County of Kings
1400 W. Lacey Blvd
Hanford, CA 93230

Initial Study

Project Title: Tract 936 Summers Pointe

This document is the Initial Study for the proposed subdivision and development of approximately 20.08 gross acres into 109 single family residential lots in the County of Kings, within the Armona Community Plan. The County of Kings will act as Lead Agency for this project pursuant to the California Environmental Quality Act (CEQA) and the CEQA Guidelines.

1.1 PURPOSE

The purpose of this environmental document is to implement the California Environmental Quality Act (CEQA). Section 15002(a) of the CEQA Guidelines describes the basic purposes of CEQA as follows.

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

This Initial Study of environmental impacts has been prepared to conform to the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations Section 15000 et seq.). According to Section 15070, a public agency shall prepare or have prepared a proposed negative declaration or mitigated negative declaration for a project subject to CEQA when:

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

1.2 INITIAL STUDY

1. **Project Title:** Tract 936 Summers Pointe

2. **Lead Agency:** County of Kings Community Development Agency
   1400 W. Lacey Blvd., Building #6
   Hanford, CA 93230
   Telephone: 559-852-2670
   Fax: 559-584-8989

3. **Applicant:** Hollyhills Group
   Contact Person: Dan Bailey
   17 Mayfair Drive
   Rancho Mirage, CA 92270
   (760) 835-9448

4. **Project Location:** The proposed project site is located within the County of Kings within the Armona Community Plan, South of W. Lacy Boulevard, North of Front Street, and East of 14th Avenue. The site is approximately 0.3 miles Northeast of the Armona downtown, and approximately 3 miles West of the Hanford downtown. The Project involves the subdivision and development of 109 single family residences on approximately 20.08 acres within Parcels 017-100-012 and 017-100-013. The site is topographically flat and is bounded by agricultural uses to the North, East, and West and single-family residential development to the South. The site is zoned R-1-6 Single-Family Residential by the Kings County Development Code and is designated as Medium Density Residential by the Armona Community Plan. The site currently contains one single-family residence surrounded by agricultural uses.

5. **General Plan Designation:** The proposed project site is designated as Medium Density Residential by the Armona Community Plan.

6. **Zoning Designation:** The site is zoned R-1-6 Single-Family Residential by the Kings County Development Code.

7. **Project Description:** The Project proposes a 109-unit, single family development on 20.08 gross acres in the County of Kings, within the community of Armona. The Project site's existing and proposed zoning is R-1-6 Single-Family Residential. The project includes 109 single family homes, with an average lot size of 5,094 square feet, as well as an existing home on approximately one acre. The Project also proposes a 1.7-acre onsite drainage basin. The Project would result in onsite and offsite infrastructure improvements including new and relocated utilities, new residential streets, and the continuation and improvement of Crocus Way. The Project would require no demolition as the site is currently on agriculture land.

8. **Surrounding Land Uses and Settings:**
   North Agriculture (Armona Community Plan)
   South Residential – Single Family (Armona Community Plan)
   East Agriculture (Armona Community Plan)

West Agriculture, Designated for Medium High Density Residential (Armona Community Plan)

9. **Required Approvals:** The following discretionary approvals are required from the County of Kings for the proposed project:

   - County of Kings Building and Encroachment Permits
   - County of Kings Density Bonus
   - San Joaquin Valley Air Pollution Control District (SJVAPCD). The proposed project is within the jurisdiction of the SJVAPCD and will be required to comply with Rule VIII, 3135, 4101, and 9510.
   - Central Valley Regional Water Quality Control Board, SWPPP. The proposed project site is within the jurisdiction of the Central Valley Regional Water Quality Control Board (RWQCB). The Central Valley RWQCB will require a Storm Water Pollution Prevention Plan (SWPPP) to prevent impacts related to stormwater as a result of project construction.
   - Will Serve Letter from the Armona Community Service District.

10. **Native American Consultation:** The State requires lead agencies to consider the potential effects of proposed projects and consult with California Native American tribes during the local planning process for the purpose of protecting Traditional Tribal Cultural Resources through the California Environmental Quality Act (CEQA) Guidelines. Pursuant to PRC Section 21080.3.1, the lead agency shall begin consultation with the California Native American tribe that is traditionally and culturally affiliated with the geographical area of the proposed project. Such significant cultural resources are either sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a tribe which is either on or eligible for inclusion in the California Historic Register or local historic register, or, the lead agency, at its discretion, and support by substantial evidence, choose to treat the resources as a Tribal Cultural Resources (PRC Section 21074(a)(1-2)). According to the most recent census data, California is home to 109 currently recognized Native American tribes. Tribes in California currently have nearly 100 separate reservations or Rancherias. Kings County contains the Santa Rosa Rancheria home to the Santa Rosa Rancheria Tachi Yokut Tribe. The Santa Rosa Rancheria is approximately 5.5 miles south of the Community of Armona.

    Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See PRC Section 21083.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per PRC Section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that PRC Section 21082.3(c) contains provisions specific to confidentiality.

11. **Parking and access:** Vehicular access to the project is available via Crocus Way, with plans for future road connections. The project includes three new streets and a court that provide full access to the project site. During construction, workers will utilize existing parking areas and/or temporary construction staging areas for parking of vehicles and equipment.

12. **Landscaping and Design:** The landscape and design plans will be required during building permit submittal and will be subject to the "California Model Water Efficient Landscape Ordinance". All

landscaping and design components will comply with Article 5, Section 508.B of the Kings County Development Code for the R-1-6 Single-Family Residential Zone District.

13. **Utilities and Electrical Services:** The Project would result in onsite and offsite infrastructure improvements including new and relocated utilities. Water and sewer services will be requested from the Armona Community Services District (ACSD). Electricity will be requested from Southern California Edison (SCE), with opportunities for the consumers to receive electricity from renewable sources. Natural gas will be requested from Southern California Gas (SoCalGas).

Acronyms

ACSD	Armona Community Services District
BMP	Best Management Practices
BAU	Business as Usual
CAA	Clean Air Act
CCR	California Code of Regulation
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CWA	California Water Act
DHS	Department of Health Services
FEIR	Final Environmental Impact Report
ISMND	Initial Study Mitigated Negative Declaration
KCGMP	Kings County Groundwater Management Plan
KWRA	Kings Waste and Recycling Authority
MCL	Maximum Contaminant Level
PEIR	Master Environmental Impact Report
NOI	Notice of Intent
ND	Negative Declaration
NAC	Noise Abatement Criteria
RCRA	Resource Conservation and Recovery Act of 1976
ROW	Right-of-Way
RWQCB	Regional Water Quality Control Board
SCE	Southern California Edison
SHPO	State Historic Preservation Office
SJVAPCD	San Joaquin Valley Air Pollution Control District
SWPPP	Storm Water Pollution Prevention Plan

Figure 1-1. Vicinity Map

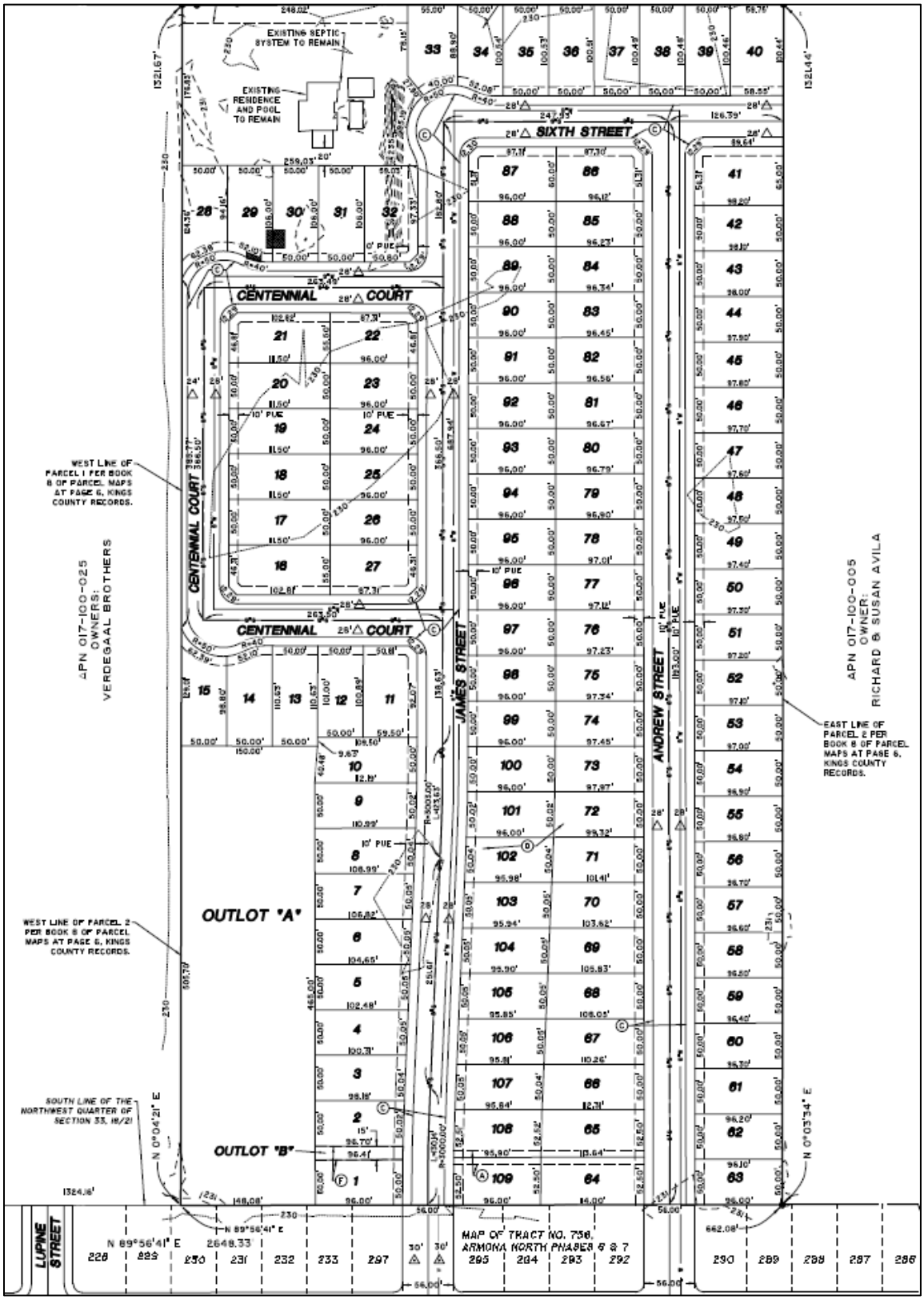


Figure 1-2: Site Plan

1.3 EVALUATION OF ENVIRONMENTAL IMPACTS

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites, in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (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).

2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR if required.

4. "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c) (3)(D). In this case, a brief discussion should identify the following.

    - Earlier Analysis Used. Identify and state where they are available for review.
    - Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
    - Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated." Describe and mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

1.4 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

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

☑ Aesthetics	☐ Greenhouse Gas Emissions	☐ Public Services
☐ Agriculture and Forest Resources	☐ Hazards & Hazardous Materials	☐ Recreation
☐ Air Quality	☑ Hydrology and Water Quality	☑ Transportation
☐ Biological Resources	☐ Land Use and Planning	☑ Tribal Cultural Resources
☑ Cultural Resources	☐ Mineral Resources	☐ Utilities and Service System
☐ Energy	☐ Noise	☐ Wildfire
☑ Geology and soils	☐ Population	☑ Mandatory Findings of Significance

DETERMINATION: (To be completed by the Lead Agency) Where potential impacts are anticipated to be significant, mitigation measures will be required, so that impacts may be avoided or reduced to insignificant levels.

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. A Negative Declaration 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 requested.

_____	_____
SIGNATURE	DATE
Victor Hernandez	County of Kings
PRINTED NAME	AGENCY

1.5 ENVIRONMENTAL ANALYSIS

The following section provides an evaluation of the impact categories and questions contained in the checklist and identify mitigation measures, if applicable.

I. AESTHETICS

Except as provided in Public Resource Code Section 210999, would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☑
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within state scenic highway?	☐	☐	☐	☑
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☐	☑
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☑	☐	☐

Environmental Setting

Scenic Resources: Scenic resources include landscapes and features that are visually or aesthetically pleasing. They contribute positively to a distinct community or region. These resources produce a visual benefit upon communities. The 2035 Kings County General Plan PEIR states that the visual character within the unincorporated County of Kings is characterized by a mix of rural and built environments. This is characterized by uses such as grazing, open space, and cultivated agriculture. Additional scenic resources within the County include rivers, hills, and other open spaces, as well as manmade features including urban and rural communities and parks. Kings County's most prominent natural feature is the Kings River, which forms part of the County's northern border. Other local scenic resources include the Coast Ranges, with the unique formations of the Chalk Buttes-Reef Ridge portion of the Kreyenhagen Hills; the
Pyramid Hills; Cottonwood Pass; Sunflower Valley; and Cross Creek. The communities in the county maintain small rural town atmospheres.

Scenic Vistas: The 2035 Kings County General Plan identifies the following as scenic vistas: the Coast Ranges to the Southwest, with formations of the Chalk Buttes-Reef Ridge portion of the Kreyenhagen Hills, the Pyramid Hills, Cottonwood Pass, and Sunflower Valley. Other scenic resources include the various

ridgelines located west of the County in adjacent Fresno County, which are visible along State Route 41 from the northern county line to Kettleman City.

Existing Visual Character: The following photos demonstrate the aesthetic character of the project area. As shown, the proposed project site area is in a relatively flat area characterized by agricultural uses.

Photo 1: North Site Boundary (View North) Source: Google Maps 2021

Photo 2: West Site Boundary (View West) Source: Google Maps 2021

Photo 3: East Site Boundary (View East) Source: Google Maps 2021

Photo 4: Southeast Site Boundary (View Southwest) Source: Google Maps 2012

Regulatory Setting

Scenic Roadways: The California Scenic Highway Program was established in 1963 by the state Legislature for the purpose of protecting and enhancing the natural beauty of California highways and adjacent corridors through conservation strategies. The State Scenic Highway System includes a list of highways that have either been officially designated or are eligible for designation. State laws affiliated with governing the scenic highway program can be found in Sections 260-263 in The Street and Highways Code.

State Scenic Highways: According to the California Department of Transportation mapping of State Scenic Highways, the County of Kings does not have any officially designated State Scenic Highways, however, the County has one eligible State Scenic Highway, a portion of State Route 41, from State Route 33 to the Kern County line. This is designated as a scenic corridor in the County's General Plan This portion of the highway is approximately 35 miles away from the proposed site.

Historic Sites: Armona has designated key historical site locations that shall be preserved. These include the Armona Depot, Armona's China town, and the Grangeville Cemetery. The nearest historic site to the project site is the Grangeville Cemetery, approximately .25 miles away.

2035 Kings County General Plan: The 2035 Kings County General Plan includes the following goals, objectives and policies, which would address potential impacts associated with aesthetic resources that relate to the proposed project:

Open Space (OS) Goal B1: Maintain and protect the scenic beauty of Kings County.

- OS Objective B1.1: Protect and enhance views from roadways which cross scenic areas or serve as scenic entranceways to cities and communities.
- OS Objective B1.3: Protect the scenic qualities of human-made and natural landscapes and prominent view sheds.
    - OS Policy B1.3.1. Policy: Require new development to be designed so that it does not significantly impact or block views of Kings County's natural landscape or other important scenic features. Discretionary permit applications will be evaluated against this requirement as part of the development review process. New developments may be required, as appropriate to:
        - Minimize obstruction of views from public lands and rights-of way.

- Reduce visual prominence by keeping development and structures below ridge lines.
- Limit the impact of new roadways and grading on natural settings. Such limits shall be within design safety guidelines.

OS Goal C1: Preserve the visual identities of Community Districts by maintaining open space separations between urban areas.

- OS Objective C1.1: Preserve open space, maintain rural character, and limit development in community separator areas.
  - OS Policy C1.1.1: Preserve the agricultural open space buffer between the Community of Armona and City of Hanford to maintain community separation between Lacey Boulevard and Front Street along the west side of 13th Avenue.

Armona Community Plan (ACP): The Armona Community Plan contains the following goals, objectives and policies, which would reduce potential impacts to the visual character of the community that relate to the proposed project:

ACP Goal 2A: New residential growth reinforces Armona's vision to remain a compact small-town community while also building sustainable quality neighborhoods that meet the needs of the Community's diverse population.

- ACP Policy 4A.1.4: Preserve historical landmarks and require new development to integrate these Community valued features into the overall design of the development.
- ACP Policy 8A.1.2: Encourage infill development and compact growth for the North Expansion Area that is planned for residential and commercial development.

Kings County Development Code: The Kings County Development Code establishes specific development criteria for each zoning district (i.e. lighting, parking requirements, walls, fencing, setbacks, building height, etc.) In relation to lighting, Section 508.F of the Kings County Development Code states that exterior lighting should be designed to be compatible with the architectural and landscape design of the project and identifies the following exterior lighting requirements for residential zones:

- All new proposed uses shall preserve the existing nighttime environment by limiting the illumination of areas surrounding new development.
- An appropriate hierarchy of lighting fixtures/structures and intensity should be considered when designing the lighting for the various elements of a project (i.e., building and site entrances, walkways, parking areas, or other areas of the site).

Discussion

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

No Impact: A scenic vista is defined as a viewpoint that provides expansive views of highly valued landscape for the benefit of the general public. The Open Space Element of the 2035 Kings County General Plan identifies the Kings River and the Coast Mountain ranges as primary scenic vistas within this region. The Kings River is approximately 6 miles North of the proposed project site and the Coast Mountain range are approximately 40 miles West of the project site. The Kings River and the Coast Mountain ranges are not visible from the proposed project site due to far distances

and the urban development between the project site and these features. Therefore, there is *no impact.*

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

No Impact: There are no officially designated State Scenic Highways located in Kings County. The proposed project would not damage any scenic resources within a state scenic highway and there is *no impact.*

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

No Impact: The proposed project site is in an urbanized area within the County of Kings. The materials, signage, fencing, landscaping, and building materials used in the construction of the project will be selected based on their ability to improve the overall visual character of the area. The proposed project will comply with all applicable zoning and other regulations outlined in the 2035 Kings County General Plan and the Kings County Development Code. There is *no impact.*

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

Less than Significant Impact with Mitigation Incorporation: The proposed project would result in new lighting sources on the project site consistent with adjacent residential development. New lighting sources would include interior lighting from residences, street lighting, and security lighting. All street and landscape lighting will be consistent with the Kings County Development Code lighting standards, which are developed to minimize impacts related to excessive light and glare. The project will comply with the Kings County General Plan PEIR mitigation measure AES-1. Although the project will introduce new light sources to the area, all lighting will be consistent with adjacent residential land uses and the City's lighting standards. The impacts are *less than significant with mitigation incorporation.*

Mitigation Measures for Impacts to Aesthetic Resources Incorporated from PEIR

Mitigation Measure AES-1: Preserve the existing nighttime environment by limiting the illumination of areas surrounding new development. New lighting that is part of residential, commercial, industrial, or recreational development shall be oriented away from sensitive uses, and should be hooded, shielded, and located to direct light pools downward and prevent glare.

II. AGRICULTURE AND FOREST RESOURCES:

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

Environmental Setting

Central California is one of the world's premier growing regions. Agriculture is an important economic resource for Kings County. The Kings County General Plan states that there are over 1,100 farms in Kings County, occupying 76% of the County's total acreage. These farms produce milk, cotton, cattle & calves, alfalfa, pistachios, tomatoes, corn silage, almonds, walnuts, and peaches.

The proposed project site is located within the Armona Sphere of Influence. The proposed project site is not under Williamson Act Contract or a Farmland Security Zone contract. The proposed site is designated as Prime Farmland by the California Farmland Mapping and Monitoring Program (FMMP) published by the California Department of Conservation. Nearby to the North, East, and West the land surrounding the project site is currently designated Prime Farmland. To the South, land is currently designated Grazing Land and Urban Land.

Regulatory Setting

California Land Conservation Act of 1965: The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, allows local governments to enter into contracts with private landowners to restrict the activities on specific parcels of land to agricultural or open space uses. The landowners benefit from the contract by receiving greatly reduced property tax assessments. The California Land Conservation Act is overseen by the California Department of Conservation; however local governments are responsible for determining specific allowed uses and enforcing the contract.

Kings County Right to Farm Ordinance: The County adopted a "Right to Farm Ordinance" in 1996, to protect the rights of commercial farming operations, while promoting a "good neighbor policy" between these uses. Under this ordinance, property owners and residents are made aware that they may experience inconveniences due to commercial agricultural operations.

California Farmland Mapping and Monitoring Program (FMMP): The FMMP is implemented by the California Department of Conservation (DOC) to conserve and protect agricultural lands within the State. Land is included in this program based on soil type, annual crop yields, and other factors that influence the quality of farmland. The FMMP mapping categories for the most important statewide farmland are as follows:

- ***Prime Farmland*** has the ideal physical and chemical composition for crop production. It has been used for irrigated production in the four years prior to classification and can produce sustained yields. 16% of Kings County is classified as Prime Farmland.
- ***Farmland of Statewide Importance*** has also been used for irrigated production in the four years prior to classification and is only slightly poorer quality than Prime Farmland. 47% of Kings County is classified as Farmland of Statewide Importance.
- ***Unique Farmland*** has been cropped in the four years prior to classification and does not meet the criteria for Prime Farmland or Farmland of Statewide Importance but has produced specific crops with high economic value.
- ***Farmland of Local Importance*** encompasses farmland that does not meet the criteria for the previous three categories. These may lack irrigation, produce major crops, be zoned as agricultural, and/or support dairy.

- ***Grazing Land*** has vegetation that is suitable for grazing livestock. 27% of Kings County is classified as Grazing Land.

2035 Kings County General Plan: The 2035 Kings County General Plan includes the following objectives and policies that are related to agricultural resources.

Resource Conservation (RC) Objective B1.1: Identify the County's highest priority agricultural lands that are critical to the County's agricultural economy, prime soils, and water availability, and emphasize higher preservation efforts for these areas.

- RC Policy B1.1.1: Maintain the County's Priority Agricultural Land Model to serve as an information resource in evaluating urban growth and impacts related to the County's agricultural economy and redirect that growth where possible to the lowest priority agricultural land.
- RC Policy B1.1.2: Use the Priority Agricultural Model as a reference for determining potential economic and resource impacts related to the loss of agricultural land resulting from conversion to urban uses.

Armona Community Plan: The Armona Community Plan contains the following policies to limit impacts to agricultural resources:

- ACP Policy 2A.2.3: Residential growth should avoid development of prime agricultural lands outside the Armona Community Services District Primary Sphere of Influence, and those protected under "Williamson" Act or Farmland Security Zone Contract.
- ACP Policy 3A.1.3: The County shall implement agricultural mitigation measures to minimize the loss of prime agricultural land that also serve as agricultural buffers separating communities and cities.

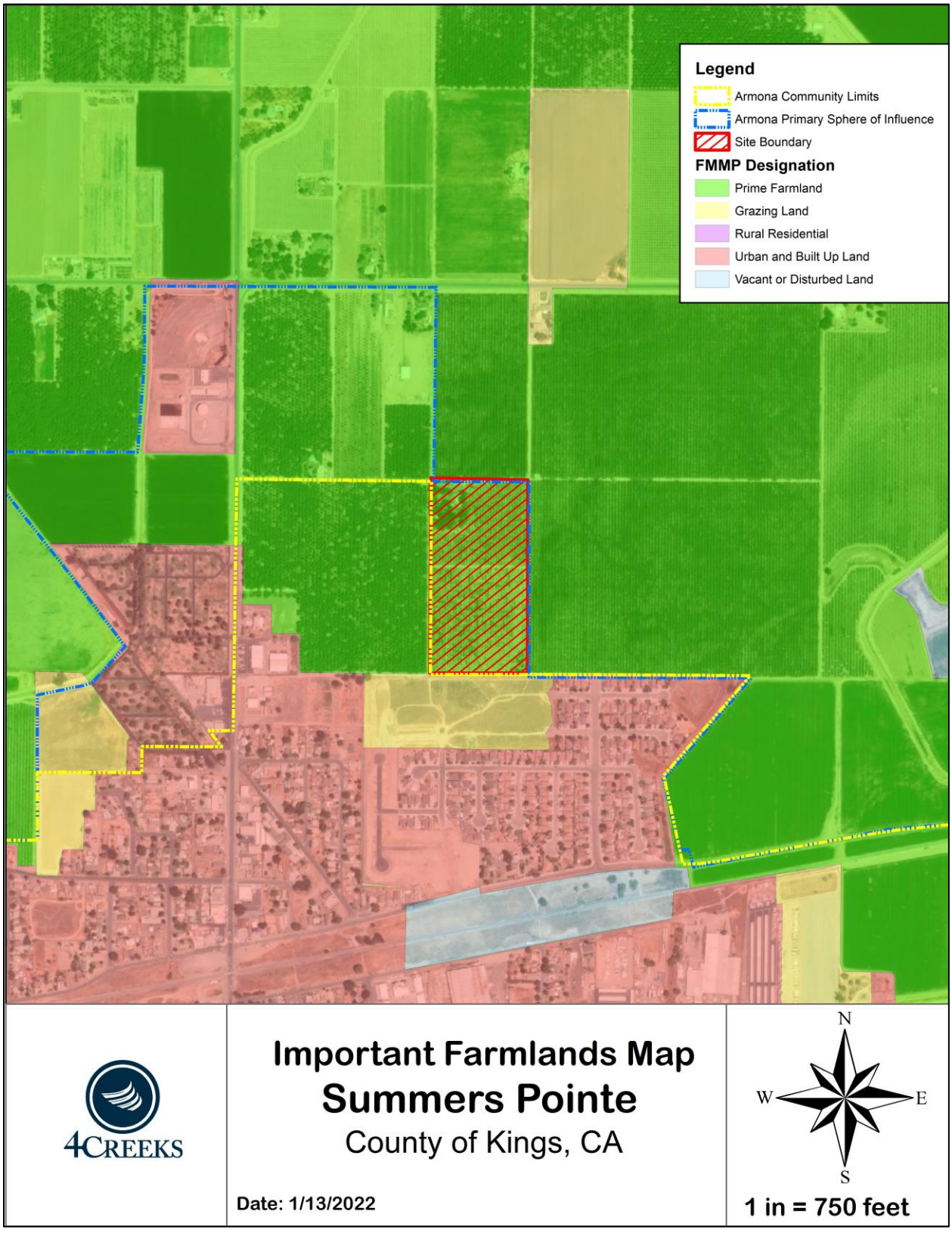


Figure 1-3: Important Farmlands Map

Discussion

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

Less Than Significant Impact: The project site is currently occupied by a Single-Family Home surrounded by cherry trees. Implementation of the proposed Project would result in the permanent conversion of approximately 20 acres of Prime Farmland to non-agricultural uses.

The loss of Prime Farmland on the Project site would result in the decrease of Important Farmland inventory in Kings County. Kings County had an Important Farmland inventory of 594,484 acres, 139,212 acres of which were categorized as Prime Farmland. Implementation of the Project would convert 20 acres of Prime Farmland, which would result in a .003 percent decrease in the Important Farmland inventory of Kings County and a .014 percent decrease in the County's Prime Farmland inventory.

As shown in Table 1-1, the 2035 Kings County General Plan plans to develop on 1,538 acres of Important Farmland, of which 749 acres are Prime Farmland. Most of the growth is planned to be adjacent to urbanized areas, which is much less disruptive to other agricultural uses countywide because it discourages the development of new rural neighborhoods or communities that would require the extension of infrastructure that would create growth-inducing impacts and potentially greater impacts to agricultural resources.

FMMP Designation	Countywide Total (acres)	Developable Land Under 2035 General Plan (acres)
Prime Farmland	139,212	749
Farmland of Statewide Importance	420,422	741
Unique Farmland	25,982	23
Farmland of Local Importance	8,868	25
Total	**594,484**	**1,538**

Table 1-1: Important Farmland Developed Under 2035 General Plan. Source: Kings County General Plan EIR

Although the proposed site is located on Prime Farmland, the development is in accordance with the 2035 Kings County General Plan. The project will follow all existing and proposed 2035 Kings County General Plan policies to reduce potential impacts. Therefore, there is a *less than significant impact.*

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

No Impact: The Kings County Development Code designates the project site as zoned R-1-6 Single Family Residential and is not zoned for agricultural use. Additionally, the project site is not under a Williamson Act Contract. There is *no impact.*

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

No Impact: The project site is not zoned for forest or timberland production. Therefore, *no impacts* would occur.

d) Would the project result in the loss of forestland or conversion of forest land to non-forest use?

No Impact: No conversion of forestland, as defined under Public Resource Code or General Code, will occur as a result of the project and thus, there would be *no impacts*.

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

Less Than Significant Impact: As discussed above, new development including the project site would be focused in and around existing communities. This would help prevent new infrastructure from interfering with surrounding farmland. The project does not include any features which could result in the conversion of forestland to non-forest use. There is a *less than significant impact.*

III. AIR QUALITY

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☑
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☑	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☑	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☑	☐

Environmental Setting

Air pollution is directly related to regional topography. Topographic features can either stimulate the movement of air or restrict air movement. California is divided into regional air basins based on topographic air drainage features. The proposed project site is within the San Joaquin Valley Air Basin, which is bordered by the Sierra Nevada Mountains to the east, Coastal Ranges to the west, and the Tehachapi Mountains to the south.

The mountain ranges surrounding the San Joaquin Valley Air Basin (SJVAB) serve to restrict air movement and prevent the dispersal of pollution. As a result, the SJVAB is highly susceptible to pollution accumulation over time. As shown in the Table 1-2, the SJVAB is in nonattainment for several pollutant standards. The primary pollutants of concern in the San Joaquin Valley are ozone (O3) and PM10.

Pollutant	Designation/Classification	
	Federal Standards	State Standards
Ozone – One hour	No Federal Standard[f]	Nonattainment/Severe
Ozone – Eight hour	Nonattainment/Extreme[e]	Nonattainment
PM 10	Attainment[c]	Nonattainment
PM 2.5	Nonattainment[d]	Nonattainment
Carbon Monoxide	Attainment/Unclassified	Attainment/Unclassified
Nitrogen Dioxide	Attainment/Unclassified	Attainment
Sulfur Dioxide	Attainment/Unclassified	Attainment
Lead (Particulate)	No Designation/Classification	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassified
Vinyl Chloride	No Federal Standard	Attainment

[a] See 40 CFR Part 81
[b] See CCR Title 17 Sections 60200-60210

[c] On September 25, 2008, EPA redesignated the San Joaquin Valley to attainment for the PM10 National Ambient Air Quality Standard (NAAQS) and approved the PM10 Maintenance Plan.
[d] The Valley is designated nonattainment for the 1997 PM2.5 NAAQS. EPA designated the Valley as nonattainment for the 2006 PM2.5 NAAQS on November 13, 2009 (effective December 14, 2009).
[e] Though the Valley was initially classified as serious nonattainment for the 1997 8-hour ozone standard, EPA approved Valley reclassification to extreme nonattainment in the Federal Register on May 5, 2010 (effective June 4, 2010).
[f] Effective June 15, 2005, the U.S. Environmental Protection Agency (EPA) revoked the federal 1-hour ozone standard, including associated designations and classifications. EPA had previously classified the SJVAB as extreme nonattainment for this standard. EPA approved the 2004 Extreme Ozone Attainment Demonstration Plan on March 8, 2010 (effective April 7, 2010). Many applicable requirements for extreme 1-hour ozone nonattainment areas continue to apply to the SJVAB.

Table 1-2. San Joaquin Valley Attainment Status; Source: SJVAPCD

Valley Fever: Valley Fever is an illness caused by a fungus (*Coccidioides immitis* and *C. posadasii*) that grows in soils under certain conditions. Favorable conditions for the Valley Fever fungus include low rainfall, high summer temperatures, and moderate winter temperatures. In California, the counties with the highest incident of Valley Fever are Fresno, Kern and Kings counties. When soils are disturbed by wind or activities like construction and farming, Valley Fever fungal spores can become airborne. The spores present a potential health hazard when inhaled. Individuals in occupations such as construction, agriculture, and archaeology have a higher risk of exposure due to working in areas of disturbed soils which may have the Valley Fever fungus.

Regulatory Setting

2035 Kings County General Plan: The County of Kings General Plan includes the following objectives and policies that are related to agricultural resources.

- AQ Policy C1.1.1 Policy: Assess and mitigate project air quality impacts using analysis methods and significance thresholds recommended by the SJVAPCD.
- AQ Policy F2.1.1 Policy: Coordinate with the SJVAPCD to ensure that construction, grading, excavation and demolition activities within County's jurisdiction are regulated and controlled to reduce particulate emissions to the maximum extent feasible.

Federal Clean Air Act – The 1977 Federal Clean Air Act (CAA) authorized the establishment of the National Ambient Air Quality Standards (NAAQS) and set deadlines for their attainment. The Clean Air Act identifies specific emission reduction goals, requires both a demonstration of reasonable further progress and an attainment demonstration, and incorporates more stringent sanctions for failure to meet interim milestones. The U.S. EPA is the federal agency charged with administering the Act and other air quality-related legislation. EPA's principal functions include setting NAAQS; establishing minimum national emission limits for major sources of pollution; and promulgating regulations. Under CAA, the NCCAB is identified as an attainment area for all pollutants.

California Clean Air Act – California Air Resources Board coordinates and oversees both state and federal air pollution control programs in California. As part of this responsibility, California Air Resources Board monitors existing air quality, establishes California Ambient Air Quality Standards, and limits allowable emissions from vehicular sources. Regulatory authority within established air basins is provided by air pollution control and management districts, which control stationary-source and most categories of area-source emissions and develop regional air quality plans. The project is located within the jurisdiction of the San Joaquin Valley Air Pollution Control District.

The state and federal standards for the criteria pollutants are presented in Section 8.4 of The San Joaquin Valley Unified Air Pollution Control District's 2015 "Guidance for Assessing and Mitigating Air Quality Impacts". These standards are designed to protect public health and welfare. The "primary" standards have been established to protect the public health. The "secondary" standards are intended to protect the nation's welfare and account for air pollutant effects on soils, water, visibility, materials, vegetation and other aspects of general welfare. The U.S. EPA revoked the national 1-hour ozone standard on June 15, 2005, and the annual PM_{10} standard on September 21, 2006, when a new $PM_{2.5}$ 24-hour standard was established.

Pollutant	Averaging Time	California Standards[1]		National Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Ozone (03)	1 Hour	0.09 ppm (180 µg/m³)	Ultraviolet Photometry	--	Same as Primary Standard	Ultraviolet 8 Hour Photometry
	8 Hour	0.070 ppm (137 µg/m³)		0.075 ppm (147 µg/m³)		
Respirable Particulate Matter (PM_{10})	24 Hour	50 µg/m	Gravimetric or Beta Attenuation	150 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Annual Analysis
	Annual Arithmetic Mean	20 µg/m3		--		
Fine Particulate Matter ($PM_{2.5}$)	24 Hour		Gravimetric or Beta Attenuation	35 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Annual Analysis
	Annual Arithmetic Mean	12 µg/m³		15 µg/m³		
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m³)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m³)	--	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m³)		9 ppm (10 mg/m³)	--	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m³)		--	--	
Nitrogen Dioxide (NO_2) [8]	1 Hour	0.18 ppm (339 µg/m³)	Gas Phase Chemiluminescence	100 ppb (188 µg/m³)	--	Gas Phase Annual Chemiluminescence
	Arithmetic Mean	0.030 ppm (57 µg/m³)		53 ppb (100 µg/m³)	Same as Primary Standard	
Sulfur Dioxide	1 Hour	0.25 ppm (655 µg/m³)	Ultraviolet Fluorescence	75 ppb (196 µg/m³)	--	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	--		--	0.5 ppm (1300 µg/m³)	
	24 Hour	0.04 ppm (105 µg/m³)		0.14 ppm (for certain areas)9	--	

Pollutant	Averaging Time	California Standards[1]		National Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
	Annual Arithmetic Mean	--		0.030 ppm (for certain areas)9	--	
Lead[10,11]	30 Day Average	1.5 µg/m^3	Atomic Absorption	--	--	High Volume Sampler and Atomic Absorption
	Calendar Quarter	--		1.5 µg/m3 (for certain areas)11	Same as Primary Standard	
	Rolling 3-Month Average	--		0.15 µg/m^3		
Visibility Reducing Particles[12]	8 Hour	See footnote 12	Beta Attenuation and Transmittance through Filter Tape	No National Standard		
Sulfates	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[10]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m3 is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.
5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
7. Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.
8. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national standards are in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national standards to the California standards the units can be converted from ppb to ppm. In this case, the national standards of 53 ppb and 100 ppb are identical to 0.053 ppm and 0.100 ppm, respectively.
9. On June 2, 2010, a new 1-hour SO2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved. Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
10. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
11. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
12. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Table 1-3. Ambient Air Quality Standards; Source: SJVAPCD

San Joaquin Valley Air Pollution Control District (SJVAPCD) – The SJVAPCD is responsible for enforcing air quality standards in the project area. To meet state and federal air quality objectives, the SJVAPCD adopted the following thresholds of significance for projects:

Pollutant/Precursor	Construction Emissions	Operational Emissions	
		Permitted Equipment and Activities	Non-Permitted Equipment and Activities
	Emissions (tpy)	Emissions (tpy)	Emissions (tpy)
CO	100	100	100
Nox	10	10	10
ROG	10	10	10
SOx	27	27	27
PM10	15	15	15
PM2.5	15	15	15

Table 1-4. SJVAPCD Thresholds of Significance for Criteria Pollutants; Source: SJVAPCD

The following SJVAPCD rules and regulations may apply to the proposed project:

- **Rule 3135:** Dust Control Plan Fee. All projects which include construction, demolition, excavation, extraction, and/or other earth moving activities as defined by Regulation VIII (Described below) are required to submit a Dust Control Plan and required fees to mitigate impacts related to dust.
- **Rule 4101:** Visible Emissions. District Rule 4101 prohibits visible emissions of air contaminants that are dark in color and/or have the potential to obstruct visibility.
- **Rule 9510:** Indirect Source Review (ISR). This rule reduces the impact PM10 and NOX emissions from growth on the SJVB. This rule places application and emission reduction requirements on applicable development projects in order to reduce emissions through onsite mitigation, offsite SJVAPCD administered projects, or a combination of the two. This project will submit an Air Impact Assessment (AIA) application in accordance with Rule 9510's requirements.
- **Regulation VIII:** Fugitive PM10 Prohibitions. Regulation VIII is composed of eight rules which together aim to limit PM10 emissions by reducing fugitive dust. These rules contain required management practices to limit PM10 emissions during construction, demolition, excavation, extraction, and/or other earth moving activities.

Discussion

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

No Impact: The proposed project is located within the boundaries of the San Joaquin Valley Air Pollution Control District (SJVAPCD) and would result in air pollutant emissions that are regulated by the air district during both its construction and operational phases. The SJVAPCD is responsible for bringing air quality in Kings County into compliance with federal and state air quality standards. The Air District has Particulate Matter (PM) plans, Ozone Plans, and Carbon Monoxide Plans that serve as the clean air plan for the basin.

Together, these plans quantify the required emission reductions to meet federal and state air quality standards and provide strategies to meet these standards. The SJVAPCD adopted the Indirect Source Review (ISR) Rule in order to fulfill the District's emission reduction commitments in its PM10 and Ozone (NOx) attainment plans and has since determined that implementation and compliance with ISR would reduce the cumulative PM10 and NOx impacts anticipated in the air quality plans to a less than significant level.

Construction Phase. Project construction would generate pollutant emissions from the following construction activities: demolition, site preparation, grading, building construction, application of architectural coatings, and paving. The construction related emissions from these activities were calculated using CalEEMod. The full CalEEMod Report can be found in Appendix A. As shown in Table 1-5 below, project construction related emissions do not exceed the thresholds established by the SJVAPCD.

	CO (tpy)	ROG (tpy)	SOx (tpy)*	Nox (tpy)	PM10 (tpy)	PM2.5 (tpy)
Emissions Generated from Project Construction	**2.2881**	**5.3633**	**0.00444**	**2.2054**	**0.4012**	**0.2192**
SJVAPCD Air Quality Thresholds of Significance	**100**	**10**	**27**	**10**	**15**	**15**
*Threshold established by SJVAPCD for SOx, however emissions are reported as SO2 by CalEEMod.						

Table 1-5. Projected Project Emissions Compared to SJVAPCD Thresholds of Significance for Criteria Pollutants related to Construction; Source: SJVAPCD, CalEEMod Analysis (Appendix A)

Operational Phase. Implementation of the proposed project would result in long-term emissions associated with area sources, such as natural gas consumption, landscaping, applications of architectural coatings, and consumer products, as well as mobile emissions. Operational emissions from these factors were calculated using CalEEMod. The Full CalEEMod Report can be found in Appendix A. As shown in Table 1-6 below, the project's operational emissions do not exceed the thresholds established by the SJVAPCD.

