for joint-use of facilities (wells, canals, and structures), and invested in 300 cubic-feet per second (cfs) of the total 500 cfs expansion of the Cross Valley Canal (CVC) in 2009 (100 cfs by AEWSD and 200 cfs by KDWD at a cost of more than \$52 million).

On August 29, 2014, the California Legislature passed comprehensive groundwater legislation contained in SB 1168, SB 1319 and AB 1739. Collectively, those bills, as subsequently amended, constitute the “Sustainable Groundwater Management Act” (SGMA, or pronounced as “Sigma”), together with its implementing regulations. Governor Brown signed the legislation on September 16, 2014 and it became effective on January 1, 2015. In adopting SGMA, the Legislature intended “[t]o provide local groundwater agencies with the authority and technical and financial assistance necessary to sustainably manage groundwater.” (California Water Code Section 10720(d).) AEWS and KDWD anticipate the proposed Project will assist each District in complying with SGMA regulations.

Even prior to SGMA, the Districts developed and maintained projects to sustainably manage the groundwater resource. This led the Districts to identify areas which have historically lower groundwater levels and implement projects and/or management actions in order to mitigate such. The proposed Project location is ideal to stabilize groundwater levels since it removes approximately 150 acres of historically (fallowed since 2018) irrigated agricultural land (decrease demand) and provides direct groundwater recharge (increases supply). The property is adjacent to KDWD’s Eastside Canal, which will provide the conveyance, and the soil characteristics are suitable for groundwater recharge.

Both Districts anticipate delivering already available surface water supplies to the Project from CVP, SWP, Kern River, and other flood type waters from northern California. AEWS’s CVP water service contract with the United States provides for delivery of up to 40,000 acre-feet per year of Class 1 water, and up to 311,675 acre-feet per year of Class 2 water. AEWS is also capable of taking SWP water through an assortment of exchanges and banking arrangements with SWP contractors, whereby the water would be delivered via the Cross Valley Canal (CVC). AEWS also has access to Kern River water through exchanges, transfers, and/or agreements with Kern River water entitlement holders. KDWD’s water supplies include 205,000 acre-feet per year of Kern River water (pre-1914 preserved entitlement), an annual allocation of SWP water based on 25,500 acre-feet of SWP entitlement, and similar to AEWS, various transfers/exchanges and banking arrangements from all sources (local, state and federal).

The Districts’ water supplies will be diverted from the Eastside Canal, by way of Kern River exchanges or a direct discharge structure from AEWS’s Forrest Frick Pipeline. Minimal extraction could occur from the existing single well on the property, but the Districts would not extract any more water than what will be recharged.

## **ENVIRONMENTAL SETTING**

The Project site is approximately 8.5 miles west of the Sierra-Tehachapi foothills within the land use jurisdiction of County of Kern. Topographically, the Project site is at an elevation of approximately 417 feet above mean sea level (see **Figure 2**). The proposed Project is adjacent to KDWD’s Eastside Canal.

As noted above, land use at the site of the proposed recharge basin is currently fallow as of 2018, however it was historically vineyards. The existing land uses surrounding the Project site are predominantly agriculture (vineyards, citrus, almonds, potatoes, carrots, peppers, onions, and melons).

### **North:**

Land Use: Exclusive Agriculture

Zoning: A (Exclusive Agriculture District)

**East:**

Land Use Exclusive Agriculture

Zoning: A (Exclusive Agriculture District)

**West:**

Land Use Exclusive Agriculture

Zoning: A (Exclusive Agriculture District)

**South:**

Land Use Exclusive Agriculture

Zoning: A (Exclusive Agriculture District)

The nearest water bodies to the site are the Eastside Canal, adjacent to the south side of the Project site, the KDWD-owned Howard Frick Recharge Ponds about two miles to the north, and the AEWSO-owned North Canal approximately three miles to the east. The nearest natural stream is Caliente Creek about 3.5 miles to the Northwest, however it is ephemeral in nature and only flows during large rain events. The nearest large reservoir with year-round water is Lake Isabella 35 miles to the Northeast in the Sierra-Tehachapi mountain region.



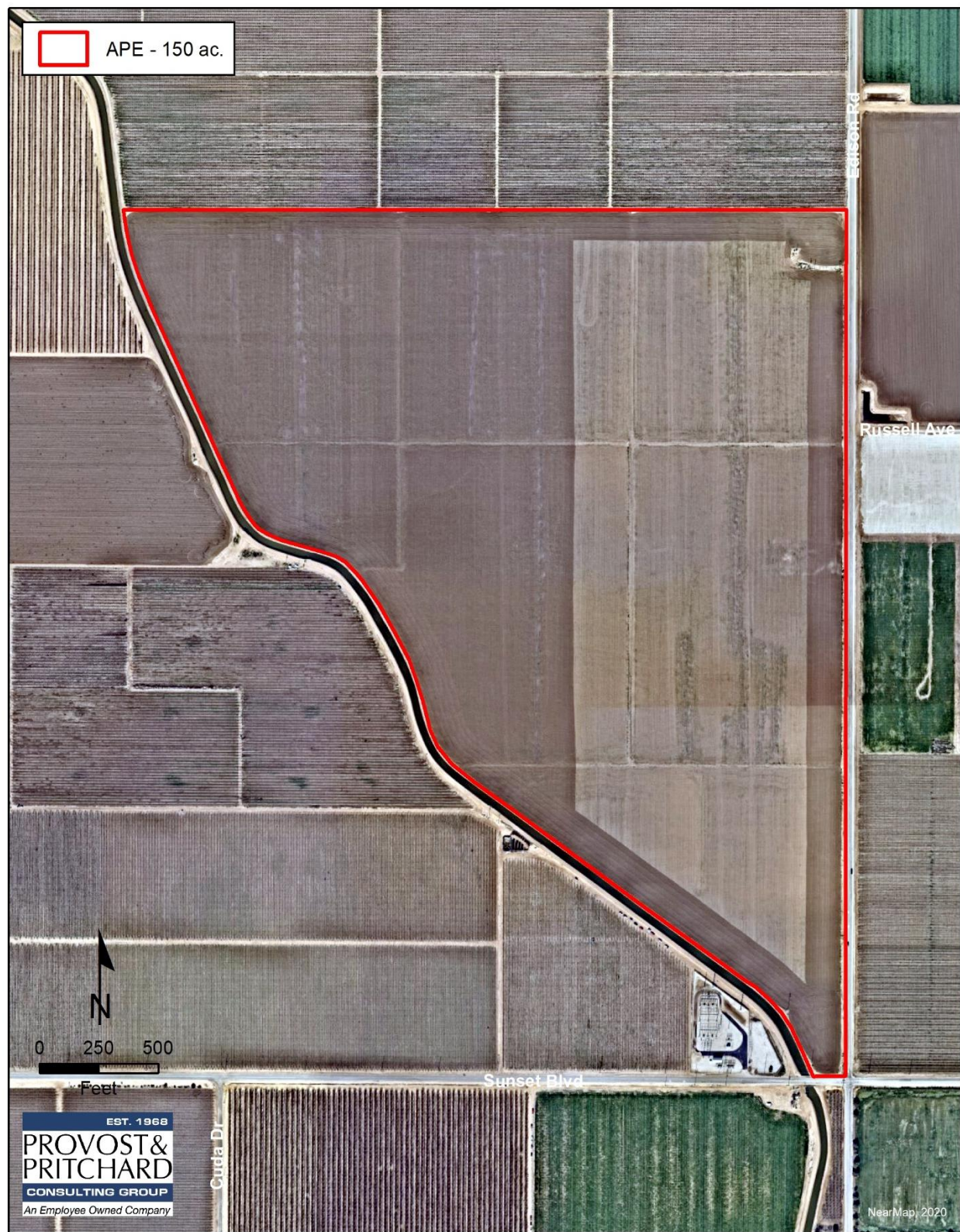


Figure 1 - Project Location Map



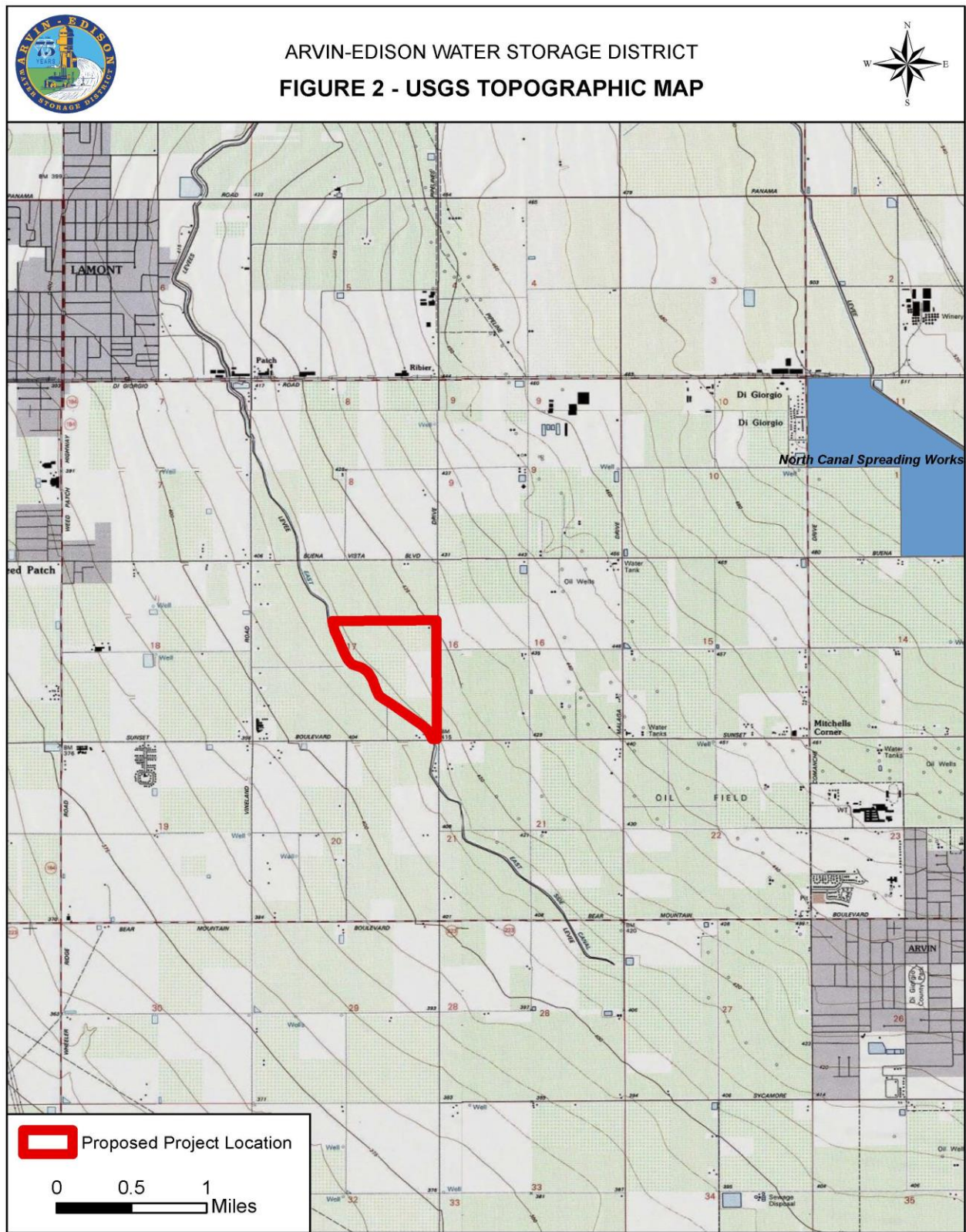


Figure 2 - USGS Topographic Map

## **PROJECT DESCRIPTION**

The proposed Project includes construction and operation of a 150-gross acre groundwater recharge basin and associated pumping/pipeline facilities located on APNs 189-190-10, 189-200-01, and 189-200-04. The Project is located on the boundary between AEWS and KDWD, adjacent to KDWD's Eastside Canal. The Project will take surface water (Federal Central Valley Project, State Water Project, Kern River, or other supplies) diverted through KDWD's Eastside Canal and recharge said surface supplies as part of AEWS's and KDWD's water management programs including respective Groundwater Sustainability Plans.

AEWS and KDWD have jointly purchased the property on which the Project will be located. Through the due diligence effort, both Districts reviewed the site's potential for recharge and found it favorable for recharge. Geologic borings were completed in February 2018, and a Phase 1 Environmental Site Assessment was completed October 2018.

The Project will include the construction of earthen berms (no greater than six feet in height) for a direct recharge facility. Project components include a 400 square foot operations/maintenance building, a new 80cfs turnout, 80cfs pump station and 2,900 linear feet of up to 54" pipeline from the KDWD Eastside Canal, and interbasin structures. The Project also includes an emergency spill into the Eastside Canal and 6,600 feet of perimeter fencing. The Project could recharge approximately 50 acre-feet (AF) per day (assuming an infiltration of nearly 0.35 AF/acre). During an above average year, the site could be utilized continuously for a three-month period (when surplus surface water supplies are available), creating the ability to capture and recharge approximately 4,500 AF of flood water and other surface supplies. Assuming an above average year occurs once every three years, the Project would yield approximately 1,500 AF of annual recharge. There are also scenarios (similar to 2017 and 2019) when 12 months of recharge is possible, which could result in recharge of approximately 18,000 AF per year.

Construction would be short term and take place over eight months, with no soil being exported/imported to or from the site; excavated soils from the basin would be utilized to construct the necessary berms. The Project is not anticipated to require any additional employees to handle operation and maintenance tasks.

### ***Summary of Benefits***

Constructing recharge ponds/basins at the Project site will result in various benefits to the vicinity which has historically experienced lower water levels than surrounding areas. With minimal extraction planned, the Project results in a net positive increase in the groundwater balance and will assist with SGMA compliance. The direct benefits obtained are as follows:

- Additional groundwater recharge capabilities will allow both Districts to beneficially utilize surface water supplies that would have otherwise been lost (SWP Article 21, Central Valley Project including, Section 215, High Flow Kern River, etc.).
- Stabilize groundwater levels.
- Increase water storage capacity by increasing recharge
- Increase AEWS and KDWD's water management program portfolio.
- The Project positively affects SGMA sustainability indicators (chronic lowering of groundwater levels, reduction of groundwater storage, degraded water quality, and land subsidence)

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indicated in AEWSD's groundwater sustainability plan ("Management Area Plan" with Kern Groundwater Authority GSA) and KDWD's groundwater sustainability plan (with Kern River GSA).



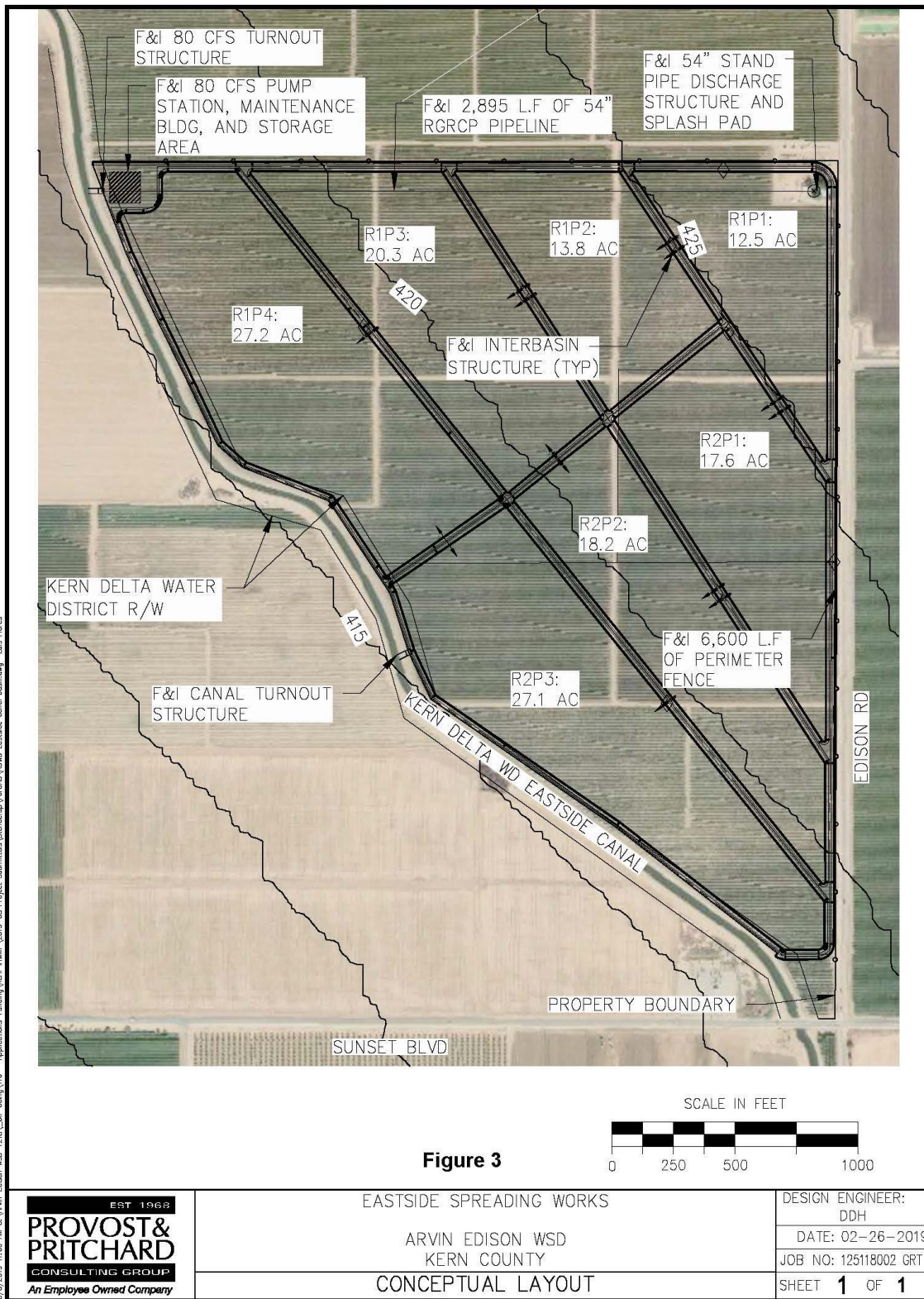


Figure 3 - Site Plan

## SECTION 3 – INITIAL STUDY CHECKLIST

- |            |  |   |
|------------|--|---|
| <b>1.</b>  | <b>Project title:</b>                                    | Sunset Groundwater Recharge Facility Project  |
| <b>2.</b>  | <b>Lead agency:</b>                                      | Arvin-Edison Water Storage District<br>20401 Bear Mountain Boulevard<br>P.O. Box 175<br>Arvin, CA 93203   |
| <b>3.</b>  | <b>Contact person:</b>                                   | Jeevan Muhar<br>Engineer-Manager<br>(661) 854-5573  |
| <b>4.</b>  | <b>Project location:</b>                                 | The Project site is located in unincorporated Kern County. The Project site is generally located north of Sunset Boulevard and west of Edison Road; within Section 17, Township 31 South, Range 29 East, M.D.B. &M. |
| <b>5.</b>  | <b>Latitude, Longitude:</b>                              | N 35° 13' 46.34", W 118° 52' 55.13"   |
| <b>6.</b>  | <b>General plan designation:</b>                         | Agriculture   |
| <b>7.</b>  | <b>Zoning:</b>   | A, Exclusive Agriculture  |
| <b>8.</b>  | <b>Description of project:</b>                           | See Chapter 2, Project Description  |
| <b>9.</b>  | <b>Surrounding land uses &amp; setting:</b>              | See Chapter 2, Project Description  |
| <b>10.</b> | <b>Other public agencies whose approval is required:</b> | Kern Delta Water District   |

**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 and Forestry Resources | <input type="checkbox"/> Air Quality                                   |
| <input checked="" type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources      | <input type="checkbox"/> Energy  |
| <input checked="" 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 checked="" type="checkbox"/> Mandatory Findings of significance |

**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.

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 Signature

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 Date

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 Printed name

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 For

**AESTHETICS**

<b>Would the project:</b>	<b>Potentially Significant Impact</b>	<b>Less than Significant With Mitigation Incorporated</b>	<b>Less than Significant Impact</b>	<b>No Impact</b>
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 checked="" type="checkbox"/>	<input type="checkbox"/>

**Responses:**

**a) No Impact.** A perimeter berm for the proposed new ponds would parallel the west side of Edison Road for approximately two-thirds (2/3) of a mile, and the surrounding lands are all primarily agriculture. There would be no impact because the Project would align with the agricultural aesthetics of the surrounding area.

**b) No Impact.** The Scenic Highway Program protects and enhances California's natural scenic beauty by allowing county and city governments to apply to the California Department of Transportation (Caltrans) to establish a scenic corridor protection program. One scenic corridor state route is located near the Project site: State Route 58. According to Caltrans, the Highway 58 is classified as an Eligible State Scenic Highway; however, it is more than seven miles to the north, therefore making visibility between the Project and the highway a non-issue. There would be no impact.

**c) No Impact.** The Project site is surrounded by agricultural land used for crops and there are two recharge basins within a three mile radius: KDWD's Howard Frick Recharge Ponds (approximately 1.5 miles northwest of the Project location) and AEWS's North Canal (approximately 2.5 miles northeast of the Project location). The construction of the recharge basins will be similar in visual character to the surrounding landscape and would not degrade the existing visual character or quality of the area or its surroundings. There would be no impact.

**d) Less Than Significant Impact.** There is a small potential for glare from the water surface during times of recharge, however, impacts to the surrounding area would be less than significant.