	CO (tpy)	ROG (tpy)	SOx (tpy)*	Nox (tpy)	PM10 (tpy)	PM2.5 (tpy)
Operational Emissions (Dry Years)	**4.1355**	**3.0045**	**.0101**	**.6481**	**1.0560**	**.2965**
SJVAPCD Air Quality Thresholds of Significance	**100**	**10**	**27**	**10**	**15**	**15**
*Threshold established by SJVAPCD for SOx, however emissions are reported as SO2 by CalEEMod.						

Table 1-6. Projected Project Emissions Compared to SJVAPCD Thresholds of Significance for Criteria Pollutants related to Operations; Source: SJVAPCD, CalEEMod Analysis (Appendix A)

Because the emissions from both construction and operation of the proposed project would be below the thresholds of significance established by the SJVAPCD, the project would not conflict with or obstruct implementation of an applicable air quality plan and there is *no impact.*

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

Less Than Significant Impact: The SJVAPCD is responsible for bringing air quality in Kings County into compliance with federal and state air quality standards. The significance thresholds and rules developed by the SJVAPCD are designed to prevent projects from violating air quality standards or significantly contributing to existing air quality violations. As discussed above, neither construction-related emissions nor operation-related emissions will exceed thresholds established by the SJVAPCD. The project will comply with all applicable SJVAPCD rules and regulations, which will further reduce the potential for any significant impacts related to air quality as a result of project implementation. Because these thresholds and regulations are designed to achieve and/or maintain federal and state air quality standards, and the project is compliant with these thresholds and regulations, the project will not violate an air quality standard or significantly contribute to an existing air quality violation. The impact is *less than significant.*

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

Less than Significant Impact: The single-family residences located to the South and in the future to the East of the project site are the closest sensitive receptors. The project does not include any project components identified by the California Air Resources Board that could potentially impact any sensitive receptors. These include heavily traveled roads, distribution centers, fueling stations, and dry-cleaning operations. The project would not expose sensitive receptors to substantial pollutant concentrations. The impact would be *less than significant.*

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

Less Than Significant Impact: The project will create temporary localized odors during project construction. The proposed project will not introduce a conflicting land use (surrounding land includes residential neighborhoods) to the area and will not have any component that would typically emit odors. The project would not create objectionable odors affecting a substantial number of people. Therefore, impacts would be *less than significant.*

IV. BIOLOGICAL RESOURCES

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

Discussion for this section originates from the Biological Evaluation letter that was prepared for this project by Soar Environmental Consulting to identify biological resources present or potentially present on the project site and assess the significance of project impacts on such resources per provisions of the California Environmental Quality Act (CEQA), the federal Clean Water Act (CWA), the state and federal endangered species acts (FESA and CESA respectively), California Fish and Game Code, and California Water Code. The full document can be found in Appendix B.

Environmental Setting

The Project site is located in northern Kings County within the lower San Joaquin Valley, within the Central Valley of California. The Central Valley is bordered by the Sierra Nevada Mountain Ranges to the east and the Coast Ranges to the west. Like most of California, Kings County is considered a Mediterranean climate. Warm, dry summers are followed by cool, moist winters. Summer temperatures often reach above 90 degrees Fahrenheit, and the humidity is relatively low. Winter temperatures are often below 60 degrees Fahrenheit during the day and rarely exceed 70 degrees. On average, the Central Valley receives approximately 10 inches of precipitation in the form of rainfall yearly, most of which occurs between October and March.

The proposed Project site is located in a residential and agricultural interface environment just outside the northern boundary of the community of Armona. The proposed Project site is bounded by agricultural fields to the north, east, and west, and a vacant lot to the south. A residential neighborhood is located approximately 200 feet southeast of the proposed Project site. An irrigation canal runs north and south approximately 0.5-mile to the east of the site. The canal is surrounded by agricultural fields. No other natural water features occur in the vicinity of the proposed Project site. The topography of the area is flat and is approximately 250 feet above mean sea level. The soil on the proposed Project site is highly compacted between rows of orchard trees. A grove of eucalyptus trees is located next to a single-family residence on the northwest portion of the property. Other than orchard trees, few other trees exist in the surrounding area. Powerlines run east and west along the southern boundary of the site. No small mammal burrows or vernal pool features were observed in the vicinity of the proposed Project site.

Regulatory Setting

The purpose of CEQA is to assess the impacts of projects on the environment prior to project implementation. Impacts to biological resources are just one type of environmental impact assessed under CEQA and can vary from project to project in terms of scope and magnitude. Projects requiring removal of vegetation may result in the mortality or displacement of animals associated with said vegetation. Animals adapted to humans, roads, buildings, and pets may replace those species formerly occurring on a site. Plants and animals that are State and/or federally listed as threatened or endangered may be destroyed or displaced. Sensitive habitats such as wetlands and riparian woodlands may be altered or destroyed. Such impacts may be considered either “significant” or “less-than significant” under CEQA. According to California Environmental Quality Act, Statute and Guidelines (AEP 2012), “significant effect on the environment” means a substantial or potentially substantial adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic interest. Specific project impacts to biological resources may be considered “significant” if they would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan

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

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

Federal Endangered Species Act (FESA): defines an endangered species as "any species or subspecies that is in danger of extinction throughout all or a significant portion of its range." A threatened species is defined as "any species or subspecies that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." The law requires protection for the habitats and implements recovery plans of the listed species.

California Endangered Species Act (CESA): prohibits the take of any state-listed threatened and endangered species. CESA defines *take* as "any action or attempt to hunt, pursue, catch, capture, or kill any listed species." If the proposed project results in a take of a listed species, a permit pursuant to Section 2080 of CESA is required from the California Department of Fish and Wildlife (CDFW).

2035 Kings County General Plan: The Kings County General Plan contains the following policies related to the preservation of biological resources that may be considered relevant to the proposed Project's environmental review:

Resource Conservation Goal D.1: Preserve land that contains important natural plant and animal habitats.

- **Resource Conservation Objective D1.1:** Require that development in or adjacent to important natural plant and animal habitats minimize the disruption of such habitats.
- **Resource Conservation Objective D3.1:** Ensure that, in development decisions affecting riparian environments, the conservation of fish and wildlife habitat and the protection of scenic qualities are balanced with other purposes representing basic health, safety, and economic needs.

Resource Conservation Goal E.1: Balance the protection of the County's diverse plant and animal communities with the County's economic needs.

- **Resource Conservation Objective E.1.1:** Require mitigation measures to protect important plant and wildlife habitats.

- **Resource Conservation Objective E.1.1.2:** Require as a primary objective in the review of development projects the preservation of healthy native oaks and other healthy native trees.
- **Resource Conservation Objective E.1.1.3:** Maintain to the maximum extent practical the natural plant communities utilized as habitat by threatened and endangered species.

Discussion

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

Less Than Significant Impact: The Biological Resource Assessment conducted for the proposed Project found that San Joaquin kitfox is the only special-status species with historical observations within 5 miles of the proposed Project site. No signs of San Joaquin kit fox were found at the time of the Habitat Assessment. Suitable habitat for San Joaquin kit fox is poor on and near the proposed Project site due to agricultural activity. CNDDB records indicate that the nearest and most recent occurrence of San Joaquin kit fox was recorded in 2006 approximately 2.58 miles northeast of the proposed Project site. No small mammal burrows were observed on site that could provide adequate refugia for San Joaquin kit fox or associated prey base species. Due to the level of agricultural activity, residential development of the surrounding area, lack of suitable habitat, time span and distance of other known occurrences from the site, occurrence of San Joaquin kit fox within the vicinity of the proposed Project site is unlikely, and the proposed Project would be unlikely to adversely affect populations of this species. Impacts would be *less than significant.*

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

No Impact: There are no CNDDB-designated "natural communities of special concern" recorded within the proposed Project area or surrounding lands. The proposed Project site consists of agricultural fields and one single-family residence. There are no water bodies on site, and no riparian vegetation exists on the property. In addition, the proposed Project site is surrounded by cultivated agricultural lands. There would be *no impact*.

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

No Impact: There are no wetlands within the proposed Project area. There would be *no impact.*

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

Less than Significant Impact: The proposed Project area is surrounded by cultivated agricultural lands,

residential development, and paved roads. Therefore, the proposed Project area does not contain features that would be likely to function as a wildlife movement corridor. No aquatic habitat exists on the proposed Project site. San Joaquin kit fox is the only special status species with potential to exist in the vicinity of the site. Due to the level of agricultural activity, residential development of the surrounding area, lack of suitable habitat, time span and distance of other known occurrences from the site, occurrence of San Joaquin kit fox within the vicinity of the proposed Project site is unlikely. Impacts would be *less than significant.*

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

No Impact: The proposed Project would comply with the goals and policies of the 2035 Kings County General Plan. The County does not have a tree preservation policy or ordinance. There would be *no impact.*

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

No Impact: The proposed Project would comply with the goals and policies of the 2035 Kings County General Plan. There are no known habitat conservation plans or Natural Community Conservation Plans (NCCP) in the proposed Project area. There would be *no impact.*

V. CULTURAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	☐	☑	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☑	☐	☐
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☑	☐	☐

Environmental Setting

The Project area is in the Southern Valley Yokuts ethnographic territory of the San Joaquin Valley and located between the Kings River and the north shore of Tulare Lake. The Yokuts were generally divided into three major groups, the Northern Valley Yokuts, the Southern Valley Yokuts, and the Foothill Yokuts. The Project area is within the Tachi Yokuts territory. The closest village for this area was *Waiu*, which was located on Mussel Slough approximately 6 miles southwest of the Project Site. Primary Yokuts villages were typically located along lakeshores and major stream courses, with scattered secondary or temporary camps and settlements located near gathering areas in the foothills.

European settlement in the Central Valley did not occur until the 1830's, with settlers mainly being trappers or horse thieves. Most areas south of the San Joaquin River were less settled simply because those rivers did not connect to the San Francisco Bay area except in wet flood years. By 1850, California became a state, Tulare County was established in 1853, and Kings County was formed out of the western half of Tulare County in 1893.

The community of Armona dates from 1875, and was a train stop of the east to west branch of the Southern Pacific Railway that ran from Goshen in the east through Hanford and on to Lemoore in the west. The community of Armona served as a major railroad shipping point for local farming and fruit, and even had its own China Town in the early 1900s. With the growth of local cities such as Lemoore and Hanford however, the community was outpaced in growth and prominence.

A Cultural Resources Records Search was conducted by the Southern San Joaquin Valley Information Center on January 21, 2022. The records search included a review of all recorded archaeological and historical resources in the Project area and within a 0.5-mile radius of the Project. Sources consulted included archaeological site and survey base maps, historical USGS topographic maps, reports of previous investigations, cultural resource records (DPR forms) as well as listings of the Historic Properties Directory of the Office of Historic Preservation, General Land Office Maps, Archaeological Determinations of Eligibility, and the California Inventory of Historic Resources. The records search stated there have been six previous cultural resource studies within the project area and seven additional studies within one-half mile of the project site. According to the records search, there are no recorded cultural resources within

the project area and five recorded cultural resources within a one-half mile radius. These resources are the Southern Pacific Railroad, the site of the former Armona Train Station, a historic era well/cisterns, a historic era canal, and a historic era water tower. The full findings of the cultural records search can be found in Appendix C.

Regulatory Setting

National Historic Preservation Act: The National Historic Preservation Act was adopted in 1966 to preserve historic and archeological sites in the United States. The Act created the National Register of Historic Places, the list of National Historic Landmarks, and the State Historic Preservation offices.

California Historic Register: Pursuant to CEQA, a historical resource is a resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources. Historical resources may include, but are not limited to, "any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically or archaeologically significant" (PRC§5020.1[j]). In addition, a resource included in a local register of historical resources or identified as significant in a local survey conducted in accordance with the state guidelines are also considered historic resources under California Public Resources Code (PRC) Section 5020.1.

According to CEQA guidelines §15064.5 (a)(3), criteria for listing on the California Register of Historical Resources includes the following:

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

According to CEQA guidelines §21074 (a)(1)(2), criteria for tribal cultural resources includes the following:

- Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
    - Included or determined to be eligible for inclusion in the California Register of Historical Resources.
    - Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

2035 Kings County General Plan: The Resource Conservation Element of the 2035 Kings County General Plan includes the following objectives and policies that are potentially applicable to the proposed project:

Resource Conservation Objective I1.1: Promote the rehabilitation or adaptation to new uses of historic sites and structures.

- RC Policy I1.1.2 Direct proposed developments that may affect proposed or designated historic sites or County landmarks to the Kings County Museum Advisory Committee or other similarly

purposed advisory body under the Kings County Parks and Recreation Advisory Commission for review and comment.

- RC Policy I1.1.3 Encourage the protection of cultural and archaeological sites with potential for placement on the National Register of Historic Places and/or inclusion in the California Inventory of Historic Resources.
- RC Policy I1.1.4 Refer applications that involve the removal, destruction, or alteration of proposed or designated historic sites or County landmarks to the Kings County Museum Advisory Committee or its successor for recommended mitigation measures.

Resource Conservation Objective I1.2: Identify potential archaeological and historical resources and, where appropriate, protect such resources.

- RC Policy I1.2.3 Address archaeological and cultural resources in accordance with the California Environmental Quality Act (CEQA) for discretionary land use applications.

Armona Community Plan: The Armona Community Plan contains the following policies to limit impacts to cultural resources:

- ACP Policy 4A.1.4 Preserve historical landmarks and require new development to integrate these Community valued features into the overall design of the development.
- ACP Policy 8D.1.1 New development within the Armona Community Planning Area shall be required to provide onsite monitoring for archaeological, cultural and historic remains and artifacts whenever earth moving construction activities have unearthed archaeological remains. Monitoring shall be done by an individual or firm that is found acceptable by the Tachi Yokut Tribe based at the Santa Rosa Rancheria.
- ACP Policy 8D.1.2 If any discoveries are made, construction shall immediately cease and the nature of the finding determined. The local tribe(s) as identified by the California Native American Heritage Commission shall be immediately notified and allowed the opportunity to evaluate the findings.

Discussion

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

Less Than Significant Impact with Mitigation Incorporation: A records search was conducted on behalf of the Applicant at the Southern San Joaquin Valley Archaeological Information Center (AIC), to determine if historical or archaeological sites had previously been recorded within the study area, if the project area had been systematically surveyed by archaeologists prior to the initial study, and/or whether the region of the field project was known to contain archaeological sites and to thereby be archaeologically sensitive.

The records search stated there have been six previous cultural resource studies within the project area and seven additional studies within one-half mile of the project site. According to the records search, there are no recorded cultural resources within the project area and five recorded cultural resources within a one-half mile radius. These resources are the Southern Pacific Railroad, the site of

the former Armona Train Station, a historic era well/cisterns, a historic era canal, and a historic era water tower. The full findings of the cultural records search can be found in Appendix C.

Although no other cultural resources were identified, the presence of remains or unanticipated cultural resources under the ground surface is possible. Implementation of Mitigation Measures CUL-1 and CUL-2 will ensure that impacts to this checklist item will be *less than significant with mitigation incorporation*.

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

Less Than Significant Impact with Mitigation Incorporation: There are no known archaeological resources located within the project area. Implementation of Mitigation Measures CUL-1 and CUL-2 will ensure that potential impact to unknown archeological resources will be *less than significant with mitigation incorporation*.

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

Less Than Significant Impact with Mitigation Incorporation: There are no known human remains buried in the project vicinity. If human remains are unearthed during project construction, there is a potential for a significant impact. As such, implementation of Mitigation Measure CUL-2 will ensure that impacts remain *less than significant with mitigation incorporation.*

Mitigation Measures for Impacts to Cultural Resources

Mitigation Measure CUL-1:

In order to avoid the potential for impacts to historic and prehistoric archaeological resources, the following measures shall be implemented, as necessary, in conjunction with the construction of each phase of the Project:

a. Cultural Resources Alert on Project Plans. The project proponent shall note on any plans that require ground disturbing excavation that there is a potential for exposing buried cultural resources.

b. Pre-Construction Briefing. The project proponent shall retain Santa Rosa Rancheria Cultural Staff to provide a pre-construction Cultural Sensitivity Training to construction staff regarding the discovery of cultural resources and the potential for discovery during ground disturbing activities, which will include information on potential cultural material finds and on the procedures to be enacted if resources are found.

c. Stop Work Near any Discovered Cultural Resources. The project proponent shall retain a professional archaeologist on an "on-call" basis during ground disturbing construction for the project to review, identify and evaluate cultural resources that may be inadvertently exposed during construction. Should previously unidentified cultural resources be discovered during construction of the project, the project proponent shall cease work within 100 feet of the resources, and Kings County Community Development Agency (CDA) shall be notified

immediately. The archaeologist shall review and evaluate any discoveries to determine if they are historical resource(s) and/or unique archaeological resources under CEQA.

d. Mitigation for Discovered Cultural Resources. If the professional archaeologist determines that any cultural resources exposed during construction constitute a historical resource and/or unique archaeological resource, he/she shall notify the project proponent and other appropriate parties of the evaluation and recommended mitigation measures to mitigate the impact to a less-than-significant level. Mitigation measures may include avoidance, preservation in-place, recordation, additional archaeological testing and data recovery, among other options. Treatment of any significant cultural resources shall be undertaken with the approval of the Kings County CDA. The archaeologist shall document the resources using DPR 523 forms and file said forms with the California Historical Resources Information System, Southern San Joaquin Valley Information Center. The resources shall be photo documented and collected by the archaeologist for submittal to the Santa Rosa Rancheria's Cultural and Historical Preservation Department. The archaeologist shall be required to submit to the County for review and approval a report of the findings and method of curation or protection of the resources. Further grading or site work within the area of discovery shall not be allowed until the preceding steps have been taken.

e. Native American Monitoring. Prior to any ground disturbance, the project proponent shall offer the Santa Rosa Rancheria Tachi Yokut Tribe the opportunity to provide a Native American Monitor during ground disturbing activities during construction. Tribal participation would be dependent upon the availability and interest of the Tribe.

f. Disposition of Cultural Resources. Upon coordination with the Kings County Community Development Agency, any pre-historic archaeological artifacts recovered shall be donated to an appropriate Tribal custodian or a qualified scientific institution where they would be afforded applicable cultural resources laws and guidelines.

Mitigation Measure CUL-2: In order to avoid the potential for impacts to buried human remains, the following measures shall be implemented, as necessary, in conjunction with the construction of each phase of the Project:

a. Pursuant to State Health and Safety Code Section 7050.5(e) and Public Resources Code Section 5097.98, if human bone or bone of unknown origin is found at any time during on- or off-site construction, all work shall stop in the vicinity of the find and the Kings County Coroner shall be notified immediately. If the remains are determined to be Native American, the Coroner shall notify the California State Native American Heritage Commission (NAHC), who shall identify the person believed to be the Most Likely Descendant (MLD). The project proponent and MLD, with the assistance of the archaeologist, shall make all reasonable efforts to develop an agreement for the treatment of human remains and associated or unassociated funerary objects with appropriate dignity (CEQA Guidelines Sec. 15064.5(d)). The agreed upon treatment shall address the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects. California Public Resources Code allows 48 hours for the MLD to make their wishes known to the landowner after being granted access to the site. If the MLD and the other parties do not agree on the reburial method, the project will follow Public Resources Code Section 5097.98(e) which states that ". . . the landowner or his or her authorized representative shall reinter the human remains and items

associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance."

b. Any findings shall be submitted by the archaeologist in a professional report submitted to the project applicant, the MLD, the Kings County Community Development Agency, and the California Historical Resources Information System, Southern San Joaquin Valley Information Center.

VI. ENERGY

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

Environmental Setting

Southern California Edison (SCE) provides electricity services to the community of Armona. SCE serves approximately 15 million people in a 50,000 square-mile area of Central, Coastal, and Southern California. SCE supplies electricity to its customers through a variety of renewable and nonrenewable sources. Table 1-7 below shows the proportion of each energy resource sold to California consumers by SCE in 2019 as compared to the statewide average.

Fuel Type		SCE Power Mix	California Power Mix
Coal		0%	3%
Large Hydroelectric		7.9%	14.6%
Natural Gas		16.1%	34.2%
Nuclear		8.2%	9%
Other (Oil/Petroleum Coke/Waste Heat)		0.1%	0.2%
Unspecified Sources of Power[1]		32.6%	7.3%
Eligible Renewables	Biomass	0.6%	2.4%
	Geothermal	5.9%	4.8%
	Small Hydro	1%	2%
	Solar	16%	12.3%
	Wind	11.5%	10.2%
	Total Eligible Renewable	**35.1%**	**31.7%**
1. "Unspecified sources of power" means electricity from transactions that are not traceable to specific generation sources.			

Table 1-7. 2019 SCE and State average power resources; Source: Southern California Edison

SCE also offers Green Rate Options, which allow consumers to indirectly purchase up to 100% of their energy from renewable sources. To accomplish this, SCE purchases the renewable energy necessary to meet the needs of Green Rate participants from solar renewable developers.

Southern California Gas (SoCalGas) Company provides natural gas services to the project area. Natural gas is an energy source developed from fossil fuels composed primarily of methane (CH4). Approximately 45% of the natural gas burned in California is used for electricity generation, while 21% is consumed by the residential sector, 25% is consumed by the industrial sector, and 9% is consumed by the commercial sector.

Regulatory Setting

California Code of Regulations, Title 20: Title 20 of the California Code of Regulations establishes standards and requirements for appliance energy efficiency. The standards apply to a broad range of appliances sold in California.

California Code of Regulations, Title 24: Title 24 of the California Code of Regulations is a broad set of standards designed to address the energy efficiency of new and altered homes and commercial buildings. These standards regulate energy consumed for heating, cooling, ventilation, water heating, and lighting. Title 24 requirements are enforced locally by the Kings County Building Department.

California Green Building Standards Code (CALGreen): CalGreen is a mandatory green building code that sets minimum environmental standards for new buildings. It includes standards for volatile organic compound (VOC) emitting materials, water conservation, and construction waste recycling.

SB 100: SB 100, passed in 2018, set a deadline in 2045 for 100% of energy to be renewable. Additionally, by 2030, 60% of all energy must be renewable. California is targeting this goal through solar and other renewable sources.

AB 178: For California to meet its renewable goals, AB 178 was passed in 2018. AB 178 states that starting in 2020 all new low rise residential buildings must be built with solar power.

2035 Kings County General Plan: The Resource Conservation Element of the County of Kings General Plan contains the following policies related to energy conservation:

RC G1.3 Objective: Conserve energy to lower energy costs and improve air quality.

- RC Policy G1.3.1: Encourage developers to be innovative in providing landscaping that modifies microclimates, thus reducing energy consumption.
- RC Policy G1.3.2: Require new urban development to provide and maintain shade trees and other landscaping along streets and within parking areas to reduce radiation heating. However, solar access for solar panels shall not be blocked.
- RC Policy G1.3.3: Participate, to the extent feasible, in local and State programs that strive to reduce the consumption of energy.

Discussion

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

Less Than Significant Impact: The proposed project includes the construction and operation of single-family housing. During project construction there would be an increase in energy consumption related to worker trips and operation of construction equipment. This increase in energy use would be temporary and limited to the greatest extent possible through compliance with local, state, and federal regulations. Vehicle fuel consumption during project construction was estimated based on the assumed construction schedule, vehicle trip lengths, and the number of workers per construction phase as provided by CalEEMod, and Year 2023 gasoline/diesel MPG factors provided by the EMFAC2014. To simplify the estimation process, it was assumed that all worker vehicles used gasoline as a fuel source and all vendor vehicles used diesel as a fuel source. Table 1-8, below, provides gasoline and diesel fuel used by construction and on-road sources during each phase of project construction.

Construction Phase	# of Days	Daily Worker Trips[1]	Daily Vendor Trips[1]	Daily Hauling Trips[1]	Total Gasoline Fuel Use (gallons)[2]	Total Diesel Fuel Use (gallons)[2]
Site Preparation	10	18	0	0	1,950	0
Grading	35	20	0	0	10,777	0
Building Construction	370	39	12	0	53,441	3,845
Paving	20	15	0	0	2,356	0
Architectural Coating	20	8	0	0	317	0
Total	**445**	**N/A**	**N/A**	**N/A**	**68,841**	**3,844**

1. Data provided by CalEEMod (Appendix A)
2. See Appendix D

Table 1-8. On-Road Mobile Fuel Use Generated by Construction Activities. Source: CalEEMod (v. 2020.4.0); EMFAC2014

While construction of the proposed project will result in additional energy consumption, this energy use is not unnecessary or inefficient. This energy use is justified by the energy-efficient nature of the proposed project and would be limited to the greatest extent possible through compliance with local, state, and federal regulations. Once construction is complete, the project is expected to achieve net zero energy consumption. The proposed project is subject to the California New Residential Zero Net Energy Action Plan 2015-2020. This plan establishes a goal for all residential buildings built after January 1, 2020, to be zero net energy. The California Energy Commission is responsible for the development and enforcement of specific strategies to achieve this goal. These strategies are implemented through Title 24, Part 6 of the California Building Code, which requires developers to include certain measures (including solar panels on all new residential buildings) to achieve required building efficiency standards.

Total Annual Operational VMT[1]	Annual Fuel Use (Gasoline)	Annual Fuel Use (Diesel)	Average MPG
2,764,433 Miles	**105,916 Gallons**	**11,887 Gallons**	**25.1**

1. Data Provided by CalEEMod
2. See Appendix D

Table 1-9. On-Road Mobile Fuel Use Generated by Operational Activities. Source CalEEMod (v. 2020.4.0); EMFAC2014

During project operations, the proposed project is not anticipated to increase in wasteful fuel consumption. This is due to the distance of the project site to the commercial, recreational, and denser residential uses, resulting in less of a reliance on personal vehicles.

Because construction-related energy use would be temporary and limited to the greatest extent feasible through consistency with Federal, State, and local policies related to energy conservation, and operation of the project will comply with all energy efficiency standards required under Title 24, Section 6, and these standards were specifically developed to achieve net zero energy for residential projects, it can be presumed that the project will achieve net zero energy. The project would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources. The impact is *less than significant.*

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

No Impact: The proposed project will not conflict with or obstruct any state or local plans for renewable energy or energy efficiency. The proposed project will comply with all state and local policies related to energy efficiency and there is *no impact*.

VII. GEOLOGY AND SOILS

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

Environmental Setting

Geologic Stability and Seismic Activity

- **Seismicity:** Kings County has no known major fault systems within its boundaries. The greatest potential for seismic activity in Kings County is posed by the San Andreas Fault, which is located approximately four miles west of the Kings County line. Another large fault that may pose potential geologic hazards for Kings County is the White Wolf fault located South of the County

near Arvin and Bakersfield. The Five County Seismic Safety Element identifies the project site as having a 20-30% probability of shaking 10% in 50 years. Ground shaking can result in other geological impacts, including liquefaction, landslides, lateral spreading, subsidence, or collapse of buildings.

- **Liquefaction**: Liquefaction is a phenomenon whereby unconsolidated and/or near saturated soils lose cohesion and are converted to a fluid state as a result of severe vibratory motion. The relatively rapid loss of soil shear strength during strong earthquake shaking results in temporary, fluid-like behavior of the soil, which can result in landslides and lateral spreading. The Five County Seismic Safety Element describes potential Liquefaction areas, with the project site located in the safest Valley Floor Seismic Zone.

- **Landslides**: Landslides refer to a wide variety of processes that result in the downward and outward movement of soil, rock, and vegetation under gravitational influence. Landslides are caused by both natural and human-induced changes in slope stability and often accompany other natural hazard events, such as floods, wildfire, or earthquake. While Western portions of the County are high landslide hazard areas, most of the County, including the proposed project site, is considered a low landslide hazard area.

- **Subsidence**: Land Subsidence refers to the vertical sinking of land as a result of either manmade or natural underground voids. Subsidence has occurred throughout the Central Valley as a result of groundwater, oil, and gas withdrawal. Most of the County, including the proposed project site, is not considered to be at risk of subsidence related hazards.

Soils Involved in Project: The proposed project involves construction on two soil types. The properties of the soil are described briefly below:

- **Nord Complex:** The Nord series consists of very deep, well drained soils that formed in mixed alluvium dominantly from granitic and sedimentary rocks. Nord soils occur on alluvial fans and flood plains. Slopes are 0 to 2 percent. They are well drained, negligible to low runoff, moderate permeability, but are moderately slow in saline-sodic phases. There is available water storage of 11.21 cm.

- **Nord Fine Sandy Loam:** Also in the Nord series, there is available water storage of 12.54 cm.

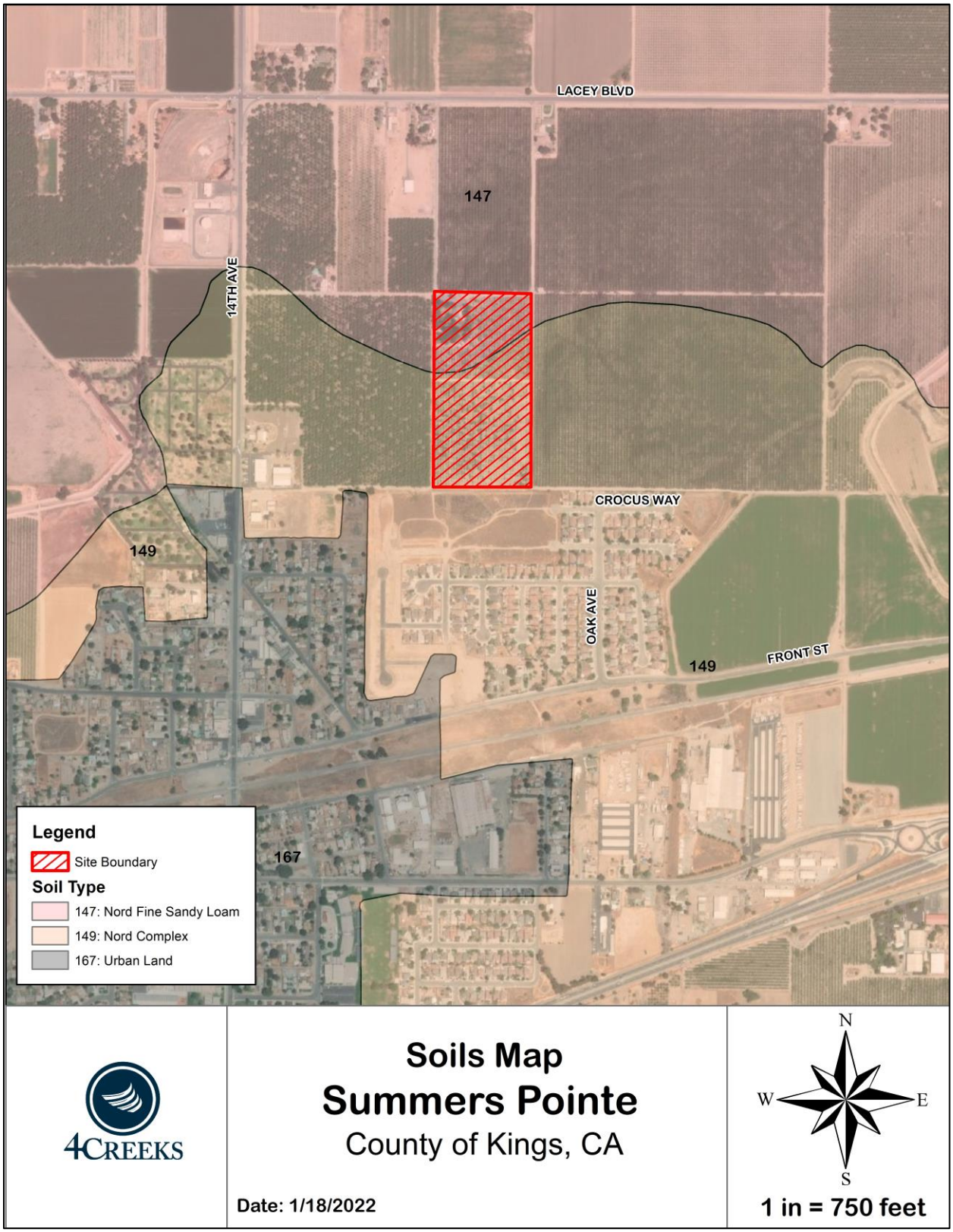


Figure 1-4: Soils Map

Regulatory Setting

California Building Code: The California Building Code contains general building design and construction requirements relating to fire and life safety, structural safety, and access compliance. CBC provisions provide minimum standards to safeguard life or limb, health, property and public welfare by regulating and controlling the design, construction, quality of materials, use and occupancy, location and maintenance of all buildings and structures and certain equipment.

County of Kings Municipal Code, Section 5-36 (California Building Code): The County of Kings Municipal Code has incorporated and adopted the CBC, 2013 Edition, as promulgated by the California Building Standards Commission, which incorporates the adoption of the 2012 edition of the of the International Building Code, as amended with necessary California amendments and the 2012 International Building Code of the International Code Council. Together with the County's amendments to the CBC provided in Section 5-3, these shall be referred to as the Kings County Building Code.

2035 Kings County General Plan: The Health and Safety (HS) Element of the 2035 Kings County General Plan includes the following policies regarding soils and geology:

- HS Policy A1.3.1: Implement natural hazards review criteria for new development that is based upon information provided in the Natural Hazards Section of the Health and Safety Element to improve long term loss prevention.
- HS Policy A1.4.1: Implement the current California Building Codes and any subsequent amendments as contained within California Code of Regulations Title 24 to improve disaster resistance of future buildings.
- HS Policy A2.1.1: Maintain and enforce current building codes and standards to reduce the potential for structural failure caused by ground shaking and other geologic hazards.
- HS Policy A2.1.2: Use the 1997 Uniform Code for the Abatement of Dangerous Buildings of a non-residential nature, and the 1997 Uniform Housing Code to assess unsafe residential structures and ensure their safe construction and rehabilitation.

Additionally, the HS Element shows that the project site is in the *V1* Seismic Zone. This is the safest zone in the county regarding earthquakes. This seismic zone can be summarized as a moderately thick section of marine and continental sedimentary deposits overlying the granitic basement complex. The amplification of shaking from an earthquake in this zone is relatively high for low to medium rise structures, however the fault systems are too far away to cause any significant effect. The effects of earthquakes in and around the project site should be minimal.

Discussion

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

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

No Impact: Although the project is located in an area of relatively low seismic activity, the project site has a low chance of being affected by ground shaking from distant faults. The potential for strong seismic ground shaking on the project site is not a significant environmental concern due to the infrequent seismic activity of the area and distance to the faults. The project does not propose any components which could cause substantial adverse effects in the event of an earthquake. Additionally, the project has no potential to cause the rupture of an earthquake fault indirectly or directly. Therefore, there is *no impact* related to the risk of loss, injury or death involving a rupture of a known earthquake fault.

ii. Strong seismic ground shaking?

No Impact: According to the Five County Seismic Safety Element, the project site is in an area of low seismic activity. The proposed project does not include any activities or components which could feasibly cause strong seismic ground shaking, either directly or indirectly. There is *no impact.*

iii. Seismic-related ground failure, including liquefaction?

No Impact: The Five County Seismic Safety Element identifies the risk of liquefaction within the county as low because the soil types are unsuitable for liquefaction. Due to the project being in the V1 Seismic Zone, there is low potential for seismic activity. This would further reduce the likelihood of liquefaction occurrence. Because the project site is within an area of low seismic activity, and the soils associated with the project area not suitable for liquefaction, there are *no impacts.*

iv. Landslides?

No Impact: The County of Kings is considered at low risk of landslides. Additionally, the project site is generally flat and there are no hill slopes in the area. No geologic landforms exist on or near the site that would result in a landslide event. As a result, there is very low potential for landslides. There would be *no impact.*

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

Less Than Significant Impact: Because the project site is relatively flat, the potential for erosion is low. However, construction-related activities and increased impermeable surfaces can increase the probability for erosion to occur. Construction-related impacts related to erosion will be temporary and subject to best management practices (BMPs) required by SWPPP, which are developed to prevent significant impacts related to erosion from construction. Because impacts related to erosion would be temporary and limited to construction, and because required best management practices would prevent significant impacts related to erosion, the impact will remain *less than significant.*

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

No Impact: The soils known to be on the project site and the geologic formations in the V1 seismic zone are considered stable. and have a low capacity for landslides, lateral spreading, subsidence, liquefaction or collapse. Because the project area is stable, and this project would not result in a substantial grade change to the topography to the point that it would increase the risk of landslides, lateral spreading, subsidence, liquefaction or collapse, there is *no impact.*

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

No Impact: The proposed project site is not in an area as having expansive soils. Because the soils associated with the project do not exhibit shrink swell behavior, implementation of the project will pose no risk to life or property caused by expansive soils and there is *no impact.*

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

No Impact: The proposed project would not include the use of septic tanks or any other alternative wastewater disposal systems. The proposed buildings will tie into the Armona Community Service District sewer services. Therefore, there would be *no impact.*

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

Less Than Significant Impact with Mitigation: There are no unique geologic features and no known paleontological resources located within the project area. However, there is always the possibility that paleontological resources may exist below the ground surface. Implementation of Mitigation Measures CUL-1 and CUL-2 will ensure that any impacts resulting from project implementation remain *less than significant with mitigation incorporation*.

Mitigation Measures for Impacts to Geology and Soils:

See Cultural Resources Section- Mitigation Measures CUL-1 and CUL-2

VIII. GREENHOUSE GAS EMISSIONS

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

Environmental Setting

Natural processes and human activities emit greenhouse gases. The presence of GHGs in the atmosphere affects the earth's temperature. Without the natural heat-trapping effect of GHGs, the earth's surface would be about 34ºC cooler. However, it is believed that emissions from human activities, such as electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations.

The effect of greenhouse gasses on earth's temperature is equivalent to the way a greenhouse retains heat. Common GHGs include water vapor, carbon dioxide, methane, nitrous oxide, ozone, chlorofluorocarbons, hydro chlorofluorocarbons, and hydro fluorocarbons, per fluorocarbons, sulfur and hexafluoride. Some gases are more effective than others. The Global Warming Potential (GWP) has been calculated for each greenhouse gas to reflect how long it remains in the atmosphere, on average, and how strongly it absorbs energy. Gases with a higher GWP absorb more energy, per pound, than gases with a lower GWP, and thus contribute more to global warming. For example, one pound of methane is equivalent to twenty-one pounds of carbon dioxide.

GHGs as defined by AB 32 include the following gases: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. GHGs as defined by AB 32 are summarized in Table 1-10. Each gas's effect on climate change depends on three main factors. The first being the quantity of these gases are in the atmosphere, followed by how long they stay in the atmosphere and finally how strongly they impact global temperatures.

Greenhouse Gas	Description and Physical Properties	Lifetime	GWP	Sources
Methane (CH4)	Is a flammable gas and is the main component of natural gas	12 years	21	Emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills.

Greenhouse Gas	Description and Physical Properties	Lifetime	GWP	Sources
Carbon dioxide (CO2)	An odorless, colorless, natural greenhouse gas.	30-95 years	1	Enters the atmosphere through burning fossil fuels (coal, natural gas and oil), solid waste, trees and wood products, and also as a result of certain chemical reactions (e.g., manufacture of cement). Carbon dioxide is removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.
Chloro-fluorocarbons	Gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. They are non-toxic nonflammable, insoluble and chemically unreactive in the troposphere (the level of air at the earth's surface).	55-140 years	3,800 to 8,100	Were synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. They destroy stratospheric ozone.
Hydro-fluorocarbons	A man-made greenhouse gas. It was developed to replace ozone-depleting gases found in a variety of appliances. Composed of a group of greenhouse gases containing carbon, chlorine an at least one hydrogen atom.	14 years	140 to 11,700	Powerful greenhouse gases that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for stratospheric ozone-depleting substances. These gases are typically emitted in smaller quantities, but because they are potent greenhouse gases.
Nitrous oxide (N2O)	Commonly known as laughing gas, is a chemical compound with the formula N2O. It is an oxide of nitrogen. At room temperature, it is a colorless, non-flammable gas, with a slightly sweet odor and taste. It is used in surgery and dentistry for its anesthetic and analgesic effects.	120 years	310	Emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.
Pre-fluorocarbons	Has a stable molecular structure and only breaks down by ultraviolet rays about 60 kilometers above Earth's surface.	50,000 years	6,500 to 9,200	Two main sources of pre-fluorocarbons are primary aluminum production and semiconductor manufacturing.
Sulfur hexafluoride	An inorganic, odorless, colorless, and nontoxic nonflammable gas.	3,200 years	23,900	This gas is manmade and used for insulation in electric power transmission equipment, in the magnesium industry, in semiconductor manufacturing and as a tracer gas.