**AGRICULTURE AND FORESTRY RESOURCES**

<p>In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.</p> <p><b>Would the project:</b></p>	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 checked="" type="checkbox"/>	<input 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"/>

**Responses:**

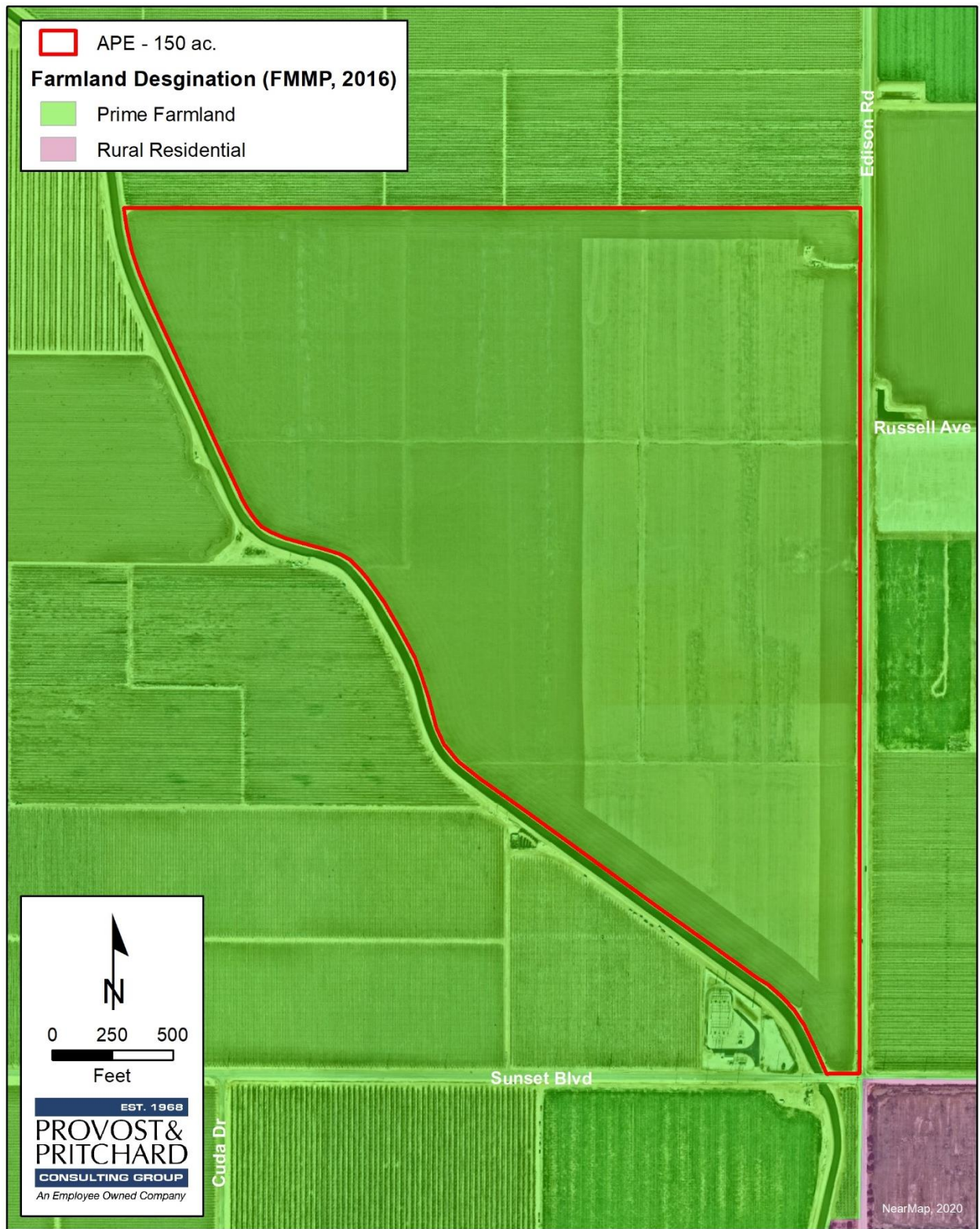
**a) Less Than Significant.** According to the Kern County General Plan the Project location is currently zoned as Exclusive Agriculture. The proposed Project would be compatible with the goals and policies of the Kern County General Plan for protecting agricultural resources through the beneficial use of recharge basins and would reduce the potential for District lands to be converted to residential, commercial or other non-agricultural uses including fallowing. Recharge facilities are permitted uses in agricultural zoning districts and agricultural preserves. Local land use authorities do not recognize the proposed Project as a conversion of farmland to non-agricultural use, but rather see the Project as an agricultural or agricultural support operation. The proposed Project would not indirectly induce loss of farmland in the Project area, as is typical of projects that convert agricultural lands to residential or commercial uses. By recharging the groundwater basin, more groundwater will be available to sustain otherwise declining groundwater and support agricultural resources in the region, and thereby avoid eventual fallowing or conversion to non-agriculture uses that may occur without the Project particularly in light of the groundwater sustainability requirement of the recently enacted Sustainable Groundwater Management Act of 2014. Accordingly, there would be no conversion to non-agricultural use and impacts to agricultural resources would be less than significant.

**b) No Impact.** The proposed Project site will not change agricultural zoning or impact any Williamson Act Contract.

**c) No impact.** The site is not zoned for forestry and is not forested. There would be no impact.

**d) No impact.** The Project vicinity is dominated by active agricultural land. The site is not forested, and the Project would not impact forest land. There is no impact.

**e) No impact.** Any impacts regarding the potential conversion of farmland due to the Project's location have been discussed in the analysis of Impacts II-a and II-b. There would be no impact.



**Figure 4 - Farmlands Map**

**AIR QUALITY**

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. <b>Would the project:</b>	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 checked="" type="checkbox"/>	<input type="checkbox"/>

**Response:**

**a) Less Than Significant Impact.** The Project lies within the San Joaquin Valley Air Basin, which is managed by the San Joaquin Valley Air Pollution Control District (SJVAPCD). As noted in **Impact Assessment b)** and **c)** below, implementation of the Project would not result in short-term or long-term increases in emissions that would exceed applicable thresholds of significance. Projects that do not exceed the recommended thresholds would not be considered to conflict with or obstruct the implementation of applicable air quality plans. This impact would be considered less than significant.

**b) Less Than Significant Impact.** The San Joaquin Valley is designated as a Federal and State non-attainment area for O<sub>3</sub> and PM<sub>2.5</sub>. The SJVAPCD is the regional agency that regulates air permitting and maintains an extensive air quality monitoring network to measure criteria pollution concentrations throughout the San Joaquin Valley air basin. An Air Quality and Greenhouse Gas Emissions Evaluation Report (**Appendix A**) was prepared using CalEEMod, Version 2016.3.2 for the proposed Project in April 2020 in order to calculate emissions generated by Project implementation.

Project operations would not contribute to criteria pollutant emissions; however, emissions would be associated with short term construction activities (see Table 1 for construction emissions). The operational phase of the Project would not generate any dedicated trips to the facility (see **Table 2** for operational emissions).

Regulation VIII measures are SJVAPCD mandated requirements for any type of ground moving activity and would be adhered to during the construction of the Project and are listed in **Table 3**. Implementation of Regulation VIII measures would reduce any construction related PM<sub>10</sub> emission impacts to less than significant. As demonstrated in **Table 1** and **Table 2**,

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Project construction and operation emissions would be under the significance threshold and are therefore considered less than significant.

**Table 1 - Unmitigated Short-Term Construction-Generated Emissions of Criteria Pollutants**

Source	Annual Emissions (Tons/Year)					
	ROG	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>2020</b>	0.2423	2.6154	1.6143	0.0031	1.0641	0.4437
<b>2021</b>	0.1394	1.5102	1.0258	0.0021	0.6794	0.2135
<b>Maximum Annual Proposed Project Emissions</b>	0.2423	2.6154	1.6143	0.0031	1.0641	0.4437
<b>SJVAPCD Thresholds</b>	10	10	100	27	15	15
<b>Exceed SJVAPCD Thresholds?</b>	No	No	No	No	No	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](http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en) Accessed April 5, 2020.

**Table 2 - Unmitigated Long-Term Operational Emissions**

Source	Annual Emissions (Tons/Year)					
	ROG	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>Maximum Annual Proposed Project Emissions</b>	0.5588	0.00001	0.0014	0.0000	0.0000	0.0000
<b>SJVAPCD Thresholds</b>	10	10	100	27	15	15
<b>Exceed SJVAPCD Thresholds?</b>	No	No	No	No	No	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](http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en) Accessed April 5, 2020.

**Table 3 - San Joaquin Valley Air Pollution Control District  
Regulation VIII Control Measures for Construction Emissions of PM<sub>10</sub>**

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

**c) Less Than Significant Impact.** Section 3 of the Guide for Assessing and Mitigating Air Quality Impacts defines a sensitive receptor as a location where human populations, especially children, seniors, and sick persons are present and where there is a reasonable expectation of human exposure to pollutants. Sensitive receptors normally refer to people with heightened sensitivity to localized, rather than regional, pollutants. Concentrations of pollutants would not pose a hazardous threat to any sensitive receptors as emissions resulting from the Project would be below significance threshold. The impact would be less than significant.

**d) Less Than Significant Impact.** Implementation of the Project would not result in long-term emissions of odors. However, construction would involve the use of a variety of gasoline- or diesel-powered equipment that would emit exhaust fumes. Exhaust fumes, particularly diesel exhaust, may be considered objectionable by some people. Construction activities would be short-term in duration, lasting approximately eight months. An electric stationary pump station, similar to those currently in use in the area for agricultural operations, will be used when necessary. As a result, long-term emissions are estimated to be minimal. Furthermore, the Project is located in a region dominated by agricultural activities which typically involve the use of odorous chemicals and exhaust from various vehicles and equipment. Impacts would be less than significant.

**BIOLOGICAL RESOURCES**

<b>Would the project:</b>	<b>Potentially Significant Impact</b>	<b>Less than Significant With Mitigation Incorporated</b>	<b>Less than Significant Impact</b>	<b>No Impact</b>
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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input 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"/>

**Response:**

**a) Less than Significant with Mitigation Incorporated.** California contains several “rare” plant and animal species. In this context, “rare” is defined as species known to have low

populations or limited distributions. As the human population grows, resulting in urban expansion which encroaches on the already limited suitable habitat, these sensitive species become increasingly more vulnerable to extirpation. A variety of State and federal regulations, including the Endangered Species Act, have provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting the diversity of native plant and animal species. Numerous native plants and animals have been formally designated as “threatened” or “endangered” under State and federal endangered species legislation. Other formal designations include “candidate” for listing or “species of special concern” by CDFW. The California Native Plant Society (CNPS) maintains a list of native plants considered rare, threatened, or endangered. All plants with a CNPS Rare Plant Rank of 1 or 2 meet the definition of the California Endangered Species Act and are eligible for State listing. Collectively these plants and animals are referred to as “special status species.” Impacts to these species, either directly through injury or mortality, or indirectly through habitat loss must be analyzed during the preparation of environmental documents relating to California Environmental Quality Act (CEQA).

A thorough search of the California Natural Diversity Database (CNDDDB) for published accounts of special status plant and animal species was conducted for the *Weed Patch* 7.5-minute quadrangle that contains the Project area in its entirety, and for the eight surrounding quadrangles: *Gosford*, *Lamont*, *Edison*, *Conner*, *Arvin*, *Coal Oil Canyon*, *Mettler*, and *Tejon Hills*. A list of these species and a discussion regarding their potential to occur within the Project area is available in **Table 4** and **Table 5** on the following pages, and raw data obtained from the CNDDDB is available in **Appendix B** of this document.

Other sources of information utilized in the preparation of this analysis included the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Vascular Plants of California, CalFlora’s online database of California native plants, the Jepson Herbarium online database (Jepson eFlora), U.S. Fish and Wildlife Service (USFWS) Environmental Conservation Online System (ECOS), the NatureServe Explorer online database, the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Plants Database, the California Department of Fish and Wildlife (CDFW) California Wildlife Habitat Relationships (CWHR) database, ebird.org, and the California Herps online database. The following analysis of potential Project-related impacts to biological resources is based on desktop research.



**Table 4 - List of Special Status Animal Species with Potential to Occur Onsite or in the Vicinity**

Species	Status	Habitat	Occurrence on Project Site
<b>American badger (<i>Taxidea taxus</i>)</b>	CSC	Grasslands, savannas, and mountain meadows near timberline are preferred. Most abundant in drier open spaces of shrub and grassland. Burrows in soil.	<b>Possible.</b> This species could potentially inhabit the fallowed agricultural field or burrow along compacted dirt roads, fence margins, canals, or basins. There are five recorded observations of this species in the vicinity, the nearest of which was recorded in 2012 approximately 6.5 miles east of the Project site. The Project site and surrounding agricultural lands have been modeled by CWHR as moderately suitable for this species, and there is an expanse of highly suitable habitat located approximately 6.5 miles east of the site.
<b>Bakersfield Legless Lizard (<i>Anniella grinnelli</i>)</b>	CSC	General habitat is sandy with herbaceous cover and scattered shrubs in grassland, sand/dune, or chaparral. Burrows in soil. Fallen logs, woody debris, and leaf litter under trees and bushes in sunny areas often indicate suitable habitat.	<b>Absent.</b> Suitable habitat is absent.
<b>blunt-nosed leopard lizard (<i>Gambelia sila</i>)</b>	FE, CE, CFP	Inhabits semi-arid grasslands, alkali flats, low foothills, canyon floors, large washes, and arroyos, usually on sandy, gravelly, or loamy substrate, sometimes on hardpan. Often found where there are abundant rodent burrows in dense vegetation or tall grass. Cannot survive on lands under cultivation. Known to bask on kangaroo rat mounds and often seeks	<b>Unlikely.</b> Typical suitable habitat is absent. This species does not occur on active agricultural lands but may occur on some long-term fallowed lands if there is an open habitat structure and connection to extant occupied habitat. The Project area has historically been used for agriculture until recently, and the now fallowed field is disked multiple times a year. Extant habitat is absent from adjacent parcels. Surrounding lands are developed into intensively cultivated agricultural crops which are unsuitable for this

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Species	Status	Habitat	Occurrence on Project Site
		shelter at the base of shrubs, in small mammal burrows, or in rock piles. Adults may excavate shallow burrows but rely on deeper pre-existing rodent burrows for hibernation and reproduction.	species and would likely preclude movement of this species onto the Project site.
<b>Buena Vista Lake ornate shrew (<i>Sorex ornatus relictus</i>)</b>	FE, CSC	Prefers moist soils, inhabiting marshes, swamps, and riparian shrublands. Uses stumps, logs, and leaf litter for cover.	<b>Absent.</b> Suitable habitat is absent.
<b>burrowing owl (<i>Athene cunicularia</i>)</b>	CSC	Resides in open, dry annual or perennial grasslands, deserts, and scrublands with low growing vegetation. Nests underground in existing burrows created by mammals, most often ground squirrels.	<b>Possible.</b> This species could potentially inhabit the fallowed agricultural field or burrow along compacted dirt roads, fence margins, canals, or basins. Suitable breeding, wintering, and foraging habitat appear to present onsite. There are 28 reported occurrences of this species in the vicinity.
<b>California glossy snake (<i>Arizona elegans occidentalis</i>)</b>	CSC	Inhabits arid scrub, rocky washes, grasslands, and chaparral. Prefers open areas with loose soil for easy burrowing.	<b>Absent.</b> Suitable habitat is absent.
<b>California legless lizard (<i>Anniella sp.</i>)</b>	CSC	Inhabits a variety of habitats which contain moist, loose soils and plant cover. Often can be found under objects such as rocks, boards, driftwood, and logs.	<b>Absent.</b> Suitable habitat is absent.

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Species	Status	Habitat	Occurrence on Project Site
<b>Crotch bumble bee (<i>Bombus crotchii</i>)</b>	CCE	Occurs throughout coastal California, as well as east to the Sierra-Cascade crest, and south in to Mexico. Food plant genera include <i>Antirrhinum</i> , <i>Phacelia</i> , <i>Clarkia</i> , <i>Dendromecon</i> , <i>Eschscholzia</i> , and <i>Eriogonum</i> .	<b>Unlikely.</b> This species could feed on flowering plants within the fallow field; however, the presence of introduced crop pollinators and use of pesticides in adjacent orchards would likely preclude the establishment of a successful population of native bees.
<b>least Bell's vireo (<i>Vireo bellii pusillus</i>)</b>	FE, CE	This migratory species breeds in southern California. Breeding habitat consists of dense, low, shrubby, riparian vegetation in the vicinity of water or dry river bottoms. By the early 1980s, this species was extirpated from most of its historic range in California, including the Central Valley.	<b>Unlikely.</b> Suitable breeding habitat is absent from the Project area. An occurrence of this species has not been recorded in the vicinity in more than 45 years.
<b>long-eared owl (<i>Asio otus</i>)</b>	CSC	Occurs in riparian forests and woodlands, as well as scrublands. Requires adjacent open land for hunting mice, and the nests of crows, hawks, or magpies are required for breeding.	<b>Unlikely.</b> Typical suitable habitat is absent from the Project area. At most, this species could use the fallow field as foraging habitat.
<b>pallid bat (<i>Antrozous pallidus</i>)</b>	CSC	Found in grasslands, chaparral, and woodlands, where it feeds on ground- and vegetation-dwelling arthropods, and occasionally takes insects in flight. Prefers to roost in rock crevices, but may also use tree cavities, caves, bridges, and other man-made structures.	<b>Possible.</b> Roosting habitat is absent, but this species could potentially forage nocturnally.

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Species	Status	Habitat	Occurrence on Project Site
<b>purple martin</b> <i>(Progne subis)</i>	CSC	Inhabits woodlands, low elevation coniferous forest of Douglas-fir, ponderosa pine, and Monterey pine. Nests in old woodpecker cavities as well as in human-made structures. Nest often located in tall, isolated trees and snags.	<b>Unlikely.</b> Typical suitable habitat is absent from the Project site. At most, this species could potentially pass during dispersal or migratory movements.
<b>San Joaquin coachwhip</b> <i>(Masticophis flagellum ruddocki)</i>	CSC	Found in open dry habitats with little or no tree cover in valley grassland and saltbush scrub communities in the San Joaquin Valley. Relies on mammal burrows for refuge and oviposition sites.	<b>Unlikely.</b> The disturbed habitat of the Project area is generally considered unsuitable for this species. The nearest recorded observation of this species was reported in 2012 approximately 10.5 miles south-southeast of the Project site.
<b>San Joaquin kit fox</b> ( <i>Vulpes macrotis mutica</i> )	FE, CT	Underground dens with multiple entrances in alkali sink, valley grassland, and woodland in valleys and adjacent foothills.	<b>Possible.</b> The fallow field could be considered marginal habitat for this species. While past and ongoing disturbance onsite and on surrounding lands reduces the quality of denning habitat, this species could pass through while foraging or den temporarily in burrows within the fallow field or along the canal banks. The Project site is located approximately 11 miles southeast of the nearest satellite population in urban Bakersfield and 35 miles east of the nearest core population in western Kern County. There are 41 CNDDB recorded occurrences of this species in the vicinity, the nearest of which was reported in 1975 approximately 2.5 miles northeast of the site.
<b>Swainson's hawk</b> ( <i>Buteo swainsoni</i> )	CT	Nests in large trees in open areas adjacent to grasslands, grain or alfalfa fields, or livestock pastures suitable for	<b>Possible.</b> There are no potential nest trees onsite; however, this species does breed in the vicinity and there is a known nest tree approximately 2.5 miles south of the Project. This species could nest

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Species	Status	Habitat	Occurrence on Project Site
		supporting rodent populations.	within ornamental trees near the site.
<b>Tipton kangaroo rat (<i>Dipodomys nitratoides nitratoides</i>)</b>	FE, CE	Burrows in soil. Often found in grassland and shrubland.	<b>Unlikely.</b> Typical suitable habitat is absent. This species does not occur on active agricultural lands but may occur on some long-term fallowed lands if there is an open habitat structure and connection to extant occupied habitat. The Project area has historically been used for agriculture until recently, and the now fallowed field is disked multiple times a year. Extant habitat is absent from adjacent parcels. Surrounding lands are developed into intensively cultivated agricultural crops which are unsuitable for this species and would likely preclude movement of this species onto the Project site. Rodenticide use in adjacent agricultural parcels may also preclude successful reinvasion of this species. The nearest recorded observation of this species corresponds to known population detected on trapping studies between 1985 and 2015 at the Arvin landfill approximately 3 miles southwest of the Project.
<b>tricolored blackbird (<i>Agelaius tricolor</i>)</b>	CT, CSC	Nests colonially near fresh water in dense cattails or tules, or in thickets of riparian shrubs. Forages in grassland and cropland. Large colonies are often found on dairy farm forage fields.	<b>Possible.</b> Suitable nesting habitat is absent from the Project site.
<b>Tulare grasshopper mouse (<i>Onychomys torridus tularensis</i>)</b>	CSC	Typically inhabit arid shrubland communities in hot, arid grassland and shrubland associations. Diet consists almost exclusively of arthropods.	<b>Absent.</b> Suitable habitat is absent and this species has not been observed in the vicinity in over 100 years.

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Species	Status	Habitat	Occurrence on Project Site
<b>western mastiff bat (<i>Eumops perotis californicus</i>)</b>	CSC	Found in open, arid to semi-arid habitats, including dry desert washes, flood plains, chaparral, oak woodland, open ponderosa pine forest, grassland, and agricultural areas, where it feeds on insects in flight. Roosts most commonly in crevices in cliff faces but may also use high buildings and tunnels.	<b>Possible.</b> Roosting habitat is absent, but this species could forage nocturnally.
<b>western pond turtle (<i>Emys marmorata</i>)</b>	CSC	An aquatic turtle of ponds, marshes, slow-moving rivers, streams, and irrigation ditches with riparian vegetation. Requires adequate basking sites and sandy banks or grassy open fields to deposit eggs.	<b>Unlikely.</b> The Eastside Canal's aquatic habitat is marginal, at best for this species, and the Project site's fallow field is unsuitable upland habitat. The only recorded observation of this species in the vicinity corresponds to a historical record made more than 30 years ago at Gator Pond, Kern Lake Preserve approximately 12.5 miles southwest of the Project site.
<b>western spadefoot (<i>Spea hammondi</i>)</b>	CSC	Prefers open areas with sandy or gravelly soils, in a variety of habitats including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Vernal pools or temporary wetlands, lasting a minimum of three weeks, which do not contain bullfrogs, fish, or crayfish are necessary for breeding.	<b>Unlikely.</b> Vernal pools and typical suitable breeding pools appear to be absent from the Project area and surrounding lands on review of aerial imagery. Although rodent burrows may be present, the disturbed habitats of the Project area and surrounding lands are typically unsuitable as breeding or upland habitat for this species. The nearest recorded observation of this species was reported in 2016 within a temporary pool approximately 7 miles southeast of the Project site.