Table 1-10. Greenhouse Gasses; Source: EPA, Intergovernmental Panel on Climate Change

Regarding the quantity of these gases are in the atmosphere, we first must establish the amount of the particular gas in the air, known as Concentration, or abundance, which are measured in parts per million, parts per billion and even parts per trillion**.** To put these measurements in more relatable terms, one part per million is equivalent to one drop of water diluted into about 13 gallons of water, roughly a full tank of gas in a compact car. Therefore, it can be assumed larger emission of greenhouse gases lead to a higher concentration in the atmosphere.

Each of the designated gases described above can reside in the atmosphere for different amounts of time, ranging from a few years to thousands of years. All these gases remain in the atmosphere long enough to become well mixed, meaning that the amount that is measured in the atmosphere is roughly the same all over the world regardless of the source of the emission.

Regulatory Setting

AB 32: AB 32 set the 2020 greenhouse gas emissions reduction goal into law. It directed the California Air Resources Board to begin developing discrete early actions to reduce greenhouse gases while also preparing a scoping plan to identify how best to reach the 2020 limit. The reduction measures to meet the 2020 target are to be adopted by the start of 2011.

SB 1078, SB 107 and Executive Order S-14-08: SB 1078, SB 107, and Executive Order S-14-08 require California to generate 20% of its electricity from renewable energy by 2017. SB 107 then changes the 2017 deadline to 2010. Executive Order S-14-08 required that all retail sellers of electricity serve 33 percent of their load with renewable energy by 2020.

SJVAPCD Guidance for Valley Land Use Agencies in Addressing GHG Emission Impacts for New Projects Under CEQA: The County of Kings does not have a climate action plan, however the SJVAPCD created a guidance document to review the impacts of proposed projects within the district's boundaries. This document provides thresholds for proposed projects to meet to be considered less than significant. Additionally, this document provides strategies to reduce GHG emissions.

Kings County Association of Governments Regional Climate Action Plan: The KCAG prepared a Climate Action Plan to reduce GHG emissions. The plan is a long-range policy document that identifies cost-effective measures to reduce GHG emissions from activities within Kings County consistent with California State Assembly Bill (AB) 32. The GHG Plan is designed to ensure that the development accommodated by the buildout of the General Plan supports the goals of AB 32. This plan is a voluntary effort between local agencies and can be used by agencies to reduce GHG emissions. The document was designed with three goals in mind: 1) Benchmark the region's 2005 baseline GHG emissions and 2020 projected emissions relative to the statewide emissions target; 2) Provide a roadmap for each local agency, as desired, to achieve the State recommended target of 15 percent below 2005 levels by the year 2020, consistent with AB 32; and 3) Support the streamlining of the environmental review process for future projects within the participating local jurisdictions in accordance with State California Environmental Quality Act (CEQA) Guidelines Sections 15152 and 15183.5.

Discussion

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

Less Than Significant Impact: The SJVAPCD does not provide numeric thresholds to assess the significance of greenhouse gas emissions. Instead, the SJVAPCD "Guidance for Valley Land Use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA" states that projects which achieve a 29% GHG emission reduction compared to Business as Usual (BAU) would be determined to have a less than significant individual and cumulative impact for GHG. "Business as usual" (BAU) conditions are defined based on the year 2005 building energy efficiency, average vehicle emissions, and electricity energy conditions. The BAU conditions assume no improvements in energy efficiency, fuel efficiency, or renewable energy generation beyond that existing today. The 2005 BAU conditions were estimated using CalEEMod.

Implementation of the proposed project would result in long-term greenhouse gas emissions associated with area sources, such as natural gas consumption, landscaping, applications of architectural coatings, and consumer products, as well as mobile emissions. The GHG emissions were estimated using CalEEMod (Appendix A).

	C02 (MT/Year)	CH4 (MT/Year)	N20 (MT/Year)	CO2e (MT/Year)
Operational Emissions	1,200	1.86	.06	1,269
2005 BAU	1,941	2.18	.18	2,048
% Reduction From BAU				**38%**

Table 1-11: Projected Project Operational GHG Emissions Compared to 2005 BAU; Source: (CalEEMod, V.2020.4.0)

The project's operational GHG are estimated to be 779 CO2e MT lower than the 2005 BAU. This is a reduction of 38%, more than the 29% threshold. Therefore, the impact is considered *less than significant.*

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

No Impact: The SJVAPCD states that individual and cumulative GHG emissions are considered less than significant if a project complies with an approved GHG emission reduction plan or GHG mitigation program with within the geographic area in which the project is located. The KCAG Climate Action Plan meets the requirements for a Qualified Greenhouse Gas Reduction Strategy. Therefore, the proposed project's GHG emissions would not be considered a significant impact if the proposed Project would be consistent with the KCAG GHG Reduction Strategy. Table 1-12, below, evaluates the proposed project's consistency with the applicable objectives and policies included in the GHG reduction plan.

Climate Action Plan Policies	Project Consistency with Strategy
Policy E-4.1: Encourage local homebuilders to participate in the New Solar Homes Partnership to install solar PV systems on qualifying new homes.	**Consistent.** The proposed project involves solar panels on the new homes.
Policy TL-2.5: Support land use planning that will promote pedestrian and bicyclist access to and from new development by encouraging land use and subdivision designs that provide safe bicycle and pedestrian circulation, including bicycle parking facilities and internal bicycle and pedestrian routes, where feasible.	**Consistent.** The proposed project provides enhanced pedestrian access throughout the project site.
Policy T-1.1: Provide tree planting guidelines that address the types of trees appropriate to plant in the region, with emphasis placed on native, drought-tolerant trees.	**Consistent.** The proposed project incorporates street trees.
Policy TL-2.2: Incorporate multi-modal improvements into pavement resurfacing, restriping, and signalization operations where safety and convenience of users can be improved within the scope of work.	**Consistent.** The proposed project will improve the streets in and around the project site.
Policy TL-1.4: Through the development review process, evaluate development projects based on consistency with applicable general plan policies, zoning regulations, and design guidelines, including the Kings County Smart Growth Principles and Kings County and San Joaquin Valley Blueprint.	**Consistent.** The proposed project will comply with all general plan policies and guidelines.

Table 1-12. Project Consistency with Climate Action Plan Strategies.

As discussed above, the proposed project is consistent with the KCAG Climate Action Plan. The proposed project will comply with all Federal, State, and Local rules pertaining to the regulation of greenhouse gas emissions and the project will implement Best Performance Standards developed by the SJVAPCD. The project will not conflict with any plan, policy, or regulation developed to reduce GHG emissions. There is *no impact.*

IX. HAZARDS AND HAZARDOUS MATERIALS

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

Environmental Setting

The proposed project site is located approximately .60 miles North of the nearest school (Parkview Middle School) and approximately 4.1 miles West of the nearest public airport (Hanford Municipal Airport).

The Department of Toxic Substances Control's (DTSC's) Envirostor was used to identify any sites known to be associated with releases of hazardous materials or wastes within the project area. This research confirmed that the project would not be located on or nearby a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.

Regulatory Setting

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S. Code [U.S.C.] §9601 et seq.). The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, or the Superfund Act) authorizes the President to respond to releases or threatened releases of hazardous substances into the environment.

Occupational Safety and Health Administration. The Occupational Safety and Health Administration (OSHA) sets and enforces Occupational Safety and Health Standards to assure safe working conditions. OSHA provides training, outreach, education, and compliance assistance to promote safe workplaces. The proposed Project would be subject to OSHA requirements during construction, operation, and maintenance.

Toxic Substances Control Act of 1976 (15 U.S.C. §2601 et seq.). The Toxic Substance Control Act was enacted by Congress in 1976 and authorizes the EPA to regulate any chemical substances determined to cause an unreasonable risk to public health or the environment.

Hazardous Waste Control Law, Title 26. The Hazardous Waste Control Law creates hazardous waste management program requirements. The law is implemented by regulations contained in Title 26 of the California Code of Regulations (CCR), which contains requirements for the following aspects of hazardous waste management:

- Identification and classification;
- Generation and transportation;
- Design and permitting of recycling, treatment, storage, and disposal facilities;
- Treatment standards;
- Operation of facilities and staff training; and
- Closure of facilities and liability requirements.

California Code of Regulations, Title 22, Chapter 11. Title 22 of the California Code of Regulations contains regulations for the identification and classification of hazardous wastes. The CCR defines a waste as hazardous if it has any of the following characteristics: ignitability, corrosivity, reactivity, and/or toxicity.

California Emergency Services Act. The California Emergency Services Act created a multi-agency emergency response plan for the state of California. The Act coordinates various agencies, including CalEPA, Caltrans, the California Highway Patrol, regional water quality control boards, air quality management districts, and county disaster response offices.

Kings County of Department of Public Health: A Certified Unified Program Agency (CUPA) is a local agency that has been certified by Cal/EPA to implement the local Unified Program. The Kings County Department of Public Health is the certified CUPA for the Armona area and vicinity.

2035 Kings County General Plan: The Health and Safety Element of the 2035 Kings County General Plan includes the following policies pertaining to hazards and hazardous materials and have been relevant to this analysis:

HS Objective C2.2: Provide quality fire protection services throughout the County by the Kings County Fire Department, and Fire safety preventative measures to prevent unnecessary exposure of people and property to fire hazards in both County Local Responsibility Areas and State Responsibility Area.

- HS Policy C2.2.3: Use the 1997 Uniform Code for the abatement of Dangerous Buildings. All new structures to be occupied shall be built to current Fire Code Standards.

HS Objective C2.4: Ensure maintenance and upkeep of key emergency access routes, and critical facilities and infrastructure to minimize delays or disruptions in emergency response.

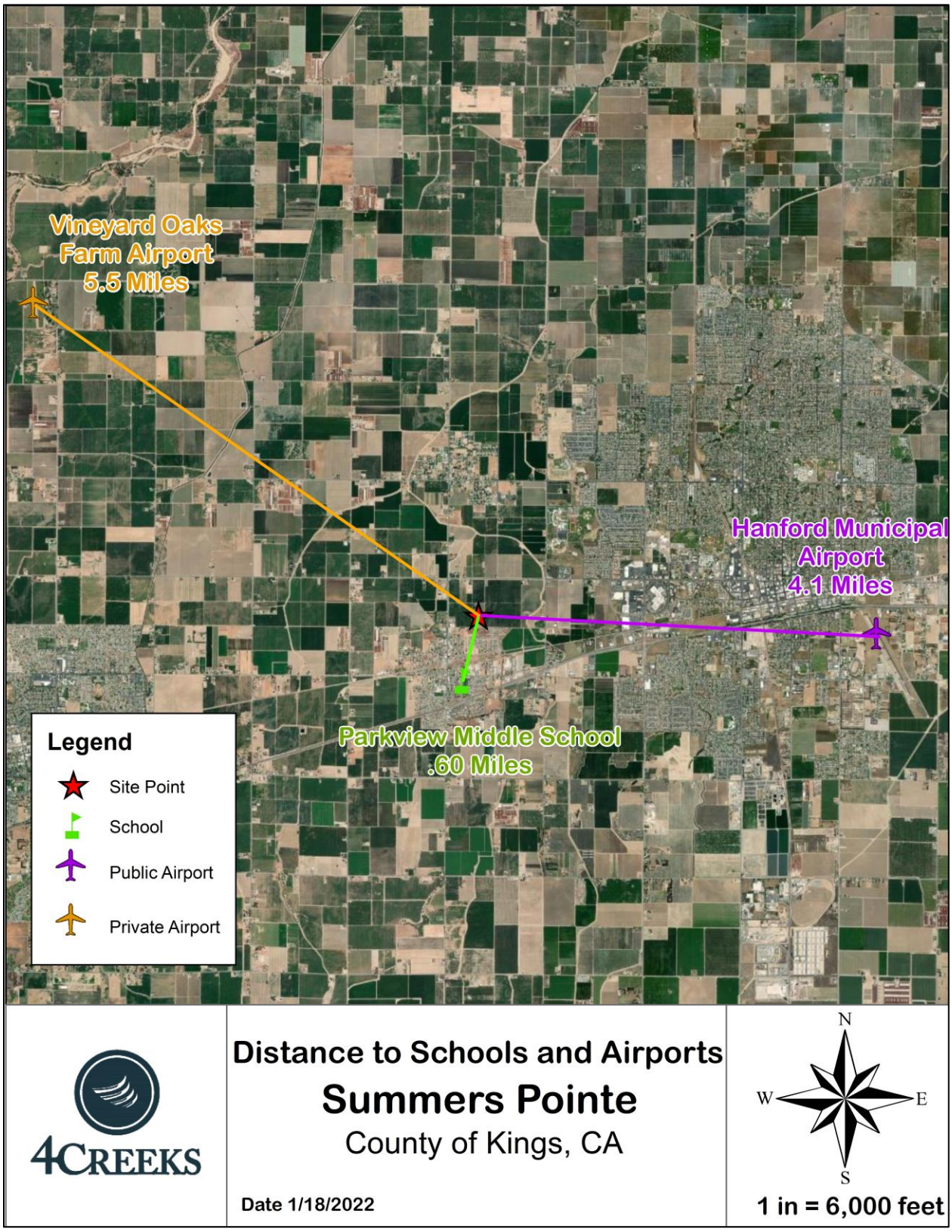


Figure 1-5: Distance to Schools and Airports

Discussion

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

Less than Significant Impact: Project construction activities may involve the use, storage, and transport of hazardous materials. During construction, the contractor will use fuel trucks to refuel onsite equipment and may use paints and solvents to a limited degree. The storage, transport, and use of these materials will comply with Local, State, and Federal regulatory requirements. There is the potential for small leaks due to refueling of construction equipment, however standard construction Best Management Practices (BMPs) included in the SWPPP will reduce the potential for the release of construction related fuels and other hazardous materials by controlling runoff from the site and requiring proper disposal or recycling of hazardous materials. The impact is *less than significant.*

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

Less than Significant Impact: There is no reasonably foreseeable condition or incident involving the project that could result in release of hazardous materials into the environment, other than any potential accidental releases of standard fuels, solvents, or chemicals encountered during typical construction of a residential subdivision. Should an accidental hazardous release occur or should the project encounter hazardous soils, existing regulations for handling hazardous materials require coordination with the California Department of Toxic Substances Control for an appropriate plan of action, which can include studies or testing to determine the nature and extent of contamination, as well as handling and proper disposal. Therefore, potential impacts are *less than significant*.

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

Less than Significant Impact: The project is located approximately .60 miles from an existing middle school. The project does not involve the use or storage of hazardous substances other than small amounts of pesticides, fertilizers, and cleaning agents required for normal maintenance of structures and landscaping. The project would not emit hazardous emissions or involve the handling of acutely hazardous materials or waste. Therefore, impacts would be *less than significant*.

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

No Impact: The project site is not 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. There would be *no impact.*

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

No Impact: The proposed project is located approximately 4.1 miles West of the nearest public airport (Hanford Municipal Airport) and is not located in an airport land use plan. Implementation of the proposed project would not result in a safety hazard for people residing or working in the project area. There is *no impact.*

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

No Impact: The County's design and environmental review procedures shall ensure compliance with emergency response and evacuation plans. In addition, the site plan will be reviewed by the Fire Department per standard County procedure to ensure consistency with emergency response and evacuation needs. Therefore, the proposed project would have *no impact* on emergency evacuation.

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

No Impact: The land surrounding the project site is developed with urban uses and farmlands which are not considered to be wildlands. The Kings County Multi-jurisdictional Local Hazard Mitigation Plan (Pages 52-55) identifies Armona and the areas surrounding the Community as a low fire hazard severity zone. The Plan states that wildfires are unlikely to occur west of Interstate 5, as almost all wildfires occur in the southwestern portion of the County. The proposed project would not expose people or structures to significant risk of loss, injury or death involving wildland fires and there is *no impact.*

X. HYDROLOGY AND WATER QUALITY

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

Environmental Setting

Surface Water: The King's River is the County's primary surface water feature. It is 133 miles long and is located approximately 6 miles North of the proposed project site. The King's River travels through the San Joaquin Valley, providing irrigation water to more than one million acres of agricultural land. Additionally, there is a network of canals and channels for agricultural and drainage uses throughout the planning area. The river is regulated by the Pine Flat Dam east of Fresno.

Groundwater: The San Joaquin Valley Groundwater Basin is comprised of six subbasins. The County of Kings contains five of the subbasins: The Westside Subbasin, The Kaweah Subbasin, The Kings Subbasin, The Pleasant Valley Subbasin, and The Tulare Lake Subbasin. The project site is located within the Tulare Lake Subbasin. The Tulare Lake Subbasin is approximately 837 square miles and is crucial to the southern

San Joaquin Valley. Subsurface recharge occurs through movement of groundwater from external sources. Subsurface water tends to flow from areas with a higher groundwater table into areas with lower groundwater tables because the groundwater table surrounding the County is higher than inside the County itself. Groundwater flows from five bounding features, the Kettleman Hills to the southwest, the Kings River alluvial fan to the northeast, The Arroyo Pasajero fan to the northwest, The Tulare Lake clay beds in the central portion, and the Kaweah and Tule River alluvial fans to the east.

Stormwater Drainage: The Armona Community Services District (ACSD) plans, implements, operates, and maintains storm drainage facilities within the Community. Storm water facilities consist of pipelines, storm drain inlets, retention basins, stormwater pump stations, and urban detention (water quality) basins. The project site will be within the service area, and the proposed project will eventually connect to the Community's drainage system.

Regulatory Setting

Clean Water Act: The Clean Water Act (CWA) is enforced by the U.S. EPA and was developed in 1972 to regulate discharges of pollutants into the waters of the United States. The Act made it unlawful to discharge any pollutant from a point source into navigable waters unless a National Pollution Discharge Elimination System (NPDES) Permit is obtained.

National Flood Insurance Act: The Federal Emergency Management Agency (FEMA) is tasked with responding to, planning for, recovering from, and mitigating against disasters. The Federal Insurance and Mitigation Administration within FEMA is responsible for administering the National Flood Insurance Program (NFIP) and administering programs that aid with mitigating future damages from natural hazards.

California Water Quality Porter-Cologne Act: California's primary statute leading water quality and water pollution concerns with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (Porter-Cologne Act). The Porter-Cologne Act grants the State Water Resource Control Board (SWRCB) and each of the nine Regional Water Quality Boards (RWQCB) power to protect water quality and further develop the Clean Water Act within California. The applicable RWQCB for the proposed project is the Central Valley RWQCB.

Central Valley RWQCB: The proposed project site is within the jurisdiction of the Central Valley Regional Water Quality Control Board (RWQCB). The Central Valley RWQCB requires a National Pollution Discharge Elimination System (NPDES) Permit and Stormwater Pollution Prevention Plan (SWPPP) for projects disturbing more than one acre of total land area. Because the project is greater than one acre, a NPDES Permit and SWPPP will be required.

Mid-Kings River Groundwater Sustainability Agency: The Tulare Lake Subbasin is divided into five Groundwater Sustainability Agencies (GSA). The Armona Community Services District and the project site is within the Mid-Kings River GSA (MKR GSA). The MKR GSA is approximately 152 square miles and includes the Kings County Water District, the City of Hanford, and other smaller communities and irrigation companies. The MKR GSA serves approximately 60,000 people and many agricultural uses.

Mid-Kings River Groundwater Sustainability Plan: The MKR GSA has identified that the service area is over drafting groundwater by approximately 28,000-32,000 acre feet per year (AFY). To counter this, the GSA has the following plans and objectives:

- **New Recharge Basins:** The MKR GSA believes that an additional 1,500 acres of recharge basins need to be developed and believes this would be the most effective way to counter the over drafting.
- **Partnership with Kings County Water District**: The Kings County WD plans to develop roughly 500 acres of recharge basins. A partnership with the Kings County WD can help facilitate the overall goal of 1,500 acres.
- **System Improvements:** Current efforts to improve the system are to optimize the diversion capacities of the existing recharge basins and remove restrictions on existing canals to allow greater flows.
- **Conservation Measures:** The MKR GSA is attempting to convert local growers into more efficient irrigation systems to reduce the amount of water lost to evaporation and past the root zone.
- **Voluntary Fallowing:** The MKR GSA is developing a plan to lease the property of row crop growers to reduce the water usage during droughts.
- **On-Farm Recharge:** The MKR GSA is seeking to partner with local growers to use the recharge capacity of existing fields.
- **Meter Requirements:** The MKR GSA can better understand the water usage if all wells, public and private, are required to use a flow meter.
- **Pumping Restrictions:** Although it is known restricting the amount of water each well can pump will cause issues, the MKR GSA will consider this if other strategies fail to counter the over drafting.

2035 Kings County General Plan: The Health and Safety Element (HS) and Resource Conservation (RC) Element of the County of Kings General Plan contains the following flood control and water use policies that are potentially applicable to the proposed project:

HS Objective A4.1: Direct new growth away from designated flood hazard risk areas and regulate new development to reduce the risk of flood damage to an acceptable level. an acceptable level.

- HS Policy A4.1.4: Direct new urban growth to existing cities and community districts, or away from New Community Discouragement Areas to avoid flood hazard areas and increased risk to people and property.
- HS Policy A4.1.6: New development shall provide onsite drainage or contribute towards their fair share cost of off-site drainage facilities to handle surface runoff.

RC Objective A1.4: Protect the quality of surface water and groundwater resources in accordance with applicable federal, state and regional requirements and regulations.

- RC Policy A1.4.3: Require the use of feasible and cost-effective Best Management Practices (BMPs) and other measures designed to protect surface water and groundwater from the adverse effects of construction activities and urban and agricultural runoff in coordination with the California Water Quality Control Board, Central Valley Region.
- RC Policy A1.6.1: Require subdivisions with lot sizes of less than one acre to connect to the sewer and water services of a city or community district.

Armona Community Plan: The Armona Community Plan includes the following objectives and policies which mitigate potential impacts related to water quality:

ACP Goal 5B: Armona CSD establishes a communitywide storm drainage system that removes standing pools of water along roadways, and drains runoff into a diverse number of receiving facilities.

ACP Objective 5B.1: Establish a diverse series of site hydrologic functions to receive and detain storm water runoff.

- ACP Policy 5B.1.1: Require new development to integrate onsite stormwater drainage features to increase the storm water detention throughout the community.
- ACP Policy 5B.1.2: Integrate stormwater detention basins into the design of parks, parkways, medians, and other open space areas to serve as dual purpose facilities.
- ACP Policy 5B.1.3: New stormwater drainage facilities established by new developments shall be required to establish a County Service Area or District Zone of Benefit that is supported by benefiting property assessments.

Discussion

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

Less than Significant Impact with Mitigation: The project will result in less than significant impacts to water quality due to potentially polluted runoff generated during construction activities. Construction may include excavation, grading, and other earthwork across most of the 20.08-acre project site. During storm events, exposed construction areas across the project site may cause runoff to carry pollutants, such as chemicals, oils, sediment, and debris. Implementation of a Stormwater Pollution Prevention Plan (SWPPP) will be required for the project. A SWPPP identifies all potential sources of pollution that could affect stormwater discharges from the project site and identifies best management practices (BMPs) related to stormwater runoff. As such, implementation of Mitigation Measures HYD- 1 and HYD-2 will ensure impacts remain *less than significant with mitigation incorporated.*

Mitigation Measures for Hydrology and Water Quality

Mitigation Measure HYD-1: Prior to the issuance of any construction/grading and/or the commencement of any clearing, grading, or excavation, the Applicant shall submit a Notice of Intent (NOI) for discharge from the Project site to the California SWRCB Storm Water Permit Unit.

Mitigation Measure HYD-2: The Applicant shall require the building contractor to prepare and submit a Storm Water Pollution Prevention Plan (SWPPP) to the County 45 days prior to the start of work for approval. The contractor is responsible for understanding the State General Permit and instituting the SWPPP during construction. A SWPPP for site construction shall be developed prior to the initiation of grading and implemented for all construction activity on the Project site in excess of one (1) acre, or where the area of disturbance is less than one acre but is part of the Project's plan of development that in total disturbs one or more acres. The SWPPP shall identify potential pollutant sources that may

affect the quality of discharges to storm water and shall include specific BMPs to control the discharge of material from the site. The following BMP methods shall include, but would not be limited to:

- Dust control measures will be implemented to ensure success of all onsite activities to control fugitive dust;
- A routine monitoring plan will be implemented to ensure success of all onsite erosion and sedimentation control measures;
- Provisional detention basins, straw bales, erosion control blankets, mulching, silt fencing, sand bagging, and soil stabilizers will be used;
- Soil stockpiles and graded slopes will be covered after two weeks of inactivity and 24 hours prior to and during extreme weather conditions; and,
- BMPs will be strictly followed to prevent spills and discharges of pollutants onsite, such as material storage, trash disposal, construction entrances, etc.

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

Less than Significant Impact: Water services will be provided by the Armona Community Services District upon development.

The Community has 2 active wells, have a capacity to pump an average of 1,800 gallons of water per minute, about 2.5 million gallons per day (MGD). The second well is used for a backup during the summer months. The current water supply is only sufficient for the current population. However, the ACSD are willing to drill more wells as the population grows. ACSD's Capital Facilities Plan includes the provision of new wells and additional water storage capacity to accommodate potential housing sites as identified in the existing General Plan Housing Element. A plan for a third well will increase the total capacity to an average of 2,800 gallons of water per minute, or 4 MGD. which would serve an additional population of 1,600.

Using average per-person water use in the Armona Community (187 gallons, including commercial and industrial uses; County of Kings General Plan) and the average household size in the Armona Community (3.68 persons; US Census Bureau), water demand for the proposed 109-unit residential development is estimated to be approximately 75,009 gallons of water daily, or about 84-acre feet per year. With an expected increase of 1.5 MGD, there will be enough water supply for the proposed project. The Project is consistent with the County's General Plan land use designation. As such, the Project would not affect groundwater supplies beyond what has already been analyzed in the most current General Plan EIR.

The project would result in nearly full development of the site, which would convert approximately 20.02 acres from pervious surfaces to impervious surfaces. However, this would not significantly interfere with groundwater recharge because all stormwaters would be collected and diverted to a new stormwater basin located on the Southwest area of the project site for groundwater recharge. Because the addition of impervious surfaces would not interfere substantially with groundwater recharge and the project would not utilize groundwater resources beyond what has been previously analyzed in the County's General Plan EIR, the impact would be *less than significant.*

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

i. Result in substantial erosion or siltation on- or off-site?

Less than Significant with Mitigation Incorporated: The proposed project would result in the addition of impervious surfaces and alter existing drainage patterns on the 20.02-acre project site which would have the potential to result in erosion or siltation on- or off-site. The disturbance of soils during construction could cause erosion, resulting in temporary construction impacts. However, this impact would be appropriately mitigated through implementation of a Stormwater Pollution Prevention Plan (SWPPP) which include mandated erosion control measures, which are developed to prevent significant impacts related to erosion caused by runoff during construction (Mitigation Measure HYD-1). The Project proponent will also be required to prepare drainage plans (Mitigation Measure HYD-2) to ensure that existing drainage patterns are maintained during project operations and that that

the project would not result in substantial erosion or siltation on- or off-site. The impact is *less than significant with implementation of these mitigation measures.*

ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?

Less than Significant with Mitigation Incorporated: The proposed project would result in the addition of impervious surfaces on the 20.02-acre project site which would have the potential to increase surface runoff resulting in flooding on- or off-site. This impact would be appropriately mitigated through implementation of Mitigation Measure HYD-2, which requires the project to submit drainage plans to the County Engineer prior to the issuance of any permits, as well as Mitigation Measure H-1(a), which requires the development design to have limited runoff. The drainage plans will include BMPs to ensure runoff from the project will not result in flooding on- or off-site. Therefore, impacts are *less than significant with mitigation incorporated.*

Mitigation Measures for Impacts to Water Quality Resources Incorporated from County PEIR

H-1(a) Low Impact Development (LID). Future development pursuant to the 2035 Kings County General Plan shall incorporate LID principals into the project design to minimize long-term stormwater runoff. Such principles shall include:

- Permeable paving, such as pavers, porous concrete, or pathway comprised of decomposed granite that is effective in stormwater infiltration to help prevent excess runoff.
- Use of "urban bio-swales" to redirect stormwater into planter strips, rather than capturing runoff in pipes and diverting it to a remote location.
- Use of water efficient irrigation (e.g., drip irrigation system) to water trees, shrub beds, and areas of groundcover to eliminate evaporation losses and minimize runoff.
- Use of predominately (75 percent) native plants and drought-tolerant landscaping wherever possible.

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?

Less than Significant with Mitigation Incorporated: The proposed project would result in the addition of impervious surfaces and alter existing drainage patterns on the 20.02-acre project site which would have the potential to impact existing stormwater drainage systems or provide additional sources of polluted runoff. The proposed project would contain a storm drainage basin to collect all runoff from the site. The disturbance of soils during construction could cause erosion, resulting in temporary construction impacts. However, this impact would be appropriately mitigated through implementation of a Stormwater Pollution Prevention Plan (SWPPP) which include mandated erosion control measures, which are developed to prevent significant impacts related to erosion caused by runoff during construction (Mitigation Measure HYD-1). During project operations, the proposed impervious surfaces, including roads, building pads, and parking areas, would collect automobile derived pollutants such as oils, greases, rubber, and heavy metals. This could contribute to point source and non-point source pollution if these pollutants were transported into waterways during storm events. The Project proponent will be required to prepare drainage plans (Mitigation Measure HYD-2) to ensure that the project would not overwhelm the planned stormwater drainage basin or

result in discharges of polluted runoff into local waterways. The impact is *less than significant with mitigation measures incorporated.*

iv. Impede or redirect flood flows?

Less than Significant with Mitigation Incorporated: The Project site is generally flat and no significant grading or leveling will be required. The proposed project site is not in proximity to a stream or river and will not alter the course of a stream or river. According to National Flood Hazard mapping by the Federal Emergency Management Agency, the proposed project site is not located within a 100-year flood hazard area. The proposed project would result in the addition of impervious surfaces on the 20.02-acre project site which could affect drainage and flood patterns. This impact would be appropriately mitigated through implementation of Mitigation Measure HYD-2, which requires the project to submit drainage plans to the County Engineer prior to the issuance of any permits. The drainage plans will include BMPs to ensure the project would not impede or redirect flood flows. Therefore, impacts are *less than significant with mitigation incorporated.*

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

No Impact: The proposed project is located inland and not near an ocean or large body of water, therefore, would not be affected by a tsunami. The proposed project is in a relatively flat area and would not be impacted by inundation related to mudflow. Since the project is in an area that is not susceptible to inundation, the project would not risk release of pollutants due to project inundation. As such, there is *no impact.*

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

No Impact: The project would not conflict with or obstruct the implementation of a water quality control plan or sustainable groundwater management plan. The proposed project is consistent with the Mid Kings River GMP and the Central Valley RWQCB. The project will comply with all applicable rules and regulations regarding water quality and groundwater management and there is *no impact.*

XI. LAND USE AND PLANNING

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

Environmental Setting

The proposed project site is in the Armona Primary Sphere of Influence, just outside the community limits. The site is approximately 0.3 miles Northeast of the Armona downtown, and approximately 3 miles West of the Hanford Downtown. The site is zoned R-1-6 by the County of Kings Development Code and is designated as Medium Density Residential by the Armona Community Plan. The Project involves no rezoning or General Plan amendments.

The site currently contains one single-family rural residence and agriculture uses. The site is topographically flat and is bounded by agricultural uses to the North, East, and West and single-family residential development to the South.

Regulatory Setting

Armona Community Plan. The proposed project site is designated as Medium Density Residential by the Armona Community Plan. The Medium Density residential designation is intended for single family residential uses on smaller lots (4-7 dwelling units/acre). The goal of the Medium Density Residential is to concentrate growth within the community, increase investment in Armona's centralized and walkable community design, and preserve farmland. No change would be needed to the Community Plan.

Kings County Development Code: The proposed project site is designated as R-1-6 by the Kings County Development Code. The R-1-6 zone district is intended to provide living areas within the County where development is limited to concentrations of single-family dwellings and where regulations are designed to accomplish the following:

- promote and encourage a suitable environment for family life
- provide space for community facilities needed to complement urban residential areas and for institutions which require a residential environment
- to minimize traffic congestion
- avoid the overloading of utilities and public facilities designed to service primarily single-family residential uses in accordance with density standards of the General Plan
- facilitate the production of affordable housing
-

The R-1-6 zone supports minimum lot sizes of 6,000 sf but can be reduced with a density bonus.

2035 Kings County General Plan: The following goals and policies in the County of Kings General Plan are applicable to the project site's residential land use designation:

Land Use Element (LU)

LU Objective D1.1: Accommodate future urban growth within the Community Districts by establishing Community Plans that are developed with community resident and stakeholder input.

- LU Policy D1.1.2: Community Plans shall designate a variety and distribution of urban type land uses that include residential, commercial, industrial, open space and other public land uses that can accommodate future projected unincorporated growth.

LU Objective D1.2: Establish Community Plan land use policies and associated improvement standards to integrate smart growth principles and compact urban design to revitalize existing communities.

- LU Policy D1.2.2: Prioritize infill development of vacant and underutilized parcels within the existing special district boundaries where water and sewer service are available to reduce outward growth pressure and costly expansion of district facilities.

Circulation Element (C)

C Objective B1.2: Enhance pedestrian/bicycle access and safety through traffic calming street design measures and bicycle rack integration into new commercial structures.

- C Policy B1.2.1: Adopt traffic calming street design standards into the County's "Improvement Standards" to make available "Pedestrian Friendly" street design alternatives along Community District streets.

County of Kings Housing Element: The 2016-2024 General Plan Housing Element includes the following goals and policies which seek to provide a wide range of well-designed housing choices in every community.

Goal 1: Improve and maintain the quality of housing and residential neighborhoods.

- Policy 1.1 Promote and improve the quality of residential properties by ensuring compliance with housing and property maintenance standards.

Goal 2: Facilitate and encourage the provision of a range of housing types and prices to meet the diverse needs of residents.

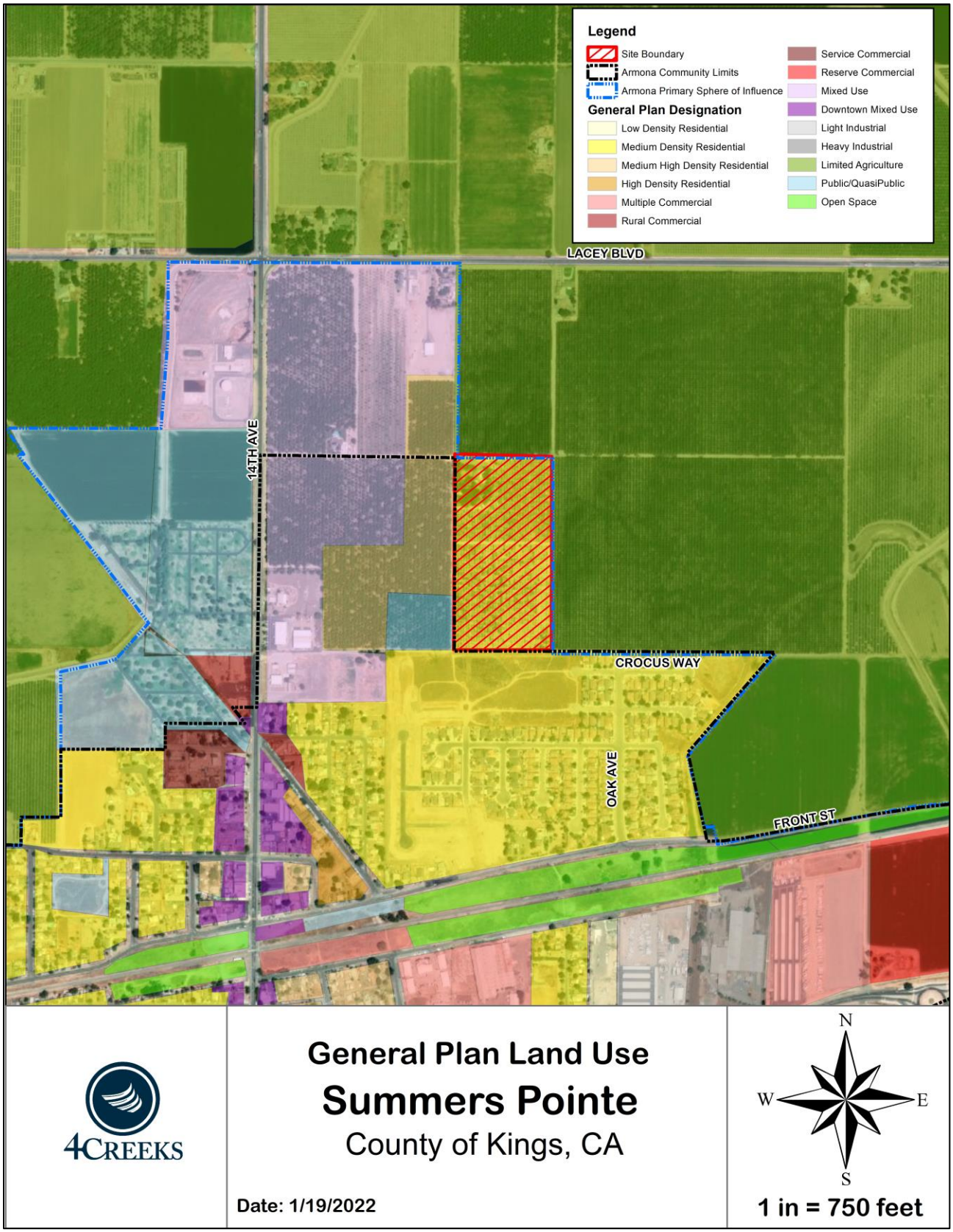


Figure 1-6: General Plan Land Use Designation

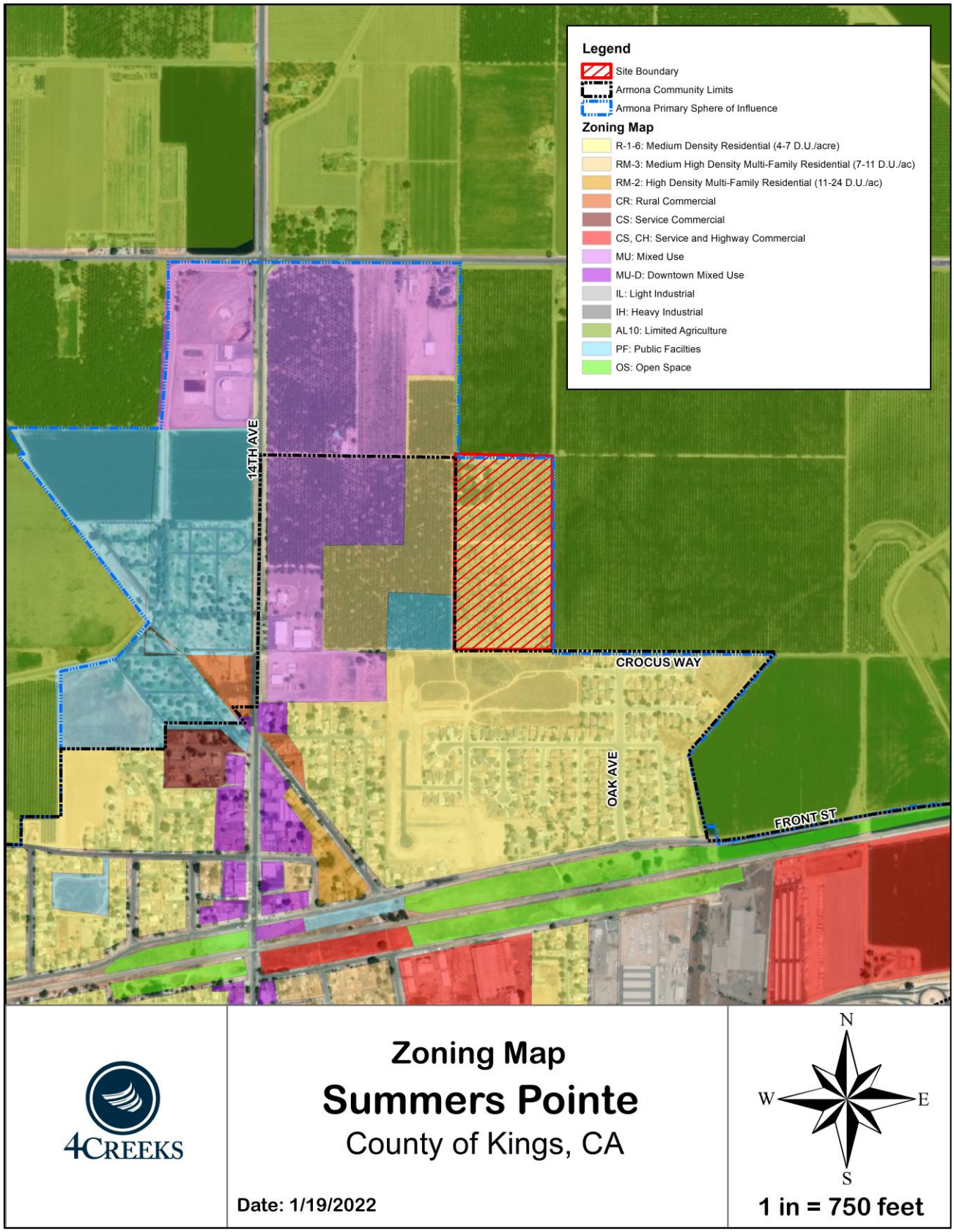


Figure 1-7: Zoning Map

Discussion

a) Would the project physically divide an established community?

No Impact: The proposed project will not physically divide an established community. The proposed project site is designated for Medium Density under the City's General Plan and R-1-6 zoning under the Kings County Development Code and would continue to operate as the same designation following project implementation. There is *no impact.*

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

No Impact: The project site is located on land designated for residential use. The proposed project does not conflict with this land use, or any other policy or regulation adopted for the purpose of avoiding or mitigating an environmental effect. There is *no impact.*

XII. MINERAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☑
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 lands use plan?	☐	☐	☐	☑

Environmental Setting

According to the Resource Conservation Element of the Kings County General Plan, there are currently no mineral extraction activities occurring within the County. The California Division of Mines and Geology has not identified any significant mineral resources within the County. Oil and gas resources have been identified in and extracted from portions of the County.

The principal active petroleum resource fields include the Pyramid Hills, Kettleman Middle and North Dome, Tulare Lake oil fields, and the Harvester gas field. The nearest field to the project site is the Tulare Lake oil fields, approximately 20 miles South of the project site. Additionally, Riverdale Oil field is approximately 12 miles Northwest of the project site in Fresno County.

Regulatory Setting

California State Surface Mining and Reclamation Act: The California State Surface Mining and Reclamation Act was adopted in 1975 to regulate surface mining to prevent adverse environmental impacts and to preserve the state's mineral resources. The Act is enforced by the California Department of Conservation's Division of Mine Reclamation.

2035 Kings County General Plan: The Resource Conservation Element of the County's General Plan contains the following objectives and policies related to mineral resources.

RC Objective H1.1: Provide for the development of mining and mineral extraction.

- RC Policy H1.1.1: Implement the Surface Mining and Reclamation Act by requiring all mining operations, including surface mining, to secure a Conditional Use Permit, pursuant to the Kings County Zoning Ordinance, prior to beginning any mining operation.
- RC Policy H1.1.2: All surface mines, unless otherwise exempted, shall be subject to reclamation plans that meet the requirements of the Kings County Surface Mining and Reclamation Act Ordinance (Article 17 Kings County Code of Ordinance) and the State Surface Mining and Reclamation Act (SMARA) requirements. Reclamation procedures shall restore the site for future beneficial use of the land. Mine reclamation costs shall be borne by the mine operator and guaranteed by financial assurances set aside for reclamation procedures.

RC Objective H1.2: Ensure that mineral extraction operations are designed, located and operated so that they do not harm humans or the natural environment or are incompatible with surrounding land uses.

- RC Policy H1.2.1: Discourage the location of mining operations near residential areas and other sensitive land uses unless all impacts to such uses can be mitigated.
- RC Policy H1.2.2: Minimize the adverse effects on environmental resources such as water quality and quantity, air quality, drainage and flood control, geophysical characteristics, biological resources, and aesthetic factors.

Discussion

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

No Impact: The project site has no known mineral resources that would be of a value to the region and the residents of the state, therefore the proposed project would not result in the loss of or impede the mining of regionally or locally important mineral resources. There is *no impact.*

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

No Impact: There are no known mineral resources of importance to the region and the project site is not designated under the Community Plan or County's General Plan as an important mineral resource recovery site. For that reason, the proposed project would not result in the loss of availability of known regionally or locally important mineral resources. There is *no impact.*

XIII. NOISE

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

Environmental Setting

Noise is often described as unwanted sound. Sound is the variation in air pressure that the human ear can detect. If the pressure variations occur at least 20 times per second, they can be detected by the human ear. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second, called Hertz (Hz).

Ambient noise is the "background" noise of an environment. Ambient noise levels on the proposed project site are primarily due to agricultural activities and traffic. Construction activities usually result in an increase in sound above ambient noise levels.

Sensitive Receptors: Noise level allowances for various types of land uses reflect the varying noise sensitivities associated with those uses. Residences, hotels/motels, hospitals, schools, and libraries are some of the most sensitive land uses to noise intrusion and therefore have more stringent noise level allowances than most commercial or agricultural uses that are not subject to impacts such as sleep disturbance.

Regulatory Setting

2035 Kings County General Plan: The County of Kings General Plan Noise Element provides noise level criteria for land use compatibility for both transportation and non-transportation noise sources. The Noise Element of the 2035 Kings County General Plan contains the non-transportation noise standards for the unincorporated area of the county in Table 1-13. The standards are shown in Leq and Lmax. Leq is continuous dB, and Lmax is maximum allowed dB. For Single Family Residential, the exterior noise

during the daytime is to be below 75 Lmax, and the indoor noise during the daytime is to be below 55 Lmax.

Table N-8 Non-Transportation Noise Standards
Average (Leq) / Maximum (Lmax)[1]

	Outdoor Area[2]		Interior[3]	
Receiving Land Use	Daytime	Nighttime	Day & Night	Notes
All Residential	55 / 75	50 / 70	35 / 55	
Transient Lodging	55 / 75	---	35 / 55	4
Hospitals & Nursing Homes	55 / 75	---	35 / 55	5, 6
Theaters & Auditoriums	---	---	30 / 50	6
Churches, Meeting Halls, Schools, Libraries, etc.	55 / 75	---	35 / 60	6
Office Buildings	60 / 75	---	45 / 65	6
Commercial Buildings	55 / 75	---	45 / 65	6
Playgrounds, Parks, etc.	65 / 75	---	---	6
Industry	60 / 80	---	50 / 70	6

Notes:
1. The Table N-8 standards shall be reduced by 5 dB for sounds consisting primarily of speech or music, and for recurring impulsive sounds. If the existing ambient noise level exceeds the standards of Table N-8, then the noise level standards shall be increased at 5 dB increments to encompass the ambient.
2. Sensitive areas are defined acoustic terminology section.
3. Interior noise level standards are applied within noise-sensitive areas of the various land uses, with windows and doors in the closed positions.
4. Outdoor activity areas of transient lodging facilities are not commonly used during nighttime hours.
5. Hospitals are often noise-generating uses. The exterior noise level standards for hospitals are applicable only at clearly identified areas designated for outdoor relaxation by either hospital staff or patients.
6. The outdoor activity areas of these uses (if any), are not typically utilized during nighttime hours.

Table 1-13: County of Kings Non-Transportation Noise Standards. Source: County of Kings 2035 General Plan

The County of Kings General Plan addresses noise and vibration within the Noise (N) Element. The following noise related policies are applicable to the proposed project:

- N Policy A1.1.1: Appropriate noise mitigation measures shall be included in a proposed project design when the proposed new use(s) will be affected by traffic or railroad noise sources and exceed the County's "Noise Standards for New Uses Affected by Transportation Noise Sources" (Table N-7). Mitigation measures shall reduce projected noise levels to a state of compliance with this standard.
- N Policy B1.1.1: Appropriate noise mitigation measures shall be included in a proposed project design when the proposed new use(s) will be affected by or include non-transportation noise sources and exceed the County's "Non-Transportation Noise Standards" (Table N-8). Mitigation measures shall reduce projected noise levels to a state of compliance with this standard within sensitive areas. These standards are applied at the sensitive areas of the receiving use.

- N Policy B1.1.3: Noise associated with construction activities shall be considered temporary but will still be required to adhere to applicable County Noise Element standards.
- N Policy C1.1.2: Where noise mitigation measures are required to satisfy the noise level standards of this Noise Element, emphasis shall be placed on the use of setbacks and site design, prior to consideration of the use of noise barriers.

Discussion

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

Less than Significant Impact: Project construction is anticipated to last approximately 21 months and will involve temporary noise sources in the vicinity of the project. The average noise levels generated by construction equipment that will likely be used in the proposed project are provided in Table 1-14.

The single-family homes to the Southeast are the nearest sensitive receptors to the Project Site. The nearest residence is approximately 230 feet from the Project Site. The County requires that mitigation measures be implemented if noise levels exceed 75 dB in sensitive outdoor areas or if interior noise levels exceed 55 dB (Lmax). As shown in Figure 1-8, it was found that a residence must be at least 160 feet from construction to avoid noise levels exceeding these thresholds.

There are no residences or other sensitive receptors within 160 feet of the proposed project. The nearest agricultural residence is approximately 230 feet from the Project Site. From this distance, the maximum exterior noise level is 72 dBA, and the maximum interior noise level is 47 dBA (Table 1-14). Therefore, noise generated by construction activities would not exceed thresholds established by Kings County for sensitive receptors. Additionally, noise-producing construction activities will be limited to daytime hours and the project will comply with all County ordinances regarding construction-related noise levels and noise-generating equipment.

Long term noise levels resulting from the project would include single family residential homes, which are not normally associated with high operational noise levels. Because noise generated during project construction would be intermittent, short term, and would not exceed the thresholds established by Kings County for sensitive receptors and the project does not propose uses that would typically generate high noise levels, the impact is *less than significant*.

Type of Equipment	Exterior Lmax at 50 feet (dBA)	Calculated Lmax at 230 feet (dBA)	
		Exterior	Interior
Tractors	84	71	46
Loaders	80	67	42
Backhoes	80	67	42
Excavators	85	72	47
Generator Sets	82	69	44
Air Compressors	80	67	42
Rubber Tired Dozers	85	72	47
Forklifts	75	62	37
Welders	73	60	35
Graders	85	72	47
Scrapers	85	72	47
Cranes	85	72	47
Paving Equipment	85	72	47
Rollers	85	72	47

Table 1-14. Noise levels of noise-generating construction equipment at various distances. Source: Federal Highway Administration Construction Noise Handbook (dBA at 50 feet). Noise levels beyond 50 feet were estimated using the inverse square law based on given values for dBA at 50 feet.

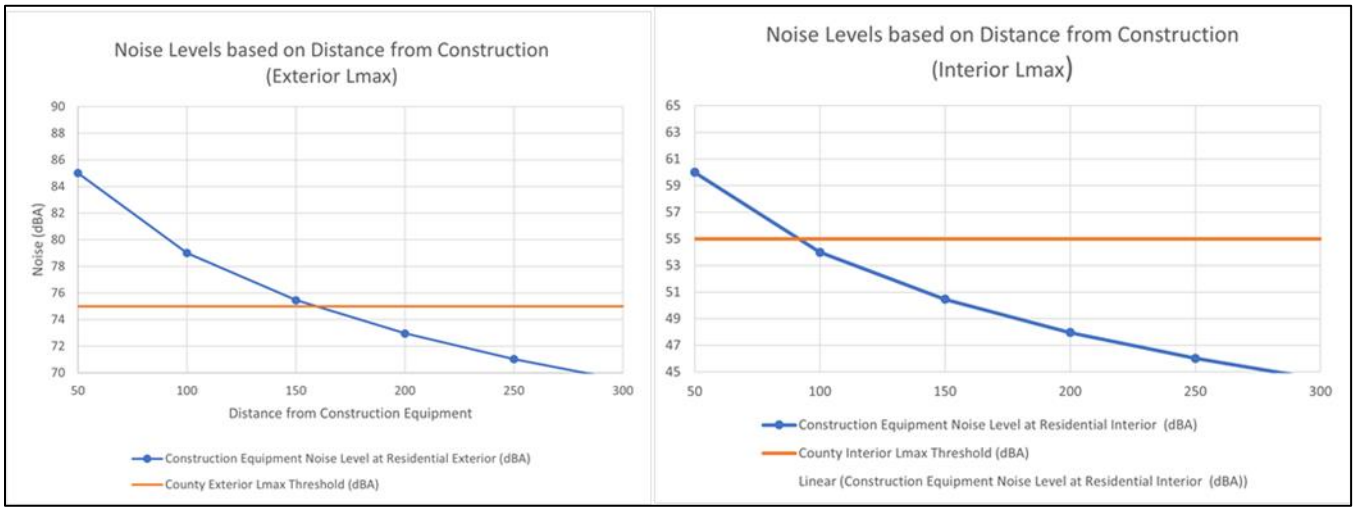


Figure 1-8: Construction Related Noise Levels Based on Distance from Construction Equipment. Interior Noise Assume 25 dB Exterior to Interior Noise Reduction

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

Less than Significant Impact: Although project operations would not include uses or activities that typically generate excessive groundborne vibration or groundborne noise levels, project construction

could introduce temporary groundborne vibration to the project site and the surrounding area. Sources that may produce perceptible vibrations are provided in Table 1-15.

Equipment	Peak Particle Velocity (inches/second) at 25 feet	Approximate Vibration Level (LV) at 25 feet
Pile driver (impact)	1.518 (upper range) 0.644 (typical)	112 104
Pile driver (sonic)	0.734 upper range 0.170 typical	105 93
Clam shovel drop (slurry wall)	0.202	94
Hydromill (slurry wall)	0.008 in soil 0.017 in rock	66 75
Vibratory Roller	0.210	94
Hoe Ram	0.089	87
Large bulldozer	0.089	87
Caisson drill	0.089	87
Loaded trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58

Table 1-15. Vibration Levels Generated by Construction Equipment. Source: Transit Noise and Vibration Impact Assessment, Federal Transit Administration, September 2018.

The primary source of vibration during project construction would likely be from a bulldozer (tractor), which would generate 0.089 inch per second PPV at 25 feet with an approximate vibration level of 87 VdB. Vibration from the bulldozer would be intermittent and not a source of continual vibration. There are no adopted County standards or thresholds of significance for vibration. The evaluation of potential impacts related to construction vibration levels is based on the published data in the 2018 FTA Guidelines. At 25 feet, the buildings most susceptible to vibration could be impacted at .12 inch/second. Because vibrations generated by project construction would not exceed 0.12 inch/second, the impact is *less than significant.*

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

No Impact: Kings County does have an Airport Land Use Compatibility Plan; however, the Project Site is not within an area covered by an airport land use plan and is not included within any Compatibility Maps for any public airport or public use airport. The proposed project is not located within an airport land use plan, within the vicinity of a private airstrip, or within two miles of a public airport. There is *no impact*.

XIV. POPULATION AND HOUSING

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

Environmental Setting

The United States Census Bureau stated the population in the County of Kings to be 152,486 as of April 2020. This is a slight decrease from the 2010 census, which counted the population in the County of Kings to be 152,982. The Armona community had a population of 4,274 in 2020. This is an increase from the 2010 population of 4,156. Factors that influence population growth in Armona include job availability, housing availability, and the capacity of proposed and existing infrastructure.

Regulatory Setting

The County of Kings and Armona community population size is controlled by the Kings County Development Code and Housing Element of the General Plan. These documents regulate the number of dwelling units per acre allowed on various land uses and establish minimum and maximum lot sizes, which has a direct impact on the Armona community population size.

County of Kings 2016-2024 Housing Element: The County of Kings Housing Element addresses population and housing. The following population and housing related policies are applicable to the proposed project:

- Policy 3.1: Offer regulatory and/or financial incentives, as available and appropriate, to encourage the construction of quality housing.
- Policy 3.3: Utilize planned developments and other creative mechanisms to facilitate the construction of more creative, well-designed, housing projects.

Discussion

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

No Impact: The United States Census Bureau stated the population in the Armona community to be 4,274 as of April 2020. The project proposes to construct 109 new single family residential units. The US Census Bureau states that the City's average household size is 3.68 persons. Based on this average household size, the anticipated population increase because of the proposed project is 401 persons. The construction of housing at this location would not be unplanned, as the County's General Plan designated the proposed project site for medium density residential and is zoned R-1-6, single family residential. Additionally, the community is planning for more businesses, services, and infrastructure to accommodate the new population. Overall, the project will not constitute an unplanned increase in growth and population. There is *no impact.*

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

No Impact: The project would not displace any existing housing. There is one existing house on the site which will not be removed. Overall, this project will increase the amount of available housing in the community. There is *No Impact*.

XV. PUBLIC SERVICES

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable serve ratios, response times of other performance objectives for any of the public services:				
a. Fire protection?	☐	☐	☑	☐
b. Police protection?	☐	☐	☑	☐
c. Schools?	☐	☐	☑	☐
d. Parks?	☐	☐	☑	☐
e. Other public facilities?	☐	☐	☑	☐

Environmental Setting

Fire: The Armona community and project site is served by the Kings County Fire Department which operates 12 fire stations within the County of Kings. The Kings County Department will continue to provide fire protection services to the proposed project site following project implementation. Kings County Fire Station #5 serves the Armona community and is located approximately .75 miles South of the proposed project site.

Police: Law enforcement services are provided to the project site via the Kings County Sheriff's Department. The Kings County Sheriff's Department will continue to provide police protection services to the proposed project site following project implementation. The Kings County Sheriff's Department is located approximately 2.1 miles East of the proposed project site in Hanford. There is a substation located in Armona, but it is currently closed due to budget constraints.

Schools: The proposed project site is located within the Armona Union Elementary School District for kindergarten through 8th grade and the Hanford Joint Union High School for 9th to 12th grade. The nearest school is approximately .60 miles South of the project site (Parkview Middle School).

Regulatory Setting

2035 Kings County General Plan: The Health and Safety Element (HS) and the Land Use Element (LU) of the County of Kings General Plan addresses public services. The following public services related policies are applicable to the proposed project:

- HS Policy C2.2.3: Use the 1997 Uniform Code for the abatement of Dangerous Buildings. All new structures to be occupied shall be built to current Fire Code Standards.
- LU Policy D1.4.7: Refer any development proposal for five or more residential units which may have a direct or indirect impact on school facilities to the affected school district for review and comment.
- LU Policy D1.4.8: Development shall pay school district impact fees, pursuant to Section 65995.(b) of the California Government Code, at the time a building permit is issued to finance the construction of school facilities made necessary by the development.

Armona Community Plan: The Armona Community Plan includes the following policies which would reduce potential impacts to public services within Armona:

ACP Objective 7A.1: Provide sufficient law enforcement to protect residents from personal and property crimes.

- ACP Policy 7A.1.1: Promote community safety by providing sufficient sheriff patrol coverage to provide 20 minute or faster response time to priority emergency calls.

ACP Objective 7B.1: Expand the Fire Department Station personnel and equipment as the community grows to maintain the current level of service.

- ACP Policy 7B.1.1: Fire Department services shall increase as the Armona population grows in order to maintain existing levels of service.
- ACP Policy 7B.1.2: Adequate water supply shall be maintained throughout the Armona fire hydrant system.

Discussion

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 serve ratios, response times or other performance objectives for any of the public services:

a. Fire protection?

Less than Significant Impact: The Kings County Fire Department will provide fire protection services to the proposed development. The closest fire station is Kings County Fire Station #5, located .75 miles South of the project site at 11235 14th Ave. The Fire Department uses the National Fire Protection Association (NFPA) standard for fire protection services, which requires 1.2 firefighters per 1,000 residents. The addition of 109 residential units will increase the demand for fire protection services. The county currently has .64 firefighters per 1,000 residents. By 2035, the county expects growth that could result in .21 firefighters per 1,000 residents. This will require an additional 86 on-duty full time firefighters by 2035. The Armona Community would require an additional 9 firefighters by 2035. However, the existing fire stations are placed to provide optimum service, so no new stations will be needed. To support the expansion of fire services, a development impact fee per dwelling unit will be paid to offset any potential impacts to existing fire department facilities and services.

The timing of when new fire service facilities would be required or details about size and location cannot be known until such facilities are planned and proposed, and any attempt to analyze impacts to a potential future facility would be speculative. As new or expanded fire service facilities become necessary, construction or expansion projects would be subject to their own separate CEQA review in order to identify and mitigate any potential environmental impacts. Therefore, the impact is *less than significant.*

b. Police protection?

Less than Significant Impact: The Kings County Sheriff's Department will provide services to the proposed development. The Kings County Sheriff's Department is located approximately 2.1 miles East of the proposed project site. The development would increase the demand for police service with the addition of 109 residential units. The Sheriff Department's goal is to provide one deputy per 1,000 residents. Currently, the department provides 0.4 deputies per 1,000 residents. By 2035, the county expects growth that could result in .25 deputies per 1,000 residents. To meet the counties' goal 33 additional deputies would need to be hired by 2035. However, adequate facilities exist to accommodate additional deputies, but funding is not available to provide them. The shortage and the additional demand will be compensated by a development impact fee of per dwelling unit to offset any potential impacts to existing sheriff department facilities.

The timing of when new police service facilities would be required or details about size and location cannot be known until such facilities are planned and proposed, and any attempt to analyze impacts to a potential future facility would be speculative. As new or expanded police service facilities become necessary, construction or expansion projects would be subject to their own separate CEQA review in order to identify and mitigate any potential environmental impacts. Therefore, the impact is *less than significant*.

c. Schools?

Less than Significant Impact: The proposed project is within the Armona Union Elementary School District for kindergarten through 8th grade and the Hanford Joint Union High School for 9th to 12th grade. The County of Kings predicts the generation rates are 0.55 students per household for kindergarten through 8^{th} and 0.18 students per household for 9^{th} through 12^{th} grade. Since the proposed project includes the addition of 109 single-family residential units, the number of students will increase by approximately 80. The proposed project site is located within the Community limits and therefore, growth associated with the Project has been planned and expected. In addition to the goals and policies of the County General Plan, future development is required by state law to pay development impact fees to the school districts at the time of building permit issuance. These impact fees are used by the school districts to maintain existing and develop new facilities, as needed. Therefore, the impact is *less than significant.*

d. Parks?

Less than Significant Impact: The addition of 109 new residential units would result in more use at existing parks. Parks within a half-mile to one-mile radius that would service the proposed development include Hood Park. Since the project would not lower the existing level of services

for parks, and the proposed project would contribute its fair share to parks facilities through in-lieu fees, the impact is *less than significant.*

e. Other public facilities?

Less than Significant Impact: The proposed project would be required to pay a development impact fee per unit for the public library. Additional development fees will be paid to offset the increased demand for public services related to transportation, water, wastewater, groundwater recharge, storm drainage, and general governmental services. Fees for transportation, water, wastewater, and general government are based on building square footage and will be calculated prior to the issuance of building permits. Fees for groundwater recharge and storm drainage are based on site acreage.

While the payment of development fees could result in the construction of new or altered public service facilities, no specific projects have been identified at this time. As new or expanded public service facilities become necessary, construction or expansion projects would be subject to their own separate CEQA review in order to identify and mitigate any potential environmental impacts. Therefore, the impact is *less than significant*.

XVI. RECREATION

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☑	☐
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?	☐	☐	☐	☑

Environmental Setting

There are six regional and community park facilities totaling 130.67 acres within unincorporated Kings County. The Armona Community Service District maintains a community park. Armona currently has 3.17 acres of parkland. The County of Kings provides different types of parks and open space facilities, or park types, to meet park and open space recreation needs of the community. Park types include pocket parks, neighborhood parks, community parks, regional parks, special use parks, greenbelts/trails, and open space/natural areas. Kings County currently does not have an existing park to population ratio requirement. However, Armona's community plan has set a ratio of two acres of parkland per 1,000 residents.

Regulatory Setting

2035 Kings County General Plan: The General Plan's Open Space Element analyzes the parks and recreation facilities and establishes goals and policies for future development of the parks and recreation system. The following features of the General Plan relate to parks and recreation facilities:

- OS Policy D1.1.2: Community Plans should facilitate the development and maintenance of community park(s) within Community District areas to expand recreational resources available to residents.

Armona Community Plan: The Armona Community Plan establishes policies relating to parks and recreation:

- ACP Policy 3A.2.1: Require all new residential development located north of Hanford Armona Road to provide for the establishment of a three-and-a-half-acre park planned within the North Community Expansion Area.
- ACP Policy 3A.2.4: Require new residential development to establish an ongoing funding mechanism to support the long-term maintenance of new neighborhood park and connective pathways along open space corridors.

- ACP Policy 3A.2.5: The adopted standard for parkland acres per 1,000 individuals within the Armona Community Plan shall be 2 acres of parkland per 1,000 individuals.

Discussion

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?

Less than Significant Impact: With the predicted increase in population from the Armona Community Plan, Armona would need 10.3 acres of parkland to meet the requirement of two acres of parkland per 1,000 residents. This project proposes to construct 109 new single-family homes. The US Census Bureau states that the City's average household size is 3.68 persons. Based on this average household size, the anticipated population increase because of the proposed project is 401 persons. This would equate to 0.802 acres of parkland. Implementation of the proposed project would result in increased use of existing parks and other recreational facilities; however, the project would contribute its fair share to parks facilities in-lieu fees. The Armona Community Plan Policy 3.A.2.5 states that "the developer and ACSD shall negotiate a fee, if in-lieu fees will be paid, based on the average market price for open space zoned land within Armona." Armona has identified an area for park space near the project site in the northern area of Armona. These fees will be used to support the maintenance of existing parks and other recreational facilities. If necessary, the project site has a 1.7-acre lot dedicated for a storm water retention basin that can be dedicated to park space. The impact is *less than significant.*

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

No Impact: The proposed project does not include any recreational facilities or require the construction or expansion of any recreational facilities that would have an adverse physical effect on the environment. There is *no impact.*

XVII. TRANSPORTATION

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

Environmental Setting

Vehicular Access: Vehicular access to the project is available via Crocus Way, with plans for future road connections. The project includes three new streets and a court that provide full access to the project site.

Parking: Each home will contain parking with a driveway, as well as available parking on the street. During construction, workers will utilize existing parking areas and/or temporary construction staging areas for parking of vehicles and equipment.

Regulatory Setting

CEQA Guidelines Section 15064.3, Subdivision (b): Criteria for Analyzing Transportation Impacts

(1) Land Use Projects. Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high-quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be considered to have a less than significant transportation impact.

(2) Transportation Projects. Transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. To the extent that such impacts have already been adequately addressed at a programmatic level, a lead agency may tier from that analysis as provided in Section 15152.

(3) Qualitative Analysis. If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the project's vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the

availability of transit, proximity to other destinations, etc. For many projects, a qualitative analysis of construction traffic may be appropriate.

(4) Methodology. A lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's vehicle miles traveled and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate vehicle miles traveled and any revisions to model outputs should be documented and explained in the environmental document prepared for the project. The standard of adequacy in Section 15151 shall apply to the analysis described in this section.

County of Kings Improvement Standards: The County of Kings Improvement Standards Specifications are developed and enforced by the County of Kings Public Works Department to guide the development and maintenance of streets within the County. The cross-section drawings contained in the County's Improvement Standards dictate the development of County roads within the County.

2035 Kings County General Plan: Many agencies, including the County of Kings, utilize Level of Service (LOS) to evaluate traffic operating conditions. LOS can be used to determine where transportation improvements should be located. LOS is determined by the Average Total Daily Vehicles in Both Directions (ADT) for each type of road. Table 1-16 below lists the standards Kings County currently utilizes.

Roadway Type	Total Daily Vehicles in Both Directions (ADT)				
	Level of Service A	Level of Service B	Level of Service C	Level of Service D	Level of Service E
6-Lane Freeway	36,900	61,100	85,300	103,600	115,300
4-Lane Freeway	23,800	39,600	55,200	67,100	74,600
6-Lane Arterial	7,300	44,700	52,100	53,500	----
4-Lane Arterial (turn lanes)	4,800	29,300	34,700	35,700	----
4-Lane Collector	2,400	14,650	17,350	17,850	----
2-Lane Facility	----	4,200	13,800	16,400	16,900

Note: 1 Based upon Florida DOT Tables (2000 Highway Capacity Manual). ADT = Average Daily Traffic
2. All volumes are approximate and assume ideal roadway characteristics. Actual threshold volumes for each Level of Service listed above may vary depending on a number of factors including curvature and grade, intersection or interchange spacing, percentage of trucks and other heavy vehicles, lane widths, signal timing, on-street parking, amount of cross traffic and pedestrians, driveway spacing, etc.

Table 1-16: County of Kings LOS Standards. Source: County of Kings 2035 General Plan

The Circulation Element (C) of the County of Kings General Plan includes the following objectives and policies that are potentially applicable to the proposed project:

- C Policy A1.1.6 Work closely with Caltrans, Kings County Association of Governments, and the City of Hanford to develop an alternative design for the 13th Avenue and State Route 198 interchange to enhance traffic safety and accommodate future growth demands.
- C Policy A1.2.1 Coordinate land use planning with planned transportation facilities to make efficient use of the transportation system and reduce total vehicle miles traveled, vehicle

emissions, and energy use through improved accessibility to schools, job centers, and commercial services.

- C Policy A1.2.3 Establish transportation related development impact fees in coordination with the City of Hanford to create a funding mechanism for construction of the alternative 13th Avenue/State Route 198 interchange design.
- C Policy A1.3.1: Maintain and manage County roadway systems to maintain a minimum Level of Service Standard "D" or better on all major roadways and arterial intersections.
- C Policy A1.3.2 Require proposed developments that have the potential to generate 100 peak hour trips or more to conduct a traffic impact study that follows the most recent methodology outlined in Caltrans Guide to the Preparation of Traffic Impact Studies.
- C Policy A1.3.3 Implement traffic operational improvements such as road widening, signals, and lanes to maximize service and efficiency.
- C Policy A1.3.5 Require new development to pay its fair share of costs for street and traffic improvements based on traffic generated and its impact to traffic levels of service.
- C Policy B1.2.1 Adopt traffic calming street design standards into the County's "Improvement Standards" to make available "Pedestrian Friendly" street design alternatives along Community District streets.
- C Policy B1.2.3 Integrate pedestrian infrastructure that includes sidewalks, tree lined streets, and traffic calming crossings to balance both car and people use of neighborhood streets in new mixed-use development.
- C Policy B1.3.1 New development shall make circulation system improvements or pay its fair share to ensure maintenance of acceptable levels of service.

Armona Community Plan: The Armona Community Plan establishes policies relating to transportation:

- ACP Policy 6A.4.1 The County shall work closely with Caltrans, KCAG and the City of Hanford to develop an alternative design for the highway interchange at 13th Avenue and State Route 198 to enhance traffic safety and accommodate future growth demands.
- ACP Policy 6A.4.3 A transportation related development impact fee shall be established in coordination with the City of Hanford to create a funding mechanism for construction of the alternative 13th Avenue/State Route 198 interchange design.

Discussion

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

Less than Significant Impact: The 2035 Kings County General Plan determined the current LOS and projected LOS in 2035 of main roads throughout the County from a variety of sources. Notable streets near the project site are listed below in Table 1-18. Currently, all the main roads and highways in and around Armona are at an acceptable LOS. In 2035, the General Plan projects the segments of State Route 198 near Armona will exceed the acceptable LOS. 14th Avenue, Lacey Boulevard, and Houston Avenue are projected to be at an acceptable LOS in 2035.

Roadway Segment	Limits	Number of Lanes	Current ADT	Current LOS	ADT in 2035	LOS in 2035
14th Avenue	Grangeville Boulevard – Houston Avenue	2	5,880	C	3,790	B
State Route 198	Houston Avenue – 14th Avenue	4	29,000	B	67,350	E
State Route 198	14th Avenue – Hanford-Armona Road	4	32,000	B	67,710	E
Lacey Boulevard	13th Avenue – 18th Avenue	2	8,110	C	10,750	C
Houston Avenue	17th Avenue – 14th Avenue	2	9,340	C	10,170	C
Houston Avenue	14th Avenue – 12th Avenue	2	2,000	B	4,980	C

Table 1-17: Current and Future LOS of roads near Armona. Source: County of Kings 2035 General Plan

Using the trip generation rate from *Trip Generation Manual, 11th Edition*, Institute of Transportation Engineers (Table 1-18), the project is projected to generate 1,028 daily trips. Applying this number to each street segment in Armona, 14th Avenue would increase the amount of average daily trips but would maintain a C LOS. The remaining segments would remain at their projected LOS. To help improve the LOS in Armona, the project will follow C Policy A1.3.5 and pay its fair share of costs for street and traffic improvements.

Land Use	Units	Daily		A.M. Peak Hour					P.M. Peak Hour				
		Rate	Total	Rate	In:Out	In	Out	Total	Rate	In:Out	In	Out	Total
Single-Family Detached Housing (210)	109	9.43	1,028	0.70	26:74	20	56	76	0.94	63:37	64	38	102

Table 1-18: Trips Generated From the Project. Source: Trip Generation Manual, 11th Edition, Institute of Transportation Engineers

The proposed project will not increase the LOS more than has been projected for in the future. Transportation development fees will be used to help reduce the LOS to an acceptable level. Overall, the project does not conflict with any program, plan, ordinance or policy related to the circulation system. There is *a less than significant impact.*

b) Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3, Subdivision (b)?

Potentially Significant Impact: The State of California Governor's Office of Planning and Research document entitled Technical Advisory on Evaluating Transportation Impacts in CEQA dated December 2018 (OPR Guidelines) provides guidance for determining a project's transportation impacts based on vehicle miles traveled (VMT). VMT measures how much actual automobi1e travel (additional miles driven) a proposed Project would create on California roads. If the project adds excessive automobile travel onto roads, then the project may cause a significant transportation impact. The OPR Guidelines advises "a proposed Project exceeding a level of 15 percent below existing VMT per capita may indicate a significant transportation impact. Existing VMT per capita may be measured as regional VMT per capita or as city VMT per capita." The OPR guidelines provide screening criteria, where if the project meets any of the criteria, a VMT analysis is not required. However, the project does not meet any of the screening thresholds.

Based on the OPR's VMT requirements, all projects must limit the generation of VMT to be 15% or more below the County's average. A project that does not meet these requirements will have a significant impact. The VMT per capita of the project was calculated for existing year (2022) using the estimates from the KGAG model. While the project would be built over time, the Year 2022 analysis shows how the VMT generated by the proposed project compares to current travel and VMT characteristics in Kings County. The Traffic Analysis Zone (TAZ) that the project is in has a VMT per capita of 10.60. The County Baseline VMT is 9.6 VMT per capita. Therefore, the project would need 8.16 VMT per capita to meet the 15% below the baseline. The project is 23% over 8.16. Therefore, there is a *potentially significant impact.*

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

No Impact: The project does not propose any incompatible uses or include any design features that could increase traffic hazards. The project does include two new vehicle access points via Crocus Way. This improvement will be subject to review by the County's engineer to ensure the new access point does not pose any safety risks due to project design. The proposed project would not substantially increase hazards in or around the project area there is *no impact.*

d) Would the project result in inadequate emergency access?

No Impact: This project would not result in inadequate emergency access. Emergency access to the site would be via Crocus Street. A network of drive aisles within the proposed project property provides full access to all buildings within the development. The Project would have *no impact* on emergency access.

XVIII. TRIBAL CULTURAL RESOURCES

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

Environmental Setting

The Project area is in the Southern Valley Yokuts ethnographic territory of the San Joaquin Valley and located between the Kings River and the north shore of Tulare Lake. The Yokuts were generally divided into three major groups, the Northern Valley Yokuts, the Southern Valley Yokuts, and the Foothill Yokuts. The Project area is within the Tachi Yokuts territory. The closest village for this area was *Waiu*, which was located on Mussel Slough approximately 6 miles southwest of the Project Site. Primary Yokuts villages were typically located along lakeshores and major stream courses, with scattered secondary or temporary camps and settlements located near gathering areas in the foothills.

Cultural Resources Record Search: A Cultural Resources Records Search was conducted by the Southern San Joaquin Valley Information Center on January 21, 2022. The records search included a review of all recorded archaeological and historical resources in the Project area and within a 0.5-mile radius of the Project. Sources consulted included archaeological site and survey base maps, historical USGS topographic maps, reports of previous investigations, cultural resource records (DPR forms) as well as listings of the Historic Properties Directory of the Office of Historic Preservation, General Land Office Maps,

Archaeological Determinations of Eligibility, and the California Inventory of Historic Resources. The records search stated there have been six previous cultural resource studies within the project area and seven additional studies within one-half mile of the project site. According to the records search, there are no recorded cultural resources within the project area and five recorded cultural resources within a one-half mile radius. These resources are the Southern Pacific Railroad, the site of the former Armona Train Station, a historic era well/cisterns, a historic era canal, and a historic era water tower. The full findings of the cultural records search can be found in Appendix C.

Native American Consultation: The State requires lead agencies to consider the potential effects of proposed projects and consult with California Native American tribes during the local planning process for the purpose of protecting Traditional Tribal Cultural Resources through the California Environmental Quality Act (CEQA) Guidelines. Pursuant to PRC Section 21080.3.1, the lead agency shall begin consultation with the California Native American tribe that is traditionally and culturally affiliated with the geographical area of the proposed project. Such significant cultural resources are either sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a tribe which is either on or eligible for inclusion in the California Historic Register or local historic register, or, the lead agency, at its discretion, and support by substantial evidence, choose to treat the resources as a Tribal Cultural Resources (PRC Section 21074(a)(1-2)).

Additional information may also be available from the California Native American Heritage Commission's Sacred Lands File per PRC Section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that PRC Section 21082.3(c) contains provisions specific to confidentiality.

The site is currently vacant and has been routinely disturbed as part of the agricultural operations. If any artifacts are inadvertently discovered during ground-disturbing activities, existing federal, State, and local laws and regulations will require construction activities to cease until such artifacts are properly examined and determined not to be of significance by a qualified cultural resources professional.

Regulatory Setting

Historical Resources: Pursuant to CEQA, a historical resource is a resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources. Historical resources may include, but are not limited to, "any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically or archaeologically significant" (PRC§5020.1[j]). In addition, a resource included in a local register of historical resources or identified as significant in a local survey conducted in accordance with the state guidelines are also considered historic resources under California Public Resources Code (PRC) Section 5020.1.

According to CEQA guidelines §15064.5 (a)(3), criteria for listing on the California Register of Historical Resources includes the following:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
- Is associated with the lives of persons important in our past.
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.

- Has yielded, or may be likely to yield, information important in prehistory or history.
  According to CEQA guidelines §21074 (a)(1)(2), criteria for tribal cultural resources includes the following:
- Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
    - Included or determined to be eligible for inclusion in the California Register of Historical Resources.
    - Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

Archaeological Resources: As stated above, archaeological resources may be considered historical resources. If they do not meet the qualifications under the California Public Resources Code 21084.1 or California Code of Regulations Section 15064.5, they are instead determined to be "unique" as defined by the CEQA Statute Section 21083.2. A unique archaeological resource is an artifact, object, or site that:

- Contains information (for which there is a demonstrable public interest) needed to answer important scientific research questions;
- Has a special and particular quality, such as being the oldest of its type or the best available example of its type; or
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Tribal Cultural Resource (TCR): Tribal Cultural Resources can include site features, places, cultural landscapes, sacred places, or objects, which are of cultural value to a Tribe. It is either listed on or eligible for the CA Historic Register or a local historic register or determined by the lead agency to be treated as TCR.

Paleontological Resources: For the purposes of this section, "paleontological resources" refers to the fossilized plant and animal remains of prehistoric species. Paleontological Resources are a limited scientific and educational resource and are valued for the information they yield about the history of the earth and its ecology. Fossilized remains, such as bones, teeth, shells, and leaves, are found in geologic deposits (i.e., rock formations). Paleontological resources generally include the geologic formations and localities in which the fossils are collected.

Native American Reserve (NAR): This designation recognizes tribal trust and reservation lands managed by a Native American Tribe under the United States Department of the Interior's Bureau of Indian Affairs over which the County has no land use jurisdiction. The County encourages adoption of tribal management plans for these areas that consider compatibility and impacts upon adjacent area facilities and plans.

National Historic Preservation Act: The National Historic Preservation Act was adopted in 1966 to preserve historic and archeological sites in the United States. The Act created the National Register of Historic Places, the list of National Historic Landmarks, and the State Historic Preservation offices.

California Historic Register: The California Historic Register was developed as a program to identify, evaluate, register, and protect Historical Resources in California. California Historical Landmarks are sites, buildings, features, or events that are of statewide significance and have anthropological, cultural,

military, political, architectural, economic, scientific, religious, experimental, or other value. In order for a resource to be designated as a historical landmark, it must meet the following criteria:

- The first, last, only, or most significant of its type in the state or within a large geographic region (Northern, Central, or Southern California).
- Associated with an individual or group having a profound influence on the history of California.
- A prototype of, or an outstanding example of, a period, style, architectural movement or construction or is one of the more notable works or the best surviving work in a region of a pioneer architect, designer or master builder.

2035 Kings County General Plan: The Resource Conservation Element of the County of Kings General Plan includes the following objectives and policies that are potentially applicable to the proposed project:

Resource Conservation Objective I1.1: Promote the rehabilitation or adaptation to new uses of historic sites and structures.

- RC Policy I1.1.2 Direct proposed developments that may affect proposed or designated historic sites or County landmarks to the Kings County Museum Advisory Committee or other similarly purposed advisory body under the Kings County Parks and Recreation Advisory Commission for review and comment.
- RC Policy I1.1.3 Encourage the protection of cultural and archaeological sites with potential for placement on the National Register of Historic Places and/or inclusion in the California Inventory of Historic Resources.
- RC Policy I1.1.4 Refer applications that involve the removal, destruction, or alteration of proposed or designated historic sites or County landmarks to the Kings County Museum Advisory Committee or its successor for recommended mitigation measures.