**Table 5 - List of Special Status Plant Species with Potential to Occur Onsite or in the Vicinity**

<b>Species</b>	<b>Status</b>	<b>Habitat</b>	<b>Occurrence on Project Site</b>
<b>alkali mariposa-lily (<i>Calochortus striatus</i>)</b>	CNPS 1B	Found in the Sierra Nevada Foothills, the Desert Mountains, and the Mojave Desert in alkaline meadows, ephemeral washes, and creosote-bush scrub in chaparral, alkali scrub communities, meadows, and seeps at elevations between 230 feet and 5300 feet. Sometimes associated with vernal pools. Blooms April–June.	<b>Absent.</b> Suitable habitat is absent.
<b>Bakersfield cactus (<i>Opuntia basilaris</i> var. <i>treleasei</i>)</b>	CNPS 1B, FE, CE	Found in chenopod scrublands, valley and foothill grasslands, cismontane woodlands where the Transverse range, Coastal range, Sierra Nevada range, and Mojave Desert meet. This species grows in coarse or cobbly well-drained granitic sand at elevations between 394 feet and 492 feet. Blooms March – April.	<b>Absent.</b> Past and ongoing disturbance has made the Project area unsuitable for this species.
<b>Bakersfield smallscale (<i>Atriplex tularensis</i>)</b>	CNPS 1A, CE	Historically found in the southernmost portion of the San Joaquin Valley in valley sink scrub habitat and associated with saltgrass. Grows at elevations between 295 and 655 feet. Blooms June – October.	<b>Absent.</b> Suitable habitat is absent.

<b>Species</b>	<b>Status</b>	<b>Habitat</b>	<b>Occurrence on Project Site</b>
<b>calico monkeyflower</b> ( <i>Diplacus pictus</i> / <i>Mimulus pictus</i> / <i>Eunanus pictus</i> )	CNPS 1B	Found in the Sierra Nevada foothills and the Tehachapi mountains in bare, sunny, shrubby areas, and around granite outcrops within foothill woodland communities at elevations between 450 feet and 4100 feet. Blooms March – May.	<b>Absent.</b> Suitable habitat is absent.
<b>California alkali grass</b> ( <i>Puccinellia simplex</i> )	CNPS 1B	Found in the San Joaquin Valley and other parts of California in saline flats and mineral springs within valley grassland and wetland-riparian communities at elevations below 3000 feet. Blooms March–May.	<b>Absent.</b> Suitable habitat is absent.
<b>California jewelflower</b> ( <i>Caulanthus californicus</i> )	FE, CE, CNPS 1B	Found in the San Joaquin Valley and Western Transverse Ranges in sandy soils. Occurs on flats and slopes, generally in non-alkaline grassland at elevations between 230 feet and 6100 feet. Blooms February–April.	<b>Absent.</b> Past and ongoing disturbance has made the Project area unsuitable for this species
<b>California satintail</b> ( <i>Imperata brevifolia</i> )	CNPS 2B	Although this facultative species is equally likely to occur in wetlands and non-wetlands, it is often found in wet springs, meadows, streambanks, and floodplains at elevations below 1600 feet. Blooms September – May.	<b>Absent.</b> Suitable habitat is absent.



<b>Species</b>	<b>Status</b>	<b>Habitat</b>	<b>Occurrence on Project Site</b>
<b>Comanche Point layia (<i>Layia leucopappa</i>)</b>	CNPS 1B	Occurs in the southernmost portion of the San Joaquin Valley as well as the Mojave Desert in in scrubland and valley-foothill grasslands. Grows on dry hills in white-grey soils at elevations between 325 and 1,145 feet. Blooms march – April. Does not reliably appear every year.	<b>Absent.</b> Suitable habitat is absent.
<b>heartscale (<i>Atriplex cordulata</i> var. <i>cordulata</i>)</b>	CNPS 1B	Found in the San Joaquin Valley and Sacramento Valley in saline or alkaline soils within shadescale scrub, valley grassland, and wetland-riparian communities at elevations below 230 feet. Blooms June–July.	<b>Absent.</b> Suitable habitat is absent.
<b>hispid salty bird's-beak (<i>Chloropyron molle</i> ssp. <i>hispidum</i>)</b>	CNPS 1B	Grows in the damp, alkali soils of meadows, playas, and sinks in the San Joaquin Valley and Delta-Bay region of California. Found at elevations below 426 feet. Blooms June – July.	<b>Absent.</b> Suitable habitat is absent.
<b>Horn's milk-vetch (<i>Astragalus hornii</i> var. <i>hornii</i>)</b>	CNPS 1B	This facultative species is most frequently found in the San Joaquin Valley and Sierra Nevada foothills in the alkali soils of lake margins, meadows, seeps, and playas at elevations between 196 feet and 984 feet. Blooms May – September.	<b>Absent.</b> Suitable habitat is absent.

<b>Species</b>	<b>Status</b>	<b>Habitat</b>	<b>Occurrence on Project Site</b>
<b>Kern Mallow</b> <i>(Eremalche parryi ssp. kernensis)</i>	CNPS 1B, FE	Occurs in the San Joaquin Valley and the Inner South Coast Ranges in eroded hillsides and alkali flats; often on dry, open, sandy to clay soils and within alkali scrub communities. Occurs at elevations between 200 feet and 4250 feet. Blooms March–May.	<b>Absent.</b> Past and ongoing disturbance has made the Project area unsuitable for this species.
<b>Lemmon's jewelflower</b> <i>(Caulanthus lemmonii)</i>	CNPS 1B	Grows in the Coastal range and Mojave woodlands and grasslands at elevations between 260 and 3,610 feet. Often associated with pinyon pines and junipers. Blooms March – May.	<b>Absent.</b> Past and ongoing disturbance has made the Project area unsuitable for this species.
<b>Lost Hills crownscale</b> <i>(Atriplex coronata var. vallicola)</i>	CNPS 1B	Found in the San Joaquin Valley in dried ponds and alkaline soils in alkali scrub, valley and foothill grassland, and vernal pools at elevations below 2900 feet. Blooms April–September.	<b>Absent.</b> Suitable habitat is absent.
<b>Munz's tidy-tips</b> <i>(Layia munzii)</i>	CNPS 1B	Found in the San Joaquin Valley in alkaline clay soils; often along hillsides in alkali scrub and sometimes valley and foothill grassland. Occurs at elevations between 145 feet and 2625 feet. Blooms March–April.	<b>Absent.</b> Suitable habitat is absent.

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<b>Species</b>	<b>Status</b>	<b>Habitat</b>	<b>Occurrence on Project Site</b>
<b>Palmer's mariposa-lily</b> <b>(<i>Calochortus palmeri</i> var. <i>palmeri</i>)</b>	CNPS 1B	Found throughout southwestern California, primarily in wetland habitats, but occasionally in non-wetland habitats, including woodlands and shrublands. Grows at elevations between 3937 and 7218 feet. Blooms May – July.	<b>Absent.</b> Suitable habitat is absent.
<b>Piute Mountains navarretia</b> <b>(<i>Navarretia setiloba</i>)</b>	CNPS 1B	Occurs in the Sierra Nevada foothills, San Joaquin Valley, and the Western Transverse Ranges in woodlands at grasslands at elevations between 1640 and 6890 feet. Grows in red clay soils or gravelly loam. Blooms April – July.	<b>Absent.</b> Suitable habitat is absent, and the Project is located outside of the accepted altitudinal range of this species.
<b>recurved larkspur</b> <b>(<i>Delphinium recurvatum</i>)</b>	CNPS 1B	Occurs in poorly drained, fine, alkaline soils in grassland and alaki scrub communities at elevations between 100 feet and 2600 feet. Blooms March–June.	<b>Absent.</b> Suitable habitat is absent.
<b>San Joaquin adobe sunburst</b> <b>(<i>Pseudobahia peirsonii</i>)</b>	FT, CE, CNPS 1B	Found in the San Joaquin Valley and the Sierra Nevada Foothills in bare dark clay soils in valley and foothill grassland and cismontane woodland communities at elevations between 325 feet and 2950 feet. Blooms March–May.	<b>Absent.</b> Suitable habitat is absent.

<b>Species</b>	<b>Status</b>	<b>Habitat</b>	<b>Occurrence on Project Site</b>
<b>San Joaquin woollythreads</b> <i>(Monolopia congdonii)</i>	CNPS 1B, FE	Occurs in the San Joaquin Valley in sandy soils on alkaline or loamy plains in valley and foothill grassland and alkali scrub communities at elevations between 180 feet and 2750 feet. Blooms February–May.	<b>Absent.</b> Suitable habitat is absent.
<b>Tejon poppy</b> <i>(Eschscholzia lemmonii ssp. kernensis)</i>	CNPS 1B	Occurs in the grasslands of the southern portion of the San Joaquin valley and the foothills of the Transverse mountain range. Found in elevations between 656 feet and 3280 feet. Blooms March – April.	<b>Absent.</b> Suitable habitat is absent.
<b>Vasek's clarkia</b> <i>(Clarkia tembloriensis ssp. calientensis)</i>	CNPS 1B	Endemic to the southern Sierra Nevada Foothills, this species can be found in grasslands on north facing slopes at elevations between 885 and 1640 feet. Associated with <i>Isomeris</i> and other <i>Clarkia</i> species. Blooms April – May.	<b>Absent.</b> Suitable habitat is absent.

**Explanation of Occurrence Designations and Status Codes**

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

**Status Codes**

FE	Federally Endangered	CE	California Endangered
CSC	California Species of Special Concern	CT	California Threatened
CFP	California Fully Protected	CCE	California Endangered (Candidate)

**CNPS Rare Plant Rank**

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

As explained in **Table 4** above, there is potential for the following special status species to occur onsite: American badger, burrowing owl, San Joaquin kit fox, pallid bat, western mastiff bat, tricolored blackbird, and Swainson's hawk. Although trees are absent from the Project area, ground-nesting birds protected by the federal Migratory Bird Treaty Act and the California Fish and Game Code could potentially nest onsite. Unless properly mitigated, impacts to nesting birds and the aforementioned special status species could be considered a potentially significant impact.

The Project site is composed of a recently fallowed field, which is disked multiple times a year, that was historically developed into vineyards in agricultural production. Surrounding lands are also developed into intensively cultivated agricultural land. Although some species could potentially make use of the Project site in the absence of higher quality habitat, the Project area does not constitute extant native habitat for any regionally occurring special status or native species. Past and ongoing disturbance onsite and within surrounding lands has made the Project area of relatively low quality for native plants and wildlife, and therefore conversion of a recently fallowed agricultural parcel should not be considered a loss of habitat. Those species that could potentially forage over the Project area can easily continue to utilize the swath of similar habitat in the vicinity.

As explained in **Table 5** above, the Project area does not constitute suitable habitat for any regionally occurring special status plant species. Historically occurring native plant populations and rare plants would have been extirpated from the site over 20 years ago when the land was converted into agriculture.

As explained in Table 5 above, the Project does have suitable habitat for several animal and avian species as enumerated below. The Project's disturbance to these habitats has the potential to result in significant adverse impacts to the species analyzed below:

**1. Western Mastiff and Pallid Bats:**

Although roosting habitat is absent, the western mastiff bat and the pallid bat (both California Species of Special Concern) could potentially forage nocturnally. In order to avoid any impacts to foraging bats, the Project will implement the following mitigation measure during construction activities:

**BIO-1 (Construction Hours):** Construction activities will be limited to the daylight hours in order to avoid any potential impacts to nocturnal foragers onsite.

**2. Avian Foragers, Nesting Birds & Raptors, and Migratory Birds:**

Even in the absence of nesting habitat, some avian species, such as the tricolored blackbird (California Species of Special Concern) and the Swainson's hawk (California Threatened and California Species of Special Concern) could forage over the Project area. In the event a Swainson's hawk, tricolored blackbird, or other avian species were foraging onsite, the individual would be expected to fly away from disturbance encountered thereby eliminating the risk of injury or mortality. Ground-nesting birds, such as the killdeer could nest onsite, and individuals nesting within the Project area during construction have the potential to be injured or killed by Project-related activities. In addition to the direct "take" of nesting birds, nesting birds within the Project site or adjacent areas could be disturbed by Project-related activities resulting in nest abandonment. Projects that adversely affect the nesting success of raptors and migratory birds or result in the mortality of individual birds is considered a violation of

State and federal laws and would be considered a significant impact if not mitigated. In order to reduce the Project's potential impacts to nesting native and migratory birds to a less than significant level and ensure compliance with State and federal laws protecting these species, the following measures will be implemented prior to the Project's construction activities:

**Mitigation Measure BIO-2a (Avoidance):** The Project's construction activities shall occur, if feasible, between September 1 and January 31 (outside of nesting bird season) in an effort to avoid impacts to nesting birds.

**Mitigation Measure BIO-2b (Pre-construction Surveys):** If activities must occur within nesting bird season (February 1 to August 31), a qualified biologist shall conduct pre-construction surveys for active nests within 30 days prior to the start of construction. The survey shall include the proposed work area and surrounding lands within 500 feet for all raptors and migratory birds. If no active nests are observed, no further mitigation is required. Nests containing eggs or young are to be considered "active," with the exception of raptors; raptor nests are considered "active" upon the nest-building stage.

**Mitigation Measure BIO-2c (Establish Buffers):** On discovery of any active nests near work areas, the biologist shall determine appropriate construction setback distances based on applicable CDFW guidelines and/or the biology of the species in question. Construction buffers shall be identified with flagging, fencing, or other easily visible means, and shall be maintained until the biologist has determined that the nestlings have fledged.

### **3. Burrowing Owl:**

The burrowing owl (California Species of Special Concern) could inhabit ground squirrel burrows onsite or along the canal banks year-round. If burrowing owls were occupying burrows during construction, they would be at risk of injury or mortality due to burrow collapse or vehicle/equipment collision. If burrowing owls were nesting in areas adjacent to the site, individuals could be disturbed by the Project's construction activities which could result in nest abandonment. In order to reduce the Project's potential impacts to burrowing owls to a less than significant level and ensure compliance with State and federal laws protecting this species, the following measures will be implemented prior to the Project's construction activities:

**Mitigation Measure BIO-3a (Pre-Construction Survey):** A qualified biologist shall conduct a pre-construction take avoidance survey for burrowing owls and suitable burrows, in accordance with CDFW's *Staff Report on Burrowing Owl Mitigation* (2012), within 30 days prior to the start of construction activities. The survey shall include the proposed work area and surrounding lands within 500 feet. If no burrowing owl individuals or suitable burrows are observed, no further mitigation is required.

**Mitigation Measure BIO-3b (Avoidance):** If an active burrowing owl burrow is detected, the occurrence shall be reported to the local CDFW office and the CNDDDB, and disturbance-free buffers shall be implemented in accordance with CDFW's 2012 *Staff Report on Burrowing Owl Mitigation*, as outlined in the table below:

Location	Time of Year	Level of Disturbance		
		Low	Medium	High
Nesting sites	April 1 – August 15	200 meters	500 meters	500 meters
Nesting sites	August 16 – October 15	200 meters	200 meters	500 meters
Nesting sites	October 16 – March 31	50 meters	100 meters	500 meters

**Mitigation Measure BIO-3c (Consultation with CDFW and Passive Relocation):** If avoidance of an active burrowing owl burrow is not feasible, CDFW shall be immediately consulted to determine the best course of action, which may include passive relocation during non-breeding season. Passive relocation and/or burrow exclusion shall not take place without coordination with CDFW and preparation of an approved exclusion and relocation plan.

#### 4. American Badger:

The Project area may represent marginally suitable denning and foraging habitat for the American badger (California Species of Special Concern). Implementation of mitigation measure **BIO-1** will help reduce potential impacts to this nocturnal forager. However, if an American badger were denning onsite during construction, individuals would be at risk for injury or mortality from burrow collapse or collision with vehicles/equipment. In order to further reduce the Project's potential impacts to American badger to a less than significant level, the following mitigation measure will be implemented prior to construction:

**Mitigation Measure BIO-4a (Pre-Construction Survey):** A pre-construction survey for American badger will be conducted by a qualified biologist within 30 days prior to the start of construction in all suitable denning habitat.

**Mitigation Measure BIO-4b (Avoidance):** If an active American badger den is detected on the pre-construction survey, a qualified biologist shall flag the den and enforce an appropriate disturbance-free buffer around the den until the biologist has determined the den is abandoned.

#### 5. San Joaquin Kit Fox:

As explained in **Table 4** above, the San Joaquin kit fox (federally Endangered and California Threatened) could occasionally occur within the Project area, although past and ongoing disturbance makes the site marginally suitable, at best. Implementation of mitigation measure **BIO-1** will help reduce potential impacts to this nocturnal forager. However, if a San Joaquin kit fox were denning onsite during construction, individuals would be at risk for injury or mortality from burrow collapse or collision with vehicles/equipment. In order to further reduce the Project's potential impacts to San Joaquin kit fox to a less than significant level and avoid any "take" of this species, the Project proponent will implement the following mitigation measures derived from the USFWS 2011 *Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance*:

**Mitigation Measure BIO-5a (Pre-construction Survey):** Within 30 days prior to the start of construction, a pre-construction survey for San Joaquin kit fox shall be conducted on and within 200 feet of proposed work areas. If kit fox sign and potential dens are detected within or adjacent to the Project area, potential dens shall be monitored for a period of three consecutive nights with a remote-sensing camera and/or tracking medium.

**Mitigation Measure BIO-5b (Den Destruction):** If there is no sign of kit fox activity at a den after monitoring with a remote-sensing camera and/or tracking medium for a period of three consecutive nights, the den will be closed, excavated, or destroyed to prevent subsequent use by a kit fox during construction activities. There will be no destruction of “known dens” without a take authorization/permit from USFWS and CDFW.

**Mitigation Measure BIO-5c (Incidental Take Permit):** If a known den or natal/pupping den is detected, the Project proponent will contact CDFW and USFWS to apply for an Incidental Take Permit (ITP).

**Mitigation Measure BIO-5d (Minimization):** The Project shall observe all minimization and protective measures from the Construction and On-Going Operational Requirements of the USFWS 2011 *Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance*, including, but not limited to: construction speed limits, covering of pipes, installation of escape structures, restriction of herbicide and rodenticide use, proper disposal of food items and trash, prohibition of pets and firearms, and completion of an employee education program.

**Mitigation Measure BIO-5e (Mortality Reporting):** The Sacramento Field Office of USFWS and the Fresno Field Office of CDFW will be notified in writing within three working days in the case of the accidental death or injury to a San Joaquin kit fox during construction. Notification must include the date, time, and location of the incident and any other pertinent information.

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) No Impact.** The Project involves the development of groundwater recharge basins on fallowed agricultural land. There will be no impact to sensitive natural communities or riparian habitat.

**c) Less Than Significant Impact.** As illustrated in **Figure 5**, the USFWS National Wetlands Inventory (NWI) map shows one “freshwater emergent wetland” in the northeast corner of the APE and designates the Eastside Canal as “riverine.” The “freshwater emergent wetland” designation is based on NWI’s aerial imagery collected in 1987 and is further described as “depressional seasonal unnatural emergent” and “pond and associated vegetation.” A review of historical aerial imagery from 1946 to 1992 indicates there was an excavated irrigation basin associated with the agricultural crops at this location. At some point between 1992 and 2002 the basin was filled and appears to have been used as a storage yard for farming equipment. The Eastside Canal carries irrigation water south from the Kern River and does not discharge into a navigable water. Historically, U.S. Army Corps of Engineers has not



claimed jurisdiction over the Eastside Canal, and therefore it is reasonable to assume that Waters of the U.S. are absent from the project area.

Although Eastside Canal may not be a Water of the U.S., it is likely to be considered a Water of the State under authority of the Water Code and regulated by the Regional Water Quality Control Board (RWQCB). Discharges into all Waters of the State require Waste Discharge Requirements (WDRs), or waivers of WDRs, from the RWQCB.

The RWQCB also administers the Construction Storm Water Program and the federal National Pollution Discharge Elimination System (NPDES) program. Projects that disturb one or more acres of soil must obtain a Construction General Permit under the Construction Storm Water Program. A prerequisite for this permit is the development of a Storm Water Pollution Prevention Plan (SWPPP) by a certified Qualified SWPPP Developer.

Prior to construction, the Project proponent will apply for WDRs, waiver of WDRs, an NPDES permit, if applicable, and develop a SWPPP as required by existing laws. Compliance with these requirements will ensure the Project's potential impacts to State and federally protected wetlands and other aquatic resources.

**d) Less than Significant with Mitigation Incorporated.** Roosting habitat is absent from the Project area; therefore, the Project will have no impact on roosting bats or maternal bat colonies. Potential Project-related impacts to migratory and native nesting birds has been discussed in detail in **Impact Assessment a)** above. It was determined that implementation of mitigation measures **BIO-2a** through **BIO-2c** and **BIO-3a** through **BIO-3c** will reduce potential impacts to migratory and nesting birds to a less than significant level. Potential Project-related impacts to American badger and San Joaquin kit fox natal dens were also discussed in **Impact Assessment a)** above. It was determined that implementation of mitigation measures **BIO-4a**, **BIO-4b**, and **BIO-5a** through **BIO-5e** will reduce potential impacts to American badger and San Joaquin kit fox natal dens to a less than significant level.

Wildlife movement corridors are routes that animals regularly and predictably follow during seasonal migration, dispersal from native ranges, daily travel within home ranges, and inter-population movements. Movement corridors in California are typically associated with valleys, ridgelines, and rivers and creeks supporting riparian vegetation. The Eastside Canal likely supports certain species of introduced exotic fish and American bullfrogs but would not be considered an important feature used by native aquatic wildlife. The canal banks are subject to frequent vegetation management activities and subsequently do not support significant riparian vegetation. Furthermore, the Project is located in a region often disturbed by intensive agricultural cultivation practices and human disturbance which would discourage dispersal and migration. For these reasons, the canal banks would not be likely to serve as an important movement corridor for terrestrial wildlife. The Project will not impact native wildlife movement corridors, and implementation of mitigation measures **BIO-2a** through **BIO-2c**, **BIO-3a** through **BIO-3c**, **BIO-4a**, **BIO-4b**, and **BIO-5a** through **BIO-5e** will reduce potential impacts to native nursery sites to a less than significant level.

**e) No Impact.** There are no trees onsite. The Project, which involves the development of groundwater recharge basins on fallowed agricultural land, will be implemented in accordance with the goals and policies of the Kern County General Plan. There would be no impact.

**f) No Impact.** The Metropolitan Bakersfield Habitat Conservation Plan (MBHCP) is a program in which an applicant is required to pay mitigation fees for the development of

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previously undeveloped lands as part of the project's City or County permitting process in order to offset impacts to sensitive species and/or associated habitats. Although the Project is located within the mapped boundaries of the MBHCP area, the Project is not subject to City or County permitting and therefore not required to comply with the adopted elements of the MBHCP. Furthermore, the Project involves the development of groundwater recharge basins on agricultural land. This would not be considered conversion of land to an urban use. Therefore, the Project does not conflict with the MBHCP and there are no other adopted Habitat Conservation Plans within the Project area. There would be no impact.