Resource Conservation Objective I1.2: Identify potential archaeological and historical resources and, where appropriate, protect such resources.

- RC Policy I1.2.2 Continue to solicit input from local Native American communities in cases where development may result in disturbance to sites containing evidence of Native American Activity and/or to sites of cultural importance.
- RC Policy I1.2.3 Address archaeological and cultural resources in accordance with the California Environmental Quality Act (CEQA) for discretionary land use applications.
- RC Policy I1.2.4 The County will respectfully comply with Government Code §65352.3 (SB18) by conducting formal consultations with tribes as identified by the Native American Heritage Commission on all general plan and specific plan amendments.
- RC Policy I1.2.5 The County will respectfully comply with Government Code §6254.(r) and 6254.10 by protecting confidential information concerning Native American cultural resources. For example adopting internal procedures such as keeping confidential archaeological reports away from public view or discussion in public meetings.
- RC Policy I1.2.6 The County shall work in good faith with the Santa Rosa Rancheria Tachi Yokut Tribe (“Tribe”), the developer and other parties if the Tribe requests return of certain Native American artifacts from private development projects (e.g. for interpretive or educational value). The developer is expected to act in good faith when considering the Tribe’s request for artifacts. Artifacts not desired by the Tribe shall be placed in a qualified repository as established by the

California State Historical Resources Commission (see Guidelines for the Curation of Archaeological Collections, May 1993). If no facility is available, then all artifacts shall be donated to the Tribe.

Armona Community Plan: The Armona Community Plan contains the following policies to limit impacts to cultural resources:

- ACP Policy 4A.1.4 Preserve historical landmarks and require new development to integrate these Community valued features into the overall design of the development.
- ACP Policy 8D.1.1 New development within the Armona Community Planning Area shall be required to provide onsite monitoring for archaeological, cultural and historic remains and artifacts whenever earth moving construction activities have unearthed archaeological remains. Monitoring shall be done by an individual or firm that is found acceptable by the Tachi Yokut Tribe based at the Santa Rosa Rancheria.
- ACP Policy 8D.1.2 If any discoveries are made, construction shall immediately cease and the nature of the finding determined. The local tribe(s) as identified by the California Native American Heritage Commission shall be immediately notified and allowed the opportunity to evaluate the findings.

Discussion

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

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

Less Than Significant Impact with Mitigation Incorporation: The project would not cause a substantial adverse change in the significance of a tribal cultural resource that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources. Based on the results of the records search, no previously recorded tribal cultural resources are located within the project site. Although no cultural resources were identified, the presence of remains or unanticipated cultural resources under the ground surface is possible. Implementation of Mitigation Measures CUL-1 and CUL-2 will ensure that impacts to this checklist item will be *less than significant with mitigation incorporation*.

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 Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Less Than Significant Impact with Mitigation Incorporation: The lead agency has not determined there to be any known tribal cultural resources located within the project area. Additionally, there are not believed to be any paleontological resources or human remains buried within the project

area's vicinity. However, if resources were found to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resources to a California Native American Tribe. Implementation of Mitigation Measures CUL-1 and CUL-2 will ensure that any impacts resulting from project implementation remain *less than significant with mitigation incorporation*.

Mitigation Measures for Impacts to Tribal Cultural Resources:

Mitigation Measure CUL-1:

In order to avoid the potential for impacts to historic and prehistoric archaeological resources, the following measures shall be implemented, as necessary, in conjunction with the construction of each phase of the Project:

a. Cultural Resources Alert on Project Plans. The project proponent shall note on any plans that require ground disturbing excavation that there is a potential for exposing buried cultural resources.

b. Pre-Construction Briefing. The project proponent shall retain Santa Rosa Rancheria Cultural Staff to provide a pre-construction Cultural Sensitivity Training to construction staff regarding the discovery of cultural resources and the potential for discovery during ground disturbing activities, which will include information on potential cultural material finds and on the procedures to be enacted if resources are found.

c. Stop Work Near any Discovered Cultural Resources. The project proponent shall retain a professional archaeologist on an "on-call" basis during ground disturbing construction for the project to review, identify and evaluate cultural resources that may be inadvertently exposed during construction. Should previously unidentified cultural resources be discovered during construction of the project, the project proponent shall cease work within 100 feet of the resources, and Kings County Community Development Agency (CDA) shall be notified immediately. The archaeologist shall review and evaluate any discoveries to determine if they are historical resource(s) and/or unique archaeological resources under CEQA.

d. Mitigation for Discovered Cultural Resources. If the professional archaeologist determines that any cultural resources exposed during construction constitute a historical resource and/or unique archaeological resource, he/she shall notify the project proponent and other appropriate parties of the evaluation and recommended mitigation measures to mitigate the impact to a less-than-significant level. Mitigation measures may include avoidance, preservation in-place, recordation, additional archaeological testing and data recovery, among other options. Treatment of any significant cultural resources shall be undertaken with the approval of the Kings County CDA. The archaeologist shall document the resources using DPR 523 forms and file said forms with the California Historical Resources Information System, Southern San Joaquin Valley Information Center. The resources shall be photo documented and collected by the archaeologist for submittal to the Santa Rosa Rancheria's Cultural and Historical Preservation Department. The archaeologist shall be required to submit to the County for review and approval a report of the findings and method of curation or protection of the resources. Further grading or site work within the area of discovery shall not be allowed until the preceding steps have been taken.

e. Native American Monitoring. Prior to any ground disturbance, the project proponent shall offer the Santa Rosa Rancheria Tachi Yokut Tribe the opportunity to provide a Native American Monitor during ground disturbing activities during construction. Tribal participation would be dependent upon the availability and interest of the Tribe.

f. Disposition of Cultural Resources. Upon coordination with the Kings County Community Development Agency, any pre-historic archaeological artifacts recovered shall be donated to an appropriate Tribal custodian or a qualified scientific institution where they would be afforded applicable cultural resources laws and guidelines.

Mitigation Measure CUL-2: In order to avoid the potential for impacts to buried human remains, the following measures shall be implemented, as necessary, in conjunction with the construction of each phase of the Project:

a. Pursuant to State Health and Safety Code Section 7050.5(e) and Public Resources Code Section 5097.98, if human bone or bone of unknown origin is found at any time during on- or off-site construction, all work shall stop in the vicinity of the find and the Kings County Coroner shall be notified immediately. If the remains are determined to be Native American, the Coroner shall notify the California State Native American Heritage Commission (NAHC), who shall identify the person believed to be the Most Likely Descendant (MLD). The project proponent and MLD, with the assistance of the archaeologist, shall make all reasonable efforts to develop an agreement for the treatment of human remains and associated or unassociated funerary objects with appropriate dignity (CEQA Guidelines Sec. 15064.5(d)). The agreed upon treatment shall address the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects. California Public Resources Code allows 48 hours for the MLD to make their wishes known to the landowner after being granted access to the site. If the MLD and the other parties do not agree on the reburial method, the project will follow Public Resources Code Section 5097.98(e) which states that ". . . the landowner or his or her authorized representative shall reinter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance."

b. Any findings shall be submitted by the archaeologist in a professional report submitted to the project applicant, the MLD, the Kings County Community Development Agency, and the California Historical Resources Information System, Southern San Joaquin Valley Information Center.

XIX. UTILITIES AND SERVICE SYSTEMS

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

Environmental Setting

Wastewater: Sewer services are provided to the site by the Armona Community Services District (ACSD). The ACSD owns and operates a sewage treatment plant on the south end of town that serves almost all Armona's residents. It currently has the capacity to receive approximately 0.534 MGD. The ACSD has determined that there is currently a need for the expansion to a capacity of 0.70 to 1.0 MGD to support future populations.

Solid Waste: The Kings Waste and Recycling Authority (KWRA) receives solid waste from 13 service providers who perform solid waste collection and disposal services, including recyclable materials, for all County unincorporated areas, and the cities of Corcoran, Hanford, and Lemoore. A new landfill was opened in 2009 and is expected to support Kings County until at least 2030. In addition, a planned landfill West of Kettleman City is expected to accommodate waste generated by the County through the year 2047.

Water: The ACSD provides water to the Community, including the proposed project site. Water supply in Armona is provided by two active groundwater wells, which have the pumping capacity of 1,800 GPM. The second well serves as backup during dry summer months. The existing water system facility includes treatment, storage, and booster pumping capabilities at well number one (Dillon Well), and water storage and booster pumping at well number two (7th Day Well). The current population uses approximately 187.2-acre feet per year (AFY). The ACSD anticipates that the water supply facilities are sufficient for the existing population only. The ACSD, however, is not restricted in the number of wells they can drill. As demand for water supply increases with population growth, the ACSD has indicated that it would drill new wells and construct additional water storage facilities in accordance with the Capital Facilities Plan. Additionally, ACSD's Capital Facilities Plan includes the provision of new wells and additional water storage capacity to accommodate potential housing sites as identified in the existing General Plan Housing Element. A proposed third well would pump 1,000 GPM to serve an additional 1,600 residents.

Regulatory Setting

CalRecycle: California Code of Regulations, Title 14, Natural Resources – Division 7 contains all current CalRecycle regulations regarding nonhazardous waste management in the state. These regulations include standards for the handling of solid waste, standards for the handling of compostable materials, design standards for disposal facilities, and disposal standards for specific types of waste.

Central Valley RWQCB: The Central Valley RWQCB requires a Stormwater Pollution Prevention Plan (SWPPP) for projects disturbing more than one acre of total land area. Because the project is greater than one acre, a SWPPP to manage stormwater generated during project construction will be required.
The Central Valley RWQCB regulates Wastewater Discharges to Land by establishing thresholds for discharged pollutants and implementing monitoring programs to evaluate program compliance. This program regulates approximately 1500 dischargers in the region.
The Central Valley RWQCB is also responsible for implementing the federal program, the National Pollutant Discharge Elimination System (NPDES). The NPDES Program is the federal permitting program that regulates discharges of pollutants to surface waters of the U.S. Under this program, a NPDES permit is required to discharge pollutants into Water's of the U.S. There are 350 permitted facilities within the Central Valley Region.

Kings County Countywide Integrated Waste Management Plan: This plan includes source reduction, recycling, composting, special waste, and household waste programs, all of which strive to reduce overall solid waste generation. Implementation of these programs may further extend the life of existing and planned landfills that would or are expected to serve the County.

2035 Kings County General Plan: The 2035 General Plan Resource Conservation Element includes the following policies which would reduce potential impacts to water supply and infrastructure:

- RC Policy A1.2.2: Require the use of low water consuming, drought-tolerant and native landscaping and other water conserving techniques, such as mulching, drip irrigation and moisture sensors, for new development.

Armona Community Plan: The Armona Community Plan includes the following policies which mitigate potential impacts related to water quality:

- ACP Policy 8B.1.2: Coordinate with the Armona Community Services District to explore options for integrating reclaimed water usage within new growth areas.
- ACP Policy 8B.1.3: Require new residential and commercial development to integrate drought tolerant landscaping and water conservation fixtures with the structures to reduce the average per capita water use within the Community.
- ACP Policy 8B.2.1: A water service development impact fee shall be established and required of all new development within the Armona CSD to support District expansion of this service.

Discussion

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

Less than Significant Impact: The proposed project would result in new water services. However, the proposed site has no change of use proposal. The ACSD is willing to provide new wells and additional water facilities as needed along with the population growth. To compensate, new development will be required to pay impact fees for new water services. It is not anticipated that implementation of the proposed project would result in increased demand for any utility services beyond the planned conditions. There is *a less than significant impact.*

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

Less than Significant Impact: Water services will be provided by the ACSD. The Community's water supply source is comprised of 2 groundwater wells. The current system provides 1,800 GPM, which is sufficient for the existing population only. Using average per-person daily water use in the Armona Community (187 gallons, including commercial and industrial uses; County of Kings General Plan) and the average household size in the Armona Community (3.68 persons; US Census Bureau), the proposed site of 109 new residential units would require 75,009 GPD, or about 84 AFY. The project does not propose any new or expanded uses against the Armona Community Plan. By 2035, the community plan anticipates 5,973 additional residents which would require approximately 1,116,951 GPD, or 1,251 AFY. However, ACSD has indicated that it would drill new wells and construct additional water facilities as needed. To compensate, new development will be required to pay impact fees for new water services, along with the reduced water use implementations from the polices set forth in the Armona Community Plan. Therefore, the impact is *less than significant.*

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

Less than Significant Impact: The project does not propose any new or expanded uses and is therefore not anticipated to result in increased demand for wastewater treatment services beyond existing conditions in the Armona Community Plan. Additionally, the site's current and future wastewater service demand has been evaluated by the City's PEIR. The current capacity of the wastewater system is approximately 0.534 MGD. It currently receives .353 MGD, leaving an available 0.181 MGD. Based on the average per-person daily wastewater use (109 gallons, including commercial

and industrial uses; County of Kings General Plan) and Armona's average of 3.68 persons per household, the 109-unit project would produce approximately .0044 MGD of wastewater.

Because the Community's sewer system has the capacity to meet the project site's expected demand for wastewater treatment, and it is not anticipated that the project will increase the site's demand for wastewater treatment, it can be inferred that the existing wastewater treatment system has adequate capacity to serve the proposed project. There is a *less than significant impact.*

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

No Impact: The KWRA provides solid waste services to the proposed project site. The project does not propose any new or expanded uses and is therefore not anticipated to result in increased generation of solid waste beyond existing conditions. Because the City's existing infrastructure has the capacity to accommodate the solid waste currently planned in the community plan for expanded population, it can be inferred that the existing solid waste infrastructure has adequate capacity to serve the proposed project. The project would not generate solid waste in excess of State or Local Standards and there is *no impact.*

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

No Impact: This proposed project conforms to all applicable statutes and regulations related to solid waste disposal. The proposed project will comply with the adopted policies related to solid waste, and will comply with all applicable federal, state, and local statutes and regulations pertaining to disposal of solid waste, including recycling. Therefore, the proposed project would have *no impact* on solid waste regulations.

XX. WILDFIRE

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

Environmental Setting

There are no State Responsibility Areas (SRAs) within the vicinity of the project site, and the project site is not categorized as a "Very High" Fire Hazard Severity Zone (FHSZ) by CalFire. This CEQA topic only applies to areas within an SRA or a Very High FHSZ.

Regulatory Setting

Fire Hazard Severity Zones: geographical areas designated pursuant to California Public Resources Codes Sections 4201 through 4204 and classified as Very High, High, or Moderate in State Responsibility Areas or as Local Agency Very High Fire Hazard Severity Zones designated pursuant to California Government Code, Sections 51175 through 51189.

Discussion

a) Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

No Impact: The project would not substantially impair an adopted emergency response plan or emergency evacuation plan. The project will be reviewed by the Kings County Fire Department to ensure the project does not impair emergency response or emergency evacuation. Additionally, the proposed project site is not located within an SRA or a Very High FHSZ. There is *no impact.*

b) Due to slope, prevailing winds, and other factors, would the project exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

No Impact: The project is located on a flat area of agricultural and urban land which is considered to be at little risk of fire. Additionally, the proposed project site is not located within an SRA or a Very High FHSZ. There is *no impact.*

c) Would the project 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?

Less than Significant Impact: The construction of the project involves adding new local residential streets, and new and relocated utilities. Utilities such as emergency water sources and power lines would be included as part of the proposed development, however all improvements would be subject to City standards and Fire Chief approval. The proposed project would not exacerbate fire risk and the impact would be *less than significant*

d) Would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire instability, or drainage changes?

No Impact: The project site is not located in an area designated as a Fire Hazard Severity Zone and lands associated with the Project site are relatively flat. Therefore, the project would not be susceptible to downslope or downstream flooding or landslides as a result of post-fire instability or drainage changes. There is *no impact.*

XXI. MANDATORY FINDINGS OF SIGNIFICANCE

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Does the project have the potential substantially 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, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☑	☐	☐
b) 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)?	☐	☑	☐	☐
c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☑	☐

Discussion

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

Less than Significant Impact with Mitigation Incorporation: This initial study found the project could have significant impacts on transportation (VMT), hydrology and water quality, historical, recreation and tribal cultural resources. However, implementation of the identified mitigation measures for each respective section would ensure that impacts are *less than significant with mitigation incorporation.*

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable

when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

Less than Significant Impact: CEQA Guidelines Section 15064(h) states that a Lead Agency shall consider whether the cumulative impact of a project is significant and whether the effects of the project are cumulatively considerable. The assessment of the significance of the cumulative effects of a project must, therefore, be conducted in connection with the effects of past projects, other current projects, and probable future projects. Due to the nature of the project and consistency with environmental policies, incremental contributions to impacts are considered less than cumulatively considerable. The proposed project would not contribute substantially to adverse cumulative conditions, or create any substantial indirect impacts (i.e., increase in population could lead to an increased need for housing, increase in traffic, air pollutants, etc).

As described in the impact analysis in Sections I through XX above, any potentially significant impacts of the proposed project would be reduced to a less-than-significant level following incorporation of the mitigation measures listed in the Mitigation Monitoring and Reporting Program. All pending, approved, and completed projects in the vicinity of the proposed project would be subject to review in separate environmental documents and required to conform to the 2035 Kings County General Plan, the Kings County Development Code, mitigate for project-specific impacts, and provide appropriate engineering to ensure the development meets all applicable federal, State and local regulations and codes. As currently designed, and by complying with the recommended mitigation measures, the proposed project would not contribute to a cumulative impact. Thus, the cumulative impacts of pending, approved, and completed projects would be less than cumulatively considerable. Impacts would be *less than significant with mitigation incorporated*.

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

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

1.6 MITIGATION MONITORING AND REPORTING PROGRAM

As required by Public Resources Code Section 21081.6, subd. (a)(1), a Mitigation Monitoring and Reporting Program (MMRP) has been prepared for the project in order to monitor the implementation of the mitigation measures that have been adopted for the project. This Mitigation Monitoring and Reporting Program (MMRP) has been created based upon the findings of the Initial Study (IS) for the Summers Pointe Project in the County of Kings.

The first column of the table identifies the mitigation measure. The second column names the party responsible for carrying out the required action. The third column, "Timing of Mitigation Measure" identifies the time the mitigation measure should be initiated. The fourth column, "Responsible Party for Monitoring," names the party ensuring that the mitigation measure is implemented. The last column will be used by the County to ensure that the individual mitigation measures have been monitored.

Plan checking and verification of mitigation compliance shall be the responsibility of the County of Kings.

Mitigation Measure	Responsible Party for Implementation	Implementation Timing	Responsible Party for Monitoring	Verification
Mitigation Measure AES-1: Preserve the existing nighttime environment by limiting the illumination of areas surrounding new development. New lighting that is part of residential, commercial, industrial, or recreational development shall be oriented away from sensitive uses, and should be hooded, shielded, and located to direct light pools downward and prevent glare.	County of Kings	Prior to the Start of Construction	County of Kings	
Mitigation Measure CUL-1: In order to avoid the potential for impacts to historic and prehistoric archaeological resources, the following measures shall be implemented, as necessary, in conjunction with the construction of each phase of the Project: **a.** Cultural Resources Alert on Project Plans. The project proponent shall note on any plans that require ground disturbing excavation that there is a potential for exposing buried cultural resources. **b.** Pre-Construction Briefing. The project proponent shall retain Santa Rosa Rancheria Cultural Staff to provide a pre-construction Cultural Sensitivity Training to construction staff regarding the discovery of cultural resources and the potential for discovery during ground disturbing activities, which will include information on potential cultural material finds and on the procedures to be enacted if resources are found. **c.** Stop Work Near any Discovered Cultural Resources. The project proponent shall retain a professional archaeologist on an "on-call" basis during ground disturbing construction for the project to review, identify and evaluate cultural resources that may be inadvertently exposed during construction. Should previously unidentified cultural	County of Kings	Prior to and ongoing during construction	County of Kings	

Mitigation Measure	Responsible Party for Implementation	Implementation Timing	Responsible Party for Monitoring	Verification
resources be discovered during construction of the project, the project proponent shall cease work within 100 feet of the resources, and Kings County Community Development Agency (CDA) shall be notified immediately. The archaeologist shall review and evaluate any discoveries to determine if they are historical resource(s) and/or unique archaeological resources under CEQA. **d.** Mitigation for Discovered Cultural Resources. If the professional archaeologist determines that any cultural resources exposed during construction constitute a historical resource and/or unique archaeological resource, he/she shall notify the project proponent and other appropriate parties of the evaluation and recommended mitigation measures to mitigate the impact to a less-than-significant level. Mitigation measures may include avoidance, preservation in-place, recordation, additional archaeological testing and data recovery, among other options. Treatment of any significant cultural resources shall be undertaken with the approval of the Kings County CDA. The archaeologist shall document the resources using DPR 523 forms and file said forms with the California Historical Resources Information System, Southern San Joaquin Valley Information Center. The resources shall be photo documented and collected by the archaeologist for submittal to the Santa Rosa Rancheria's Cultural and Historical Preservation Department. The archaeologist shall be required to submit to the County for review and approval a report of the findings and method of curation or protection of the resources. Further grading or site work within the area of discovery shall not be allowed until the preceding steps have been taken. **e.** Native American Monitoring. Prior to any ground disturbance, the project proponent shall offer the Santa Rosa Rancheria Tachi Yokut Tribe the opportunity to provide a Native American Monitor during ground disturbing activities during construction. Tribal participation would be dependent upon the availability and interest of the Tribe. **f.** Disposition of Cultural Resources. Upon coordination with the Kings County Community Development Agency, any pre-historic archaeological artifacts recovered shall be donated to an appropriate Tribal custodian or a qualified scientific institution where they would be afforded applicable cultural resources laws and guidelines.				

Mitigation Measure	Responsible Party for Implementation	Implementation Timing	Responsible Party for Monitoring	Verification
Mitigation Measure CUL-2: In order to avoid the potential for impacts to buried human remains, the following measures shall be implemented, as necessary, in conjunction with the construction of each phase of the Project: **a.** Pursuant to State Health and Safety Code Section 7050.5(e) and Public Resources Code Section 5097.98, if human bone or bone of unknown origin is found at any time during on- or off-site construction, all work shall stop in the vicinity of the find and the Kings County Coroner shall be notified immediately. If the remains are determined to be Native American, the Coroner shall notify the California State Native American Heritage Commission (NAHC), who shall identify the person believed to be the Most Likely Descendant (MLD). The project proponent and MLD, with the assistance of the archaeologist, shall make all reasonable efforts to develop an agreement for the treatment of human remains and associated or unassociated funerary objects with appropriate dignity (CEQA Guidelines Sec. 15064.5(d)). The agreed upon treatment shall address the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects. California Public Resources Code allows 48 hours for the MLD to make their wishes known to the landowner after being granted access to the site. If the MLD and the other parties do not agree on the reburial method, the project will follow Public Resources Code Section 5097.98(e) which states that ". . . the landowner or his or her authorized representative shall reinter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance." **b.** Any findings shall be submitted by the archaeologist in a professional report submitted to the project applicant, the MLD, the Kings County Community Development Agency, and the California Historical Resources Information System, Southern San Joaquin Valley Information Center.provided to a County-approved institution or person who is capable of providing long-term preservation to allow future scientific study.	County of Kings	Ongoing during construction	County of Kings	
Mitigation Measure HYD-1: Prior to the issuance of any construction/grading permit and/or the commencement of any clearing, grading, or excavation, the Applicant shall submit a Notice of Intent (NOI) for discharge from the Project site to the California SWRCB Storm Water Permit Unit.	County of Kings	Prior to the Start of Construction	County of Kings	

Mitigation Measure	Responsible Party for Implementation	Implementation Timing	Responsible Party for Monitoring	Verification
H-1(a) Low Impact Development (LID). Future development pursuant to the 2035 General Plan shall incorporate LID principals into the project design to minimize long-term stormwater runoff. Such principles shall include: • Permeable paving, such as pavers, porous concrete, or pathway comprised of decomposed granite that is effective in stormwater infiltration to help prevent excess runoff. • Use of "urban bio-swales" to redirect stormwater into planter strips, rather than capturing runoff in pipes and diverting it to a remote location. • Use of water efficient irrigation (e.g., drip irrigation system) to water trees, shrub beds, and areas of groundcover to eliminate evaporation losses and minimize runoff. • Use of predominately (75 percent) native plants and drought-tolerant landscaping wherever possible.				
Mitigation Measure HYD-2: The Applicant shall require the building contractor to prepare and submit a Storm Water Pollution Prevention Plan (SWPPP) to the County 45 days prior to the start of work for approval. The contractor is responsible for understanding the State General Permit and instituting the SWPPP during construction. A SWPPP for site construction shall be developed prior to the initiation of grading and implemented for all construction activity on the Project site in excess of one (1) acre, or where the area of disturbance is less than one acre but is part of the Project's plan of development that in total disturbs one or more acres. The SWPPP shall identify potential pollutant sources that may affect the quality of discharges to storm water and shall include specific BMPs to control the discharge of material from the site. The following BMP methods shall include, but would not be limited to: • Dust control measures will be implemented to ensure success of all onsite activities to control fugitive dust; • A routine monitoring plan will be implemented to ensure success of all onsite erosion and sedimentation control measures; • Provisional detention basins, straw bales, erosion control blankets, mulching, silt fencing, sand bagging, and soil stabilizers will be used; • Soil stockpiles and graded slopes will be covered after two weeks of inactivity and 24 hours prior to and during extreme weather conditions; and,	County of Kings	45 Day prior to the start of construction	County of Kings	

Mitigation Measure	Responsible Party for Implementation	Implementation Timing	Responsible Party for Monitoring	Verification
• BMPs will be strictly followed to prevent spills and discharges of pollutants onsite, such as material storage, trash disposal, construction entrances, etc.				

1.7 Supporting Information and Sources

1. District Accepted Fleet Mix for Residential Projects, Valley Air
2. Armona Community Plan
3. County of Kings General Plan
4. County of Kings General Plan PEIR
5. KCAG Climate Action Plan
6. County of Kings Zoning Ordinance
7. Improvement Standards, County of Kings
8. SJVAPCD Regulations and Guidelines
9. FEMA Flood Maps
10. California Air Resources Board's (CARB's) Air Quality and Land Use Handbook
11. 2019 California Environmental Quality Act CEQA Guidelines
12. California Building Code
13. California Stormwater Pollution Prevention Program (SWPPP)
14. Government Code Section 65962.5
15. California Environmental Protection Agency (CEPA) San Joaquin Valley Air Pollution Control District Mitigation Measures
16. Southern California Edison 2019 Power Content Label
17. Transit Noise and Vibration Impact Assessment, Federal Transit Administration, September 2018.
18. 2020 U.S. Census
19. Federal Highway Administration Construction Noise Handbook
20. Kings County Multi-jurisdictional Local Hazard Mitigation Plan
21. California Scenic Highway Program
22. California Farmland Mapping and Monitoring Program
23. EMFAC 2021 (v1.0.1) Emissions Inventory
24. EPA, Greenhouse Gasses
25. Tulare Lake Subbasin Groundwater Sustainability Plan
26. OPR Technical Advisory on Evaluating Transportation Impacts in CEQA, 2018

Appendix A

CalEEMod Report

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

Summers Pointe

Kings County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	109.00	Dwelling Unit	20.08	555,246.00	312

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	37
Climate Zone	3			**Operational Year**	2025
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acerage and Square Feet Defined

Construction Phase -

Off-road Equipment -

Trips and VMT -

On-road Fugitive Dust -

Demolition -

Grading -

Architectural Coating -

Road Dust -

Woodstoves -

Consumer Products -

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

Area Coating -

Landscape Equipment -

Energy Use -

Water And Wastewater -

Solid Waste -

Land Use Change -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Fleet Mix - District Accepted Fleet Mix for Residential Projects

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblFleetMix	HHD	0.04	0.02
tblFleetMix	LDA	0.51	0.52
tblFleetMix	LDT1	0.05	0.21
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LHD1	0.03	8.0000e-004
tblFleetMix	LHD2	6.6260e-003	9.0000e-004
tblFleetMix	MCY	0.02	2.5000e-003
tblFleetMix	MDV	0.16	0.06
tblFleetMix	MH	3.3810e-003	2.2000e-003
tblFleetMix	MHD	8.2810e-003	7.6000e-003
tblFleetMix	OBUS	6.0300e-004	0.00
tblFleetMix	SBUS	1.1230e-003	1.0000e-004
tblFleetMix	UBUS	1.8800e-004	4.3000e-003
tblLandUse	LandUseSquareFeet	196,200.00	555,246.00
tblLandUse	LotAcreage	35.39	20.08
tblWoodstoves	NumberCatalytic	20.08	0.00
tblWoodstoves	NumberNoncatalytic	20.08	0.00

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

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.2390	2.2054	2.2881	4.4400e-003	0.3012	0.1000	0.4012	0.1258	0.0934	0.2192	0.0000	388.1702	388.1702	0.0910	4.1400e-003	391.6773
2024	5.3633	1.3375	1.6772	3.0700e-003	0.0363	0.0594	0.0957	9.7900e-003	0.0558	0.0656	0.0000	268.2381	268.2381	0.0553	3.5800e-003	270.6881
Maximum	**5.3633**	**2.2054**	**2.2881**	**4.4400e-003**	**0.3012**	**0.1000**	**0.4012**	**0.1258**	**0.0934**	**0.2192**	**0.0000**	**388.1702**	**388.1702**	**0.0910**	**4.1400e-003**	**391.6773**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.2390	2.2054	2.2881	4.4400e-003	0.3012	0.1000	0.4012	0.1258	0.0934	0.2192	0.0000	388.1698	388.1698	0.0910	4.1400e-003	391.6769
2024	5.3633	1.3375	1.6772	3.0700e-003	0.0363	0.0594	0.0957	9.7900e-003	0.0558	0.0656	0.0000	268.2378	268.2378	0.0553	3.5800e-003	270.6878
Maximum	**5.3633**	**2.2054**	**2.2881**	**4.4400e-003**	**0.3012**	**0.1000**	**0.4012**	**0.1258**	**0.0934**	**0.2192**	**0.0000**	**388.1698**	**388.1698**	**0.0910**	**4.1400e-003**	**391.6769**

Summers Pointe - Kings County, Annual

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

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2023**	**3-31-2023**	0.8154	0.8154
2	**4-1-2023**	**6-30-2023**	0.5427	0.5427
3	**7-1-2023**	**9-30-2023**	0.5487	0.5487
4	**10-1-2023**	**12-31-2023**	0.5498	0.5498
5	**1-1-2024**	**3-31-2024**	0.5093	0.5093
6	**4-1-2024**	**6-30-2024**	0.5082	0.5082
7	**7-1-2024**	**9-30-2024**	1.0064	1.0064
		Highest	1.0064	1.0064

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.7187	0.0501	0.8259	3.0000e-004		7.7800e-003	7.7800e-003		7.7800e-003	7.7800e-003	0.0000	48.5416	48.5416	2.1700e-003	8.7000e-004	48.8539
Energy	0.0141	0.1207	0.0514	7.7000e-004		9.7600e-003	9.7600e-003		9.7600e-003	9.7600e-003	0.0000	293.9601	293.9601	0.0157	4.1400e-003	295.5861
Mobile	0.2790	0.5371	3.3992	9.7800e-003	1.0891	7.3700e-003	1.0965	0.2902	6.8700e-003	0.2970	0.0000	914.4282	914.4282	0.0583	0.0440	928.9852
Waste						0.0000	0.0000		0.0000	0.0000	22.7999	0.0000	22.7999	1.3474	0.0000	56.4859
Water						0.0000	0.0000		0.0000	0.0000	2.2531	9.5940	11.8471	0.2322	5.5600e-003	19.3102
Total	**3.0119**	**0.7079**	**4.2765**	**0.0109**	**1.0891**	**0.0249**	**1.1140**	**0.2902**	**0.0244**	**0.3146**	**25.0530**	**1,266.5239**	**1,291.5769**	**1.6558**	**0.0545**	**1,349.2213**

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

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.7139	9.3100e-003	0.8086	4.0000e-005		4.4900e-003	4.4900e-003		4.4900e-003	4.4900e-003	0.0000	1.3220	1.3220	1.2700e-003	0.0000	1.3537
Energy	0.0141	0.1207	0.0514	7.7000e-004		9.7600e-003	9.7600e-003		9.7600e-003	9.7600e-003	0.0000	293.9601	293.9601	0.0157	4.1400e-003	295.5861
Mobile	0.2764	0.5180	3.2755	9.3100e-003	1.0347	7.0400e-003	1.0417	0.2756	6.5600e-003	0.2822	0.0000	870.1831	870.1831	0.0563	0.0423	884.1907
Waste						0.0000	0.0000		0.0000	0.0000	22.7999	0.0000	22.7999	1.3474	0.0000	56.4859
Water						0.0000	0.0000		0.0000	0.0000	2.2531	9.5940	11.8471	0.2322	5.5600e-003	19.3102
Total	**3.0045**	**0.6481**	**4.1355**	**0.0101**	**1.0347**	**0.0213**	**1.0560**	**0.2756**	**0.0208**	**0.2965**	**25.0530**	**1,175.0592**	**1,200.1122**	**1.6529**	**0.0520**	**1,256.9266**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.25**	**8.45**	**3.30**	**6.73**	**5.00**	**14.53**	**5.21**	**5.00**	**14.75**	**5.75**	**0.00**	**7.22**	**7.08**	**0.18**	**4.66**	**6.84**

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	1/28/2023	2/10/2023	5	10	
2	Grading	Grading	2/11/2023	3/31/2023	5	35	
3	Building Construction	Building Construction	4/1/2023	8/30/2024	5	370	

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

4	Paving	Paving	8/31/2024	9/27/2024	5	20	
5	Architectural Coating	Architectural Coating	9/28/2024	10/25/2024	5	20	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 105

Acres of Paving: 0

Residential Indoor: 1,124,373; Residential Outdoor: 374,791; 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
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

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

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	39.00	12.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0133	0.1376	0.0912	1.9000e-004		6.3300e-003	6.3300e-003		5.8200e-003	5.8200e-003	0.0000	16.7254	16.7254	5.4100e-003	0.0000	16.8606
Total	**0.0133**	**0.1376**	**0.0912**	**1.9000e-004**	**0.0983**	**6.3300e-003**	**0.1046**	**0.0505**	**5.8200e-003**	**0.0563**	**0.0000**	**16.7254**	**16.7254**	**5.4100e-003**	**0.0000**	**16.8606**

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

3.2 Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	1.9000e-004	2.2300e-003	1.0000e-005	7.2000e-004	0.0000	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.5688	0.5688	2.0000e-005	2.0000e-005	0.5742
Total	**2.7000e-004**	**1.9000e-004**	**2.2300e-003**	**1.0000e-005**	**7.2000e-004**	**0.0000**	**7.3000e-004**	**1.9000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**0.5688**	**0.5688**	**2.0000e-005**	**2.0000e-005**	**0.5742**

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					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0133	0.1376	0.0912	1.9000e-004		6.3300e-003	6.3300e-003		5.8200e-003	5.8200e-003	0.0000	16.7253	16.7253	5.4100e-003	0.0000	16.8606
Total	**0.0133**	**0.1376**	**0.0912**	**1.9000e-004**	**0.0983**	**6.3300e-003**	**0.1046**	**0.0505**	**5.8200e-003**	**0.0563**	**0.0000**	**16.7253**	**16.7253**	**5.4100e-003**	**0.0000**	**16.8606**

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

3.2 Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	1.9000e-004	2.2300e-003	1.0000e-005	7.2000e-004	0.0000	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.5688	0.5688	2.0000e-005	2.0000e-005	0.5742
Total	**2.7000e-004**	**1.9000e-004**	**2.2300e-003**	**1.0000e-005**	**7.2000e-004**	**0.0000**	**7.3000e-004**	**1.9000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**0.5688**	**0.5688**	**2.0000e-005**	**2.0000e-005**	**0.5742**

3.3 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1611	0.0000	0.1611	0.0639	0.0000	0.0639	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0581	0.6040	0.4909	1.0900e-003		0.0249	0.0249		0.0229	0.0229	0.0000	95.4366	95.4366	0.0309	0.0000	96.2083
Total	**0.0581**	**0.6040**	**0.4909**	**1.0900e-003**	**0.1611**	**0.0249**	**0.1860**	**0.0639**	**0.0229**	**0.0869**	**0.0000**	**95.4366**	**95.4366**	**0.0309**	**0.0000**	**96.2083**

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

3.3 Grading - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	1.0600e-003	7.3000e-004	8.6500e-003	2.0000e-005	2.8100e-003	1.0000e-005	2.8300e-003	7.5000e-004	1.0000e-005	7.6000e-004	0.0000	2.2121	2.2121	7.0000e-005	6.0000e-005	2.2331
Total	**1.0600e-003**	**7.3000e-004**	**8.6500e-003**	**2.0000e-005**	**2.8100e-003**	**1.0000e-005**	**2.8300e-003**	**7.5000e-004**	**1.0000e-005**	**7.6000e-004**	**0.0000**	**2.2121**	**2.2121**	**7.0000e-005**	**6.0000e-005**	**2.2331**

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					0.1611	0.0000	0.1611	0.0639	0.0000	0.0639	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0581	0.6040	0.4909	1.0900e-003		0.0249	0.0249		0.0229	0.0229	0.0000	95.4365	95.4365	0.0309	0.0000	96.2082
Total	**0.0581**	**0.6040**	**0.4909**	**1.0900e-003**	**0.1611**	**0.0249**	**0.1860**	**0.0639**	**0.0229**	**0.0869**	**0.0000**	**95.4365**	**95.4365**	**0.0309**	**0.0000**	**96.2082**

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

3.3 Grading - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	1.0600e-003	7.3000e-004	8.6500e-003	2.0000e-005	2.8100e-003	1.0000e-005	2.8300e-003	7.5000e-004	1.0000e-005	7.6000e-004	0.0000	2.2121	2.2121	7.0000e-005	6.0000e-005	2.2331
Total	**1.0600e-003**	**7.3000e-004**	**8.6500e-003**	**2.0000e-005**	**2.8100e-003**	**1.0000e-005**	**2.8300e-003**	**7.5000e-004**	**1.0000e-005**	**7.6000e-004**	**0.0000**	**2.2121**	**2.2121**	**7.0000e-005**	**6.0000e-005**	**2.2331**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1533	1.4025	1.5838	2.6300e-003		0.0682	0.0682		0.0642	0.0642	0.0000	226.0096	226.0096	0.0538	0.0000	227.3537
Total	**0.1533**	**1.4025**	**1.5838**	**2.6300e-003**		**0.0682**	**0.0682**		**0.0642**	**0.0642**	**0.0000**	**226.0096**	**226.0096**	**0.0538**	**0.0000**	**227.3537**

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

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.4300e-003	0.0524	0.0173	2.4000e-004	7.7900e-003	3.4000e-004	8.1400e-003	2.2500e-003	3.3000e-004	2.5800e-003	0.0000	23.1854	23.1854	9.0000e-005	3.3500e-003	24.1870
Worker	0.0115	7.8800e-003	0.0940	2.6000e-004	0.0306	1.6000e-004	0.0307	8.1200e-003	1.4000e-004	8.2600e-003	0.0000	24.0323	24.0323	7.4000e-004	7.0000e-004	24.2605
Total	**0.0129**	**0.0603**	**0.1113**	**5.0000e-004**	**0.0383**	**5.0000e-004**	**0.0388**	**0.0104**	**4.7000e-004**	**0.0108**	**0.0000**	**47.2177**	**47.2177**	**8.3000e-004**	**4.0500e-003**	**48.4474**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1533	1.4025	1.5838	2.6300e-003		0.0682	0.0682		0.0642	0.0642	0.0000	226.0094	226.0094	0.0538	0.0000	227.3535
Total	**0.1533**	**1.4025**	**1.5838**	**2.6300e-003**		**0.0682**	**0.0682**		**0.0642**	**0.0642**	**0.0000**	**226.0094**	**226.0094**	**0.0538**	**0.0000**	**227.3535**

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

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.4300e-003	0.0524	0.0173	2.4000e-004	7.7900e-003	3.4000e-004	8.1400e-003	2.2500e-003	3.3000e-004	2.5800e-003	0.0000	23.1854	23.1854	9.0000e-005	3.3500e-003	24.1870
Worker	0.0115	7.8800e-003	0.0940	2.6000e-004	0.0306	1.6000e-004	0.0307	8.1200e-003	1.4000e-004	8.2600e-003	0.0000	24.0323	24.0323	7.4000e-004	7.0000e-004	24.2605
Total	**0.0129**	**0.0603**	**0.1113**	**5.0000e-004**	**0.0383**	**5.0000e-004**	**0.0388**	**0.0104**	**4.7000e-004**	**0.0108**	**0.0000**	**47.2177**	**47.2177**	**8.3000e-004**	**4.0500e-003**	**48.4474**