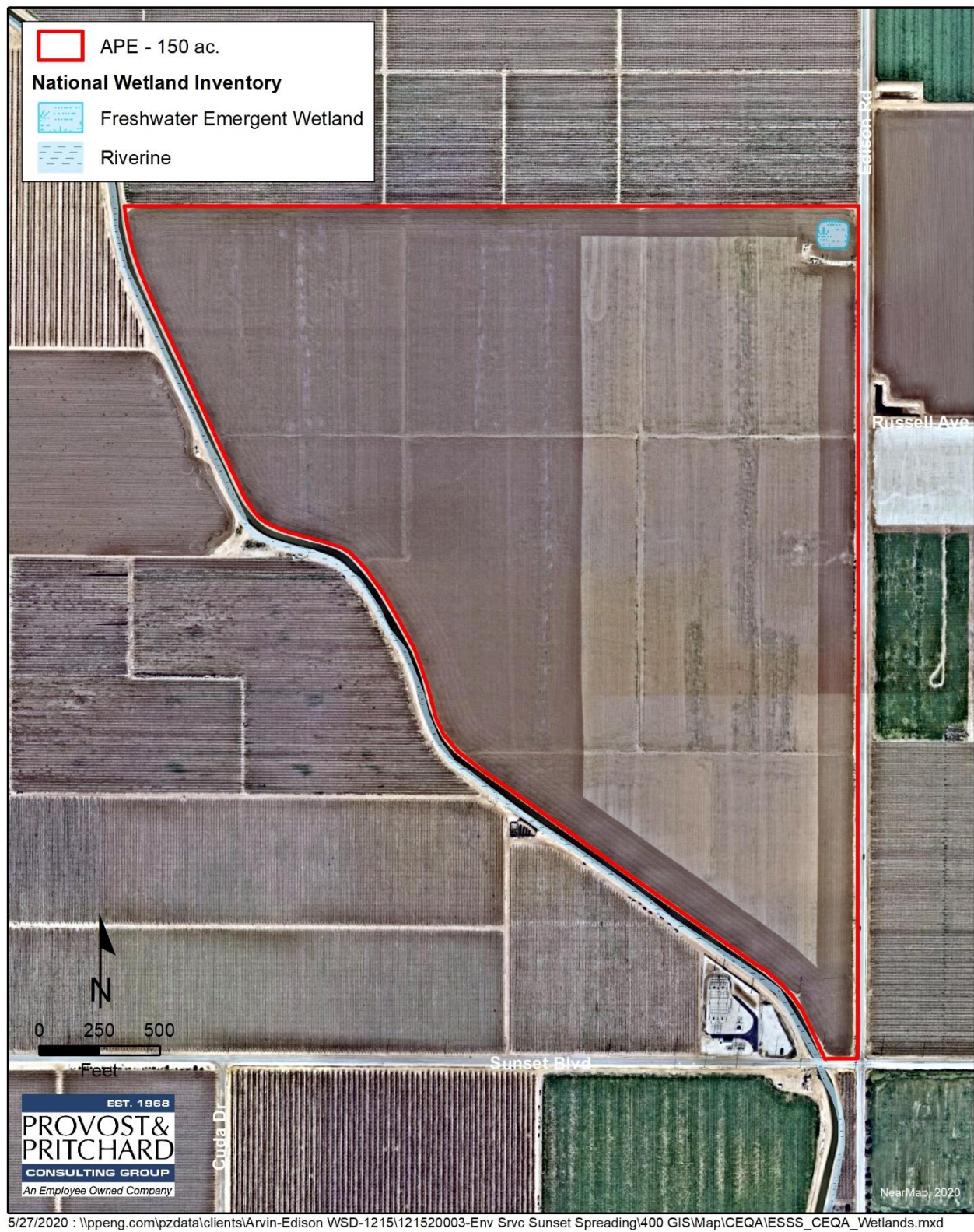


Figure 5- Wetlands Map

**CULTURAL RESOURCES**

<b>Would the project:</b>	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 as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Response:****a) Less Than Significant Impact .**

On March 25, 2020, Provost & Pritchard requested a records search from the Southern San Joaquin Valley Information Center (SSJVIC) of the California Historical Resources Information System (CHRIS), located at California State University, Bakersfield. The records search encompassed the Project APE as well as a 0.5-mile radius surrounding the site. SSJVIC staff examined site record files, maps, and other materials to identify previously recorded resources and prior surveys within the delineated area (Appendix C).

According to the information in the SSJVIC files, there has been one previous cultural resource study conducted within a very small portion of the project area, KE-05149. There have been three additional cultural resource studies conducted within the one-half mile radius, KE-01067, KE-02059, and KE-03726. There is one recorded resource within the project area, P-15-020328, an historic era well. There are two recorded resources within the one-half mile radius, P-15-013724 and P-15-020329, the Eastside Canal and an historic era well. The proposed project will avoid the well and impacts would be less than significant.

Additionally, on March 27, 2020, Provost & Pritchard contacted the Native American Heritage Commission (NAHC) in Sacramento. Provost & Pritchard provided NAHC a brief description of the Project and a map showing its location and requested that the NAHC perform a search of the Sacred Lands File to determine if any Native American resources have been recorded in the immediate study area. Provost & Pritchard also requested NAHC provide a current list of local Native American contacts for the Project APE. The ten tribes identified by NAHC were contacted in writing via US mail with a letter dated March 30, 2020, informing them about the Proposed Project.

1. Big Pine Paiute Tribe of the Owens Valley, James Rambeau, Sr., Sally Manning, Danelle Gutierrez
2. Chumash Council of Bakersfield, Julio Quair
3. Kern Valley Indian Community, Julie Turner, Robert Robinson, Brandy Kendricks
4. Kitanemuk & Yowlumne Tejon Indians, Delia Dominguez

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5. San Manuel Band of Mission Indians, Jessica Mauck
6. Santa Rosa Rancheria Tachi Yokut Tribe, Leo Sisco
7. Tejon Indian Tribe, Octavio Escobedo III, Colin Rambo
8. Tubatulabals of Kern Valley, Robert L. Gomez
9. Tule River Indian Tribe, Neil Pevron
10. Wuksache Indian Tribe/Eshom Valley Band, Kenneth Woodrow

An email was received April 16, 2020 from the San Manuel Band of Mission Indians (SMBMI) regarding the above-referenced project. The proposed Project is located outside of Serrano ancestral territory and, as such, SMBMI will not be requesting consulting party status with the lead agency or requesting to participate in the scoping, development, and/or review of documents created pursuant to legal and regulatory mandates.

**b) Less Than Significant Impact With Mitigation Incorporated.**

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

**Mitigation Measure CUL-1 (Archaeological Resources)**

In the event that archaeological remains are encountered at any time during development or ground-moving activities within the entire project area, all work in the vicinity of the find shall halt so that the archaeologist present can assess the discovery. The District shall implement all recommendations of the archaeologist necessary to avoid or reduce to a less than significant level potential impacts to cultural resource. Appropriate actions could include a Data Recovery Plan or preservation in place.

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

**Mitigation Measure CUL-2 (Human Remains)**

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

**ENERGY**

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>

**Response:**

**a) No Impact.** As discussed in the Air Quality and Greenhouse Gas sections above, the Project would not exceed any air emission thresholds during construction or operation. The Project would comply with construction best management practices and will be required to complete a SWPPP as part of construction. Once completed, the Project would be mostly passive in nature, including the use of an 80 cfs pump station as necessary, and would not use an excessive amount of energy. Therefore, the Project would not result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources during construction or operation.

**b) No Impact.** The Project would be passive in nature once it is completed, and the construction phase would be temporary in nature and would not exceed any thresholds set by the SJVAPCD.



**GEOLOGY AND SOILS**

<b>Would the project:</b>	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the most recently adopted Uniform Building Code 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 waste water?	<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 type="checkbox"/>	<input checked="" type="checkbox"/>

**Response:**

**a-i) Less Than Significant Impact.**

The Alquist-Priolo Fault Zone maps show two faults within close proximity to the Project site: the Edison Fault about 5.25 miles to the Northeast and the White Wolf Fault about 5 miles to the Southeast; however, the proposed facilities are subject to seismic activity from the faults in and around the Districts, as are the existing facilities. To minimize or eliminate the possibility of structural damage, the Project elements would be designed and constructed in accordance with accepted engineering standards and methods. The basic design of the Project would follow the design successfully used for the existing facilities, including earth berms and control structures. As a result, the Project would not result in or expose people to potential additional impacts involving seismic shaking. As a Project feature, the lowest pond will not be fully utilized as a recharge pond and will always have substantial unfilled capacity for emergencies. Its primary function will be to catch any water that is overflow from the ponds located upstream and/or power outages. As an emergency relief, the water leaving the Project site will be directed into the existing Eastside Canal located immediately downstream of the Project site. The impact would be less than significant.

**a-ii) Less Than Significant Impact.** Any impacts regarding strong seismic ground shaking have been discussed in **Impact a-i** above. The impact would be less than significant.

**a-iii) No Impact.** No subsidence-prone soils or oil or gas production are involved with the Project. There would be no impact.

**a-iv) No Impact.** No geologic landforms exist on or near the site that would result in a landslide event. The surrounding topography is very flat and the Project is about 5.5 miles from the nearest foothill slope. There would be no impact.

**b) No Impact.** Topsoil will be removed due to excavation of the Project site during construction. Up to 140,000 cubic yards of material will be excavated during the earthwork portion of the Project and then used to construct the ponds and levees, depending on the final design. It is anticipated the Project will be balanced, with no export or import of soil. The redistribution of material will not result in additional erosion or loss of material, therefore no mitigation measures are necessary

**c) No Impact.** Substantial grade change would not occur in the topography to the point where the Project would expose people or structures to potential substantial adverse effects on, or offsite, such as landslides, lateral spreading, subsidence, liquefaction or collapse. Project recharge activities would benefit potential subsidence concerns in the area. Because of the size, type and location of the Project it would be unlikely for regional land subsidence to cause an impact to the surrounding landscape related to the proposed basins. The berm side slopes will be designed to maintain stability. Regular maintenance of the ponds will be demonstrated in order to maintain stable interior levees and protect from erosion caused by waves from windy conditions. The basic design of the Project would follow the design successfully used for existing facilities, including earth berms and control structures. Additionally, the construction contractor will devise and implement a Stormwater Pollution Prevention Plan (SWPPP) during construction. The contractor would be responsible for remediating any hazardous spills during construction.

**d) Less Than Significant Impact.** The Proposed Project will not contain any facilities that could be affected by expansive soils nor would substantial grading change the topography such that the project would generate substantial risks to life or property. The Proposed Project will be



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consistent with the California Building Standards Code; therefore, impacts would be less than significant.

**e) No Impact.** The Project does not include the use of septic tanks or other alternative waste water disposal system. There would be no impact.

**f) No Impact.** Unique paleontological resources or sites or unique geological features have not been identified in the Project area. There will be no impact

**GREENHOUSE GAS EMISSIONS**

<b>Would the project:</b>	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"/>

**Response:**

**a) Less Than Significant Impact.** Although the Project is not located in the Bay Area, the Bay Area Air Quality Management District's thresholds for significance are based on the Statewide AB 32 objectives and will be used to quantify 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 of carbon dioxide equivalent (MTCO<sub>2e</sub>). For stationary source projects, such as those requiring a permit from a local air district to operate, the threshold is 10,000 MTCO<sub>2e</sub>. These thresholds are illustrated in **Table 6** below.

**Short-Term Construction-Generated Emissions**

Estimated construction-generated emissions are summarized in **Table 6**. As indicated, construction of the Project would generate maximum annual emissions of approximately 277.4299 MTCO<sub>2e</sub>. Construction-related production of GHGs would be temporary and last approximately eight months.

**Table 6 - Short-Term Construction-Generated GHG Emissions**

<b>Short-Term Construction-Generated GHG Emissions</b>	
<b>Year</b>	<b>Emissions (MT CO<sub>2</sub>e)<sup>(1)</sup></b>
2020	277.4299
2021	185.6839
<i>AB 32 Consistency Threshold for Land-Use Development Projects*</i>	<i>1,100</i>
<i>AB 32 Consistency Threshold for Stationary Source Projects*</i>	<i>10,000</i>
<i>Exceed Threshold?</i>	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](http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en)  
Accessed April 5, 2020.

### Long-Term Operational Emissions

It is projected that the basin will need infrequent upkeep. Maintenance of the Project will be performed by existing District staff on an as-needed basis. An electric stationary pump station, similar to those currently in use in the area for agricultural operations, will be used when necessary. As a result, long-term emissions are estimated to be minimal.

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

As discussed in Impact Assessment VIII-a and illustrated in **Table 6** above, the Project complies with the Bay Area Air Quality Management District's GHG emissions thresholds for significance. Consequently, implementation of the proposed Project is not anticipated to conflict with any applicable plan, policy, or regulation for reducing the emissions of GHGs, nor will the Project have a significant impact on the environment. The impact would be considered less than significant.

**HAZARDS AND HAZARDOUS MATERIALS**

<b>Would the project:</b>	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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input 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 to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Response:**

**a) No Impact.** There would be no transport, use or disposal of hazardous materials associated with Project construction or operation. There would be no impact.

**b) No Impact.** The Project would not create a significant hazard to the public or the environment as the Project would not discharge hazardous materials into the environment. Furthermore, construction activities will require implementation of a SWPPP and compliance with all Cal/OSHA regulations in order to reduce the potential for incidental release of hazardous substances into the environment. There would be no impact.

**c) No Impact.** The nearest school, Vineland Elementary School, is approximately 0.9 miles west of the Project site. The Project does not involve any toxic chemicals, would not emit hazardous emissions, involve hazardous materials, or create a hazard to the schools in any way. There would be no impact.

**d) 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. Additionally, a Phase I Environmental Site Assessment of the Project area was completed in October 2018. There would be no impact.

**e) No impact.** The nearest airport, the Creekside Airport, is over four miles away from the Project. The Project is well outside the 55 dB noise contours of all the nearby airports. The proposed Project would not result in a safety hazard for people working in the Project area. There would be no impact.

**f) No Impact.** The Project does not cross any publicly accessed routes and would not interfere with implementation of an emergency response plan or evacuation. There would be no impact.

**g) No impact.** The Project site and the surrounding lands are in agricultural, recreational, or industrial uses and are not considered wildlands. The Project site is not located in any of the fire hazard areas identified in the Kern County General Plan Safety Element (section 4.6). The impact would be no impact.

**HYDROLOGY AND WATER QUALITY**

<b>Would the project:</b>	<b>Potentially Significant Impact</b>	<b>Less than Significant With Mitigation Incorporated</b>	<b>Less than Significant Impact</b>	<b>No Impact</b>
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 type="checkbox"/>	<input checked="" 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:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) result in substantial erosion or siltation on- or off-site;	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>
iv) impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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"/>

**Response:**

**a) No impact.** The water that will be stored in the spreading/recharge area will be surface water from the Central Valley Project, the State Water Project, or Kern River which meets applicable

surface water quality standards. The Project would not violate any water quality standards and would not impact waste discharge requirements. Furthermore, construction activities will require implementation of a SWPPP and compliance with all Cal/OSHA regulations in order to reduce the potential for incidental release of pollutants or hazardous substances into surface water or groundwater. There would be no impact.

**b) No impact.** The Project site is located in the Kern County basin of the Tulare Lake Region, an area significantly affected by overdraft. The recharge ponds are designed for maximum percolation. There will be a positive net change in the area's groundwater supply. The Project would increase water volume in the aquifer and improve groundwater quality. As a result the net change in groundwater recharge potential surrounding the site would be positive. There would be no impact.

**c) No impact.** Drainage patterns would not change as a result of Project build out. The Project will not alter the run-off from the surrounding areas. In extreme flood events the spreading pond levees would help to ameliorate the flood flows. Siltation from storing the water in the ponds would occur over time but will not have a significant impact on the environment. Periodic removal of sediment from the bottom of the ponds will reduce siltation accumulation and increase infiltration rates.

**d) No impact.** As a Project feature, the lowest pond will not be fully utilized as a recharge pond on a regular year basis, but instead will be designed to have substantial capacity for times when emergency flows in high water years can be captured. Its primary function will be to catch any water that is overflow from the ponds located upstream. According to the Federal Emergency Management Agency (FEMA) National Flood Insurance Program (NFIP) Flood Insurance Rate Map (FIRM) for Community Number 06029C2750E dated September 26, 2008, the Project site is located within the 100 Year Flood Zone (see **Figure 6**); however the construction of housing or habitable structures is not a part of the proposed Project and there are no homes or offices in the immediate Project area. There would be no impact with regard to flood related events. The Project is not located in an area at risk of tsunami or seiche.

**e) No Impact.** Since the Project will be recharging water from the Central Valley Project, State Water Project, Kern River, or other supplies, the effect on groundwater quality in the area is expected to be improve.

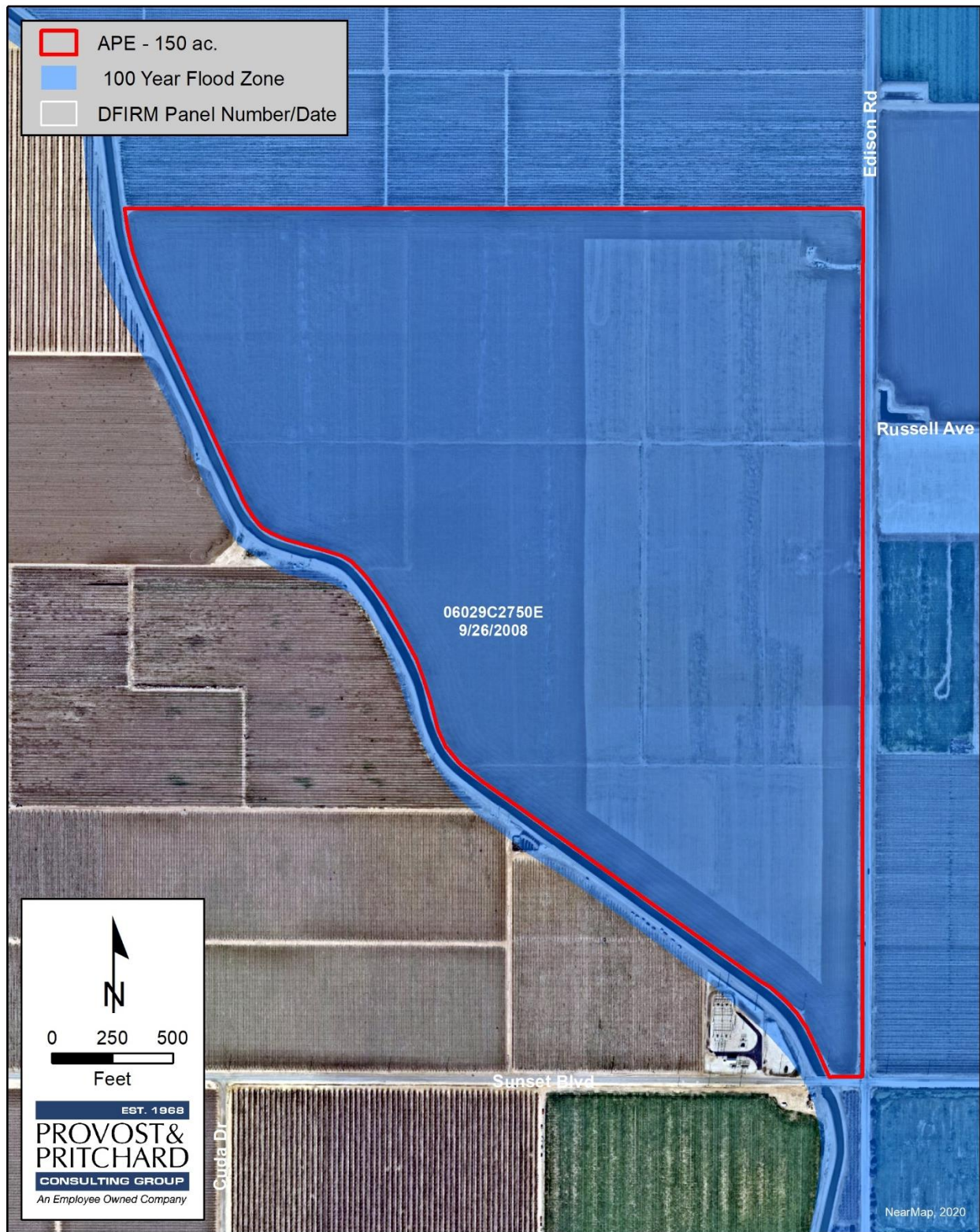


Figure 6 - FEMA Flood Map



**LAND USE AND PLANNING**

<b>Would the project:</b>	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) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the General Plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Response:**

**a) No Impact.** The Project is located in an agricultural setting in the southeastern portion of the San Joaquin Valley, and central Kern County. The existing canal and proposed Project is located outside the City Limits and Sphere of Influence of Arvin, California, and therefore would not physically divide any established community. There would be no impact.

**b) No Impact.** The Project involves the construction and operation of a groundwater recharge basin which is consistent with the land use within the vicinity. Therefore, the Proposed Project would not conflict with any applicable plans, policies, or regulations. There would be no impact

**MINERAL RESOURCES**

<b>Would the project:</b>	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"/>

**Response:**

**a) No Impact.** The Kern County General Plan (2004) includes a Land Use/Conservation/Open Space Element (Chapter 1), which identifies Mineral and Petroleum areas (Map Code 8.4) that contain “productive petroleum fields, natural gas, geothermal resources and mineral deposits of regional and statewide importance”. According to the map, the Project site is not located in a Mineral Resource Zone. The Project would not result in the loss of an known available mineral resource. There would be no impact.

**b) No Impact.** The Project site is not delineated on a local land use plan as a locally important mineral resource recovery site; therefore, the existence of the Project would not result in the loss of availability of any mineral resources. There would be no impact.

**NOISE**

<b>Would the project:</b>	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 groundborne vibration or groundborne 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 type="checkbox"/>	<input checked="" type="checkbox"/>

**Response:**

**a) Less than Significant.** Construction of the Project will involve temporary noise sources, originating predominately from off-road construction equipment, such as excavators, backhoes, graders, skid steers, loaders, and hauling trucks. The Project is located on and adjacent to agricultural lands, accustomed to similar noises associated with farm equipment. The Project will comply with the Kern County Municipal Code limiting construction activities to the hours of 6 am to 9 pm, Monday through Friday, and 8 am to 9 pm on weekends, when construction activities are located within 1,000 feet of an occupied residential dwelling<sup>1</sup>. Operational maintenance activities would be on an as-needed basis with routine monitoring performed by existing staff and would not generate significant new noise. Operational maintenance activities would be consistent with baseline noise conditions routinely experienced on site due to agricultural production. Any impacts would be mild and temporary and therefore, less than significant.