3.4 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1288	1.1763	1.4146	2.3600e-003		0.0537	0.0537		0.0505	0.0505	0.0000	202.8680	202.8680	0.0480	0.0000	204.0673
Total	**0.1288**	**1.1763**	**1.4146**	**2.3600e-003**		**0.0537**	**0.0537**		**0.0505**	**0.0505**	**0.0000**	**202.8680**	**202.8680**	**0.0480**	**0.0000**	**204.0673**

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

3.4 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.2500e-003	0.0470	0.0151	2.1000e-004	6.9900e-003	3.1000e-004	7.3000e-003	2.0200e-003	3.0000e-004	2.3200e-003	0.0000	20.5031	20.5031	8.0000e-005	2.9600e-003	21.3866
Worker	9.5200e-003	6.2400e-003	0.0779	2.3000e-004	0.0274	1.3000e-004	0.0276	7.2800e-003	1.2000e-004	7.4100e-003	0.0000	20.8800	20.8800	6.0000e-004	5.8000e-004	21.0688
Total	**0.0108**	**0.0533**	**0.0930**	**4.4000e-004**	**0.0344**	**4.4000e-004**	**0.0349**	**9.3000e-003**	**4.2000e-004**	**9.7300e-003**	**0.0000**	**41.3830**	**41.3830**	**6.8000e-004**	**3.5400e-003**	**42.4554**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1288	1.1763	1.4146	2.3600e-003		0.0537	0.0537		0.0505	0.0505	0.0000	202.8677	202.8677	0.0480	0.0000	204.0670
Total	**0.1288**	**1.1763**	**1.4146**	**2.3600e-003**		**0.0537**	**0.0537**		**0.0505**	**0.0505**	**0.0000**	**202.8677**	**202.8677**	**0.0480**	**0.0000**	**204.0670**

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

3.4 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.2500e-003	0.0470	0.0151	2.1000e-004	6.9900e-003	3.1000e-004	7.3000e-003	2.0200e-003	3.0000e-004	2.3200e-003	0.0000	20.5031	20.5031	8.0000e-005	2.9600e-003	21.3866
Worker	9.5200e-003	6.2400e-003	0.0779	2.3000e-004	0.0274	1.3000e-004	0.0276	7.2800e-003	1.2000e-004	7.4100e-003	0.0000	20.8800	20.8800	6.0000e-004	5.8000e-004	21.0688
Total	**0.0108**	**0.0533**	**0.0930**	**4.4000e-004**	**0.0344**	**4.4000e-004**	**0.0349**	**9.3000e-003**	**4.2000e-004**	**9.7300e-003**	**0.0000**	**41.3830**	**41.3830**	**6.8000e-004**	**3.5400e-003**	**42.4554**

3.5 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.8800e-003	0.0953	0.1463	2.3000e-004		4.6900e-003	4.6900e-003		4.3100e-003	4.3100e-003	0.0000	20.0265	20.0265	6.4800e-003	0.0000	20.1885
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.8800e-003**	**0.0953**	**0.1463**	**2.3000e-004**		**4.6900e-003**	**4.6900e-003**		**4.3100e-003**	**4.3100e-003**	**0.0000**	**20.0265**	**20.0265**	**6.4800e-003**	**0.0000**	**20.1885**

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

3.5 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	4.2000e-004	2.7000e-004	3.4200e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2100e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	0.9178	0.9178	3.0000e-005	3.0000e-005	0.9261
Total	**4.2000e-004**	**2.7000e-004**	**3.4200e-003**	**1.0000e-005**	**1.2100e-003**	**1.0000e-005**	**1.2100e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**0.9178**	**0.9178**	**3.0000e-005**	**3.0000e-005**	**0.9261**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.8800e-003	0.0953	0.1463	2.3000e-004		4.6900e-003	4.6900e-003		4.3100e-003	4.3100e-003	0.0000	20.0265	20.0265	6.4800e-003	0.0000	20.1884
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.8800e-003**	**0.0953**	**0.1463**	**2.3000e-004**		**4.6900e-003**	**4.6900e-003**		**4.3100e-003**	**4.3100e-003**	**0.0000**	**20.0265**	**20.0265**	**6.4800e-003**	**0.0000**	**20.1884**

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

3.5 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	4.2000e-004	2.7000e-004	3.4200e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2100e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	0.9178	0.9178	3.0000e-005	3.0000e-005	0.9261
Total	**4.2000e-004**	**2.7000e-004**	**3.4200e-003**	**1.0000e-005**	**1.2100e-003**	**1.0000e-005**	**1.2100e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**0.9178**	**0.9178**	**3.0000e-005**	**3.0000e-005**	**0.9261**

3.6 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.2115					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8100e-003	0.0122	0.0181	3.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	2.5533	2.5533	1.4000e-004	0.0000	2.5569
Total	**5.2133**	**0.0122**	**0.0181**	**3.0000e-005**		**6.1000e-004**	**6.1000e-004**		**6.1000e-004**	**6.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.4000e-004**	**0.0000**	**2.5569**

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

3.6 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-004	1.5000e-004	1.8300e-003	1.0000e-005	6.4000e-004	0.0000	6.5000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.4895	0.4895	1.0000e-005	1.0000e-005	0.4939
Total	**2.2000e-004**	**1.5000e-004**	**1.8300e-003**	**1.0000e-005**	**6.4000e-004**	**0.0000**	**6.5000e-004**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.4895**	**0.4895**	**1.0000e-005**	**1.0000e-005**	**0.4939**

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					
Archit. Coating	5.2115					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8100e-003	0.0122	0.0181	3.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	2.5533	2.5533	1.4000e-004	0.0000	2.5568
Total	**5.2133**	**0.0122**	**0.0181**	**3.0000e-005**		**6.1000e-004**	**6.1000e-004**		**6.1000e-004**	**6.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.4000e-004**	**0.0000**	**2.5568**

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

3.6 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-004	1.5000e-004	1.8300e-003	1.0000e-005	6.4000e-004	0.0000	6.5000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.4895	0.4895	1.0000e-005	1.0000e-005	0.4939
Total	**2.2000e-004**	**1.5000e-004**	**1.8300e-003**	**1.0000e-005**	**6.4000e-004**	**0.0000**	**6.5000e-004**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.4895**	**0.4895**	**1.0000e-005**	**1.0000e-005**	**0.4939**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Increase Diversity

Improve Walkability Design

Improve Destination Accessibility

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2764	0.5180	3.2755	9.3100e-003	1.0347	7.0400e-003	1.0417	0.2756	6.5600e-003	0.2822	0.0000	870.1831	870.1831	0.0563	0.0423	884.1907
Unmitigated	0.2790	0.5371	3.3992	9.7800e-003	1.0891	7.3700e-003	1.0965	0.2902	6.8700e-003	0.2970	0.0000	914.4282	914.4282	0.0583	0.0440	928.9852

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	1,028.96	1,039.86	931.95	2,909,930	2,764,433
Total	1,028.96	1,039.86	931.95	2,909,930	2,764,433

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
Single Family Housing	10.80	7.30	7.50	42.30	19.60	38.10	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.524400	0.212000	0.167700	0.056300	0.000800	0.000900	0.007600	0.021200	0.000000	0.004300	0.002500	0.000100	0.002200

5.0 Energy Detail

Historical Energy Use: N

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

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	154.1419	154.1419	0.0130	1.5800e-003	154.9371
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	154.1419	154.1419	0.0130	1.5800e-003	154.9371
NaturalGas Mitigated	0.0141	0.1207	0.0514	7.7000e-004		9.7600e-003	9.7600e-003		9.7600e-003	9.7600e-003	0.0000	139.8181	139.8181	2.6800e-003	2.5600e-003	140.6490
NaturalGas Unmitigated	0.0141	0.1207	0.0514	7.7000e-004		9.7600e-003	9.7600e-003		9.7600e-003	9.7600e-003	0.0000	139.8181	139.8181	2.6800e-003	2.5600e-003	140.6490

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	2.62009e+006	0.0141	0.1207	0.0514	7.7000e-004		9.7600e-003	9.7600e-003		9.7600e-003	9.7600e-003	0.0000	139.8181	139.8181	2.6800e-003	2.5600e-003	140.6490
Total		**0.0141**	**0.1207**	**0.0514**	**7.7000e-004**		**9.7600e-003**	**9.7600e-003**		**9.7600e-003**	**9.7600e-003**	**0.0000**	**139.8181**	**139.8181**	**2.6800e-003**	**2.5600e-003**	**140.6490**

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

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	2.62009e+006	0.0141	0.1207	0.0514	7.7000e-004		9.7600e-003	9.7600e-003		9.7600e-003	9.7600e-003	0.0000	139.8181	139.8181	2.6800e-003	2.5600e-003	140.6490
Total		**0.0141**	**0.1207**	**0.0514**	**7.7000e-004**		**9.7600e-003**	**9.7600e-003**		**9.7600e-003**	**9.7600e-003**	**0.0000**	**139.8181**	**139.8181**	**2.6800e-003**	**2.5600e-003**	**140.6490**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	869162	154.1419	0.0130	1.5800e-003	154.9371
Total		**154.1419**	**0.0130**	**1.5800e-003**	**154.9371**

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

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	869162	154.1419	0.0130	1.5800e-003	154.9371
Total		**154.1419**	**0.0130**	**1.5800e-003**	**154.9371**

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

	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	2.7139	9.3100e-003	0.8086	4.0000e-005		4.4900e-003	4.4900e-003		4.4900e-003	4.4900e-003	0.0000	1.3220	1.3220	1.2700e-003	0.0000	1.3537
Unmitigated	2.7187	0.0501	0.8259	3.0000e-004		7.7800e-003	7.7800e-003		7.7800e-003	7.7800e-003	0.0000	48.5416	48.5416	2.1700e-003	8.7000e-004	48.8539

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

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.5212					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.1685					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	4.7700e-003	0.0408	0.0174	2.6000e-004		3.3000e-003	3.3000e-003		3.3000e-003	3.3000e-003	0.0000	47.2196	47.2196	9.1000e-004	8.7000e-004	47.5002
Landscaping	0.0243	9.3100e-003	0.8086	4.0000e-005		4.4900e-003	4.4900e-003		4.4900e-003	4.4900e-003	0.0000	1.3220	1.3220	1.2700e-003	0.0000	1.3537
Total	**2.7187**	**0.0501**	**0.8259**	**3.0000e-004**		**7.7900e-003**	**7.7900e-003**		**7.7900e-003**	**7.7900e-003**	**0.0000**	**48.5417**	**48.5417**	**2.1800e-003**	**8.7000e-004**	**48.8539**

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

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.5212					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.1685					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0243	9.3100e-003	0.8086	4.0000e-005		4.4900e-003	4.4900e-003		4.4900e-003	4.4900e-003	0.0000	1.3220	1.3220	1.2700e-003	0.0000	1.3537
Total	**2.7139**	**9.3100e-003**	**0.8086**	**4.0000e-005**		**4.4900e-003**	**4.4900e-003**		**4.4900e-003**	**4.4900e-003**	**0.0000**	**1.3220**	**1.3220**	**1.2700e-003**	**0.0000**	**1.3537**

7.0 Water Detail

7.1 Mitigation Measures Water

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

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	11.8471	0.2322	5.5600e-003	19.3102
Unmitigated	11.8471	0.2322	5.5600e-003	19.3102

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	7.10179 / 4.47721	11.8471	0.2322	5.5600e-003	19.3102
Total		**11.8471**	**0.2322**	**5.5600e-003**	**19.3102**

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

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	7.10179 / 4.47721	11.8471	0.2322	5.5600e-003	19.3102
Total		**11.8471**	**0.2322**	**5.5600e-003**	**19.3102**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	22.7999	1.3474	0.0000	56.4859
Unmitigated	22.7999	1.3474	0.0000	56.4859

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

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	112.32	22.7999	1.3474	0.0000	56.4859
Total		**22.7999**	**1.3474**	**0.0000**	**56.4859**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	112.32	22.7999	1.3474	0.0000	56.4859
Total		**22.7999**	**1.3474**	**0.0000**	**56.4859**

9.0 Operational Offroad

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

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Summers Pointe 2005 BAU - Kings County, Annual

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

Summers Pointe 2005 BAU

Kings County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	109.00	Dwelling Unit	20.08	555,246.00	312

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	37
Climate Zone	3			**Operational Year**	2005
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acerage and Square Feet Defined

Construction Phase -

Off-road Equipment -

Trips and VMT -

On-road Fugitive Dust -

Demolition -

Grading -

Architectural Coating -

Road Dust -

Woodstoves -

Consumer Products -

Summers Pointe 2005 BAU - Kings County, Annual

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

Area Coating -

Landscape Equipment -

Energy Use -

Water And Wastewater -

Solid Waste -

Land Use Change -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Fleet Mix -

Vehicle Trips -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	150.00
tblLandUse	LandUseSquareFeet	196,200.00	555,246.00
tblLandUse	LotAcreage	35.39	20.08

2.0 Emissions Summary

Summers Pointe 2005 BAU - Kings County, Annual

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

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2003	1.4147	8.2799	4.9083	0.0505	0.3054	0.5648	0.8701	0.1269	0.5640	0.6909	0.0000	494.3988	494.3988	0.1135	0.0116	500.6994
2004	6.0651	4.6239	2.8197	0.0288	0.0321	0.3377	0.3699	8.6800e-003	0.3372	0.3458	0.0000	282.4559	282.4559	0.0683	8.1600e-003	286.5964
Maximum	**6.0651**	**8.2799**	**4.9083**	**0.0505**	**0.3054**	**0.5648**	**0.8701**	**0.1269**	**0.5640**	**0.6909**	**0.0000**	**494.3988**	**494.3988**	**0.1135**	**0.0116**	**500.6994**

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					
2003	1.4147	8.2799	4.9083	0.0505	0.3054	0.5648	0.8701	0.1269	0.5640	0.6909	0.0000	494.3983	494.3983	0.1135	0.0116	500.6989
2004	6.0651	4.6239	2.8197	0.0288	0.0321	0.3377	0.3699	8.6800e-003	0.3372	0.3458	0.0000	282.4557	282.4557	0.0683	8.1600e-003	286.5961
Maximum	**6.0651**	**8.2799**	**4.9083**	**0.0505**	**0.3054**	**0.5648**	**0.8701**	**0.1269**	**0.5640**	**0.6909**	**0.0000**	**494.3983**	**494.3983**	**0.1135**	**0.0116**	**500.6989**

Summers Pointe 2005 BAU - Kings County, Annual

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

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2003**	**3-31-2003**	3.4898	3.4898
2	**4-1-2003**	**6-30-2003**	2.0465	2.0465
3	**7-1-2003**	**9-30-2003**	2.0689	2.0689
4	**10-1-2003**	**12-31-2003**	2.0822	2.0822
5	**1-1-2004**	**3-31-2004**	2.0595	2.0595
6	**4-1-2004**	**6-30-2004**	2.0465	2.0465
7	**7-1-2004**	**9-30-2004**	6.5928	6.5928
		Highest	6.5928	6.5928

Summers Pointe 2005 BAU - Kings County, Annual

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.4917	0.1142	4.6723	0.0124		0.6135	0.6135		0.6135	0.6135	81.1779	48.5416	129.7195	0.3825	8.7000e-004	139.5403
Energy	0.0141	0.1207	0.0514	7.7000e-004		9.7600e-003	9.7600e-003		9.7600e-003	9.7600e-003	0.0000	293.9601	293.9601	0.0157	4.1400e-003	295.5861
Mobile	1.8991	5.4332	21.3868	0.0368	1.0993	0.1175	1.2168	0.2944	0.1118	0.4062	0.0000	1,482.3351	1,482.3351	0.1988	0.1675	1,537.2099
Waste						0.0000	0.0000		0.0000	0.0000	22.7999	0.0000	22.7999	1.3474	0.0000	56.4859
Water						0.0000	0.0000		0.0000	0.0000	2.2531	9.5940	11.8471	0.2322	5.5600e-003	19.3102
Total	**5.4049**	**5.6681**	**26.1105**	**0.0500**	**1.0993**	**0.7408**	**1.8401**	**0.2944**	**0.7351**	**1.0294**	**106.2309**	**1,834.4309**	**1,940.6618**	**2.1766**	**0.1780**	**2,048.1325**

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

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.4917	0.1142	4.6723	0.0124		0.6135	0.6135		0.6135	0.6135	81.1779	48.5416	129.7195	0.3825	8.7000e-004	139.5403
Energy	0.0141	0.1207	0.0514	7.7000e-004		9.7600e-003	9.7600e-003		9.7600e-003	9.7600e-003	0.0000	293.9601	293.9601	0.0157	4.1400e-003	295.5861
Mobile	1.8991	5.4332	21.3868	0.0368	1.0993	0.1175	1.2168	0.2944	0.1118	0.4062	0.0000	1,482.3351	1,482.3351	0.1988	0.1675	1,537.2099
Waste						0.0000	0.0000		0.0000	0.0000	22.7999	0.0000	22.7999	1.3474	0.0000	56.4859
Water						0.0000	0.0000		0.0000	0.0000	2.2531	9.5940	11.8471	0.2322	5.5600e-003	19.3102
Total	**5.4049**	**5.6681**	**26.1105**	**0.0500**	**1.0993**	**0.7408**	**1.8401**	**0.2944**	**0.7351**	**1.0294**	**106.2309**	**1,834.4309**	**1,940.6618**	**2.1766**	**0.1780**	**2,048.1325**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2003	1/14/2003	5	10	
2	Grading	Grading	1/15/2003	3/4/2003	5	35	
3	Building Construction	Building Construction	3/5/2003	8/3/2004	5	370	

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

4	Paving	Paving	8/4/2004	8/31/2004	5	20	
5	Architectural Coating	Architectural Coating	9/1/2004	9/28/2004	5	20	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 105

Acres of Paving: 0

Residential Indoor: 1,124,373; Residential Outdoor: 374,791; 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
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

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

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	39.00	12.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2003

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					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0561	0.4016	0.1539	2.2500e-003		0.0252	0.0252		0.0252	0.0252	0.0000	20.0023	20.0023	4.5700e-003	0.0000	20.1165
Total	**0.0561**	**0.4016**	**0.1539**	**2.2500e-003**	**0.0983**	**0.0252**	**0.1235**	**0.0505**	**0.0252**	**0.0758**	**0.0000**	**20.0023**	**20.0023**	**4.5700e-003**	**0.0000**	**20.1165**

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

3.2 Site Preparation - 2003

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0600e-003	2.8100e-003	0.0198	1.0000e-005	7.2000e-004	3.0000e-005	7.5000e-004	1.9000e-004	3.0000e-005	2.2000e-004	0.0000	0.8388	0.8388	1.6000e-004	1.3000e-004	0.8825
Total	**2.0600e-003**	**2.8100e-003**	**0.0198**	**1.0000e-005**	**7.2000e-004**	**3.0000e-005**	**7.5000e-004**	**1.9000e-004**	**3.0000e-005**	**2.2000e-004**	**0.0000**	**0.8388**	**0.8388**	**1.6000e-004**	**1.3000e-004**	**0.8825**

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					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0561	0.4016	0.1539	2.2500e-003		0.0252	0.0252		0.0252	0.0252	0.0000	20.0023	20.0023	4.5700e-003	0.0000	20.1164
Total	**0.0561**	**0.4016**	**0.1539**	**2.2500e-003**	**0.0983**	**0.0252**	**0.1235**	**0.0505**	**0.0252**	**0.0758**	**0.0000**	**20.0023**	**20.0023**	**4.5700e-003**	**0.0000**	**20.1164**

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

3.2 Site Preparation - 2003

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0600e-003	2.8100e-003	0.0198	1.0000e-005	7.2000e-004	3.0000e-005	7.5000e-004	1.9000e-004	3.0000e-005	2.2000e-004	0.0000	0.8388	0.8388	1.6000e-004	1.3000e-004	0.8825
Total	**2.0600e-003**	**2.8100e-003**	**0.0198**	**1.0000e-005**	**7.2000e-004**	**3.0000e-005**	**7.5000e-004**	**1.9000e-004**	**3.0000e-005**	**2.2000e-004**	**0.0000**	**0.8388**	**0.8388**	**1.6000e-004**	**1.3000e-004**	**0.8825**

3.3 Grading - 2003

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					0.1611	0.0000	0.1611	0.0639	0.0000	0.0639	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2646	2.1307	1.0772	0.0120		0.1124	0.1124		0.1124	0.1124	0.0000	114.5134	114.5134	0.0215	0.0000	115.0513
Total	**0.2646**	**2.1307**	**1.0772**	**0.0120**	**0.1611**	**0.1124**	**0.2734**	**0.0639**	**0.1124**	**0.1763**	**0.0000**	**114.5134**	**114.5134**	**0.0215**	**0.0000**	**115.0513**

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

3.3 Grading - 2003

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-003	0.0109	0.0772	5.0000e-005	2.8100e-003	1.2000e-004	2.9300e-003	7.5000e-004	1.1000e-004	8.6000e-004	0.0000	3.2622	3.2622	6.3000e-004	5.2000e-004	3.4320
Total	**8.0000e-003**	**0.0109**	**0.0772**	**5.0000e-005**	**2.8100e-003**	**1.2000e-004**	**2.9300e-003**	**7.5000e-004**	**1.1000e-004**	**8.6000e-004**	**0.0000**	**3.2622**	**3.2622**	**6.3000e-004**	**5.2000e-004**	**3.4320**

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					0.1611	0.0000	0.1611	0.0639	0.0000	0.0639	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2646	2.1307	1.0772	0.0120		0.1124	0.1124		0.1124	0.1124	0.0000	114.5133	114.5133	0.0215	0.0000	115.0511
Total	**0.2646**	**2.1307**	**1.0772**	**0.0120**	**0.1611**	**0.1124**	**0.2734**	**0.0639**	**0.1124**	**0.1763**	**0.0000**	**114.5133**	**114.5133**	**0.0215**	**0.0000**	**115.0511**

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

3.3 Grading - 2003

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-003	0.0109	0.0772	5.0000e-005	2.8100e-003	1.2000e-004	2.9300e-003	7.5000e-004	1.1000e-004	8.6000e-004	0.0000	3.2622	3.2622	6.3000e-004	5.2000e-004	3.4320
Total	**8.0000e-003**	**0.0109**	**0.0772**	**5.0000e-005**	**2.8100e-003**	**1.2000e-004**	**2.9300e-003**	**7.5000e-004**	**1.1000e-004**	**8.6000e-004**	**0.0000**	**3.2622**	**3.2622**	**6.3000e-004**	**5.2000e-004**	**3.4320**

3.4 Building Construction - 2003

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.9423	5.2123	2.4148	0.0328		0.4098	0.4098		0.4098	0.4098	0.0000	283.8899	283.8899	0.0767	0.0000	285.8084
Total	**0.9423**	**5.2123**	**2.4148**	**0.0328**		**0.4098**	**0.4098**		**0.4098**	**0.4098**	**0.0000**	**283.8899**	**283.8899**	**0.0767**	**0.0000**	**285.8084**

Summers Pointe 2005 BAU - Kings County, Annual

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

3.4 Building Construction - 2003

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	0.0453	0.3901	0.2369	2.7500e-003	8.6300e-003	0.0159	0.0245	2.4900e-003	0.0152	0.0177	0.0000	32.6342	32.6342	2.2400e-003	4.7500e-003	34.1068
Worker	0.0963	0.1315	0.9285	6.2000e-004	0.0338	1.4100e-003	0.0353	8.9900e-003	1.3100e-003	0.0103	0.0000	39.2579	39.2579	7.6200e-003	6.2200e-003	41.3019
Total	**0.1416**	**0.5216**	**1.1654**	**3.3700e-003**	**0.0425**	**0.0173**	**0.0597**	**0.0115**	**0.0165**	**0.0280**	**0.0000**	**71.8922**	**71.8922**	**9.8600e-003**	**0.0110**	**75.4087**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.9423	5.2123	2.4148	0.0328		0.4098	0.4098		0.4098	0.4098	0.0000	283.8896	283.8896	0.0767	0.0000	285.8081
Total	**0.9423**	**5.2123**	**2.4148**	**0.0328**		**0.4098**	**0.4098**		**0.4098**	**0.4098**	**0.0000**	**283.8896**	**283.8896**	**0.0767**	**0.0000**	**285.8081**

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

3.4 Building Construction - 2003

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	0.0453	0.3901	0.2369	2.7500e-003	8.6300e-003	0.0159	0.0245	2.4900e-003	0.0152	0.0177	0.0000	32.6342	32.6342	2.2400e-003	4.7500e-003	34.1068
Worker	0.0963	0.1315	0.9285	6.2000e-004	0.0338	1.4100e-003	0.0353	8.9900e-003	1.3100e-003	0.0103	0.0000	39.2579	39.2579	7.6200e-003	6.2200e-003	41.3019
Total	**0.1416**	**0.5216**	**1.1654**	**3.3700e-003**	**0.0425**	**0.0173**	**0.0597**	**0.0115**	**0.0165**	**0.0280**	**0.0000**	**71.8922**	**71.8922**	**9.8600e-003**	**0.0110**	**75.4087**

3.4 Building Construction - 2004

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.6718	3.7162	1.7216	0.0234		0.2922	0.2922		0.2922	0.2922	0.0000	202.4030	202.4030	0.0547	0.0000	203.7708
Total	**0.6718**	**3.7162**	**1.7216**	**0.0234**		**0.2922**	**0.2922**		**0.2922**	**0.2922**	**0.0000**	**202.4030**	**202.4030**	**0.0547**	**0.0000**	**203.7708**

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

3.4 Building Construction - 2004

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	0.0323	0.2781	0.1689	1.9600e-003	6.1500e-003	0.0113	0.0175	1.7800e-003	0.0108	0.0126	0.0000	23.2670	23.2670	1.6000e-003	3.3900e-003	24.3169
Worker	0.0687	0.0938	0.6620	4.4000e-004	0.0241	1.0000e-003	0.0251	6.4100e-003	9.3000e-004	7.3400e-003	0.0000	27.9895	27.9895	5.4300e-003	4.4300e-003	29.4468
Total	**0.1010**	**0.3719**	**0.8309**	**2.4000e-003**	**0.0303**	**0.0123**	**0.0426**	**8.1900e-003**	**0.0117**	**0.0199**	**0.0000**	**51.2565**	**51.2565**	**7.0300e-003**	**7.8200e-003**	**53.7636**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.6718	3.7162	1.7216	0.0234		0.2922	0.2922		0.2922	0.2922	0.0000	202.4027	202.4027	0.0547	0.0000	203.7706
Total	**0.6718**	**3.7162**	**1.7216**	**0.0234**		**0.2922**	**0.2922**		**0.2922**	**0.2922**	**0.0000**	**202.4027**	**202.4027**	**0.0547**	**0.0000**	**203.7706**

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

3.4 Building Construction - 2004

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	0.0323	0.2781	0.1689	1.9600e-003	6.1500e-003	0.0113	0.0175	1.7800e-003	0.0108	0.0126	0.0000	23.2670	23.2670	1.6000e-003	3.3900e-003	24.3169
Worker	0.0687	0.0938	0.6620	4.4000e-004	0.0241	1.0000e-003	0.0251	6.4100e-003	9.3000e-004	7.3400e-003	0.0000	27.9895	27.9895	5.4300e-003	4.4300e-003	29.4468
Total	**0.1010**	**0.3719**	**0.8309**	**2.4000e-003**	**0.0303**	**0.0123**	**0.0426**	**8.1900e-003**	**0.0117**	**0.0199**	**0.0000**	**51.2565**	**51.2565**	**7.0300e-003**	**7.8200e-003**	**53.7636**

3.5 Paving - 2004

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0668	0.4778	0.1940	2.7000e-003		0.0291	0.0291		0.0291	0.0291	0.0000	24.0995	24.0995	5.4400e-003	0.0000	24.2355
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0668**	**0.4778**	**0.1940**	**2.7000e-003**		**0.0291**	**0.0291**		**0.0291**	**0.0291**	**0.0000**	**24.0995**	**24.0995**	**5.4400e-003**	**0.0000**	**24.2355**

Summers Pointe 2005 BAU - Kings County, Annual

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

3.5 Paving - 2004

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	3.4300e-003	4.6800e-003	0.0331	2.0000e-005	1.2100e-003	5.0000e-005	1.2600e-003	3.2000e-004	5.0000e-005	3.7000e-004	0.0000	1.3981	1.3981	2.7000e-004	2.2000e-004	1.4709
Total	**3.4300e-003**	**4.6800e-003**	**0.0331**	**2.0000e-005**	**1.2100e-003**	**5.0000e-005**	**1.2600e-003**	**3.2000e-004**	**5.0000e-005**	**3.7000e-004**	**0.0000**	**1.3981**	**1.3981**	**2.7000e-004**	**2.2000e-004**	**1.4709**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0668	0.4778	0.1940	2.7000e-003		0.0291	0.0291		0.0291	0.0291	0.0000	24.0995	24.0995	5.4400e-003	0.0000	24.2355
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0668**	**0.4778**	**0.1940**	**2.7000e-003**		**0.0291**	**0.0291**		**0.0291**	**0.0291**	**0.0000**	**24.0995**	**24.0995**	**5.4400e-003**	**0.0000**	**24.2355**

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

3.5 Paving - 2004

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	3.4300e-003	4.6800e-003	0.0331	2.0000e-005	1.2100e-003	5.0000e-005	1.2600e-003	3.2000e-004	5.0000e-005	3.7000e-004	0.0000	1.3981	1.3981	2.7000e-004	2.2000e-004	1.4709
Total	**3.4300e-003**	**4.6800e-003**	**0.0331**	**2.0000e-005**	**1.2100e-003**	**5.0000e-005**	**1.2600e-003**	**3.2000e-004**	**5.0000e-005**	**3.7000e-004**	**0.0000**	**1.3981**	**1.3981**	**2.7000e-004**	**2.2000e-004**	**1.4709**

3.6 Architectural Coating - 2004

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					
Archit. Coating	5.2115					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.7700e-003	0.0509	0.0225	3.0000e-004		4.1400e-003	4.1400e-003		4.1400e-003	4.1400e-003	0.0000	2.5533	2.5533	7.1000e-004	0.0000	2.5711
Total	**5.2202**	**0.0509**	**0.0225**	**3.0000e-004**		**4.1400e-003**	**4.1400e-003**		**4.1400e-003**	**4.1400e-003**	**0.0000**	**2.5533**	**2.5533**	**7.1000e-004**	**0.0000**	**2.5711**

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

3.6 Architectural Coating - 2004

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	1.8300e-003	2.5000e-003	0.0176	1.0000e-005	6.4000e-004	3.0000e-005	6.7000e-004	1.7000e-004	2.0000e-005	2.0000e-004	0.0000	0.7456	0.7456	1.4000e-004	1.2000e-004	0.7845
Total	**1.8300e-003**	**2.5000e-003**	**0.0176**	**1.0000e-005**	**6.4000e-004**	**3.0000e-005**	**6.7000e-004**	**1.7000e-004**	**2.0000e-005**	**2.0000e-004**	**0.0000**	**0.7456**	**0.7456**	**1.4000e-004**	**1.2000e-004**	**0.7845**

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					
Archit. Coating	5.2115					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.7700e-003	0.0509	0.0225	3.0000e-004		4.1400e-003	4.1400e-003		4.1400e-003	4.1400e-003	0.0000	2.5533	2.5533	7.1000e-004	0.0000	2.5711
Total	**5.2202**	**0.0509**	**0.0225**	**3.0000e-004**		**4.1400e-003**	**4.1400e-003**		**4.1400e-003**	**4.1400e-003**	**0.0000**	**2.5533**	**2.5533**	**7.1000e-004**	**0.0000**	**2.5711**

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

3.6 Architectural Coating - 2004

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	1.8300e-003	2.5000e-003	0.0176	1.0000e-005	6.4000e-004	3.0000e-005	6.7000e-004	1.7000e-004	2.0000e-005	2.0000e-004	0.0000	0.7456	0.7456	1.4000e-004	1.2000e-004	0.7845
Total	**1.8300e-003**	**2.5000e-003**	**0.0176**	**1.0000e-005**	**6.4000e-004**	**3.0000e-005**	**6.7000e-004**	**1.7000e-004**	**2.0000e-005**	**2.0000e-004**	**0.0000**	**0.7456**	**0.7456**	**1.4000e-004**	**1.2000e-004**	**0.7845**

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.8991	5.4332	21.3868	0.0368	1.0993	0.1175	1.2168	0.2944	0.1118	0.4062	0.0000	1,482.3351	1,482.3351	0.1988	0.1675	1,537.2099
Unmitigated	1.8991	5.4332	21.3868	0.0368	1.0993	0.1175	1.2168	0.2944	0.1118	0.4062	0.0000	1,482.3351	1,482.3351	0.1988	0.1675	1,537.2099

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	1,028.96	1,039.86	931.95	2,909,930	2,909,930
Total	1,028.96	1,039.86	931.95	2,909,930	2,909,930

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
Single Family Housing	10.80	7.30	7.50	42.30	19.60	38.10	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.469644	0.076968	0.160836	0.173619	0.042235	0.005594	0.011165	0.028022	0.000693	0.000053	0.021206	0.001062	0.008904

Summers Pointe 2005 BAU - Kings County, Annual

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

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	154.1419	154.1419	0.0130	1.5800e-003	154.9371
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	154.1419	154.1419	0.0130	1.5800e-003	154.9371
NaturalGas Mitigated	0.0141	0.1207	0.0514	7.7000e-004		9.7600e-003	9.7600e-003		9.7600e-003	9.7600e-003	0.0000	139.8181	139.8181	2.6800e-003	2.5600e-003	140.6490
NaturalGas Unmitigated	0.0141	0.1207	0.0514	7.7000e-004		9.7600e-003	9.7600e-003		9.7600e-003	9.7600e-003	0.0000	139.8181	139.8181	2.6800e-003	2.5600e-003	140.6490

Summers Pointe 2005 BAU - Kings County, Annual

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	2.62009e+006	0.0141	0.1207	0.0514	7.7000e-004		9.7600e-003	9.7600e-003		9.7600e-003	9.7600e-003	0.0000	139.8181	139.8181	2.6800e-003	2.5600e-003	140.6490
Total		**0.0141**	**0.1207**	**0.0514**	**7.7000e-004**		**9.7600e-003**	**9.7600e-003**		**9.7600e-003**	**9.7600e-003**	**0.0000**	**139.8181**	**139.8181**	**2.6800e-003**	**2.5600e-003**	**140.6490**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	2.62009e+006	0.0141	0.1207	0.0514	7.7000e-004		9.7600e-003	9.7600e-003		9.7600e-003	9.7600e-003	0.0000	139.8181	139.8181	2.6800e-003	2.5600e-003	140.6490
Total		**0.0141**	**0.1207**	**0.0514**	**7.7000e-004**		**9.7600e-003**	**9.7600e-003**		**9.7600e-003**	**9.7600e-003**	**0.0000**	**139.8181**	**139.8181**	**2.6800e-003**	**2.5600e-003**	**140.6490**

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

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	869162	154.1419	0.0130	1.5800e-003	154.9371
Total		**154.1419**	**0.0130**	**1.5800e-003**	**154.9371**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	869162	154.1419	0.0130	1.5800e-003	154.9371
Total		**154.1419**	**0.0130**	**1.5800e-003**	**154.9371**

6.0 Area Detail

6.1 Mitigation Measures Area

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.4917	0.1142	4.6723	0.0124		0.6135	0.6135		0.6135	0.6135	81.1779	48.5416	129.7195	0.3825	8.7000e-004	139.5403
Unmitigated	3.4917	0.1142	4.6723	0.0124		0.6135	0.6135		0.6135	0.6135	81.1779	48.5416	129.7195	0.3825	8.7000e-004	139.5403

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	0.8686					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.1685					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.4140	0.1014	3.7337	0.0124		0.6096	0.6096		0.6096	0.6096	81.1779	47.2196	128.3975	0.3804	8.7000e-004	138.1653
Landscaping	0.0406	0.0128	0.9386	4.0000e-005		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	1.3220	1.3220	2.1200e-003	0.0000	1.3750
Total	**3.4917**	**0.1142**	**4.6723**	**0.0124**		**0.6135**	**0.6135**		**0.6135**	**0.6135**	**81.1779**	**48.5417**	**129.7195**	**0.3825**	**8.7000e-004**	**139.5403**

Summers Pointe 2005 BAU - Kings County, Annual

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

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.8686					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.1685					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.4140	0.1014	3.7337	0.0124		0.6096	0.6096		0.6096	0.6096	81.1779	47.2196	128.3975	0.3804	8.7000e-004	138.1653
Landscaping	0.0406	0.0128	0.9386	4.0000e-005		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	1.3220	1.3220	2.1200e-003	0.0000	1.3750
Total	**3.4917**	**0.1142**	**4.6723**	**0.0124**		**0.6135**	**0.6135**		**0.6135**	**0.6135**	**81.1779**	**48.5417**	**129.7195**	**0.3825**	**8.7000e-004**	**139.5403**

7.0 Water Detail

7.1 Mitigation Measures Water

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

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	11.8471	0.2322	5.5600e-003	19.3102
Unmitigated	11.8471	0.2322	5.5600e-003	19.3102

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	7.10179 / 4.47721	11.8471	0.2322	5.5600e-003	19.3102
Total		**11.8471**	**0.2322**	**5.5600e-003**	**19.3102**

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

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	7.10179 / 4.47721	11.8471	0.2322	5.5600e-003	19.3102
Total		**11.8471**	**0.2322**	**5.5600e-003**	**19.3102**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	22.7999	1.3474	0.0000	56.4859
Unmitigated	22.7999	1.3474	0.0000	56.4859

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

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	112.32	22.7999	1.3474	0.0000	56.4859
Total		**22.7999**	**1.3474**	**0.0000**	**56.4859**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	112.32	22.7999	1.3474	0.0000	56.4859
Total		**22.7999**	**1.3474**	**0.0000**	**56.4859**

9.0 Operational Offroad

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

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix B

Biological Evaluation

1401 Fulton Street, Suite 918 Fresno, CA 93721
www.soarhere.com • 559.547.8884

Biological Resource Assessment

Summer Point Tract #936 Subdivision Development Project
Assessor Parcel Number 017-100-012 and 017-100-013
Kings County, CA

Prepared for

4CREEKS

324 South Santa Fe Street, Suite A
Visalia, CA 93292

Prepared by

1401 Fulton St, Suite 918
Fresno, CA 93721

March 3, 2022

Executive Summary

As lead agency, the County of Kings has tasked 4Creeks, Inc. (4Creeks) to provide a Biological Resource Assessment (BRA) and Initial Study, for a Subdivision Development Project (Project) just outside the city of Armona, (City) in accordance with the California Environmental Quality Act (CEQA) prior to implementation of the proposed Project. 4Creeks has tasked Soar Environmental Consulting Inc. (Soar Environmental) to provide the BRA. The proposed subdivision development comprises 109 lots on 20 acres off Crocus Way to the South and Southeast of Lacy Boulevard and 14th Avenue. The Project site is comprised of Assessor Parcel Numbers 017-100-012 and 017-100-013. Soar Environmental prepared this Habitat Assessment Report for 4Creeks in support of California Environmental Quality Act requirements.

The objectives of this Assessment were to: 1) provide a general characterization of biological resources for the property; 2) inventory plant and wildlife species; 3) evaluate the potential for federal or state listed plants and animals species afforded other special regulatory protection; and 4) describe the property's sensitive biological resources and applicable federal, state, and local land use policies.

This BRA provides information about the biological resources within the Project area. Prior to field activities, Soar Environmental researched the California Natural Diversity Database (CNDDB) and the United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC), and California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California, to compile a list of special-status species that could potentially be present in the vicinity of the Project area. Soar Environmental researched specific species and habitat requirements for the species noted in the CNDDB, IPaC and CNPS databases and included species listing status, and proximal species observations in this report.

No listed species were observed during the habitat assessment of the Project site, and no suitable habitat features, or conditions were observed that would be conducive for any of the special status species identified in this report. Due to habitat quality and proximity of historical occurrences, all species identified in the data records search were found to be unlikely to occur within the vicinity of the Project site. Based on the findings of this assessment, the proposed development of this property is unlikely to adversely affect any special-status species and is likely to have no effect for CEQA considerations. Soar Environmental Consulting, Inc. recommends that if any special status species are observed during construction activities, work be stopped immediately and CDFW is contacted.

Contents

1. Introduction

The proposed subdivision development comprises 109 lots on 20 acres of land on Assessor Parcel Numbers (APN) 017-100-012 and 017-100-013 just outside the City of Armona, Kings County California. 4Creeks has tasked Soar Environmental Consulting (Soar Environmental) with providing a Biological Resource Assessment (BRA) as part of an Initial Study (IS) in accordance with the California Environmental Quality Act (CEQA). The Project site is a former orchard on which an apartment complex would be constructed. Soar Environmental prepared this BRA for 4Creeks in support of CEQA requirements.