**b) Less than Significant Impact.** The Project is located in an area dominated by agricultural production, which includes the use of off-road equipment and ground-disturbing activities on a regular basis. The majority of construction will involve grading work and would be completed in approximately eight months. Conditions created by Project-related construction activities would not vary substantially from the baseline conditions routinely experienced onsite and would be

<sup>1</sup> Kern County Municipal Code, Chapter 8.36.020 H.

[https://library.municode.com/ca/kern\\_county/codes/code\\_of\\_ordinances?nodeId=TTT8HESA\\_CH8.36NOCO\\_8.36.020PRSO](https://library.municode.com/ca/kern_county/codes/code_of_ordinances?nodeId=TTT8HESA_CH8.36NOCO_8.36.020PRSO)

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temporary. As stated in **a)** above, the Project will comply with Kern County Municipal Code requirements regarding construction noise. Any impacts would be less than significant.

**c) No Impact.** The nearest airport, the Creekside Airport, is over four miles away from the Project. The Project is well outside the 55 dB noise contours of all the nearby airports. Furthermore, the Project does not involve the development of habitable structures or require the presence of permanent staff onsite. Therefore, the Project would not expose people residing or working in the project area to excessive noise levels. There would be no impact.

**POPULATION AND HOUSING**

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

**Response:**

**a) No Impact.** The Project would not induce population growth. There would be no impact.

**b) No Impact.** No housing or people would be displaced by the Project. There would be no impact.

**PUBLIC SERVICES**

<b>Would the project:</b>	<b>Potentially Significant Impact</b>	<b>Less than Significant With Mitigation Incorporated</b>	<b>Less than Significant Impact</b>	<b>No Impact</b>
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Response:**

**a) No Impact.** The Project would not rely on the addition or alteration of any public services. The subject site is within rural unincorporated land north of Arvin and would receive needed services from existing agencies and departments. There would be no impact.

Fire Protection – Kern County would continue to provide fire protection services from the Arvin (#54) station (2.7 miles Southeast) to the Project site.. No residential or commercial construction is identified with this Project and no change in existing land use is associated with this Project that would exacerbate fire risks or hazards, therefore, no additional services would be required. There would be no impact.

Police Protection – The Kern County Sheriff would also continue to provide police protection services to the Project site from the Lamont substation (four Miles west).. As discussed in Impact XIV-a, no residential or commercial construction is proposed for this Project. The Project would not impact existing law enforcement services.

Schools – As discussed in **Impact a)**, the Project would not include construction of any residential structures, nor result in any change that would impact area schools. The Project

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would not result in an increase of population that would require additional school facilities. There would be no impact.

Parks – The nearest park is Kovacevich Park, three miles to the southeast. As the Project would not induce population growth, the project would not create a need for additional park or recreational services. There would be no impact.

Other public facilities – There is a power substation adjacent to the southwestern border of the property, however, the recharge ponds would not affect any performance objectives. There would be no impact.

**RECREATION**

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

**Response:**

**a) No Impact.** No recreational facilities are in the Project vicinity. The closest park, Kovacevich Park, is three miles to the Southeast. As discussed in **Impact XIV-a**, the Project would not increase the demand for recreational facilities nor put a strain on the existing recreational facilities. There would be no impact.

**b) No Impact.** This Project would not include or require recreational facilities. The Project would not include housing. There would be no impact.



**TRANSPORTATION**

<b>Would the project:</b>	<b>Potentially Significant Impact</b>	<b>Less than Significant With Mitigation Incorporated</b>	<b>Less than Significant Impact</b>	<b>No Impact</b>
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadways, bicycle and pedestrian facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>

**Response:**

**a and b) Less than Significant Impact.** The Project does not require construction of any new roadways. The Project operations and maintenance would normally be completed by personnel already traveling by the site conducting other District duties and would therefore not materially exceed baseline conditions. Construction traffic would be temporary in nature over an estimated eight month period of time. There are no transit, pedestrian, or bicycle facilities in the vicinity of the site and the need for any would not be necessitated by the Project. The Project would not conflict with any plan, ordinance, or policy regarding circulation. These impacts would be less than significant.

**c) No Impact.** The Project does not involve changes to the geometry of surrounding roadway features or propose incompatible uses. There would be no impact.

**d) Less Than Significant Impact.** The Project will not have a significant impact on existing roads or emergency access routes as it involves the conversion of fallow agricultural land to a recharge/regulation basin. Construction activity would be short-term and there would be no roads closures during construction. Any impacts would be less than significant.

**TRIBAL CULTURAL RESOURCES**

<b>Would the project:</b>	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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Response:**

**a-i and a-ii) Less than Significant Impact With Mitigation Incorporated.** On March 27, 2020, Provost & Pritchard contacted the Native American Heritage Commission (NAHC) in Sacramento. Provost & Pritchard provided NAHC a brief description of the Project and a map showing its location and requested that the NAHC perform a search of the Sacred Lands File to determine if any Native American resources have been recorded in the immediate study area. Provost & Pritchard also requested NAHC provide a current list of local Native American contacts for the Project APE. The ten tribes identified by NAHC were contacted in writing via US mail with a letter dated March 30, 2020, informing them about the Project.

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1. Big Pine Paiute Tribe of the Owens Valley, James Rambeau, Sr., Sally Manning, Danelle Gutierrez
2. Chumash Council of Bakersfield, Julio Quair
3. Kern Valley Indian Community, Julie Turner, Robert Robinson, Brandy Kendricks
4. Kitanemuk & Yowlumne Tejon Indians, Delia Dominguez
5. San Manuel Bank of Mission Indians, Jessica Mauck
6. Santa Rosa Rancheria Tachi Yokut Tribe, Leo Sisco
7. Tejon Indian Tribe, Octavio Escobedo III, Colin Rambo
8. Tubatulabals of Kern Valley, Robert L. Gomez
9. Tule River Indian Tribe, Neil Pevron
10. Wuksache Indian Tribe/Eshom Valley Band, Kenneth Woodrow

An email was received April 16, 2020 from the San Manuel Band of Mission Indians (SMBMI) regarding the above-referenced project. The proposed project is located outside of Serrano ancestral territory and, as such, SMBMI will not be requesting consulting party status with the lead agency or requesting to participate in the scoping, development, and/or review of documents created pursuant to legal and regulatory mandates.

Nonetheless, Mitigation Measures **CUL-1** and **CUL-2** described above in Cultural Resources are recommended in the event cultural materials or human remains are unearthed during excavation or construction.

**UTILITIES AND SERVICE SYSTEMS**

<b>Would the project:</b>	<b>Potentially Significant Impact</b>	<b>Less than Significant With Mitigation Incorporated</b>	<b>Less than Significant Impact</b>	<b>No Impact</b>
a) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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 reductions goals?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Response:**

**a) No Impact.** Project operation would not generate any wastewater, nor would it require water additional to the water that already flows through the canal. No new water or wastewater facilities would be needed. There would be no impact.

**b) No Impact.** No new or expanded water entitlements would be required for the Project. All additional waters captured and stored within the Project would be done within the Districts' existing water contracts and/or rights. There would be no impact.

**c) No Impact.** As discussed in **Impact a)** above, the Project would not generate wastewater. There would be no impact.

**d) Less Than Significant Impact.** Operation of the Project would generate minimal solid waste (trash) from temporary construction activities. However, this trash is expected to be collected regularly by contractors and legally disposed of in landfills with sufficient permitted capacity. There

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would be irregular collection of debris (from wind-blown or illegal dumping) in the canal channel; however, that debris already is collected at other canal locations and legally disposed of. Any impacts would be less than significant.

**e) No Impact.** The proposed Project would continue to comply with any federal, state, and local regulations. There is no impact.

**WILDFIRE**

<b>If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project::</b>	<b>Potentially Significant Impact</b>	<b>Less than Significant With Mitigation Incorporated</b>	<b>Less than Significant Impact</b>	<b>No Impact</b>
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 uncontrolled 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"/>

**Response:**

**a–d) No Impact.** The closest area of state responsibility is approximately eight miles east of the Project site and the closest land classified as very high fire hazard severity is approximately ten miles east of the Project site. Therefore, further analysis of the Project's potential impacts regarding wildfire are not warranted. There would be no impacts.

**MANDATORY FINDINGS OF SIGNIFICANCE**

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

**Response:**

**a) Less Than Significant Impact.** The analysis conducted in this Initial Study/Mitigated Negative Declaration results in a determination that the Project would have a less than significant impact on the local environment. The Project includes the construction and operation of a recharge facility and associated pump structure and pipeline. Accordingly, the Project would not degrade the quality of the environment, reduce the habitat or population of fish or wildlife, including endangered plants or animals, nor eliminate a plant or animal community or important periods of California history or prehistory. With mitigation measures for biological and cultural resources, impacts would be less than significant.

**b) Less Than Significant Impact.** As discussed above, the Project would not result in any impacts individually limited. Any cumulatively considerable impacts given the compliance with applicable codes, ordinances, laws and other required regulations would reduce the magnitude of any Project impacts to a less than significant level.

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**c) No Impact.** The Project would not result in substantial adverse effects on human beings, either directly or indirectly from implementation of the Project. There is no impact.



## SECTION 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 Sunset Groundwater Recharge Facility Project (Project) in Kern County (County). The MMRP lists mitigation measures recommended in the IS/MND for the Proposed Project and identifies monitoring and reporting requirements.

**Table** presents the mitigation measures identified for the Project. Each mitigation measure is numbered with a symbol indicating the topical section to which it pertains, a hyphen, and the impact number. For example, BIO-2 would be the second mitigation measure identified in the Biological Resources Section of the IS/MND.

The first column of **Table** 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 (fifth and sixth) will be used by AEWS to ensure that individual mitigation measures have been complied with and monitored.

Table 6 - Mitigation and Monitoring 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
<b>Biological Resources</b>					
<b>BIO-1: Project-Related Construction Hours</b>					
<b>BIO-1 (Construction Hours):</b> Construction activities will be limited to the daylight hours in order to avoid any potential impacts to nocturnal foragers onsite.	During construction	Daily	Arvin-Edison Water Storage District	Construction Period Records	
<b>BIO-2: Project-Related Mortality and/or Disturbance of Nesting Raptors and Migratory Birds</b>					
<b>BIO-2a (Avoidance):</b> The Project's construction activities shall occur, if feasible, between September 1 and January 31 (outside of nesting bird season) in an effort to avoid impacts to nesting birds.	Prior to the start of construction	N/A	Arvin-Edison Water Storage District	Construction Period Records	
<b>BIO-2b (Pre-construction Surveys):</b> If activities must occur within nesting bird season (February 1 to August 31), a qualified biologist shall conduct pre-construction surveys for active nests within 30 days prior to the start of construction. The survey shall include the proposed work area and surrounding lands within 500 feet for all raptors and	Prior to the start of any construction, including construction resuming after a lapse of 30 days without any	One time at initial start of construction and upon resumption of any construction lapse longer	Arvin-Edison Water Storage District	Pre-construction survey report, if applicable	

*Initial Study/Mitigated Negative Declaration*

<b>Mitigation Measure/Condition of Approval</b>	<b>When Monitoring is to Occur</b>	<b>Frequency of Monitoring</b>	<b>Agency Responsible for Monitoring</b>	<b>Method to Verify Compliance</b>	<b>Verification of Compliance</b>
migratory birds. If no active nests are observed, no further mitigation is required. Nests containing eggs or young are to be considered "active," with the exception of raptors; raptor nests are considered "active" upon the nest-building stage. Monitoring can cease upon determination all nests are inactive or on September 1, whichever occurs first.	construction activity.	than 30 days.			
<b>BIO-2c (Establish Buffers):</b> On discovery of any active nests near work areas, the biologist shall determine appropriate construction setback distances based on applicable CDFW guidelines and/or the biology of the species in question. Construction buffers shall be identified with flagging, fencing, or other easily visible means, and shall be maintained until the biologist has determined that the nestlings have fledged.	During construction	Upon occurrence	Arvin-Edison Water Storage District	Submittal of a report upon occurrence	

*Initial Study/Mitigated Negative Declaration*

<b>Mitigation Measure/Condition of Approval</b>	<b>When Monitoring is to Occur</b>	<b>Frequency of Monitoring</b>	<b>Agency Responsible for Monitoring</b>	<b>Method to Verify Compliance</b>	<b>Verification of Compliance</b>
<b>BIO-3: Project-Related Impacts to Burrowing Owls</b>					
<b>BIO-3a (Pre-Construction Survey):</b> A qualified biologist shall conduct a pre-construction take avoidance survey for burrowing owls and suitable burrows, in accordance with CDFW's <i>Staff Report on Burrowing Owl Mitigation</i> (2012), within 30 days prior to the start of construction activities. The survey shall include the proposed work area and surrounding lands within 500 feet. If no burrowing owl individuals or suitable burrows are observed, no further mitigation is required.	Prior to the start of construction	One time at start of construction	Arvin-Edison Water Storage District	Submittal of a Report	
<b>BIO-3b (Avoidance):</b> If an active burrowing owl burrow is detected, the occurrence shall be reported to the local CDFW office and the CNDDDB, and disturbance-free buffers shall be implemented in accordance with CDFW's 2012 <i>Staff Report on Burrowing Owl Mitigation</i> , as outlined in the table in the Biological Resources Section of the IS/MND.	During construction	Upon occurrence	Arvin-Edison Water Storage District	Submittal of a report upon occurrence	

*Initial Study/Mitigated Negative Declaration*

<b>Mitigation Measure/Condition of Approval</b>	<b>When Monitoring is to Occur</b>	<b>Frequency of Monitoring</b>	<b>Agency Responsible for Monitoring</b>	<b>Method to Verify Compliance</b>	<b>Verification of Compliance</b>
<b>BIO-3c (Consultation with CDFW and Passive Relocation):</b> If avoidance of an active burrowing owl burrow is not feasible, CDFW shall be immediately consulted to determine the best course of action, which may include passive relocation during non-breeding season. Passive relocation and/or burrow exclusion shall not take place without coordination with CDFW and preparation of an approved exclusion and relocation plan.	Upon occurrence of an active burrow, and in the event the District and CDFW determine avoidance is infeasible	As determined by CDFW	Arvin-Edison Water Storage District	Consultation with CDFW	
<b>BIO-4: Project-Related Impacts to American Badgers</b>					
<b>BIO-4a (Pre-Construction Survey):</b> A pre-construction survey for American badger will be conducted by a qualified biologist within 30 days prior to the start of construction in all suitable denning habitat.	Prior to the start of construction	One time at start of construction	Arvin-Edison Water Storage District	Submittal of a report	
<b>BIO-4b (Avoidance):</b> If an active American badger den is detected on the pre-construction survey, a qualified biologist shall flag the den and enforce an appropriate disturbance-free buffer around the den until the biologist has determined the den is abandoned.	During construction	Upon occurrence	Arvin-Edison Water Storage District	Submittal of a report upon occurrence	

*Initial Study/Mitigated Negative Declaration*

<b>Mitigation Measure/Condition of Approval</b>	<b>When Monitoring is to Occur</b>	<b>Frequency of Monitoring</b>	<b>Agency Responsible for Monitoring</b>	<b>Method to Verify Compliance</b>	<b>Verification of Compliance</b>
<b>BIO-5: Project-Related Impacts to San Joaquin Kit Fox</b>					
<b>BIO-5a (Pre-construction Surveys):</b> Within 30 days prior to the start of construction, a pre-construction survey for San Joaquin kit fox shall be conducted on and within 200 feet of proposed work areas. If kit fox sign and potential dens are detected within or adjacent to the Project area, potential dens shall be monitored for a period of three consecutive nights with a remote-sensing camera and/or tracking medium.	Prior to the start of construction	One time at start of construction	Arvin-Edison Water Storage District	Submittal of a report	
<b>BIO-5b (Den Destruction):</b> If there is no sign of kit fox activity at a den after monitoring with a remote-sensing camera and/or tracking medium for a period of three consecutive nights, the den will be closed, excavated, or destroyed to prevent subsequent use by a kit fox during construction activities. There will be no destruction of “known dens” without a take authorization/permit from USFWS and CDFW.	Prior to the start of construction	For three consecutive days upon occurrence	Arvin-Edison Water Storage District	Submittal of a report upon occurrence	

*Initial Study/Mitigated Negative Declaration*

<b>Mitigation Measure/Condition of Approval</b>	<b>When Monitoring is to Occur</b>	<b>Frequency of Monitoring</b>	<b>Agency Responsible for Monitoring</b>	<b>Method to Verify Compliance</b>	<b>Verification of Compliance</b>
<b>BIO-5c (Incidental Take Permit):</b> If a known den or natal/pupping den is detected, the Project proponent will contact CDFW and USFWS to apply for an Incidental Take Permit (ITP).	Prior to the start of construction	Upon occurrence	Arvin-Edison Water Storage District		
<b>BIO-5d (Minimization):</b> The Project shall observe all minimization and protective measures from the Construction and On-Going Operational Requirements of the USFWS 2011 Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance, including, but not limited to: construction speed limits, covering of pipes, installation of escape structures, restriction of herbicide and rodenticide use, proper disposal of food items and trash, prohibition of pets and firearms, and completion of an employee education program.	During construction	Continuously	Arvin-Edison Water Storage District		
<b>BIO-5e (Mortality Reporting):</b> The Sacramento Field Office of USFWS and the Fresno Field Office of CDFW will be notified in writing within three working days in the case of the accidental death or injury to a San Joaquin	In the event of mortality	Upon occurrence	Arvin-Edison Water Storage District	Submittal of a report upon occurrence	

*Initial Study/Mitigated Negative Declaration*

<b>Mitigation Measure/Condition of Approval</b>	<b>When Monitoring is to Occur</b>	<b>Frequency of Monitoring</b>	<b>Agency Responsible for Monitoring</b>	<b>Method to Verify Compliance</b>	<b>Verification of Compliance</b>
kit fox during construction. Notification must include the date, time, and location of the incident and any other pertinent information.					
<b>Cultural Resources</b>					
<b>CUL-1: Archaeological Resources</b>					
In the event that archaeological remains are encountered at any time during development or ground-moving activities within the entire project area, all work in the vicinity of the find shall halt until a qualified archaeologist can assess the discovery. AEWSD shall implement all recommendations of the archaeologist necessary to avoid or reduce to a less than significant level potential impacts to cultural resource. Appropriate actions could include a Data Recovery Plan or preservation in place. No formal cemeteries or other places of human internment are known to exist on the Project site; however, in accordance with Health and Safety Code Section 7050.5 and Public	During construction	Upon occurrence	Arvin-Edison Water Storage District	Submittal of a report	



*Initial Study/Mitigated Negative Declaration*

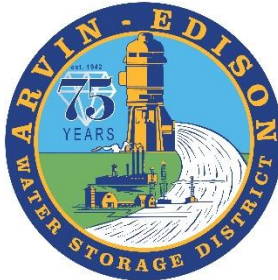
<b>Mitigation Measure/Condition of Approval</b>	<b>When Monitoring is to Occur</b>	<b>Frequency of Monitoring</b>	<b>Agency Responsible for Monitoring</b>	<b>Method to Verify Compliance</b>	<b>Verification of Compliance</b>
Resource Code Section 5097.98, if human remains are uncovered, Mitigation Measure CUL-2 would be implemented.					
<b>CUL-2: Human Remains</b>					
If human remains are uncovered, or in any other case when human remains are discovered during construction, the Kern County Coroner is to be notified to arrange their proper treatment and disposition. If the remains are identified—on the basis of archaeological context, age, cultural associations, or biological traits—as those of a Native American, California Health and Safety Code 7050.5 and Public Resource Code 5097.98 require that the coroner notify the NAHC within 24 hours of discovery. The NAHC will then identify the Most Likely Descendent who will determine the manner in which the remains are treated.	During construction	Upon occurrence	Kern County Coroner	Submittal of a report upon occurrence	

## SECTION 5 – REFERENCES

- California Air Pollution Control Officers Association. CEQA and Climate Change, January 2008.
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- California Native Plant Society. 2010. Inventory of rare and endangered plants of California (v7-10a) January 19, 2010. Sacramento, CA.
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- Federal Emergency Management Agency. Flood Insurance Rate Map. Community Number 06107C1637E. June 16, 2009.
- Guide for Assessing and Mitigating Air Quality Impacts. San Joaquin Valley Air Pollution Control District. January 2002.
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- United States Department of Agriculture, Natural Resources Conservation Service. Soil Survey of Kern County.
- United States Fish and Wildlife Service. 2009. National Wetlands Inventory website. U.S. Department of Interior, Fish and Wildlife Service, St. Petersburg, FL. <http://www.nwi.fws.gov>

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## *Appendix A*

### CalEEMod Air Quality and Greenhouse Gas Emissions Model Output

## Sunset Spreading Groundwater Recharge Basin Project - Kern-San Joaquin County, Annual

## Sunset Spreading Groundwater Recharge Basin Project

### Kern-San Joaquin County, Annual

## 1.0 Project Characteristics

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### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	150.00	Acre	150.00	6,534,000.00	0

### 1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.7	Precipitation Freq (Days)	32
Climate Zone	7			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 - 150 acre recharge basin

Construction Phase - Project will be approximately 8 months, and will involve mostly grading work.

Construction Off-road Equipment Mitigation -

## Sunset Spreading Groundwater Recharge Basin Project - Kern-San Joaquin County, Annual

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	310.00	142.00
tblConstructionPhase	NumDays	120.00	32.00
tblConstructionPhase	PhaseEndDate	12/30/2022	4/1/2021
tblConstructionPhase	PhaseEndDate	10/22/2021	9/15/2020
tblConstructionPhase	PhaseStartDate	10/23/2021	9/16/2020
tblConstructionPhase	PhaseStartDate	5/8/2021	8/1/2020
tblGrading	AcresOfGrading	355.00	775.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

## 2.0 Emissions Summary

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## Sunset Spreading Groundwater Recharge Basin Project - Kern-San Joaquin 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					
2020	0.2423	2.6154	1.6143	3.1300e-003	0.9451	0.1189	1.0641	0.3342	0.1094	0.4437	0.0000	275.2939	275.2939	0.0854	0.0000	277.4299
2021	0.1394	1.5102	1.0258	2.0900e-003	0.6148	0.0646	0.6794	0.1541	0.0594	0.2135	0.0000	184.2478	184.2478	0.0574	0.0000	185.6839
Maximum	0.2423	2.6154	1.6143	3.1300e-003	0.9451	0.1189	1.0641	0.3342	0.1094	0.4437	0.0000	275.2939	275.2939	0.0854	0.0000	277.4299

**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					
2020	0.2423	2.6154	1.6143	3.1300e-003	0.4326	0.1189	0.5515	0.1523	0.1094	0.2618	0.0000	275.2936	275.2936	0.0854	0.0000	277.4296
2021	0.1394	1.5102	1.0258	2.0900e-003	0.2811	0.0646	0.3457	0.0705	0.0594	0.1300	0.0000	184.2476	184.2476	0.0574	0.0000	185.6837
Maximum	0.2423	2.6154	1.6143	3.1300e-003	0.4326	0.1189	0.5515	0.1523	0.1094	0.2618	0.0000	275.2936	275.2936	0.0854	0.0000	277.4296

	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	54.25	0.00	48.54	54.36	0.00	40.39	0.00	0.00	0.00	0.00	0.00	0.00

## Sunset Spreading Groundwater Recharge Basin Project - Kern-San Joaquin County, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	8-1-2020	10-31-2020	1.6677	1.6677
2	11-1-2020	1-31-2021	1.7570	1.7570
3	2-1-2021	4-30-2021	1.0880	1.0880
		Highest	1.7570	1.7570

## 2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.5588	1.0000e-005	1.3800e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.6800e-003	2.6800e-003	1.0000e-005	0.0000	2.8600e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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
<b>Total</b>	<b>0.5588</b>	<b>1.0000e-005</b>	<b>1.3800e-003</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2.6800e-003</b>	<b>2.6800e-003</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>2.8600e-003</b>



## Sunset Spreading Groundwater Recharge Basin Project - Kern-San Joaquin 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	0.5588	1.0000e-005	1.3800e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.6800e-003	2.6800e-003	1.0000e-005	0.0000	2.8600e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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
<b>Total</b>	<b>0.5588</b>	<b>1.0000e-005</b>	<b>1.3800e-003</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2.6800e-003</b>	<b>2.6800e-003</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>2.8600e-003</b>

	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
<b>Percent Reduction</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

**3.0 Construction Detail****Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	8/1/2020	9/15/2020	5	32	
2	Grading	Grading	9/16/2020	4/1/2021	5	142	

## Sunset Spreading Groundwater Recharge Basin Project - Kern-San Joaquin County, Annual

**Acres of Grading (Site Preparation Phase): 0****Acres of Grading (Grading Phase): 775****Acres of Paving: 150****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	2	8.00	158	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48

**Trips and VMT**

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

**3.1 Mitigation Measures Construction**

Water Exposed Area

## Sunset Spreading Groundwater Recharge Basin Project - Kern-San Joaquin County, Annual

**3.2 Site Preparation - 2020****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2891	0.0000	0.2891	0.1589	0.0000	0.1589	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0652	0.6787	0.3442	6.1000e-004		0.0352	0.0352		0.0324	0.0324	0.0000	53.4891	53.4891	0.0173	0.0000	53.9216
<b>Total</b>	<b>0.0652</b>	<b>0.6787</b>	<b>0.3442</b>	<b>6.1000e-004</b>	<b>0.2891</b>	<b>0.0352</b>	<b>0.3242</b>	<b>0.1589</b>	<b>0.0324</b>	<b>0.1912</b>	<b>0.0000</b>	<b>53.4891</b>	<b>53.4891</b>	<b>0.0173</b>	<b>0.0000</b>	<b>53.9216</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5500e-003	1.1100e-003	0.0108	4.0000e-005	3.6100e-003	2.0000e-005	3.6300e-003	9.6000e-004	2.0000e-005	9.8000e-004	0.0000	3.2775	3.2775	8.0000e-005	0.0000	3.2796
<b>Total</b>	<b>1.5500e-003</b>	<b>1.1100e-003</b>	<b>0.0108</b>	<b>4.0000e-005</b>	<b>3.6100e-003</b>	<b>2.0000e-005</b>	<b>3.6300e-003</b>	<b>9.6000e-004</b>	<b>2.0000e-005</b>	<b>9.8000e-004</b>	<b>0.0000</b>	<b>3.2775</b>	<b>3.2775</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>3.2796</b>

## Sunset Spreading Groundwater Recharge Basin Project - Kern-San Joaquin County, Annual

**3.2 Site Preparation - 2020****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1301	0.0000	0.1301	0.0715	0.0000	0.0715	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0652	0.6787	0.3442	6.1000e-004		0.0352	0.0352		0.0324	0.0324	0.0000	53.4890	53.4890	0.0173	0.0000	53.9215
<b>Total</b>	<b>0.0652</b>	<b>0.6787</b>	<b>0.3442</b>	<b>6.1000e-004</b>	<b>0.1301</b>	<b>0.0352</b>	<b>0.1652</b>	<b>0.0715</b>	<b>0.0324</b>	<b>0.1039</b>	<b>0.0000</b>	<b>53.4890</b>	<b>53.4890</b>	<b>0.0173</b>	<b>0.0000</b>	<b>53.9215</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5500e-003	1.1100e-003	0.0108	4.0000e-005	3.6100e-003	2.0000e-005	3.6300e-003	9.6000e-004	2.0000e-005	9.8000e-004	0.0000	3.2775	3.2775	8.0000e-005	0.0000	3.2796
<b>Total</b>	<b>1.5500e-003</b>	<b>1.1100e-003</b>	<b>0.0108</b>	<b>4.0000e-005</b>	<b>3.6100e-003</b>	<b>2.0000e-005</b>	<b>3.6300e-003</b>	<b>9.6000e-004</b>	<b>2.0000e-005</b>	<b>9.8000e-004</b>	<b>0.0000</b>	<b>3.2775</b>	<b>3.2775</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>3.2796</b>

## Sunset Spreading Groundwater Recharge Basin Project - Kern-San Joaquin County, Annual

**3.3 Grading - 2020****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.6428	0.0000	0.6428	0.1718	0.0000	0.1718	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1713	1.9326	1.2304	2.3900e-003		0.0837	0.0837		0.0770	0.0770	0.0000	209.7645	209.7645	0.0678	0.0000	211.4606
<b>Total</b>	<b>0.1713</b>	<b>1.9326</b>	<b>1.2304</b>	<b>2.3900e-003</b>	<b>0.6428</b>	<b>0.0837</b>	<b>0.7265</b>	<b>0.1718</b>	<b>0.0770</b>	<b>0.2488</b>	<b>0.0000</b>	<b>209.7645</b>	<b>209.7645</b>	<b>0.0678</b>	<b>0.0000</b>	<b>211.4606</b>

**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	4.1500e-003	2.9700e-003	0.0289	1.0000e-004	9.6500e-003	7.0000e-005	9.7100e-003	2.5600e-003	6.0000e-005	2.6200e-003	0.0000	8.7628	8.7628	2.2000e-004	0.0000	8.7682
<b>Total</b>	<b>4.1500e-003</b>	<b>2.9700e-003</b>	<b>0.0289</b>	<b>1.0000e-004</b>	<b>9.6500e-003</b>	<b>7.0000e-005</b>	<b>9.7100e-003</b>	<b>2.5600e-003</b>	<b>6.0000e-005</b>	<b>2.6200e-003</b>	<b>0.0000</b>	<b>8.7628</b>	<b>8.7628</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>8.7682</b>

## Sunset Spreading Groundwater Recharge Basin Project - Kern-San Joaquin County, Annual

**3.3 Grading - 2020****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2893	0.0000	0.2893	0.0773	0.0000	0.0773	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1713	1.9326	1.2304	2.3900e-003		0.0837	0.0837		0.0770	0.0770	0.0000	209.7643	209.7643	0.0678	0.0000	211.4603
<b>Total</b>	<b>0.1713</b>	<b>1.9326</b>	<b>1.2304</b>	<b>2.3900e-003</b>	<b>0.2893</b>	<b>0.0837</b>	<b>0.3730</b>	<b>0.0773</b>	<b>0.0770</b>	<b>0.1543</b>	<b>0.0000</b>	<b>209.7643</b>	<b>209.7643</b>	<b>0.0678</b>	<b>0.0000</b>	<b>211.4603</b>

**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	4.1500e-003	2.9700e-003	0.0289	1.0000e-004	9.6500e-003	7.0000e-005	9.7100e-003	2.5600e-003	6.0000e-005	2.6200e-003	0.0000	8.7628	8.7628	2.2000e-004	0.0000	8.7682
<b>Total</b>	<b>4.1500e-003</b>	<b>2.9700e-003</b>	<b>0.0289</b>	<b>1.0000e-004</b>	<b>9.6500e-003</b>	<b>7.0000e-005</b>	<b>9.7100e-003</b>	<b>2.5600e-003</b>	<b>6.0000e-005</b>	<b>2.6200e-003</b>	<b>0.0000</b>	<b>8.7628</b>	<b>8.7628</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>8.7682</b>

## Sunset Spreading Groundwater Recharge Basin Project - Kern-San Joaquin County, Annual

**3.3 Grading - 2021****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.6067	0.0000	0.6067	0.1520	0.0000	0.1520	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1362	1.5080	1.0036	2.0200e-003		0.0645	0.0645		0.0594	0.0594	0.0000	177.1087	177.1087	0.0573	0.0000	178.5407
<b>Total</b>	<b>0.1362</b>	<b>1.5080</b>	<b>1.0036</b>	<b>2.0200e-003</b>	<b>0.6067</b>	<b>0.0645</b>	<b>0.6712</b>	<b>0.1520</b>	<b>0.0594</b>	<b>0.2113</b>	<b>0.0000</b>	<b>177.1087</b>	<b>177.1087</b>	<b>0.0573</b>	<b>0.0000</b>	<b>178.5407</b>

**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	3.2300e-003	2.2300e-003	0.0222	8.0000e-005	8.1400e-003	5.0000e-005	8.2000e-003	2.1600e-003	5.0000e-005	2.2100e-003	0.0000	7.1391	7.1391	1.6000e-004	0.0000	7.1432
<b>Total</b>	<b>3.2300e-003</b>	<b>2.2300e-003</b>	<b>0.0222</b>	<b>8.0000e-005</b>	<b>8.1400e-003</b>	<b>5.0000e-005</b>	<b>8.2000e-003</b>	<b>2.1600e-003</b>	<b>5.0000e-005</b>	<b>2.2100e-003</b>	<b>0.0000</b>	<b>7.1391</b>	<b>7.1391</b>	<b>1.6000e-004</b>	<b>0.0000</b>	<b>7.1432</b>

## Sunset Spreading Groundwater Recharge Basin Project - Kern-San Joaquin County, Annual

**3.3 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					0.2730	0.0000	0.2730	0.0684	0.0000	0.0684	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1362	1.5080	1.0036	2.0200e-003		0.0645	0.0645		0.0594	0.0594	0.0000	177.1085	177.1085	0.0573	0.0000	178.5405
<b>Total</b>	<b>0.1362</b>	<b>1.5080</b>	<b>1.0036</b>	<b>2.0200e-003</b>	<b>0.2730</b>	<b>0.0645</b>	<b>0.3375</b>	<b>0.0684</b>	<b>0.0594</b>	<b>0.1277</b>	<b>0.0000</b>	<b>177.1085</b>	<b>177.1085</b>	<b>0.0573</b>	<b>0.0000</b>	<b>178.5405</b>

**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	3.2300e-003	2.2300e-003	0.0222	8.0000e-005	8.1400e-003	5.0000e-005	8.2000e-003	2.1600e-003	5.0000e-005	2.2100e-003	0.0000	7.1391	7.1391	1.6000e-004	0.0000	7.1432
<b>Total</b>	<b>3.2300e-003</b>	<b>2.2300e-003</b>	<b>0.0222</b>	<b>8.0000e-005</b>	<b>8.1400e-003</b>	<b>5.0000e-005</b>	<b>8.2000e-003</b>	<b>2.1600e-003</b>	<b>5.0000e-005</b>	<b>2.2100e-003</b>	<b>0.0000</b>	<b>7.1391</b>	<b>7.1391</b>	<b>1.6000e-004</b>	<b>0.0000</b>	<b>7.1432</b>

**4.0 Operational Detail - Mobile**



## Sunset Spreading Groundwater Recharge Basin Project - Kern-San Joaquin County, Annual

## 4.1 Mitigation Measures Mobile

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

## 4.2 Trip Summary Information

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

## 4.3 Trip Type Information

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

## 4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.478390	0.030777	0.167800	0.120556	0.019513	0.006321	0.020235	0.145317	0.001626	0.001724	0.005916	0.000950	0.000877

## Sunset Spreading Groundwater Recharge Basin Project - Kern-San Joaquin County, Annual

## 5.0 Energy Detail

Historical Energy Use: N

## 5.1 Mitigation Measures Energy

[illegible]

## Sunset Spreading Groundwater Recharge Basin Project - Kern-San Joaquin County, Annual

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

[illegible]

**Mitigated**

[illegible]

## Sunset Spreading Groundwater Recharge Basin Project - Kern-San Joaquin County, Annual

**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
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**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
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**6.0 Area Detail****6.1 Mitigation Measures Area**

## Sunset Spreading Groundwater Recharge Basin Project - Kern-San Joaquin County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.5588	1.0000e-005	1.3800e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.6800e-003	2.6800e-003	1.0000e-005	0.0000	2.8600e-003
Unmitigated	0.5588	1.0000e-005	1.3800e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.6800e-003	2.6800e-003	1.0000e-005	0.0000	2.8600e-003

## 6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1363					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4224					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.3000e-004	1.0000e-005	1.3800e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.6800e-003	2.6800e-003	1.0000e-005	0.0000	2.8600e-003
<b>Total</b>	<b>0.5588</b>	<b>1.0000e-005</b>	<b>1.3800e-003</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2.6800e-003</b>	<b>2.6800e-003</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>2.8600e-003</b>

## Sunset Spreading Groundwater Recharge Basin Project - Kern-San Joaquin County, Annual

**6.2 Area by SubCategory****Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1363					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4224					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.3000e-004	1.0000e-005	1.3800e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.6800e-003	2.6800e-003	1.0000e-005	0.0000	2.8600e-003
<b>Total</b>	<b>0.5588</b>	<b>1.0000e-005</b>	<b>1.3800e-003</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2.6800e-003</b>	<b>2.6800e-003</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>2.8600e-003</b>

**7.0 Water Detail****7.1 Mitigation Measures Water**

## Sunset Spreading Groundwater Recharge Basin Project - Kern-San Joaquin County, Annual

	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
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

## Sunset Spreading Groundwater Recharge Basin Project - Kern-San Joaquin County, Annual

**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
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**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



## Sunset Spreading Groundwater Recharge Basin Project - Kern-San Joaquin County, Annual

**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
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**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
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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## Sunset Spreading Groundwater Recharge Basin Project - Kern-San Joaquin County, Annual

**10.0 Stationary Equipment**

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**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**

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*Appendix B*

Biological Resources Information



## Selected Elements by Common Name

### California Department of Fish and Wildlife

### California Natural Diversity Database



**Query Criteria:** Quad</span> IS </span>(Arvin (3511827)</span> OR </span>Weed Patch (3511828)</span> OR </span>Gosford (3511931)</span> OR </span>Lamont (3511838)</span> OR </span>Edison (3511837)</span> OR </span>Conner (3511921)</span> OR </span>Coal Oil Canyon (3511911)</span> OR </span>Mettler (3511818)</span> OR </span>Tejon Hills (3511817))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b>alkali mariposa-lily</b> <i>Calochortus striatus</i>	PMLIL0D190	None	None	G3?	S2S3	1B.2
<b>American badger</b> <i>Taxidea taxus</i>	AMAJF04010	None	None	G5	S3	SSC
<b>An andrenid bee</b> <i>Andrena macswaini</i>	IIHYM35130	None	None	G2	S2	
<b>Bakersfield cactus</b> <i>Opuntia basilaris</i> var. <i>treleasei</i>	PDCAC0D055	Endangered	Endangered	G5T1	S1	1B.1
<b>Bakersfield legless lizard</b> <i>Anniella grinnelli</i>	ARACC01050	None	None	G2G3	S2S3	SSC
<b>Bakersfield smallscale</b> <i>Atriplex tularensis</i>	PDCHE04240	None	Endangered	GX	SX	1A
<b>blunt-nosed leopard lizard</b> <i>Gambelia sila</i>	ARACF07010	Endangered	Endangered	G1	S1	FP
<b>Buena Vista Lake ornate shrew</b> <i>Sorex ornatus relictus</i>	AMABA01102	Endangered	None	G5T1	S1	SSC
<b>burrowing owl</b> <i>Athene cunicularia</i>	ABNSB10010	None	None	G4	S3	SSC
<b>calico monkeyflower</b> <i>Diplacus pictus</i>	PDSCR1B240	None	None	G2	S2	1B.2
<b>California alkali grass</b> <i>Puccinellia simplex</i>	PMPOA53110	None	None	G3	S2	1B.2
<b>California glossy snake</b> <i>Arizona elegans occidentalis</i>	ARADB01017	None	None	G5T2	S2	SSC
<b>California jewelflower</b> <i>Caulanthus californicus</i>	PDBRA31010	Endangered	Endangered	G1	S1	1B.1
<b>California legless lizard</b> <i>Anniella</i> spp.	ARACC01070	None	None	G3G4	S3S4	SSC
<b>California satintail</b> <i>Imperata brevifolia</i>	PMPOA3D020	None	None	G4	S3	2B.1
<b>Comanche Point layia</b> <i>Layia leucopappa</i>	PDAST5N0A0	None	None	G1	S1	1B.1
<b>Crotch bumble bee</b> <i>Bombus crotchii</i>	IIHYM24480	None	Candidate Endangered	G3G4	S1S2	
<b>great egret</b> <i>Ardea alba</i>	ABNGA04040	None	None	G5	S4	
<b>Great Valley Cottonwood Riparian Forest</b> <i>Great Valley Cottonwood Riparian Forest</i>	CTT61410CA	None	None	G2	S2.1	



Selected Elements by Common 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
<b>heartscale</b> <i>Atriplex cordulata</i> var. <i>cordulata</i>	PDCHE040B0	None	None	G3T2	S2	1B.2
<b>hispid salty bird's-beak</b> <i>Chloropyron molle</i> ssp. <i>hispidum</i>	PDSCR0J0D1	None	None	G2T1	S1	1B.1
<b>hoary bat</b> <i>Lasiurus cinereus</i>	AMACC05030	None	None	G5	S4	
<b>Hoover's eriastrum</b> <i>Eriastrum hooveri</i>	PDPLM03070	Delisted	None	G3	S3	4.2
<b>Horn's milk-vetch</b> <i>Astragalus hornii</i> var. <i>hornii</i>	PDFAB0F421	None	None	GUT1	S1	1B.1
<b>Kern mallow</b> <i>Eremalche parryi</i> ssp. <i>kernensis</i>	PDMAL0C031	Endangered	None	G3G4T3	S3	1B.2
<b>Kern shoulderband</b> <i>Helminthoglypta callistoderma</i>	IMGASC2080	None	None	G1	S1	
<b>least Bell's vireo</b> <i>Vireo bellii pusillus</i>	ABPBW01114	Endangered	Endangered	G5T2	S2	
<b>Lemmon's jewelflower</b> <i>Caulanthus lemmonii</i>	PDBRA0M0E0	None	None	G3	S3	1B.2
<b>long-eared owl</b> <i>Asio otus</i>	ABNSB13010	None	None	G5	S3?	SSC
<b>Lost Hills crownscale</b> <i>Atriplex coronata</i> var. <i>vallicola</i>	PDCHE04371	None	None	G4T2	S2	1B.2
<b>moestan blister beetle</b> <i>Lytta moesta</i>	IICOL4C020	None	None	G2	S2	
<b>Morrison's blister beetle</b> <i>Lytta morrisoni</i>	IICOL4C040	None	None	G1G2	S1S2	
<b>Munz's tidy-tips</b> <i>Layia munzii</i>	PDAST5N0B0	None	None	G2	S2	1B.2
<b>pallid bat</b> <i>Antrozous pallidus</i>	AMACC10010	None	None	G5	S3	SSC
<b>Palmer's mariposa-lily</b> <i>Calochortus palmeri</i> var. <i>palmeri</i>	PMLIL0D122	None	None	G3T2	S2	1B.2
<b>Piute Mountains navarretia</b> <i>Navarretia setiloba</i>	PDPLM0C0S0	None	None	G2	S2	1B.1
<b>purple martin</b> <i>Progne subis</i>	ABPAU01010	None	None	G5	S3	SSC
<b>recurved larkspur</b> <i>Delphinium recurvatum</i>	PDRAN0B1J0	None	None	G2?	S2?	1B.2
<b>San Joaquin adobe sunburst</b> <i>Pseudobahia peirsonii</i>	PDAST7P030	Threatened	Endangered	G1	S1	1B.1
<b>San Joaquin coachwhip</b> <i>Masticophis flagellum ruddocki</i>	ARADB21021	None	None	G5T2T3	S2?	SSC



Selected Elements by Common 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
<b>San Joaquin kit fox</b> <i>Vulpes macrotis mutica</i>	AMAJA03041	Endangered	Threatened	G4T2	S2	
<b>San Joaquin Pocket Mouse</b> <i>Perognathus inornatus</i>	AMAFD01060	None	None	G2G3	S2S3	
<b>San Joaquin woollythreads</b> <i>Monolopia congdonii</i>	PDASTA8010	Endangered	None	G2	S2	1B.2
<b>snowy egret</b> <i>Egretta thula</i>	ABNGA06030	None	None	G5	S4	
<b>Stabilized Interior Dunes</b> <i>Stabilized Interior Dunes</i>	CTT23100CA	None	None	G1	S1.1	
<b>Swainson's hawk</b> <i>Buteo swainsoni</i>	ABNKC19070	None	Threatened	G5	S3	
<b>Tejon poppy</b> <i>Eschscholzia lemmonii</i> ssp. <i>kernensis</i>	PDPAP0A071	None	None	G5T2	S2	1B.1
<b>Tipton kangaroo rat</b> <i>Dipodomys nitratoideus nitratoideus</i>	AMAFD03152	Endangered	Endangered	G3T1T2	S1S2	
<b>tricolored blackbird</b> <i>Agelaius tricolor</i>	ABPBXB0020	None	Threatened	G2G3	S1S2	SSC
<b>Tulare grasshopper mouse</b> <i>Onychomys torridus tularensis</i>	AMAFF06021	None	None	G5T1T2	S1S2	SSC
<b>Valley Saltbush Scrub</b> <i>Valley Saltbush Scrub</i>	CTT36220CA	None	None	G2	S2.1	
<b>Valley Sink Scrub</b> <i>Valley Sink Scrub</i>	CTT36210CA	None	None	G1	S1.1	
<b>Vasek's clarkia</b> <i>Clarkia tembloriensis</i> ssp. <i>calientensis</i>	PDONA05141	None	None	G3T1	S1	1B.1
<b>western mastiff bat</b> <i>Eumops perotis californicus</i>	AMACD02011	None	None	G5T4	S3S4	SSC
<b>western pond turtle</b> <i>Emys marmorata</i>	ARAAD02030	None	None	G3G4	S3	SSC
<b>western spadefoot</b> <i>Spea hammondi</i>	AAABF02020	None	None	G3	S3	SSC

Record Count: 56

**U.S. FISH AND WILDLIFE SERVICE  
STANDARDIZED RECOMMENDATIONS  
FOR PROTECTION OF THE ENDANGERED SAN JOAQUIN KIT FOX  
PRIOR TO OR DURING GROUND DISTURBANCE**

Prepared by the Sacramento Fish and Wildlife Office  
January 2011

## INTRODUCTION

The following document includes many of the San Joaquin kit fox (*Vulpes macrotis mutica*) protection measures typically recommended by the U. S. Fish and Wildlife Service (Service), prior to and during ground disturbance activities. **However, incorporating relevant sections of these guidelines into the proposed project is not the only action required under the Endangered Species Act of 1973, as amended (Act) and does not preclude the need for section 7 consultation or a section 10 incidental take permit for the proposed project.** Project applicants should contact the Service in Sacramento to determine the full range of requirements that apply to your project; the address and telephone number are given at the end of this document. Implementation of the measures presented in this document may be necessary to avoid violating the provisions of the Act, including the prohibition against "take" (defined as killing, harming, or harassing a listed species, including actions that damage or destroy its habitat). These protection measures may also be required under the terms of a biological opinion pursuant to section 7 of the Act resulting in incidental take authorization (authorization), or an incidental take permit (permit) pursuant to section 10 of the Act. The specific measures implemented to protect kit fox for any given project shall be determined by the Service based upon the applicant's consultation with the Service.