Based on a review of CNDDB database it was determined that a Habitat Assessment was necessary to search for the potential presence or suitable habitat for the 9 following State listed sensitive wildlife species: blunt-nosed leopard lizard, California tiger salamander, San Joaquin kit fox, Tipton kangaroo rat, Swainson's hawk, tricolored blackbird, western snowy plover, vernal pool fairy shrimp, and vernal pool tadpole shrimp.

A review of the USFWS IPaC database indicated a Habitat Assessment should also include analysis for the 8 additional Federally listed special-status species: Fresno kangaroo rat, giant kangaroo rat, giant garter, California red-legged frog, delta smelt, monarch butterfly, conservancy fairy shrimp, and flowering plants species Hoover's spurge.

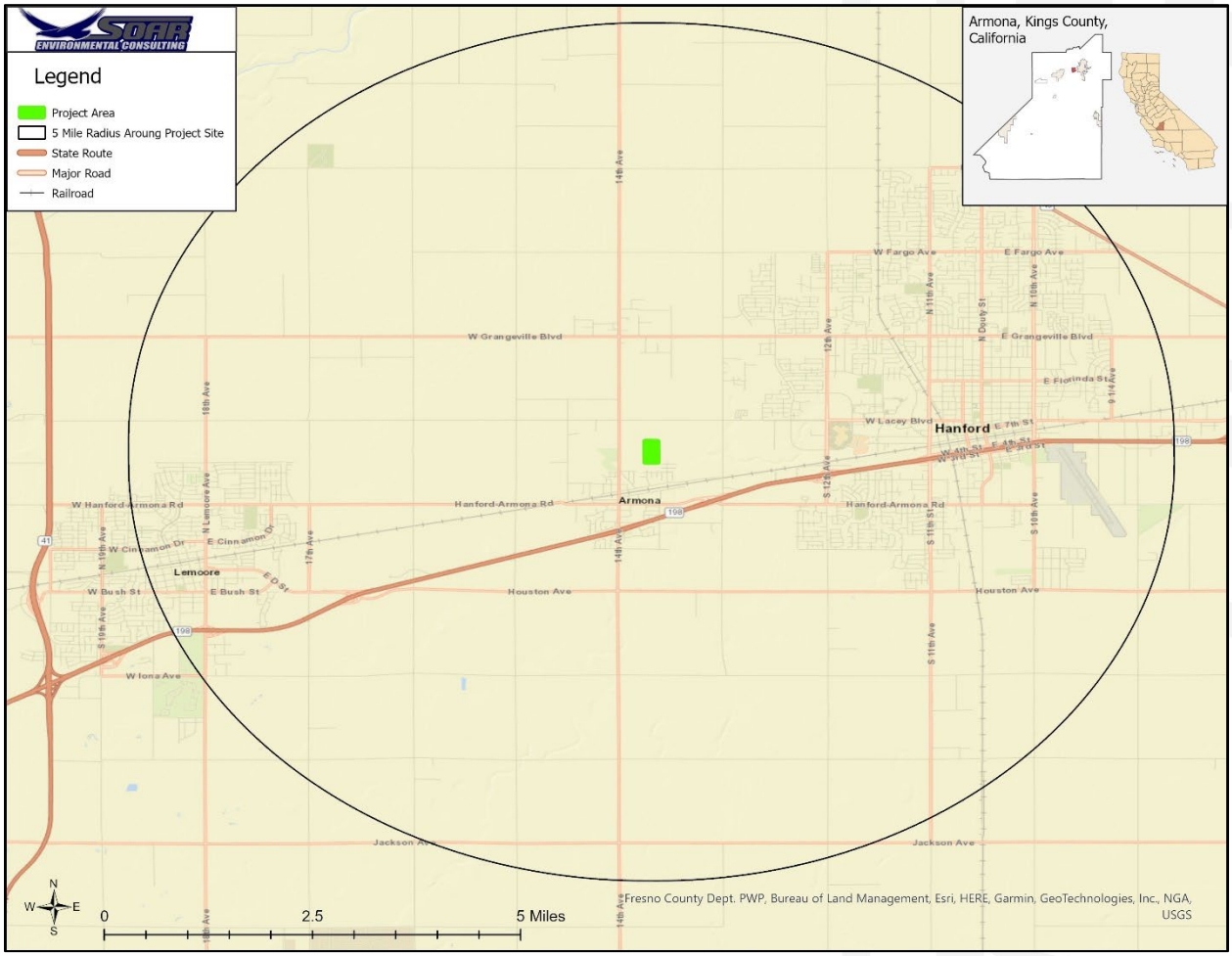
A review of the CNPS Inventory of Rare and Endangered Plants of California identified the following 6 sensitive plant species historically occurring in the vicinity of the Project site: California jewelflower, hairy Orcutt grass, Hartweg's golden sunburst, San Joaquin adobe sunburst, San Joaquin Valley Orcutt grass, and succulent owl's-clover.

A Habitat Assessment was conducted in the Project area on January 20, 2022, by Soar Environmental biologist Travis Albert. The purpose of the Habitat Assessment survey was to search for the presence of special-status species that have historically been observed within, or surrounding, the Project area. No special-status species were observed during the site visit.

1.1 Project Location

The Project site is located just outside the City of Armona, near Crocus Way to the South and Southeast of Lacy Boulevard and 14th Avenue in Kings County. The Project site is approximately 5.65 miles east of State Route (SR) 41, and 0.60 miles north of State Route (SR) 198. Located in the USGS *Hanford* 7.5-minute quadrangle in Township 18S, Range 21E, and NW ¼ of section 33. The Project site is a 20 acre property just outside the city limits, comprised of Assessor Parcel Numbers 017-100-012, and 017-100-013 (**Figure 1**).

Figure 1. Project Location



1.2 Environmental Setting

The Project site is in a residential and agricultural interface environment just outside the north boundary of the City (**Figure 1**). There are residential neighborhoods on the other side of a vacant lot to the south, and agricultural land to the north, east, and west. An irrigation canal runs north and south approximately 0.5 mile east and is surrounded by active agricultural fields. No other natural water features occur in the vicinity of the Project site. The topography of the area is flat, approximately 250 feet above mean sea level. The soil on the Project site is highly compacted except for where the rows of orchard trees are planted. There is a grove of eucalyptus trees next to the single-family residence in the northwest corner of the property. Other than orchard trees there are few other trees in the surrounding area. Powerlines run east and west along the southern boundary. No small mammal burrows or vernal pool features were observed in the vicinity of the Project site.

Figure 1 – Project Site Boundary

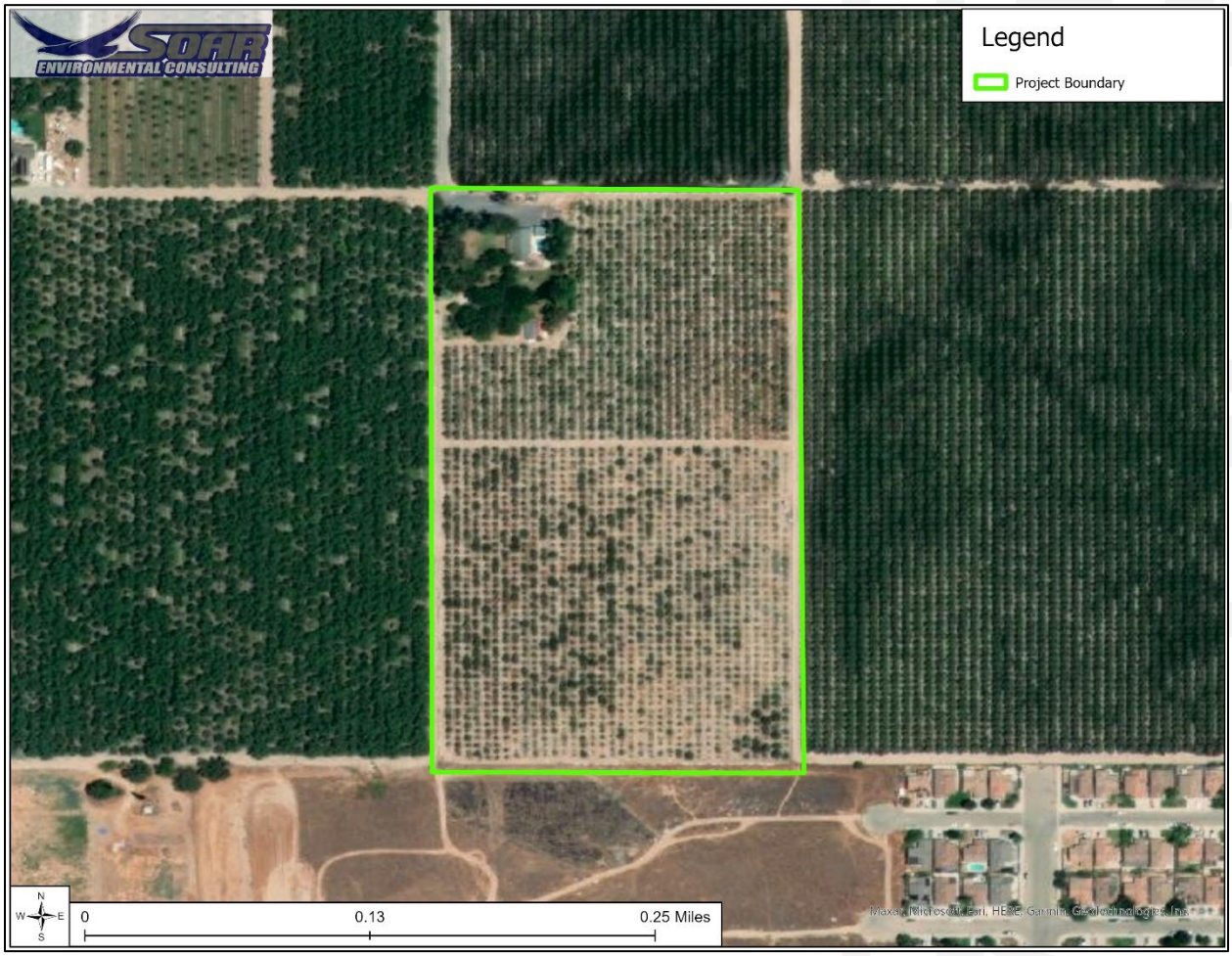
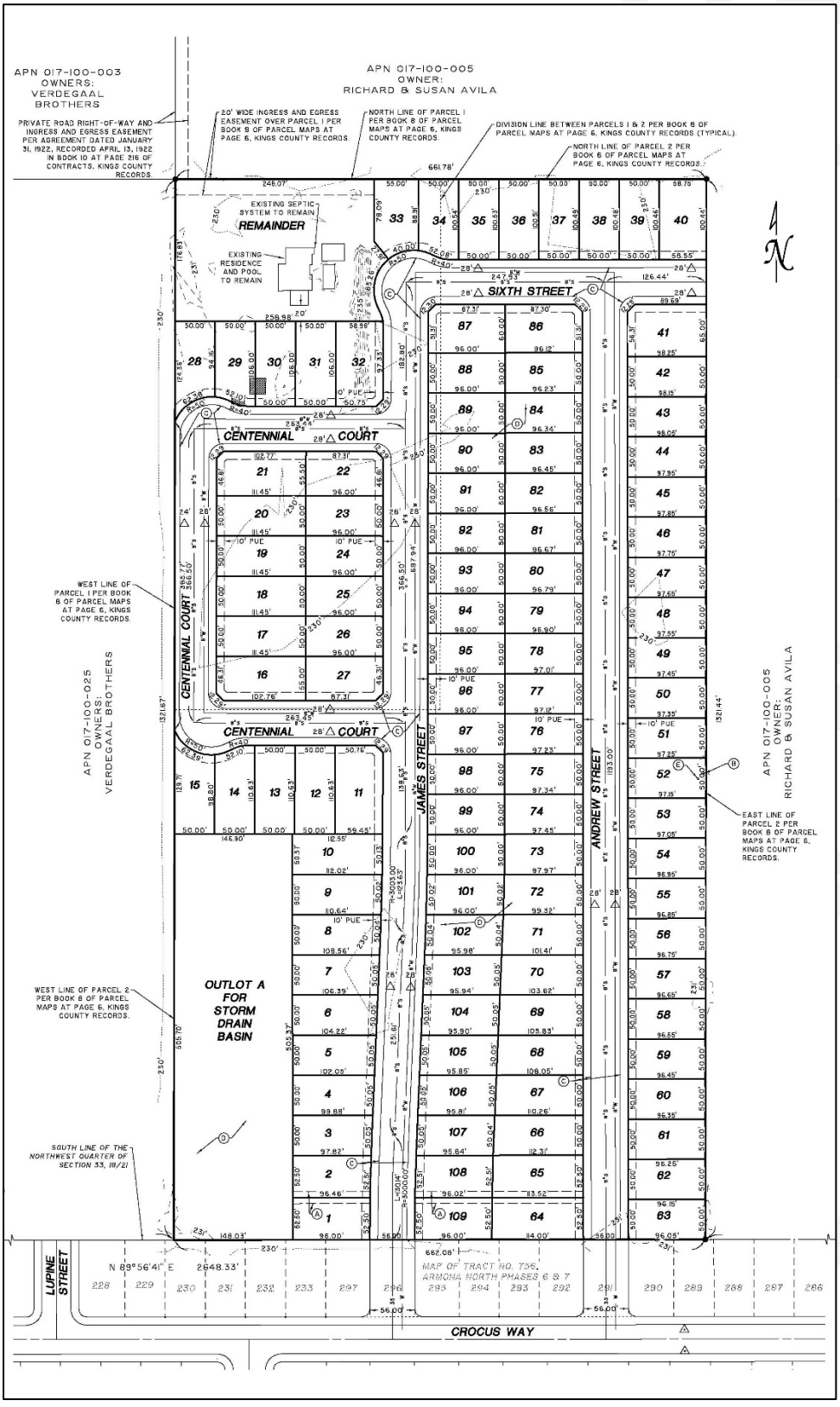


Figure 3 – Site Plan



2. Methods

2.1 Literature Review

Prior to performing the Habitat Assessment, Soar Environmental conducted a records search for threatened or endangered species that could potentially occur in the vicinity of the Project area. The records search included a review of the California Natural Diversity Database (CNDDB), the United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC), and California Native Plant Society (CNPS) Online Rare Plant Inventory. The area covered by the data records search included USGS 7.5 minute quadrangles of *Hanford, Burris Park, Guermsey, Laton, Lemoore, Remnoy, Riverdale, Stratford,* and *Waukena*. From these sources a list of special-status plant and animal species was generated. Proximal locations of special-status plant and animal species located within 5 miles of the Project site are shown in (**Figure 4**).

The CNDDB records search indicated 9 State-listed special-status wildlife species most likely to occur within or near the Project site would include:

- Blunt-nosed leopard lizard (*Gambelia sila*)
- California tiger salamander (*Ambystoma californiense*)
- San Joaquin kit fox (*Vulpes macrotis mutica*)
- Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*)
- Swainson's hawk (*Buteo swainsoni*)
- Tricolored blackbird (*Agelaius tricolor*)
- Western snowy plover (*Charadrius nivosus nivosus*)
- Vernal pool fairy shrimp (*Branchinecta lynchi*)
- Vernal pool tadpole shrimp (*Lepidurus packardi*)

The IPaC search revealed 6 additional Federally listed sensitive wildlife species likely to occur within or near the Project site include:

- Fresno kangaroo rat (*Dipodomys nitratoides exilis*)
- Giant kangaroo rat (*Dipodomys ingens*)
- Giant garter snake (*Thamnophis gigas*)
- California red-legged frog (*Rana draytonii*)
- Delta smelt (*Hypomesus transpacificus*)
- Monarch butterfly (*Danaus plexippus*)
- Conservancy fairy shrimp (*Branchinecta conservatio*)
- Hoover's spurge (*Chamaesyce hooveri*)

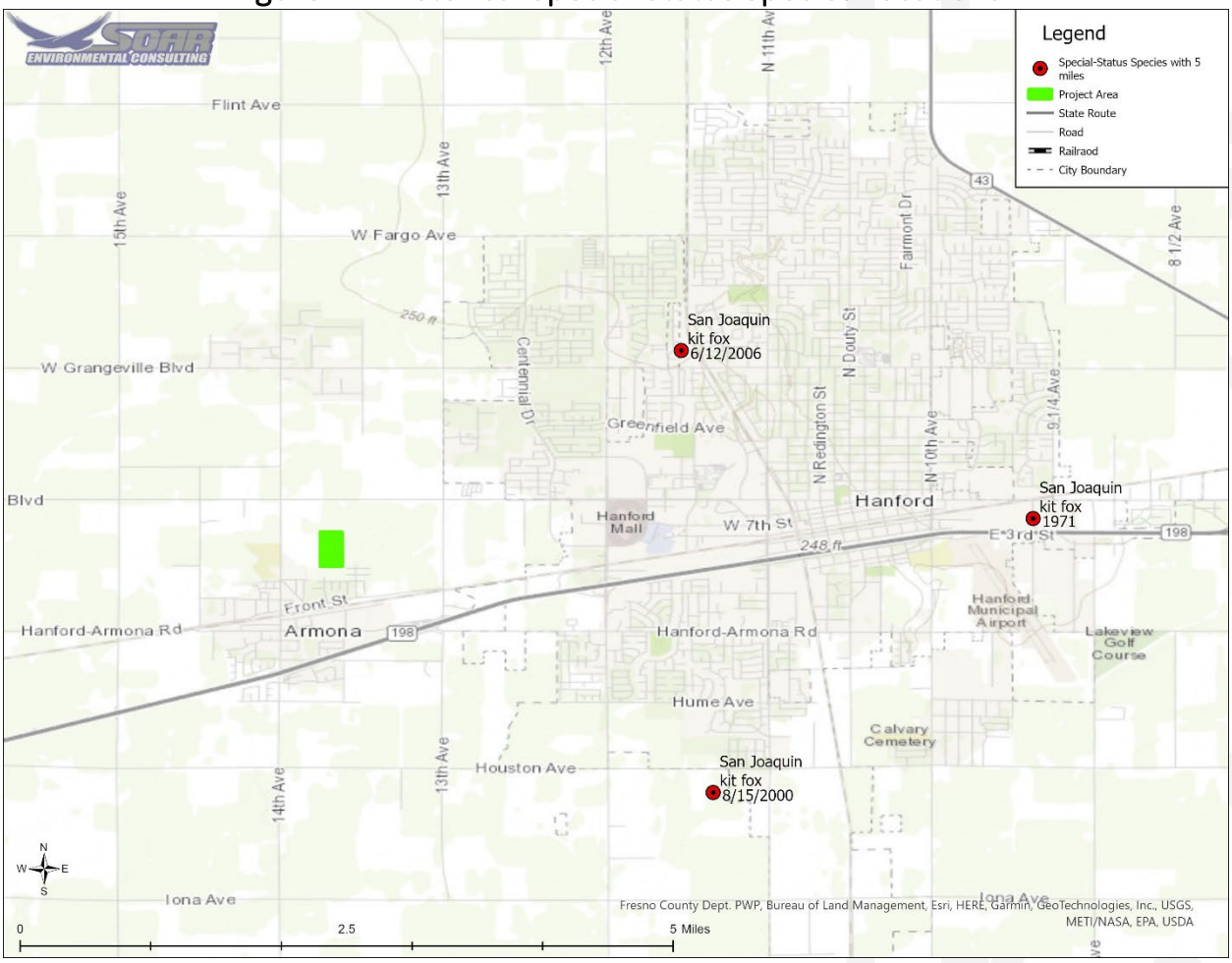
A search of the California Native Plant Society (CNPS) Online Rare Plant Inventory identified the following 6 special-status plant species likely to occur within or proximate to the Project site:

- California jewelflower (*Caulanthus californicus*)
- Hairy Orcutt grass (*Orcuttia pilosa*)
- Hartweg's golden sunburst (*Pseudobahia bahiifolia*)
- San Joaquin adobe sunburst (*Pseudobahia peirsonii*)

- San Joaquin Valley Orcutt grass (*Orcuttia inaequalis*)
- Succulent owl's-clover (*Castilleja campestris var. succulenta*)

The closest and most recent occurrences of special-status species from the data records search are shown in (**Figure 4**) below.

Figure 4 – Historical Special-Status Species Locations



2.2 Field Reconnaissance Methodology

On January 22, 2022, Soar Environmental biologist Travis Albert conducted a habitat assessment on the property for the above mentioned species. Walking the perimeter of the property, and meandering transects throughout the Project site, the surveyor searched for signs of vernal pools, bird nests, possible small mammal dens, identified vegetation, and looked for other signs of wildlife occupancy and suitable habitat. Survey efforts emphasized the search for special-status species that had documented

occurrences in the data records search of the CNDDB, IPaC, and CNPS databases. Photos were taken depicting the habitat and of the Project boundaries (**Appendix A**). After surveying the Project site, the surveyor drove the roads within 0.5 miles surrounding the Project footprint, searching for signs of special-status species, potentially active nests, and vernal pools. No active nests, small mammal burrows, vernal pools, or riparian habitats were observed. No special-status plant or wildlife species were observed during the Habitat Assessment.

3. Habitat Assessment Results

During the field reconnaissance, there were no observations of special-status plant or wildlife species. The Project site is in a residential and agricultural environment just north of the City. The surrounding area is an agricultural field, surrounded by other active agricultural fields, with the city of Armona and residential neighborhoods adjacent to the south. The soil is highly compacted from agricultural equipment except for where the rows of orchard trees are planted. There is a grove of eucalyptus trees next to the single-family residence in the northwest corner of the property. There were no nests or cavities observed in this tree grove and there were no other areas within the vicinity of the property with suitable nesting habitat. Powerline poles run east and west along the southern boundary. No raptor nests were observed on any of the powerline poles in the area, and no small mammal burrows or vernal pool features were observed in the vicinity of the Project site. No riparian areas, drainages, or natural waterways are connected to the site. During the site visit, a recorded raptor call was played over a speaker on a timer in the orchard, which likely deters most wildlife from occupying the area. Other than the orchard trees, most plant species identified on the Project Site were ruderal species, the first to colonize after major ground disturbance. Plant species identified on site are listed in (**Table 1**).

The Habitat Assessment was conducted outside of the blooming period for special status plant species, listed in (**Table 3**). Regardless, no special-status plant species were observed on the Project site. Ground cover is dominated by ruderal grasses and invasive weeds. Habitat conditions did not appear to be conducive for the listed plant species during the site visit.

Table 1– Species Observed on the Project Site

Plant Species Observed	Listing Status
Cheeseweed (*malva parviflora*)	None
Common groundsel (*Senecio vulgaris*)	None
Eucalyptus tree (*Corymbia citriodora*)	None
Oat (*Avena sativa*)	None
Prickely lettuce (*Lactuca serriola*)	None

Russian Thistle (*Salsola kali*)	None
Wall Barley (*Hordeum murinum*)	None

4. Special-Status Species

Special-status plants and animals that have a reasonable possibility to occur in the Project area based on habitat suitability and requirements, elevation and geographic range, soils, topography, surrounding land uses, and proximity of known occurrences in the CNDDB, IPaC, and CNPS databases to the Project area are listed in **Tables 2 and 3**. The likelihood for occurrence of special-status species was assessed using information from the various listed sources, wildlife and botanical surveys. Narratives are provided for species for which there are land use planning and regulatory implications. Special-status species for which there are no habitat features are excluded from consideration due to the lack of suitable habitat and distance from the subject property.

Based upon a review of the resources and databases listed in Section 2.1 (Literature Review) for the *Hanford, Burris Park, Guermsey, Laton, Lemoore, Remnoy, Riverdale, Stratford,* and *Waukena* USGS 7.5-minute quadrangles; it was determined that 23 special-status species have been documented in the vicinity of the Project area. Of these 23 special-status species, 1 was determined to have reasonable potential for occurrence in the vicinity of the Project site.

Species with Potential for Occurrence:

- San Joaquin kit fox (*Vulpes macrotis mutica*)

Special-status species and sensitive habitats include plant and wildlife taxa, or other unique biological features that are afforded special protection by local land use policies, state and federal regulations. Special-status plant and animal species are those that are listed as rare, threatened, or endangered under the state or federal Endangered Species Acts. Vegetation communities may warrant special-status if they are of limited distribution, have high wildlife value, or are particularly vulnerable to disturbance. Listed and special-status species are defined as:

- Listed or proposed for listing under the state or Federal Endangered Species acts.
- Protected under other regulations (e.g., Migratory Bird Treaty Act).
- CDFG Species of Special Concern.
- Listed as species of concern by CNPS or USFWS; or
- Receive consideration during environmental review under CEQA.

Special-status species considered for this analysis are based on field survey results, review of the CNDDB occurrence records of species, review of the USFWS lists for special-status species occurring in the region, and CNPS literature (**Tables 2 and 3**).

- **Present**: Species known to occur on the site, based on CNDDB records, and/or was observed on the site during the field survey.
- **High**: Species known to occur on or near the site (based on CNDDB records within 8 km or 5 mi)

and there is suitable habitat on the site.

- **Low**: Species known to occur in the vicinity of the site, and there is marginal habitat onsite. -**OR**- Species is not known to occur in the vicinity of the site, however there is suitable habitat on the site.
- **None**: Species is not known to occur on or in the vicinity of the site and there is no suitable habitat for the species on the site. -**OR**- Species was surveyed for during the appropriate season with negative results.

Table 2 – Special-Status Wildlife Species Potentially Occurring on Site or in the Vicinity

Common/ Scientific Name	Listing Status*	Habitat Requirements	Potential for Occurrence
Amphibians			
California red-legged frog (*Rana draytonii*)	FT, SSC	Standing waters and freshwater marshes, wetland. Forest, scrub, and woodland riparian areas. Requires a breeding pond, slow-flowing stream. Will use small mammal burrows.	**None**: Species is not known to occur on or in the vicinity of the site and there is no suitable habitat for the species on the site.
California tiger salamander (*Ambystoma californiense*)	FT, ST	Grasslands, oak savannah riparian woodlands and lower elevations of coniferous forests, ditches, vernal pools, and wetlands.	**None**: Species is not known to occur on or in the vicinity of the site and there is no suitable habitat for the species on the site.
Birds			
Swainson's hawk (*Buteo swainsoni*)	ST, MBTA	Nests in isolated trees or riparian woodlands adjacent to suitable foraging habitat (agricultural fields, grasslands, etc.).	**Low**: Species is not known to occur in the vicinity of the site, however suitable habitat is marginal.
Tricolored blackbird (*Agelaius tricolor*)	ST, BCC, MBTA	Found in areas near water, such as marshes, grasslands, and wetlands. They require some sort of substrate nearby to build nests.	**None**: Species is not known to occur on or in the vicinity of the site and there is no suitable habitat for the species on the site.
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	FT, SE, MBTA	Woodlands near streams or lakes, abandoned farmland, old fruit orchards, successional shrubland and dense thickets.	**None**: Species is not known to occur on or in the vicinity of the site and there is no suitable habitat for the species on the site.
Fishes			
Delta smelt (*Hypomesus transpacificus*)	FT	Shallow, fresh, or slightly brackish backwater sloughs and edge waters, with good water quality and substrate for spawning.	**None**: Species is not known to occur on or in the vicinity of the site and there is no

			suitable habitat for the species on the site.
Invertebrates			
Conservancy fairy shrimp (Branchinecta conservation)	FE	Inhabit large, cool-water vernal pools from early November to early April, which fill with water in the rainy season, then slowly dry up.	**None**: Species is not known to occur on or in the vicinity of the site and there is no suitable habitat for the species on the site.
Monarch butterfly (Danaus plexippus)	FC	Closed-cone coniferous forest. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.	**None**: Species is not known to occur on or in the vicinity of the site and there is no suitable habitat for the species on the site.
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	FT	Occurs only in the Central Valley of California, in association with blue elderberry (Sambucus mexicana), in riparian scrub	**None**: Species is not known to occur on or in the vicinity of the site and there is no suitable habitat for the species on the site.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	Grasslands of the Central Valley, Central Coast mountains, and South Coast mountains, in valley foothills grasslands, vernal pools, and wetlands.	**None**: Species is not known to occur on or in the vicinity of the site and there is no suitable habitat for the species on the site.
Vernal pool tadpole shrimp (Lepidurus packardi)	FE	Vernal pools, (hardpan, duripan, or claypan), grassland. Pools commonly found in grass-bottomed or mud-bottomed swales.	**None**: Species is not known to occur on or in the vicinity of the site and there is no suitable habitat for the species on the site.
Mammals			
Fresno kangaroo rat (*Dipodomys nitratoides exilis*)	FE, SE	Arid and alkaline plains under shrub and grass vegetation, coastal scrub, open stages of chaparral, and desert scrub habitats, and in conifer woodlands.	**Low:** Species known to occur in the vicinity of the site, and there is marginal habitat onsite.
Giant kangaroo rat (Dipodomys ingens)	FE	Fine sandy loam soils supporting sparse annual grass/forb vegetation, and marginally found in low-density alkali desert scrub.	**None**: Species is not known to occur on or in the vicinity of the site and there is no suitable habitat for the species on the site.
Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*)	FE, SE	Arid and alkaline plains under shrub and grass vegetation, coastal scrub, open stages of chaparral, and desert scrub habitats, and in conifer woodlands.	**None**: Species is not known to occur on or in the vicinity of the site and there is no suitable habitat for the species on the site.

San Joaquin kit fox (*Vulpes macrotis mutica*)	FE, SE	Arid flat grasslands, scrublands, and alkali meadows with short vegetation.	**None**: Species is not known to occur on or in the vicinity of the site and there is no suitable habitat for the species on the site.
Reptiles			
Blunt-nosed leopard lizard (*Gambelia sila*)	FE, SE	Semi-arid grasslands, alkali flats, and washes, utilize shrubs and small mammal burrows.	**None**: Species is not known to occur on or in the vicinity of the site and there is no suitable habitat for the species on the site.
Giant garter snake (Thamnophis gigas)	FT	Marshes, sloughs, drainage canals, irrigation ditches, and prefers locations with vegetation close to water for basking.	**None**: Species is not known to occur on or in the vicinity of the site and there is no suitable habitat for the species on the site.

*Listing Status Notes:

Federal: FE – Federally listed Endangered
FT – Federally listed Threatened
FC – Federal Candidate Species
WL – USFWS Watch list
BCC – USFWS Bird of Conservation Concern
MTBA – Migratory Bird Treaty Act

State: SE – State listed Endangered
ST – State listed Threatened
SC – State Candidate Species
SR – State Rare Species
SA – State Special Animal
FP – CDFW Fully Protected Species
SSC – CDFW Species of Special Concern
WL – CDFW Watch List

Table 3 – Special-Status Plant Species Potentially Occurring on Site or in the Vicinity

Common/ Scientific Name	*Status Fed/CA/CNPS/ Bloom Period	Habitat Description	Habitat Present/ Absent
California Jewelflower (*Caulanthus californicus*)	FE/CE/1B.1/ Feb-May	Chenopod scrub, Pinyon-Juniper woodland, valley and foothill grassland (61- 1000 m; 200 -3280 ft)	Absent
Hairy Orcutt Grass (*Orcuttia pilosa*)	FE/SE/1B.1/ May-Sep	Vernal pools (46 - 200 m; 150 – 655 ft)	Absent
Hartweg's golden sunburst (*Pseudobahia bahiifolia*)	FE/CE.1B.1/ Mar-Apr	Open grasslands and grasslands at the margins of blue oak woodland, foothills	Absent

San Joaquin adobe sunburst (*Pseudobahia peirsonii*)	FT/CE/1B.1/ Feb-Apr	Cismontane woodland, valley and foothill grassland, adobe clay	Absent
San Joaquin Valley Orcutt Grass (*Orcuttia inaequalis*)	FT/CE/1B.1/ Apr-Sep	Vernal pools (10 -755 m; 35 - 2475 ft)	Absent
Succulent Owl's-clover (*Castilleja campestris ssp. Succulenta*)	1B.2 (Mar) Apr-May	Vernal pools (50 – 750 m; 165-2460 ft)	Absent

*Listing Status Notes:

Federal: FE – Federally listed Endangered
FT – Federally listed Threatened
FC – Federal Candidate Species

State: SE – State listed Endangered
ST – State listed Threatened
SC – State Candidate Species
SR – State Rare Species

CRPR: California Native Plant Society Rare Plant Rank
CBR – Considered but Rejected
1B – Rare, threatened, or endangered in CA and elsewhere
2 – Rare, threatened, or endangered in CA but common elsewhere
4 – Limited distribution (Watch-list)
CBR – Considered but Rejected

CRPR Extensions 0.1 – Seriously endangered in California
0.2 – Fairly endangered in California
0.3 – Not very endangered in California

4.1 Special-Status Wildlife Species Descriptions

This section describes identifiable physical characteristics and habitat requirements for special-status species identified in the CNDDB records search that were within 5 miles of the Project site.

San Joaquin Kit Fox (Vulpes macrotis mutica)

The San Joaquin kit fox (SJKF) is listed as Threatened at the Federal level and Endangered at the State level. SJKF are petite, light-colored canids, approximately 50 centimeters (20 inches) in length, with bushy, black-tipped tails, large ears, and pointed snouts.

SJKF is a desert-adapted species which occurs mainly in arid, flat grasslands, scrublands, and alkali meadows where the vegetation structure is relatively short. This species uses dens year-round and needs loose-textured soils suitable for burrowing. They primarily prey on kangaroo rats and other small rodents, as well as large insects and occasionally rabbits. A typical kit fox den is anywhere from four to 10 inches in diameter, and is taller than it is wide, often with a keyhole shape. SJKF dens usually have dirt berms and matted vegetation adjacent to the entrances, and tracks and prey remains will normally be detected nearby. SJKF may also utilize man-made structures such as pipes and culverts as dens.

During the Habitat Assessment, no signs of San Joaquin kit fox were observed within the Project Site or surrounding areas. A search of CNDDB records indicate the nearest and most recent occurrence of this species is 2.58 miles away, at 53° NE from the Project Site in June 2006, observed in an undeveloped parcel of land.

5. Findings

During the Habitat Assessment, Soar Environmental did not observe any of the referenced special-status species within the Project site or environmental footprint. A records search of the CNDDB, IPaC, and CNPS Online Rare Plant Inventory indicated San Joaquin kitfox as the only special-status species with historical observations within 5 miles of the Project site (**Figure 4**). The findings for this report are summarized below.

There were no signs of San Joaquin kit fox at the time of the Habitat Assessment. Suitable habitat for this species is poor within the vicinity of the Project site. A search of CNDDB records indicate the nearest and most recent occurrence of kit fox is 2.58 miles away, at 53° NE from the Project site in June 2006. No small mammal burrows were observed that would provide adequate refugia for kit fox or associated prey base species. The Project site and surrounding area is highly disturbed from agricultural activity. Due to the level of agricultural activity, residential development of the surrounding area, lack of suitable habitat, time span and distance of other known occurrences from the site, occurrence of San Joaquin kit fox within the vicinity of the project site is unlikely, and the proposed Project is unlikely to adversely affect populations of this species.

6. Recommendations

No listed species were observed during the Habitat Assessment of the Project site, and no suitable habitat features, or conditions were observed that would be conducive for any of the aforementioned species. The proposed development of this parcel is unlikely to adversely affect any special-status species. Soar Environmental Consulting, Inc. recommends that if any special status species are observed during construction activities, work be stopped immediately and CDFW is contacted.

7. Study Limitations

This Report has been prepared in accordance with generally accepted environmental methodologies and contains all the limitations inherent in these methodologies. The Report documents site conditions that were observed during field reconnaissance and do not apply to future conditions. No other warranties, expressed or implied, are made as to the professional services provided under the terms of our contract and included in this Report.