The purpose of this document is to make information on kit fox protection strategies readily available and to help standardize the methods and definitions currently employed to achieve kit fox protection. The measures outlined in this document are subject to modification or revision at the discretion of the Service.

## IS A PERMIT NECESSARY?

**Certain acts need a permit from the Service which includes destruction of any known (occupied or unoccupied) or natal/pupping kit fox dens.** Determination of the presence or absence of kit foxes and /or their dens should be made during the environmental review process.

All surveys and monitoring described in this document must be conducted by a qualified biologist and these activities do not require a permit. A qualified biologist (biologist) means any person who has completed at least four years of university training in wildlife biology or a related science and/or has demonstrated field experience in the identification and life history of the San Joaquin kit fox. In addition, the biologist(s) must be able to identify coyote, red fox,

gray fox, and kit fox tracks, and to have seen a kit fox in the wild, at a zoo, or as a museum mount. Resumes of biologists should be submitted to the Service for review and approval prior to any survey or monitoring work occurring.

### **SMALL PROJECTS**

Small projects are considered to be those projects with small foot prints, of approximately one acre or less, such as an individual in-fill oil well, communication tower, or bridge repairs. These projects must stand alone and not be part of, or in any way connected to larger projects (i.e., bridge repair or improvement to serve a future urban development). The Service recommends that on these small projects, the biologist survey the proposed project boundary and a 200-foot area outside of the project footprint to identify habitat features and utilize this information as guidance to situate the project to minimize or avoid impacts. If habitat features cannot be completely avoided, then surveys should be conducted and the Service should be contacted for technical assistance to determine the extent of possible take.

Preconstruction/preactivity surveys shall be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities or any project activity likely to impact the San Joaquin kit fox. Kit foxes change dens four or five times during the summer months, and change natal dens one or two times per month (Morrell 1972). Surveys should identify kit fox habitat features on the project site and evaluate use by kit fox and, if possible, assess the potential impacts to the kit fox by the proposed activity. The status of all dens should be determined and mapped (see Survey Protocol). Written results of preconstruction/preactivity surveys must be received by the Service within five days after survey completion and prior to the start of ground disturbance and/or construction activities.

**If a natal/pupping den is discovered within the project area or within 200-feet of the project boundary, the Service shall be immediately notified and under no circumstances should the den be disturbed or destroyed without prior authorization. If the preconstruction/preactivity survey reveals an active natal pupping or new information, the project applicant should contact the Service immediately to obtain the necessary take authorization/permit.**

If the take authorization/permit has already been issued, then the biologist may proceed with den destruction within the project boundary, except natal/pupping den which may not be destroyed while occupied. A take authorization/permit is required to destroy these dens even after they are vacated. Protective exclusion zones can be placed around all known and potential dens which occur outside the project footprint (conversely, the project boundary can be demarcated, see den destruction section).



## OTHER PROJECTS

It is likely that all other projects occurring within kit fox habitat will require a take authorization/permit from the Service. This determination would be made by the Service during the early evaluation process (see Survey Protocol). These other projects would include, but are not limited to: Linear projects; projects with large footprints such as urban development; and projects which in themselves may be small but have far reaching impacts (i.e., water storage or conveyance facilities that promote urban growth or agriculture, etc.).

The take authorization/permit issued by the Service may incorporate some or all of the protection measures presented in this document. The take authorization/permit may include measures specific to the needs of the project and those requirements supersede any requirements found in this document.

## EXCLUSION ZONES

In order to avoid impacts, construction activities must avoid their dens. The configuration of exclusion zones around the kit fox dens should have a radius measured outward from the entrance or cluster of entrances due to the length of dens underground. The following distances are **minimums**, and if they cannot be followed the Service must be contacted. Adult and pup kit foxes are known to sometimes rest and play near the den entrance in the afternoon, but most above-ground activities begin near sunset and continue sporadically throughout the night. Den definitions are attached as Exhibit A.

Potential den**	50 feet
Atypical den**	50 feet
Known den*	100 feet
Natal/pupping den (occupied <u>and</u> unoccupied)	Service must be contacted

**\*Known den:** To ensure protection, the exclusion zone should be demarcated by fencing that encircles each den at the appropriate distance and does not prevent access to the den by kit foxes. Acceptable fencing includes untreated wood particle-board, silt fencing, orange construction fencing or other fencing as approved by the Service as long as it has openings for kit fox ingress/egress and keeps humans and equipment out. Exclusion zone fencing should be maintained until all construction related or operational disturbances have been terminated. At that time, all fencing shall be removed to avoid attracting subsequent attention to the dens.

**\*\*Potential and Atypical dens:** Placement of 4-5 flagged stakes 50 feet from the den entrance(s) will suffice to identify the den location; fencing will not be required, but the exclusion zone must be observed.

Only essential vehicle operation on existing roads and foot traffic should be permitted. Otherwise, all construction, vehicle operation, material storage, or any other type of surface-disturbing activity should be prohibited or greatly restricted within the exclusion zones.

## **DESTRUCTION OF DENS**

Limited destruction of kit fox dens may be allowed, if avoidance is not a reasonable alternative, provided the following procedures are observed. The value to kit foxes of potential, known, and natal/pupping dens differ and therefore, each den type needs a different level of protection.

**Destruction of any known or natal/pupping kit fox den requires take authorization/permit from the Service.**

Destruction of the den should be accomplished by careful excavation until it is certain that no kit foxes are inside. The den should be fully excavated, filled with dirt and compacted to ensure that kit foxes cannot reenter or use the den during the construction period. If at any point during excavation, a kit fox is discovered inside the den, the excavation activity shall cease immediately and monitoring of the den as described above should be resumed. Destruction of the den may be completed when in the judgment of the biologist, the animal has escaped, without further disturbance, from the partially destroyed den.

**Natal/pupping dens:** Natal or pupping dens which are occupied will not be destroyed until the pups and adults have vacated and then only after consultation with the Service. Therefore, project activities at some den sites may have to be postponed.

**Known Dens:** Known dens occurring within the footprint of the activity must be monitored for three days with tracking medium or an infra-red beam camera to determine the current use. If no kit fox activity is observed during this period, the den should be destroyed immediately to preclude subsequent use.

If kit fox activity is observed at the den during this period, the den should be monitored for at least five consecutive days from the time of the observation to allow any resident animal to move to another den during its normal activity. Use of the den can be discouraged during this period by partially plugging its entrances(s) with soil in such a manner that any resident animal can escape easily. Only when the den is determined to be unoccupied may the den be excavated under the direction of the biologist. If the animal is still present after five or more consecutive days of plugging and monitoring, the den may have to be excavated when, in the judgment of a biologist, it is temporarily vacant, for example during the animal's normal foraging activities.

**The Service encourages hand excavation, but realizes that soil conditions may necessitate the use of excavating equipment. However, extreme caution must be exercised.**

Potential Dens: If a take authorization/permit has been obtained from the Service, den destruction may proceed without monitoring, unless other restrictions were issued with the take authorization/permit. If no take authorization/permit has been issued, then potential dens should be monitored as if they were known dens. If any den was considered to be a potential den, but is later determined during monitoring or destruction to be currently, or previously used by kit fox (e.g., if kit fox sign is found inside), then all construction activities shall cease and the Service shall be notified immediately.

## **CONSTRUCTION AND ON-GOING OPERATIONAL REQUIREMENTS**

Habitat subject to permanent and temporary construction disturbances and other types of ongoing project-related disturbance activities should be minimized by adhering to the following activities. Project designs should limit or cluster permanent project features to the smallest area possible while still permitting achievement of project goals. To minimize temporary disturbances, all project-related vehicle traffic should be restricted to established roads, construction areas, and other designated areas. These areas should also be included in preconstruction surveys and, to the extent possible, should be established in locations disturbed by previous activities to prevent further impacts.

1. Project-related vehicles should observe a daytime speed limit of 20-mph throughout the site in all project areas, except on county roads and State and Federal highways; this is particularly important at night when kit foxes are most active. Night-time construction should be minimized to the extent possible. However if it does occur, then the speed limit should be reduced to 10-mph. Off-road traffic outside of designated project areas should be prohibited.
2. To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2-feet deep should be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks shall be installed. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the Service and the California Department of Fish and Game (CDFG) shall be contacted as noted under measure 13 referenced below.
3. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipes and become trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is

discovered inside a pipe, that section of pipe should not be moved until the Service has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity, until the fox has escaped.

4. All food-related trash items such as wrappers, cans, bottles, and food scraps should be disposed of in securely closed containers and removed at least once a week from a construction or project site.
5. No firearms shall be allowed on the project site.
6. No pets, such as dogs or cats, should be permitted on the project site to prevent harassment, mortality of kit foxes, or destruction of dens.
7. Use of rodenticides and herbicides in project areas should be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds should observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional project-related restrictions deemed necessary by the Service. If rodent control must be conducted, zinc phosphide should be used because of a proven lower risk to kit fox.
8. A representative shall be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped kit fox. The representative will be identified during the employee education program and their name and telephone number shall be provided to the Service.
9. An employee education program should be conducted for any project that has anticipated impacts to kit fox or other endangered species. The program should consist of a brief presentation by persons knowledgeable in kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and military and/or agency personnel involved in the project. The program should include the following: A description of the San Joaquin kit fox and its habitat needs; a report of the occurrence of kit fox in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to the previously referenced people and anyone else who may enter the project site.
10. Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. should be

re-contoured if necessary, and revegetated to promote restoration of the area to pre-project conditions. An area subject to "temporary" disturbance means any area that is disturbed during the project, but after project completion will not be subject to further disturbance and has the potential to be revegetated. Appropriate methods and plant species used to revegetate such areas should be determined on a site-specific basis in consultation with the Service, California Department of Fish and Game (CDFG), and revegetation experts.

11. In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape, or the Service should be contacted for guidance.
12. Any contractor, employee, or military or agency personnel who are responsible for inadvertently killing or injuring a San Joaquin kit fox shall immediately report the incident to their representative. This representative shall contact the CDFG immediately in the case of a dead, injured or entrapped kit fox. The CDFG contact for immediate assistance is State Dispatch at (916)445-0045. They will contact the local warden or Mr. Paul Hoffman, the wildlife biologist, at (530)934-9309. The Service should be contacted at the numbers below.
13. The Sacramento Fish and Wildlife Office and CDFG shall be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during project related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. The Service contact is the Chief of the Division of Endangered Species, at the addresses and telephone numbers below. The CDFG contact is Mr. Paul Hoffman at 1701 Nimbus Road, Suite A, Rancho Cordova, California 95670, (530) 934-9309.
14. New sightings of kit fox shall be reported to the California Natural Diversity Database (CNDDDB). A copy of the reporting form and a topographic map clearly marked with the location of where the kit fox was observed should also be provided to the Service at the address below.

Any project-related information required by the Service or questions concerning the above conditions or their implementation may be directed in writing to the U.S. Fish and Wildlife Service at:

Endangered Species Division  
2800 Cottage Way, Suite W2605  
Sacramento, California 95825-1846  
(916) 414-6620 or (916) 414-6600

**EXHIBIT “A” - DEFINITIONS**

"Take" - Section 9 of the Endangered Species Act of 1973, as amended (Act) prohibits the "take" of any federally listed endangered species by any person (an individual, corporation, partnership, trust, association, etc.) subject to the jurisdiction of the United States. As defined in the Act, take means " . . . to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct". Thus, not only is a listed animal protected from activities such as hunting, but also from actions that damage or destroy its habitat.

"Dens" - San Joaquin kit fox dens may be located in areas of low, moderate, or steep topography. Den characteristics are listed below, however, the specific characteristics of individual dens may vary and occupied dens may lack some or all of these features. Therefore, caution must be exercised in determining the status of any den. Typical dens may include the following: (1) one or more entrances that are approximately 5 to 8 inches in diameter; (2) dirt berms adjacent to the entrances; (3) kit fox tracks, scat, or prey remains in the vicinity of the den; (4) matted vegetation adjacent to the den entrances; and (5) manmade features such as culverts, pipes, and canal banks.

"Known den" - Any existing natural den or manmade structure that is used or has been used at any time in the past by a San Joaquin kit fox. Evidence of use may include historical records, past or current radiotelemetry or spotlighting data, kit fox sign such as tracks, scat, and/or prey remains, or other reasonable proof that a given den is being or has been used by a kit fox. The Service discourages use of the terms "active" and "inactive" when referring to any kit fox den because a great percentage of occupied dens show no evidence of use, and because kit foxes change dens often, with the result that the status of a given den may change frequently and abruptly.

"Potential Den" - Any subterranean hole within the species' range that has entrances of appropriate dimensions for which available evidence is insufficient to conclude that it is being used or has been used by a kit fox. Potential dens shall include the following: (1) any suitable subterranean hole; or (2) any den or burrow of another species (e.g., coyote, badger, red fox, or ground squirrel) that otherwise has appropriate characteristics for kit fox use.

"Natal or Pupping Den" - Any den used by kit foxes to whelp and/or rear their pups. Natal/pupping dens may be larger with more numerous entrances than dens occupied exclusively by adults. These dens typically have more kit fox tracks, scat, and prey remains in the vicinity of the den, and may have a broader apron of matted dirt and/or vegetation at one or more entrances. A natal den, defined as a den in which kit fox pups are actually whelped but not necessarily reared, is a more restrictive version of the pupping den. In practice, however, it is difficult to distinguish between the two, therefore, for purposes of this definition either term applies.

"Atypical Den" - Any manmade structure which has been or is being occupied by a San Joaquin kit fox. Atypical dens may include pipes, culverts, and diggings beneath concrete slabs and buildings.

## *Appendix C*

### Cultural Resources Information



## **Cultural Resources Information**

### **Sunset Spreading Works Groundwater Recharge Basin Project**

Southern San Joaquin Valley Information Center, CSUB, California Historical Resources Information System: Record Search 20-132, dated April 6, 2020.

- There has been one previous cultural resource study conducted within a very small portion of the project area, KE-05149.
- There have been three additional cultural resource studies conducted within the one-half mile radius, KE-01067, KE-02059, and KE-03726.
- There is one recorded resource within the project area, P-15-020328, an historic era well.
- There are two recorded resources within the one-half mile radius, P-15-013724 and P-15-020329, the East Side Canal and an historic era well.
- The historic era well will be avoided.

Native American Heritage Commission (NAHC): Sacred Lands File & Native American Contacts List Request, dated March 27, 2020.

- A Search of the NAHC Sacred Lands File was completed for the Area of Potential Effect (APE) with negative results
- A list of fifteen tribes was provided, and letters to the fifteen contacts were then mailed out March 30, 2020
- An email was received April 16, 2010 from the San Manuel Band of Mission Indians (SMBMI) regarding the above-referenced project. The proposed project is located outside of Serrano ancestral territory and, as such, SMBMI will not be requesting consulting party status with the lead agency or requesting to participate in the scoping, development, and/or review of documents created pursuant to legal and regulatory mandates.

AB 52 Consultation pursuant to Public Resource Code Section 21080.3.1

- Arvin Edison Water Storage District has not received any letters from tribes regarding AB 52.
- Therefore, no tribes were consulted on AB 52.



**To:** Jackie Lancaster  
Provost & Pritchard Consulting Group, Inc.  
130 N. Garden Street  
Visalia, CA 93291

**Record Search 20-132**

**Date:** April 6, 2020

**Re:** Arvin-Edison Water Storage District Sunset Spreading Recharge Basin Project

**County:** Kern

**Map(s):** Arvin 7.5'

### **CULTURAL RESOURCES RECORDS SEARCH**

The California Office of Historic Preservation (OHP) contracts with the California Historical Resources Information System's (CHRIS) regional Information Centers (ICs) to maintain information in the CHRIS inventory and make it available to local, state, and federal agencies, cultural resource professionals, Native American tribes, researchers, and the public. Recommendations made by IC coordinators or their staff regarding the interpretation and application of this information are advisory only. Such recommendations do not necessarily represent the evaluation or opinion of the State Historic Preservation Officer in carrying out the OHP's regulatory authority under federal and state law.

The following are the results of a search of the cultural resource files at the Southern San Joaquin Valley Information Center. These files include known and recorded cultural resources sites, inventory and excavation reports filed with this office, and resources listed on the National Register of Historic Places, the OHP Built Environment Resources Directory, California State Historical Landmarks, California Register of Historical Resources, California Inventory of Historic Resources, and California Points of Historical Interest. Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the OHP are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area.

### **PRIOR CULTURAL RESOURCE STUDIES CONDUCTED WITHIN THE PROJECT AREA AND THE ONE-HALF MILE RADIUS**

According to the information in our files, there has been one previous cultural resource study conducted within a very small portion of the project area, KE-05149. There have been three additional cultural resource studies conducted within the one-half mile radius, KE-01067, KE-02059, and KE-03726.

## **KNOWN/RECORDED CULTURAL RESOURCES WITHIN THE PROJECT AREA AND THE ONE-HALF MILE RADIUS**

There is one recorded resource within the project area, P-15-020328, an historic era well. There are two recorded resources within the one-half mile radius, P-15-013724 and P-15-020329, the East Side Canal and an historic era well.

There are no recorded cultural resources within the project area or radius that are listed in the National Register of Historic Places, the California Register of Historical Resources, the California Points of Historical Interest, California Inventory of Historic Resources, or the California State Historic Landmarks.

## **COMMENTS AND RECOMMENDATIONS**

We understand this project consists of a 140-gross acre groundwater recharge basin, including construction of dirt berms for the direct recharge facility, a new turnout, pump station and Pipeline from the KDWD Eastside Canal, and interbasin structures. Additionally, we understand this project site has been predominantly used for agriculture. Please note that agriculture does not destroy cultural resources, but merely moves them around within the plow zone. Because a cultural resources survey has not been conducted on the vast majority of this project area, it is unknown if any additional cultural resources are present. Therefore, proper to project activities, we recommend a qualified, professional consultant conduct a field survey to determine if cultural resources are present. A list of qualified consultants can be found at [www.chrisinfo.org](http://www.chrisinfo.org).

We also recommend that you contact the Native American Heritage Commission in Sacramento. They will provide you with a current list of Native American individuals/organizations that can assist you with information regarding cultural resources that may not be included in the CHRIS Inventory and that may be of concern to the Native groups in the area. The Commission can consult their "Sacred Lands Inventory" file in order to determine what sacred resources, if any, exist within this project area and the way in which these resources might be managed. Finally, please consult with the lead agency on this project to determine if any other cultural resource investigation is required. If you need any additional information or have any questions or concerns, please contact our office at (661) 654-2289.

By:

Celeste M. Thomson, Coordinator

**Date:** April 6, 2020

Please note that invoices for Information Center services will be sent under separate cover from the California State University, Bakersfield Accounting Office.

## NATIVE AMERICAN HERITAGE COMMISSION

March 27, 2020

Jackie Lancaster

Provost &amp; Pritchard Consulting Group

Via Email to: jlanaster@ppeng.com

## Re: Arvin-Edison Water Storage District Sunset Spreading Recharge Basin Project, Kern County

Dear Ms. Lancaster:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: [Nancy.Gonzalez-Lopez@nahc.ca.gov](mailto:Nancy.Gonzalez-Lopez@nahc.ca.gov).

Sincerely,



Nancy Gonzalez-Lopez  
Cultural Resources Analyst

Attachment



CHAIRPERSON  
**Laura Miranda**  
Luiseño

VICE CHAIRPERSON  
**Reginald Pagaling**  
Chumash

SECRETARY  
**Merri Lopez-Keifer**  
Luiseño

PARLIAMENTARIAN  
**Russell Attebery**  
Karuk

COMMISSIONER  
**Marshall McKay**  
Wintun

COMMISSIONER  
**William Mungary**  
Paiute/White Mountain  
Apache

COMMISSIONER  
**Joseph Myers**  
Pomo

COMMISSIONER  
**Julie Tumamait-Stenslie**  
Chumash

COMMISSIONER  
[Vacant]

EXECUTIVE SECRETARY  
**Christina Snider**  
Pomo

NAHC HEADQUARTERS  
1550 Harbor Boulevard  
Suite 100  
West Sacramento,  
California 95691  
(916) 373-3710  
[nahc@nahc.ca.gov](mailto:nahc@nahc.ca.gov)  
[NAHC.ca.gov](http://NAHC.ca.gov)

**Native American Heritage Commission  
Native American Contacts List  
March 27, 2020**

Big Pine Paiute Tribe of the Owens Valley  
James Rambeau, Sr., Chairperson  
P.O. Box 700  
Big Pine CA 93513  
j.rambeau@bigpinepaiute.org  
(760) 938-2003  
(976) 938-2942 Fax

Paiute - Shoshone

Kern Valley Indian Community  
Robert Robinson, Chairperson  
P.O. Box 1010  
Lake Isabella CA 93240  
bbutterbredt@gmail.com  
(760) 378-2915 Cell

Tubatulabal  
Kawaiisu

Big Pine Paiute Tribe of Owens Valley  
Sally Manning, Environmental Director  
P.O. Box 700  
Big Pine CA 93513  
s.manning@bigpinepaiute.org  
(760) 938-2003  
(760) 938-2942 Fax

Paiute

Kern Valley Indian Community  
Brandy Kendricks  
30741 Foxridge Court  
Tehachapi CA 93561  
krazykendricks@hotmail.com  
(661) 821-1733  
(661) 972-0445

Kawaiisu  
Tubatulabal

Big Pine Paiute Tribe of the Owens Valley  
Danelle Gutierrez THPO  
P.O. Box 700  
Big Pine CA 93513  
d.gutierrez@bigpinepaiute.org  
(760) 938-2003, ext. 228  
(760) 938-2942 Fax

Paiute

Kitanemuk & Yowlumne Tejon Indians  
Delia Dominguez, Chairperson  
115 Radio Street  
Bakersfield CA 93305  
2deedominguez@gmail.com  
(626) 339-6785

Yowlumne  
Kitanemuk

Chumash Council of Bakersfield  
Julio Quair, Chairperson  
729 Texas Street  
Bakersfield CA 93307  
chumashtribe@sbcglobal.net  
(661) 322-0121

Chumash

San Manuel Band of Mission Indians  
Jessica Mauck, Director-CRM Dept.  
26569 Community Center Drive  
Highland CA 92346  
jmauck@sanmanuel-nsn.gov  
(909) 864-8933

Serrano

Kern Valley Indian Community  
Julie Turner, Secretary  
P.O. Box 1010  
Lake Isabella CA 93240  
(661) 340-0032 Cell

Kawaiisu  
Tubatulabal

Santa Rosa Rancheria Tachi Yokut Tribe  
Leo Sisco, Chairperson  
P.O. Box 8  
Lemoore CA 93245  
(559) 924-1278  
(559) 924-3583 Fax

Tache  
Tachi  
Yokut

This list is current 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 Resources Code, or Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans Tribes for the proposed:  
Arvin-Edison Water Storage District Sunset Spreading Recharge Basin Project, Kern County.

**Native American Heritage Commission  
Native American Contacts List  
March 27, 2020**

Tejon Indian Tribe  
Octavio Escobedo III, Chairperson  
P.O. Box 640  
Arvin, CA 93203  
oescobedo@tejonindiantribe-nsn.gov  
(661) 834-8566

Kitanemuk

Tejon Indian Tribe  
Colin Rambo, CRM Tech  
P.O. Box 640  
Arvin, CA 93203  
colin.rambo@tejonindiantribe-nsn.gov  
(661) 834-8566  
(484) 515-4790 Cell

Kitanemuk

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

Tule River Indian Tribe  
Neil Peyron, Chairperson  
P.O. Box 589  
Porterville, CA 93258  
neil.peyron@tulerivertribe-nsn.gov  
(559) 781-4271  
(559) 781-4610 Fax

Yokuts

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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This list is only applicable for contacting local Native Americans Tribes for the proposed:  
Arvin-Edison Water Storage District Sunset Spreading Recharge Basin Project, Kern County.



286 W. Cromwell Avenue  
Fresno, CA 93711-6162  
Tel: (559) 449-2700  
Fax: (559) 449-2715  
[www.ppeng.com](http://www.ppeng.com)

March 30, 2020

Big Pine Paiute Tribe of the Owens Valley  
Attn: Danelle Gutierrez THPO  
PO Box 700  
Big Pine, CA 93513

RE: Arvin-Edison WSD Sunset Spreading Recharge Basin Project

Dear Ms. Gutierrez:

Provost and Pritchard Consulting Group is providing cultural resources services in support of the Arvin-Edison WSD Sunset Spreading Recharge Basin Project.

The proposed Project is a 140-gross acre groundwater recharge project located on APNs 189-190-10, 189-200-01, and 189-200-04. The project is located on the boundary between AEWSD and KDWD, adjacent to KDWD's Eastside Canal. The project will take surface water (Federal Central Valley Project, State Water Project, Kern River, or other local supplies) diverted through KDWD's Eastside Canal and recharge the surface supplies as part of AEWSD's and KDWD's joint water management programs. The Project will include the construction of dirt berms for a direct recharge facility, a new turnout, pump station and pipeline from the KDWD Eastside Canal, and interbasin structures. The Project could recharge approximately 50 AF/day (assuming an infiltration of nearly 0.35 AF/acre).

Provost and Pritchard Consulting Group has requested a records search of the California Historic Resources Information System from the Southern San Joaquin Valley Information Center to identify any cultural resources within or adjacent to the Project Area. A search of the Native American Heritage Commission (NAHC) Sacred Lands File was completed with negative results. The NAHC provided your name and address as a tribal contact that is culturally affiliated to the project area. If you have any information that you wish to share, or have questions or would like more information about the project, please do not hesitate to contact me by phone (559) 449-2700, email ([jlancaster@ppeng.com](mailto:jlancaster@ppeng.com)), or send a letter to my attention. I would appreciate any information you might provide to assist us with our inventory efforts.

Be assured that any locations of archaeological sites, cemeteries, or sacred places will be treated confidentially, as required by law, and not disclosed in any document available to the general public.

Sincerely,

Jackie Lancaster  
Project Administrator  
encl.: Topo Quad Map



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Fresno, CA 93711-6162  
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Fax: (559) 449-2715  
[www.ppeng.com](http://www.ppeng.com)

March 30, 2020

Big Pine Paiute Tribe of the Owens Valley  
Attn: Sally Manning, Environmental Director  
PO Box 700  
Big Pine, CA 93513

RE: Arvin-Edison WSD Sunset Spreading Recharge Basin Project

Dear Ms. Manning:

Provost and Pritchard Consulting Group is providing cultural resources services in support of the Arvin-Edison WSD Sunset Spreading Recharge Basin Project.

The proposed Project is a 140-gross acre groundwater recharge project located on APNs 189-190-10, 189-200-01, and 189-200-04. The project is located on the boundary between AEWSD and KDWD, adjacent to KDWD's Eastside Canal. The project will take surface water (Federal Central Valley Project, State Water Project, Kern River, or other local supplies) diverted through KDWD's Eastside Canal and recharge the surface supplies as part of AEWSD's and KDWD's joint water management programs. The Project will include the construction of dirt berms for a direct recharge facility, a new turnout, pump station and pipeline from the KDWD Eastside Canal, and interbasin structures. The Project could recharge approximately 50 AF/day (assuming an infiltration of nearly 0.35 AF/acre).

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March 30, 2020

Big Pine Paiute Tribe of the Owens Valley  
Attn: James Rambeau, Sr., Chairperson  
PO Box 700  
Big Pine, CA 93513

RE: Arvin-Edison WSD Sunset Spreading Recharge Basin Project

Dear Mr. Rambeau:

Provost and Pritchard Consulting Group is providing cultural resources services in support of the Arvin-Edison WSD Sunset Spreading Recharge Basin Project.

The proposed Project is a 140-gross acre groundwater recharge project located on APNs 189-190-10, 189-200-01, and 189-200-04. The project is located on the boundary between AEWSD and KDWD, adjacent to KDWD's Eastside Canal. The project will take surface water (Federal Central Valley Project, State Water Project, Kern River, or other local supplies) diverted through KDWD's Eastside Canal and recharge the surface supplies as part of AEWSD's and KDWD's joint water management programs. The Project will include the construction of dirt berms for a direct recharge facility, a new turnout, pump station and pipeline from the KDWD Eastside Canal, and interbasin structures. The Project could recharge approximately 50 AF/day (assuming an infiltration of nearly 0.35 AF/acre).

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Fax: (559) 449-2715  
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March 30, 2020

Chumash Council of Bakersfield  
Attn: Julio Quair, Chairperson  
729 Texas Street  
Bakersfield, CA 93307

RE: Arvin-Edison WSD Sunset Spreading Recharge Basin Project

Dear Mr. Quair:

Provost and Pritchard Consulting Group is providing cultural resources services in support of the Arvin-Edison WSD Sunset Spreading Recharge Basin Project.

The proposed Project is a 140-gross acre groundwater recharge project located on APNs 189-190-10, 189-200-01, and 189-200-04. The project is located on the boundary between AEWSD and KDWD, adjacent to KDWD's Eastside Canal. The project will take surface water (Federal Central Valley Project, State Water Project, Kern River, or other local supplies) diverted through KDWD's Eastside Canal and recharge the surface supplies as part of AEWSD's and KDWD's joint water management programs. The Project will include the construction of dirt berms for a direct recharge facility, a new turnout, pump station and pipeline from the KDWD Eastside Canal, and interbasin structures. The Project could recharge approximately 50 AF/day (assuming an infiltration of nearly 0.35 AF/acre).

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Jackie Lancaster  
Project Administrator  
encl.: Topo Quad Map



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March 30, 2020

Kern Valley Indian Community  
Attn: Brandy Kendricks  
30741 Foxridge Court  
Tehachapi, CA 93561

RE: Arvin-Edison WSD Sunset Spreading Recharge Basin Project

Dear Ms. Kendricks:

Provost and Pritchard Consulting Group is providing cultural resources services in support of the Arvin-Edison WSD Sunset Spreading Recharge Basin Project.

The proposed Project is a 140-gross acre groundwater recharge project located on APNs 189-190-10, 189-200-01, and 189-200-04. The project is located on the boundary between AEWSD and KDWD, adjacent to KDWD's Eastside Canal. The project will take surface water (Federal Central Valley Project, State Water Project, Kern River, or other local supplies) diverted through KDWD's Eastside Canal and recharge the surface supplies as part of AEWSD's and KDWD's joint water management programs. The Project will include the construction of dirt berms for a direct recharge facility, a new turnout, pump station and pipeline from the KDWD Eastside Canal, and interbasin structures. The Project could recharge approximately 50 AF/day (assuming an infiltration of nearly 0.35 AF/acre).

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Sincerely,

A handwritten signature in blue ink that reads "Jackie Lancaster". The signature is fluid and cursive, with a long, sweeping underline.

Jackie Lancaster  
Project Administrator  
encl.: Topo Quad Map



286 W. Cromwell Avenue  
Fresno, CA 93711-6162  
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March 30, 2020

Kern Valley Indian Community  
Attn: Robert Robinson, Chairperson  
PO Box 1010  
Lake Isabella, CA 93240

RE: Arvin-Edison WSD Sunset Spreading Recharge Basin Project

Dear Mr. Robinson:

Provost and Pritchard Consulting Group is providing cultural resources services in support of the Arvin-Edison WSD Sunset Spreading Recharge Basin Project.

The proposed Project is a 140-gross acre groundwater recharge project located on APNs 189-190-10, 189-200-01, and 189-200-04. The project is located on the boundary between AEWSD and KDWD, adjacent to KDWD's Eastside Canal. The project will take surface water (Federal Central Valley Project, State Water Project, Kern River, or other local supplies) diverted through KDWD's Eastside Canal and recharge the surface supplies as part of AEWSD's and KDWD's joint water management programs. The Project will include the construction of dirt berms for a direct recharge facility, a new turnout, pump station and pipeline from the KDWD Eastside Canal, and interbasin structures. The Project could recharge approximately 50 AF/day (assuming an infiltration of nearly 0.35 AF/acre).

Provost and Pritchard Consulting Group has requested a records search of the California Historic Resources Information System from the Southern San Joaquin Valley Information Center to identify any cultural resources within or adjacent to the Project Area. A search of the Native American Heritage Commission (NAHC) Sacred Lands File was completed with negative results. The NAHC provided your name and address as a tribal contact that is culturally affiliated to the project area. If you have any information that you wish to share, or have questions or would like more information about the project, please do not hesitate to contact me by phone (559) 449-2700, email ([jlancaster@ppeng.com](mailto:jlancaster@ppeng.com)), or send a letter to my attention. I would appreciate any information you might provide to assist us with our inventory efforts.

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Sincerely,

A handwritten signature in blue ink that reads "Jackie Lancaster". The signature is fluid and cursive, with a long, sweeping underline.

Jackie Lancaster  
Project Administrator  
encl.: Topo Quad Map



286 W. Cromwell Avenue  
Fresno, CA 93711-6162  
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March 30, 2020

Kern Valley Indian Community  
Attn: Julie Turner, Secretary  
PO Box 1010  
Lake Isabella, CA 93240

RE: Arvin-Edison WSD Sunset Spreading Recharge Basin Project

Dear Ms. Turner:

Provost and Pritchard Consulting Group is providing cultural resources services in support of the Arvin-Edison WSD Sunset Spreading Recharge Basin Project.

The proposed Project is a 140-gross acre groundwater recharge project located on APNs 189-190-10, 189-200-01, and 189-200-04. The project is located on the boundary between AEWSD and KDWD, adjacent to KDWD's Eastside Canal. The project will take surface water (Federal Central Valley Project, State Water Project, Kern River, or other local supplies) diverted through KDWD's Eastside Canal and recharge the surface supplies as part of AEWSD's and KDWD's joint water management programs. The Project will include the construction of dirt berms for a direct recharge facility, a new turnout, pump station and pipeline from the KDWD Eastside Canal, and interbasin structures. The Project could recharge approximately 50 AF/day (assuming an infiltration of nearly 0.35 AF/acre).

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Sincerely,

A handwritten signature in blue ink that reads "Jackie Lancaster". The signature is fluid and cursive, with a long, sweeping underline.

Jackie Lancaster  
Project Administrator  
encl.: Topo Quad Map



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Fresno, CA 93711-6162  
Tel: (559) 449-2700  
Fax: (559) 449-2715  
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March 30, 2020

Kitanemuk & Yowlumne Tejon Indians  
Attn: Delia Dominguez, Chairperson  
115 Radio Street  
Bakersfield, CA 93305

RE: Arvin-Edison WSD Sunset Spreading Recharge Basin Project

Dear Ms. Dominguez:

Provost and Pritchard Consulting Group is providing cultural resources services in support of the Arvin-Edison WSD Sunset Spreading Recharge Basin Project.

The proposed Project is a 140-gross acre groundwater recharge project located on APNs 189-190-10, 189-200-01, and 189-200-04. The project is located on the boundary between AEWSD and KDWD, adjacent to KDWD's Eastside Canal. The project will take surface water (Federal Central Valley Project, State Water Project, Kern River, or other local supplies) diverted through KDWD's Eastside Canal and recharge the surface supplies as part of AEWSD's and KDWD's joint water management programs. The Project will include the construction of dirt berms for a direct recharge facility, a new turnout, pump station and pipeline from the KDWD Eastside Canal, and interbasin structures. The Project could recharge approximately 50 AF/day (assuming an infiltration of nearly 0.35 AF/acre).

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March 30, 2020

San Manuel Band of Mission Indians  
Attn: Jessica Mauck, Director-CRM Dept.  
26569 Community Center Drive  
Highland, CA 93246

RE: Arvin-Edison WSD Sunset Spreading Recharge Basin Project

Dear Ms. Mauck:

Provost and Pritchard Consulting Group is providing cultural resources services in support of the Arvin-Edison WSD Sunset Spreading Recharge Basin Project.

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March 30, 2020

Santa Rosa Rancheria Tachi Yokut Tribe  
Attn: Leo Sisco, Chairperson  
PO Box 8  
Lemoore, CA 93245

RE: Arvin-Edison WSD Sunset Spreading Recharge Basin Project

Dear Mr. Sisco:

Provost and Pritchard Consulting Group is providing cultural resources services in support of the Arvin-Edison WSD Sunset Spreading Recharge Basin Project.

The proposed Project is a 140-gross acre groundwater recharge project located on APNs 189-190-10, 189-200-01, and 189-200-04. The project is located on the boundary between AEWSD and KDWD, adjacent to KDWD's Eastside Canal. The project will take surface water (Federal Central Valley Project, State Water Project, Kern River, or other local supplies) diverted through KDWD's Eastside Canal and recharge the surface supplies as part of AEWSD's and KDWD's joint water management programs. The Project will include the construction of dirt berms for a direct recharge facility, a new turnout, pump station and pipeline from the KDWD Eastside Canal, and interbasin structures. The Project could recharge approximately 50 AF/day (assuming an infiltration of nearly 0.35 AF/acre).

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March 30, 2020

Tejon Indian Tribe  
Attn: Colin Rambo, CRM Tech  
PO Box 640  
Arvin, CA 93203

RE: Arvin-Edison WSD Sunset Spreading Recharge Basin Project

Dear Mr. Rambo:

Provost and Pritchard Consulting Group is providing cultural resources services in support of the Arvin-Edison WSD Sunset Spreading Recharge Basin Project.

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March 30, 2020

Tejon Indian Tribe  
Attn: Octavio Escobedo III, Chairperson  
PO Box 640  
Arvin, CA 93203

RE: Arvin-Edison WSD Sunset Spreading Recharge Basin Project

Dear Mr. Escobedo:

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March 30, 2020

Tubatulabals of Kern Valley  
Attn: Robert Gomez, Jr., Tribal Chairperson  
PO Box 226  
Lake Isabella, CA 93240

RE: Arvin-Edison WSD Sunset Spreading Recharge Basin Project

Dear Mr. Gomez:

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March 30, 2020

Tule River Indian Tribe  
Attn: Neil Pevron, Chairperson  
PO Box 589  
Porterville, CA 93258

RE: Arvin-Edison WSD Sunset Spreading Recharge Basin Project

Dear Mr. Pevron:

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March 30, 2020

Wuksache Indian Tribe/Eshom Valley Band  
Attn: Kenneth Woodrow  
1179 Rock Haven Court  
Salinas CA 93906

RE: Arvin-Edison WSD Sunset Spreading Recharge Basin Project

Dear Mr. Woodrow:

Provost and Pritchard Consulting Group is providing cultural resources services in support of the Arvin-Edison WSD Sunset Spreading Recharge Basin Project.

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Jackie Lancaster  
Project Administrator  
encl.: Topo Quad Map

## Jackie Lancaster

---

**From:** Alexandra McCleary <Alexandra.McCleary@sanmanuel-nsn.gov>  
**Sent:** Thursday, April 16, 2020 12:04 PM  
**To:** Jackie Lancaster  
**Subject:** Arvin-Alison WSD Sunset Spreading Recharge Basin Project

Dear Jackie,

Thank you for contacting the San Manuel Band of Mission Indians (SMBMI) regarding the above-referenced project. SMBMI appreciates the opportunity to review the project documentation, which was received by the Cultural Resources Management Department on April 15, 2020. The proposed project is located outside of Serrano ancestral territory and, as such, SMBMI will not be requesting consulting party status with the lead agency or requesting to participate in the scoping, development, and/or review of documents created pursuant to legal and regulatory mandates.

Kind regards,  
Alexandra McCleary

### Alexandra McCleary

TRIBAL ARCHAEOLOGIST

O: (909) 864-8933 x502023

M: (909) 633-0054

26569 Community Center Dr Highland California 92346

**SAN MANUEL**  
BAND OF  MISSION INDIANS

THIS MESSAGE IS INTENDED ONLY FOR THE USE OF THE INDIVIDUAL OR ENTITY TO WHICH IT IS ADDRESSED AND MAY CONTAIN INFORMATION THAT IS PRIVILEGED, CONFIDENTIAL AND EXEMPT FROM DISCLOSURE UNDER APPLICABLE LAW. If the reader of this message is not the intended recipient or agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination or copying of this communication is strictly prohibited. If you have received this electronic transmission in error, please delete it from your system without copying it and notify the sender by reply e-mail so that the email address record can be corrected. Thank You

*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 **Kern County, California, Southwest Part**

**Arvin-Edison WSD Sunset  
Spreading Recharge Basin  
Project**





# 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](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

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

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

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

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

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# How Soil Surveys Are Made

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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

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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

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

# Custom Soil Resource Report Soil Map





## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils


 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

### Special Point Features

 Blowout

 Borrow Pit


 Clay Spot


 Closed Depression

 Gravel Pit


 Gravelly Spot


 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water


 Perennial Water

 Rock Outcrop


 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

### Water Features

 Streams and Canals

### Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Kern County, California, Southwest Part  
Survey Area Data: Version 10, Sep 16, 2019

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

Date(s) aerial images were photographed: Feb 25, 2019—Mar 15, 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
210	Kimberlina fine sandy loam, 0 to 2 percent slopes MLRA 17	150.5	100.0%
<b>Totals for Area of Interest</b>		<b>150.5</b>	<b>100.0%</b>

## 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.

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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.

## Kern County, California, Southwest Part

### 210—Kimberlina fine sandy loam, 0 to 2 percent slopes MLRA 17

#### Map Unit Setting

*National map unit symbol:* 2ss96  
*Elevation:* 120 to 1,160 feet  
*Mean annual precipitation:* 4 to 8 inches  
*Mean annual air temperature:* 63 to 64 degrees F  
*Frost-free period:* 240 to 300 days  
*Farmland classification:* Prime farmland if irrigated

#### Map Unit Composition

*Kimberlina and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Kimberlina

##### Setting

*Landform:* Alluvial fans  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Talf  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Alluvium derived from igneous and sedimentary rock

##### Typical profile

*Ap - 0 to 9 inches:* fine sandy loam  
*C - 9 to 45 inches:* fine sandy loam  
*2C - 45 to 71 inches:* silt loam

##### Properties and qualities

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Well drained  
*Runoff class:* Very low  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.57 to 1.98 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* Rare  
*Frequency of ponding:* None  
*Calcium carbonate, maximum in profile:* 10 percent  
*Salinity, maximum in profile:* Nonsaline to slightly saline (0.3 to 4.0 mmhos/cm)  
*Sodium adsorption ratio, maximum in profile:* 4.0  
*Available water storage in profile:* Moderate (about 8.7 inches)

##### Interpretive groups

*Land capability classification (irrigated):* 1  
*Land capability classification (nonirrigated):* 7e  
*Hydrologic Soil Group:* A  
*Hydric soil rating:* No

## Minor Components

### Wasco

*Percent of map unit:* 7 percent  
*Landform:* Alluvial fans  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Talf  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

### Milham

*Percent of map unit:* 6 percent  
*Landform:* Alluvial fans  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Talf  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

### Unnamed

*Percent of map unit:* 2 percent  
*Landform:* Flood plains  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Talf  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* Yes

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