8. Works Cited

Calflora. (2020). *Taxon Report*. Retrieved from https://www.calflora.org

California Diversity Database (CNDDB). California Department of Fish and Wildlife RareFind. Retrieved from https://map.dfg.ca.gov/rarefind

CDFW. (17 June 2013). *California's Vernal Pools*. Retrieved from https://www.wildlife.ca.gov/Conservation/Plants/Vernal-Pools

Audubon Guide to North American Birds. (2020). https://www.audubon.org

Calscape. (2020). Retrieved from https://calscape.org

Center for Biological Diversity. (2020). Retrieved from https://www.biologicaldiversity.org

Sacramento Fish and Wildlife Office, U.S. Fish and Wildlife Service. (1999). *Standardized Recommendations for the Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance*. Retrieved from https://www.wildlife.ca.gov/Conservation/Survey-Protocols#377281285-mammals

US EPA. (Feb. 2010). *Delta Smelt, Hypomesus transpacificus*. Retrieved from https://www.epa.gov/sites/production/files/2013-08/documents/delta-smelt_0.pdf

USFWS. (2005). *Revised Guidance on Site Assessment and Field Surveys for the California Red-legged Frog. Retrieved from* https://www.wildlife.ca.gov/Conservation/Survey-Protocols#377281282-amphibians

USFWS. (Sept. 2007). *Vernal Pool Tadpole Shrimp (Lepidurus packardi)*. Retrieved from https://ecos.fws.gov/docs/five_year_review/doc1160.pdf

APPENDIX A: Project Site Photographs

Photo 1 – Residence on the Project Site

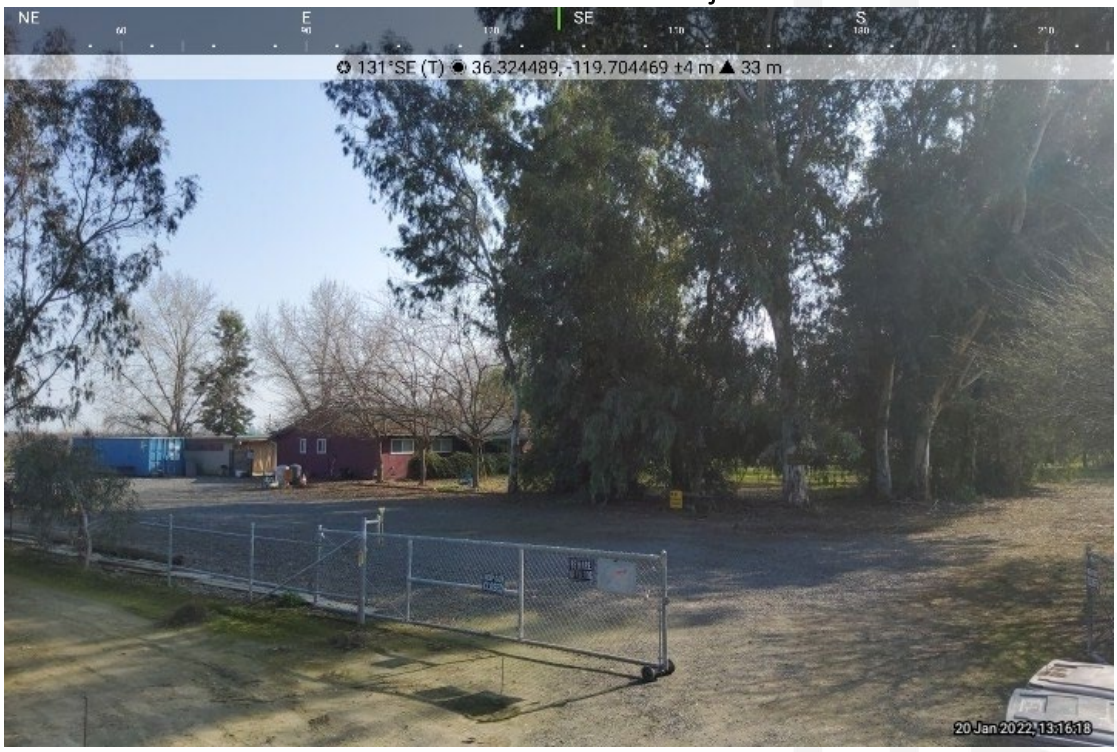


Photo 2 – North Boundary (View East)

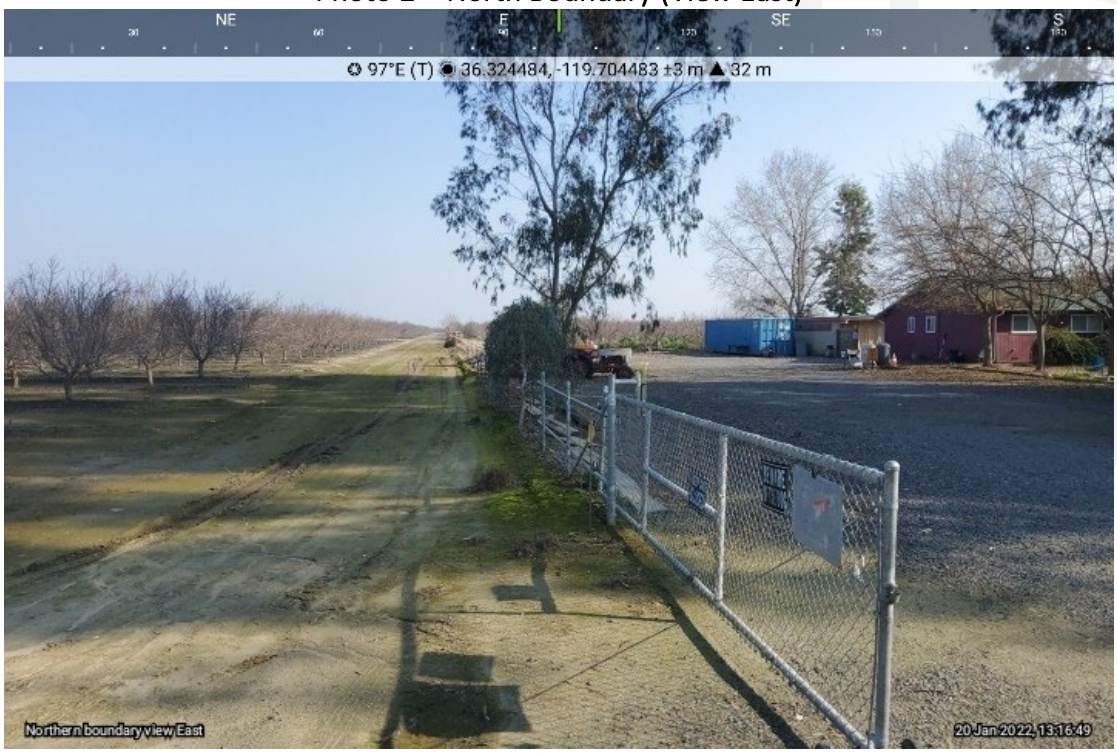


Photo 3 – East Boundary of Project Site (View South)

Photo 4 – South Boundary of Project Site (View West)

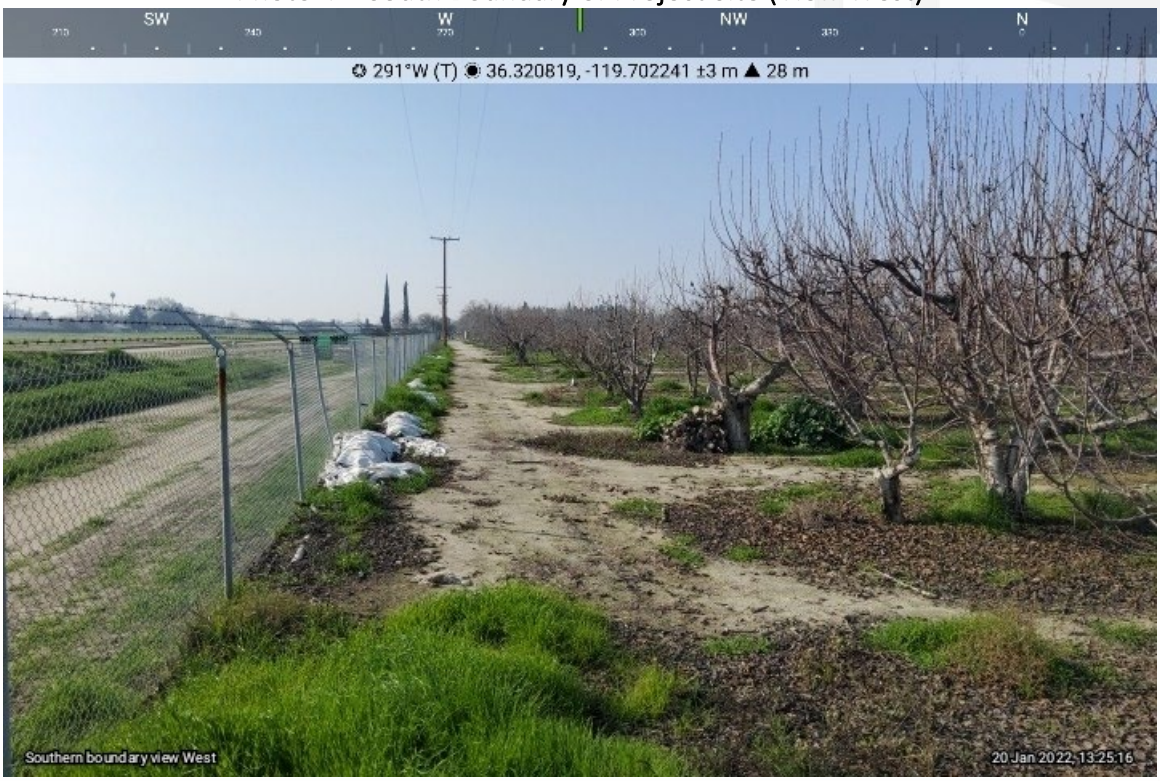


Photo 5 – West Boundary of Project Site (View North)

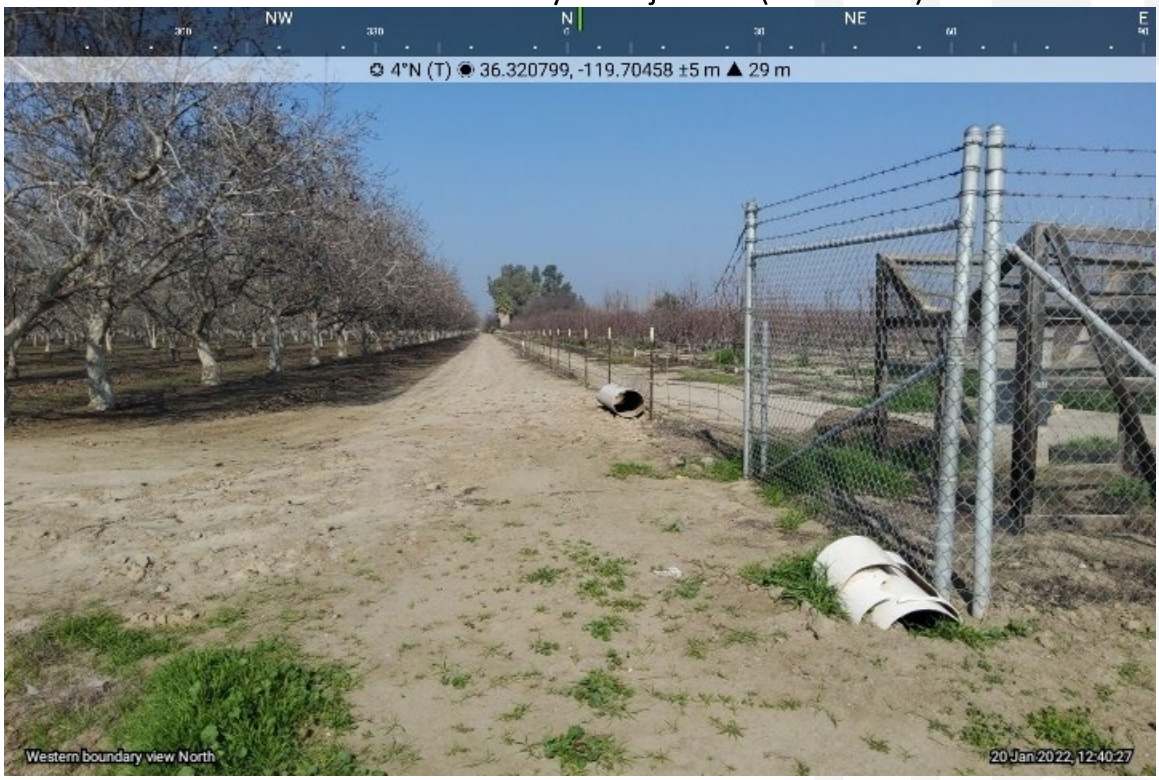
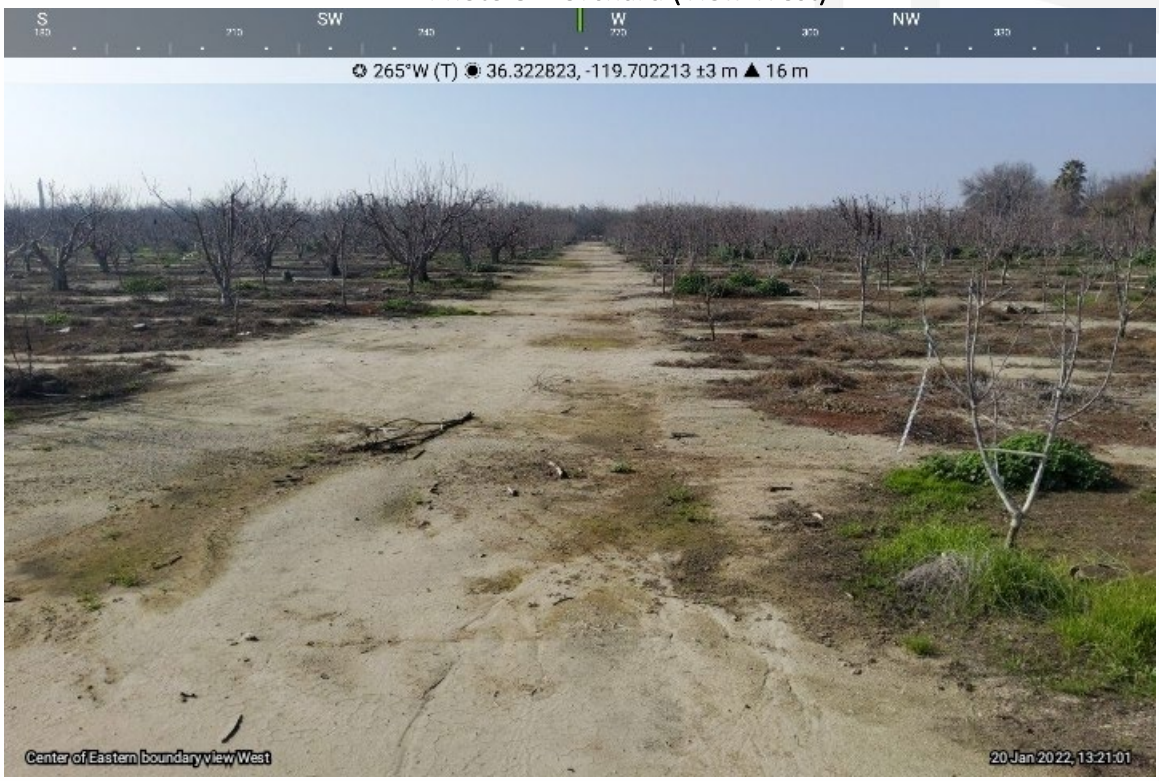


Photo 6 – Southwest Corner (View Northeast)

Photo 7 – Orchard (View South)

Photo 8 – Orchard (View West)



Appendix C

Cultural Records Search Results

Interim Phase I Cultural Resources Assessment for the Summers Pointe Tract 936 Tentative Subdivision Map Project, Kings County, California

Consuelo Y. Sauls

Prepared By

Taylored Archaeology
6083 N. Figarden Dr., Ste 616
Fresno, CA 93722

Prepared For
4Creeks, Inc.
324 S. Santa Fe St., Suite A
Visalia, CA 93292

March 2022

USGS Hanford 7.5' topographic quadrangle;
20.08 total project acres; 20.08 acres surveyed
Keywords: Negative findings

EXECUTIVE SUMMARY

Taylored Archaeology has completed an interim Phase I cultural resource assessment for the Summers Pointe Tract 936 Tentative Subdivision Map Project in Kings County, California. The Project proposes to construct 109 single-family units of residential development. The Project is subject to the California Environmental Quality Act (CEQA).

The records search results from the Southern San Joaquin Valley Information Center indicated no evidence of recorded cultural resources within the Project area but stated six prior cultural resource investigations were conducted in the Project area. Further research revealed no prior pedestrian surveys were conducted within the Project boundary. In addition, five recorded cultural resources were identified, and seven previous cultural resource investigations were conducted, within a 0.5-mile radius. As of the date of this interim report, no response was received from the Native American Heritage Commission regarding the Sacred Lands File search. Once a response is received, it will be forwarded to the CEQA lead agency as part of the final Phase I cultural resource assessment report.

A Phase I archaeological pedestrian survey of the 20.08-acre Project site was conducted by archaeologist Consuelo Sauls on February 5, 2022. The terrain throughout the Project has been disturbed by more than a century of agricultural use. No archaeological resources were identified within the Project area. One outbuilding/shed of undetermined age was observed within the Project boundary during the survey and may need to be assessed by an architectural historian to determine the potential age or historical significance.

Due to the Project site being located within 0.25 miles of the former Mussel Slough, Taylored Archaeology recommends an archaeological monitor be present during ground disturbing activities.

In the event that previously unidentified archaeological remains are encountered during development or ground-moving activities in the Project area, all work should be halted until a qualified archaeologist can identify the discovery and assess its significance. In the event of accidental discovery of unidentified archaeological remains during development or ground-moving activities in the Project area, all work shall be halted in the immediate vicinity (within a 100-foot radius) until a qualified archaeologist can identify the discovery and assess its significance.

If human remains are uncovered during construction, the Kings County Coroner is to be notified to investigate the remains and arrange proper treatment and disposition. If the remains are identified on the basis of archaeological context, age, cultural associations, or biological traits to be those of a Native American, California Health and Safety Code 7050.5 and PRC 5097.98 require that the coroner notify the Native American Heritage Commission (NAHC) within 24 hours of discovery. The NAHC will be responsible for designating the Most Likely Descendent who will make recommendations regarding the treatment and disposition of the remains.

CONTENTS

APPENDICIES

FIGURES

1
INTRODUCTION

Taylored Archaeology performed a Phase I cultural resource assessment for the Summers Pointe Tract 936 Tentative Subdivision Map Project (Project) in unincorporated Kings County, California.

The Project is currently seeking approval from Kings County for a single-family residential development on the Project site. As part of the development approval process, Kings County as the lead agency must comply with the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] 21000 [g] mandate that government agencies consider the impacts of a project on the environment, including cultural resources.

1.1 PROJECT DESCRIPTION AND LOCATION

The proposed Project includes the construction of a single-family residential development of approximately 109 units on the 20.08-acre Project site. The Project lies north of the community of Armona, south of West Lacey Boulevard, east of 14th Avenue and north of Highway 198 (Figure 1-1). 4Creeks, Inc., as the prime contractor to the private developer for environmental compliance services, retained Taylored Archaeology to conduct a Phase I cultural resources assessment of the Project for compliance with CEQA.

The proposed Project site is comprised of Assessor Parcel Numbers 017-100-012 and 017-100-013 and is within Section 33 of Township 18 South, Range 21 East, Mount Diablo Base Line and Meridian of Hanford, California 7.5-minute USGS quadrangle (Figure 1-2). The Project is currently utilized as a rural residence and orchard. The Project area is surrounded by agricultural uses to the north, west and east, and open fields and single-family residences to the south.

The proposed Project includes subdivision of the current property into 109 parcels, construction of 109 single-family residences, an on-site storm drain basin and associated neighborhood streets, landscaping, sidewalks, and utilities within the Project site.

1.2 REGULATORY SETTING

Cultural resources within the context of this report are defined as a historical or prehistorical archaeological site, or a historical structure, object, or building. Consistent with 36 CFR 60.3, the term “historical” in this report applies to archaeological remains and artifacts, and additionally to buildings, objects, or structures that are at least 50 years old. While exceptions to the 50-year criterion occur, they are relatively rare. The significance or importance of a cultural resource is dependent upon whether the resource qualifies for inclusion at the local or state in the California Register of Historical Places (CRHR). Cultural resources that are determined to be eligible for inclusion in the CRHR are called “historical resources” (CCR 15064.5[a]). Under this statue the

determination of eligibility is partially based on the consideration of the criteria of significance as defined in 14 CCR 15064.5(a)(3).

1.2.1 CALIFORNIA ENVIRONMENTAL QUALITY ACT

Pursuant to CEQA, a historical resource is a resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources. Historical resources may include, but are not limited to, "any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically or archaeologically significant" (PRC §5020.1[j]). In addition, a resource included in a local register of historical resources or identified as significant in a local survey conducted in accordance with the state guidelines are also considered historic resources under California Public Resources Code (PRC) Section 5020.1.

According to CEQA guidelines §15064.5 (a)(3), criteria for listing on the California Register of Historical Resources includes the following:

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

According to CEQA guidelines §21074 (a)(1)(2), criteria for tribal cultural resources includes the following:

> (1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following: (A) included or determined to be eligible for inclusion in the California Register of Historical Resources. (B) included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

1.3 PROFESSIONAL QUALIFICATIONS

Archaeologist Consuelo Y. Sauls (M.A.), a Registered Professional Archaeologist (RPA 41591505), managed the assessment and compiled this report for the Project. Ms. Sauls also conducted the records search and performed the pedestrian field survey of the Project site. Ms. Sauls meets the Secretary of the Interior's Standards for Professional Qualifications in Archaeology. Qualifications for key personnel is provided in Appendix A.

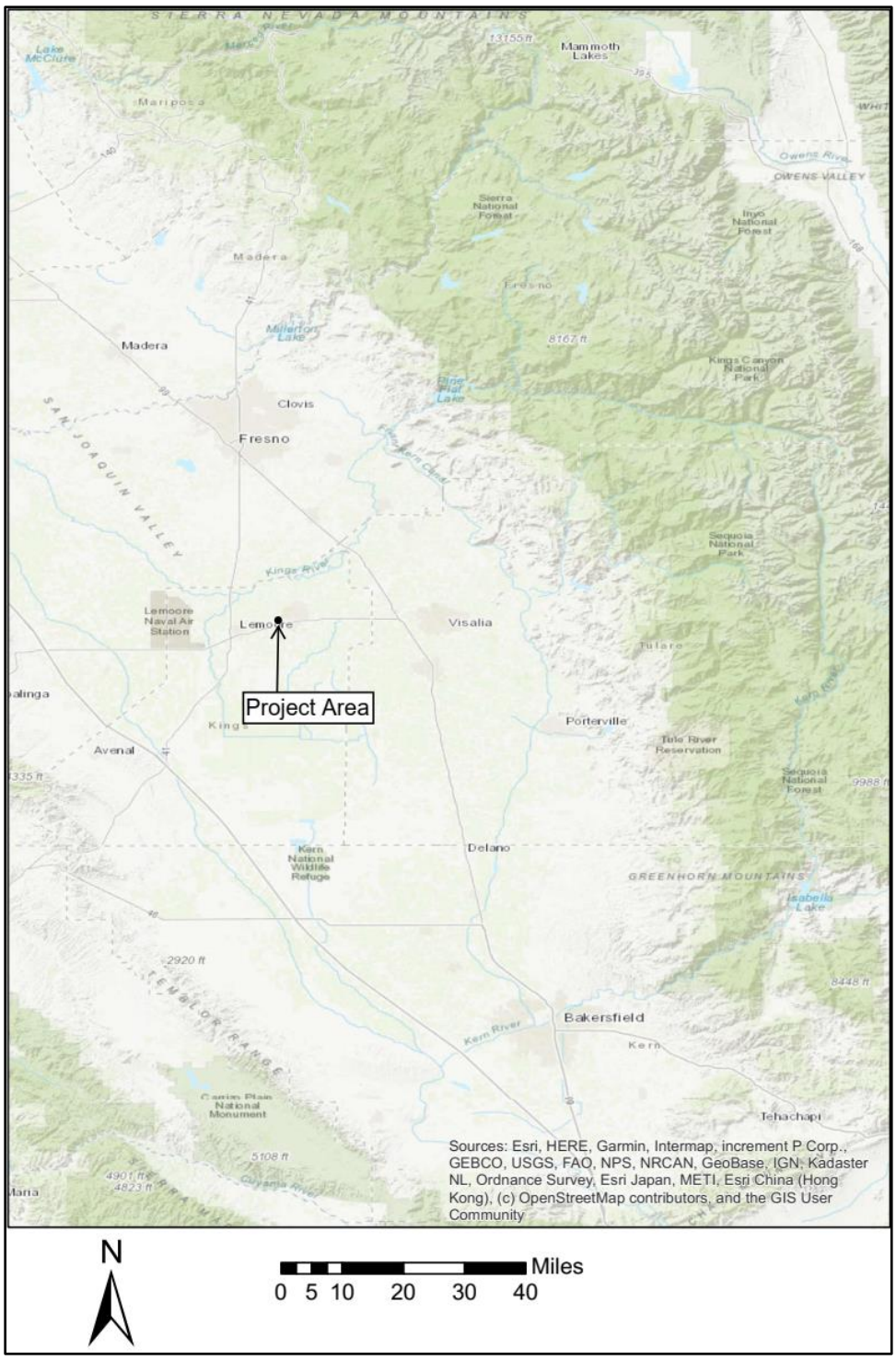


Figure 1-1 Project vicinity in Kings County, California.

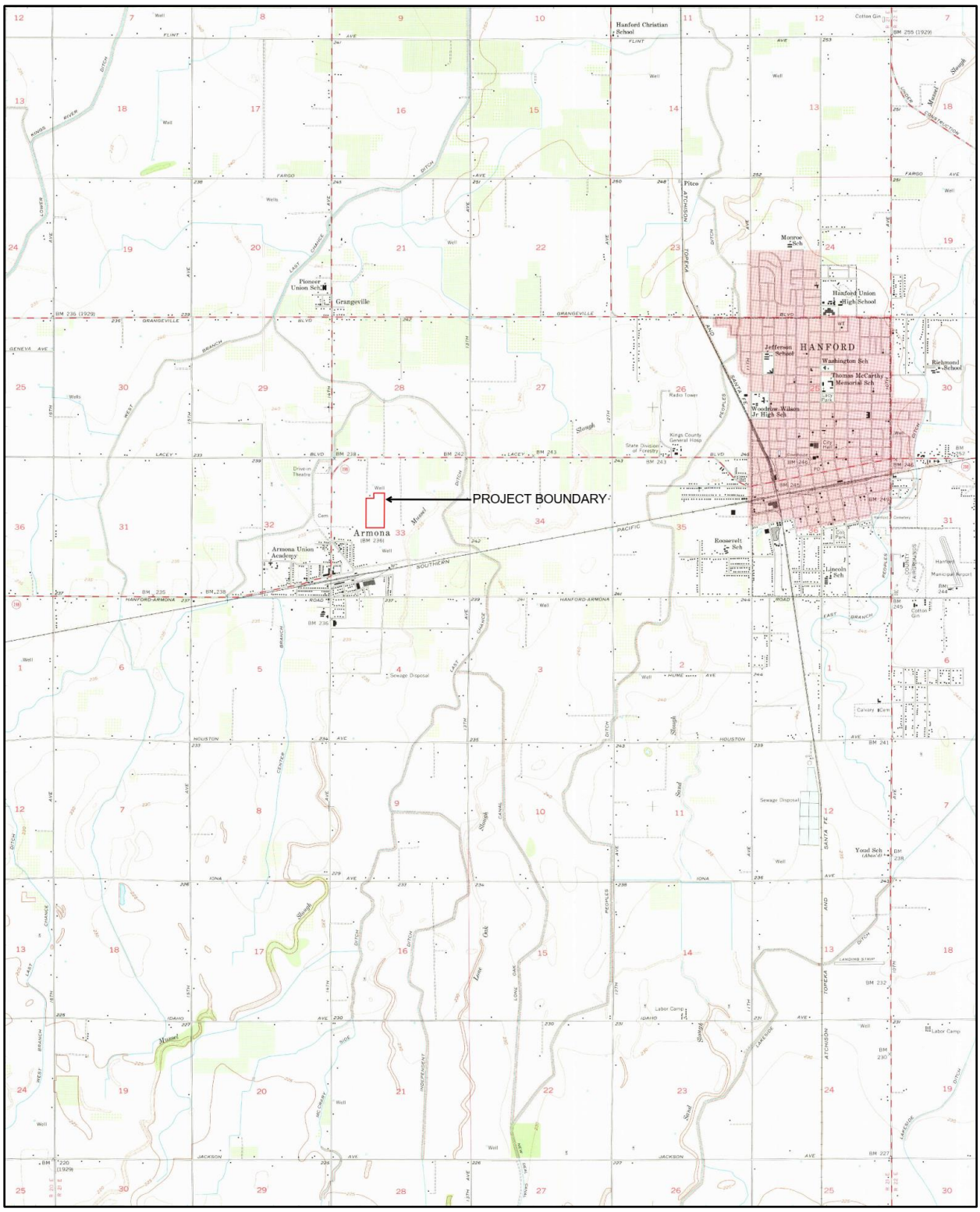


Figure 1-2 Project location on the USGS Hanford, CA 7.5-minute quadrangle.

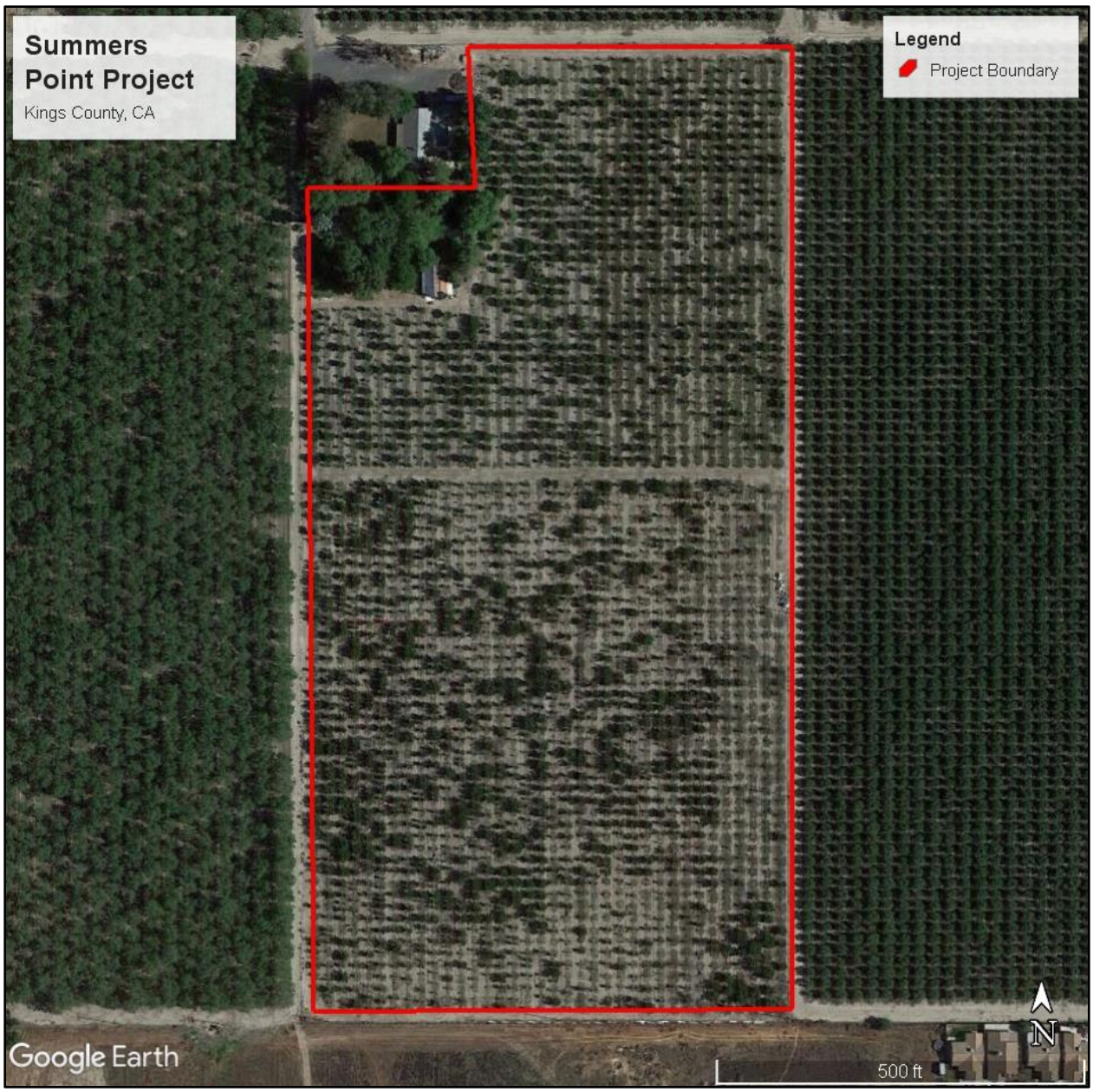


Figure 1-3 Aerial view of the Project boundary showing survey coverage.

1.4 REPORT ORGANIZATION

This report documents the results of a cultural resource assessment of the proposed Project area. In order to comply with California regulations for CEQA, the following specific tasks were completed: (1) requesting a records search from the Southern San Joaquin Information Center (SSJVIC) of the California Historical Resources Information System (CHRIS), at California State University, Bakersfield; (2) requesting a Sacred Lands File Search and list of interested parties from the Native American Heritage Commission (NAHC); (3) conducting an archaeological pedestrian survey, (4) preparing this technical report.

This report follows the California Office of Historic Preservation standards in the 1990 Archaeological Resources Management Report Recommended Contents and Format. Chapter 1 explains the Project and its location, and identifies the key personnel involved in this report. Chapter 2 describes the Project setting, including the natural, prehistoric, historic, and ethnohistoric background for the Project area and surrounding area. Chapters 3 includes the methods used for archival studies, Native American Outreach, and pedestrian survey. Chapter 4 summarizes findings of the archival studies, Native American outreach, and pedestrian survey. Chapter 5 discusses the Project findings and offers management recommendations. Chapter 6 is a bibliography of references cited within this report. The report also contains the following appendices: Qualifications of key personnel (Appendix A), the CHRIS records search results (Appendix B), and Taylored Archaeology's nongovernmental Native American outreach (Appendix C).

2
PROJECT SETTING

2.1 NATURAL ENVIRONMENT

The Project site lies in the Central Valley of California, which is approximately 450 miles from north to south, and ranges in width east to west from 40 to sixty miles (Prothero 2017). The Central Valley is divided into two subunits, the Sacramento Valley in the north and the San Joaquin Valley in the south, which are each named after the primary rivers within each valley (Madden 2020). The Project is located approximately 225 feet above sea level on the open flat plains of the Southern San Joaquin Valley. Climate within the San Joaquin valley is classified as a 'hot Mediterranean climate', with hot and dry summers, and cool damp winters characterized by periods of dense fog known as 'tule fog' (Prothero 2017).

The San Joaquin Valley is a comprised of a structural trough created approximately 65 million years ago and is filled with nearly 6 miles of sediment (Bull 1964). The San Joaquin Valley ranges from Stockton and the San Joaquin-Sacramento River Delta in the north to Wheeler Ridge to the south, ranging nearly sixty miles wide at its widest (Zack 2017). It is split by late Pleistocene alluvial fans between the San Joaquin River hydrologic area in the north and the Tulare Lake Drainage Basin in the south (Rosenthal et al 2007). The Project site is located within the latter of the two hydrologic units. The Kaweah, Tule, Kern, and Kings rivers flowed into large inland lakes with no outflow except in high flood events, in which the lakes would flow from through the Fresno Slough into the San Joaquin River. The largest of these inland lakes was the Tulare Lake, which occupied a vast area of Tulare and Kings Counties and was the largest freshwater lake west of the Mississippi. These four tributary rivers accounted for more than 95 percent of water discharged into Tulare Lake, with the remaining five percent sourced from small drainages originating in the Coast Ranges to the west (Adams et al. 2015).

The Project is located in northern Kings County on the valley floor of the San Joaquin Valley, and located within 0.25 miles of the former Mussel Slough, a distributary of the Kings River that drained into Tulare Lake (Hammond 1885). Distributaries form when debris-laden river waters meet abrupt changes in channel and slope confinement, resulting in unstable channel networks that change with time (Wagner et al. 2013). Before the appearance of agriculture in the nineteenth century, the Project location would have been comprised of prairie grasslands with scatter oak tree savannas near the foothills, and along the various streams and drainages (Preston 1981). Riparian environments would also have been present along various waterways, including drainages and marshes. Native vegetation likely would have consisted of needle grasses and other perennial bunchgrasses before the introduction of non-native species in the 1800s.

The valley floor of the region was largely dominated by marshlands, lakes, and annual grasslands. Historically, these habitats provided a lush environment for large animals, including various migratory birds and other waterfowl, grizzly bear (*Ursus arctos californicus*), tule elk (*Cervus* sp.), pronghorn (*Antilocapra americana*), mule deer (*Odocoileus hemionus*), black bear (*Ursus americanus*), and mountain lion (*Puma concolor*) (Preston 1981). Native trees and plants

observed in the Project vicinity include various blue, live, and white oaks (*Quercus* sp.), cottonwood (*Populus aegiros*), and willow (*Salix* sp.). The introduction of agriculture to region resulted in large animals being forced out of their habitat. Common land mammals now include valley coyote (*Canis latrans*), bobcat (*Lynx rufus*), gray fox, kit fox (*Vulpes macrotis*), and rabbits (Leporidae). Rivers and lakes throughout the valley provide habitat for freshwater fish, including rainbow trout (*Oncorhynchus mykiss*), Sacramento sucker (*Catostomidae* sp.), and Sacramento perch (*Archoplites interruptus*), (Preston 1981).

2.2 PREHISTORIC SETTING

Archaeologists develop models of prehistoric resource chronologies and description of lifestyles based on data collected at archaeological sites they investigate to better understand the past. Models of prehistoric life patterns are developed from both archaeological and ethnographic research. Archaeological studies in the San Joaquin Valley began in the early 1900s with several archaeological investigations (Rosenthal et al. 2007). The Southern San Joaquin Valley is of one of the least understood areas within California due to a lack of well-grounded chronologies for large segments of the valley (Rosenthal et al. 2007). This is largely due to the valley floor being filled with thick alluvial deposits, and from human activity largely disturbing much of the valley floor due to a century and a half of agricultural use (Dillon 2002; Siefken 1999). Mound sites may have occurred as frequently as one every two or three miles along major waterways but studying such mounded occupations sites is difficult as most surface sites have been destroyed (Schenck and Dawson 1929). Much of the early to middle Holocene archaeological sites may be buried as deep as 10 meters due to millennia of erosion and alluvial deposits from the western Sierras (Moratto 1984).

Mass agricultural development has heavily disturbed and changed the landscape of the Southern San Joaquin Valley, from the draining of marshes and the vanishing of the extensive Tulare Lake, to grading nearly the entire valley for agricultural operations (Garone 2011). These activities have impacted or scattered much of the shallow surface deposits and mounds throughout the valley (Rosenthal et al 2007). Some researchers have suggested that potentially as much as 90 percent of all Central California archaeological sites have been destroyed from these activities (Riddell 2002). A previous prehistoric archaeological sensitivity model for the San Joaquin Valley was conducted by Far Western Anthropological Research Group in 2010, which analyzed sensitivity based on various geographic factors such as water proximity, slope, soil type, and landform (Meyer et al. 2010). According to this model, the Project site is located within an area of moderate for the potential presence of buried prehistoric archaeological deposits.

The cultural traits and chronologies which are summarized below are largely based upon information discussed in multiple sources, including Bennyhoff and Fredrickson (1973, 1974), Garfinkel (2015), McGuire and Garfinkel (1980), Moratto (1984), and Rosenthal et al. (2007). The most recent comprehensive approach to compiling a chronology of the Southern San Joaquin Valley prehistory is by Garfinkel in 2015, which builds off Rosenthal's 2007 previous work. Both Garfinkel's and Rosenthal's chronologies are calculated in years B.C. In the interest of maintaining cohesiveness with modern anthropological research, the dates of these chronologies have been adapted into years before present (B.P.).

The Paleo-Indian Period (13,500-10,600 cal B.P.) was largely represented by ephemeral lake sites which were characterized by atlatl and spear projectile points. Around 14,000 years ago, California was largely a cooler and wetter place, but with the retreat of continental Pleistocene glaciers, California largely experienced a warming and drying period. Lakes filled with glacial meltwater were located in the valley floor and used by populations of now extinct large game animals. A few prehistoric sites were discovered near the southwestern shore of Tulare Lake (Garfinkel 2015). Foragers appear to have operated in small groups which migrated on a regular basis.

During the Lower Archaic Period (10,500-7450 cal B.P.), climate change created a largely different environment which led to the creation of larger alluvial fans and flood plains. Most of the archaeological records of the prior period wound up being buried by geological processes. During this time, cultural patterns appear to have emerged between the foothill and valley populations of the local people. The foothill sites were often categorized by dense flaked and ground stone assemblages, while the valley sites were instead characterized by a predominance of crescents and stemmed projectile points. Occupation within the area is represented mostly by isolated discoveries, and along the former shoreline of Tulare Lake finds are typically characterized by chipped stone crescents, stemmed points, and other distinctive flakes stone artifacts (Rosenthal et al. 2007). Variations in consumption patterns emerged as well, with the valley sites more marked by consumption of waterfowl, mussels, and freshwater fish, while the foothills sites saw an increase in nuts, seeds, and a more narrowly focused diet than the valley sites.

The Middle Archaic (7450-2500 cal B.P.) saw an increase in semi-permanent villages along river and creek settings, with more permanent sites located along lakes with a more stable supply of water and wildlife. Due to the warmer and drier weather of this period, many lakes within the valley dramatically reduced in size, while some vanished completely (Garone 2011). Cultural patterns during this time saw an increase in stone tools, while a growth in shell beads, ornaments, and obsidian evidence an extensive and ever-growing long-distance trade network. Little is known of cultural patterns in the valley during the Upper Archaic (2500-850 B.P.), but large village structures appeared to be more common around local rivers. An overall reduction of projectile point size suggests changing bow and arrow technologies. Finally, the Emergent Period (850 cal B.P. - Historic Era) was generally marked by an ever-increasing specialization in tools, and the bow and arrow generally replaced the dominance of the dart and atlatl. Cultural traditions ancestral to those recorded during ethnographic research in the early 1900s are identifiable.

2.3 ETHNOGRAPHY

The Project area is in the Southern Valley Yokuts ethnographic territory of the San Joaquin Valley and located between the Kings River and the north shore of Tulare Lake. The Yokuts were generally divided into three major groups, the Northern Valley Yokuts, the Southern Valley Yokuts, and the Foothill Yokuts. The Yokuts are a sub-group of the Penutian language that covers much of coastal and central California and Oregon (Callaghan 1958). The Yokuts language contained multiple dialects spoken throughout the region, though many of them were mutually understandable (Merriam 1904).

The Yokuts have been extensively researched and recorded by ethnographers, including Powers (1877), Kroeber (1925), Gifford and Schenck (1926, 1929), Gayton (1930, 1945), Driver (1937), Harrington (1957), Latta (1977), and Wallace (1978). Much of the research from these ethnographers focuses on the central Yokuts tribes due to the northernmost tribes being impacted by Euro-Americans during the California Gold Rush of the mid 1800s, and by the southernmost tribes often being removed and relocated by the Spanish to various Bay Area or coastal missions. The central Yokuts tribes, and especially the western Sierra Nevada foothill tribes, were the most intact at the time of ethnographic study.

The most detailed ethnographic information gathered regarding Native American group territories in Central California is located within maps prepared by Kroeber. According to Krober's ethnographic research, three tribes were located along the shores of Tulare Lake. From south to north, the tribes were the Wowol, Chunut, and Tachi (Krober 1925). The Tachi were arguably the largest of all Yokut groups, and their territory centered along the northern shores of Tulare Lake, from Fish Slough in the east to the Coastal Range in the west. Based upon Kroeber's map of Southern and Central Yokuts (1925: Plate 47), the Project area is within the Tachi Yokuts territory. The closest village for this area was *Waiu*, which was located on Mussel Slough approximately 6 miles southwest of the Project site (Kroeber 1925). Primary Yokuts villages were typically located along lakeshores and major stream courses, with scattered secondary or temporary camps and settlements located near gathering areas in the foothills. Yokuts were organized into groups originally designated as tribelets by Kroeber, with one or more linked villages and smaller settlements within a territory (Kroeber 1925).

Designation of these units as 'tribelets' is often viewed as pejorative by many Native Americans, and for the remainder of this report will be referred to as 'local tribes' instead. Each local tribe was a land-owning group that was organized around a central village, and shared common territory and ancestry. Most local tribe populations ranged from 150 to 500 people (Kroeber 1925). These local tribes were often led by a chief, who was often advised by a variety of assistants including the winatum, who served as a messenger and assistant chief (Gayton 1930). Early studies by Kroeber (1925), Gifford and Schenck (1926), and Gayton (1930) concluded that social and political authority within local tribes was derived from male lineage and patriarchy. However, more recent reexaminations (Dick-Bissonnette 1998) argue that this assumption of patriarchal organization was based on male bias by early 20th century researchers, and instead Yokuts sociopolitical authority was matriarchal in nature and centered around matrilineal use-rights and women's work groups.

Due to the abundance of natural resources within the greater Tulare Lake area, the Yokuts maintained some of the largest populations in North America west of the continental divide (Cook 1955a).

2.4 HISTORIC SETTING

2.4.1 California History

European contact in modern-day California first occurred in 1542 with the arrival of a Spanish expedition lead by Juan Rodríguez Cabrillo into San Diego Bay (Engstrand 1997). Expeditions along the California coast continued throughout the sixteenth century and primarily focused on finding favorable harbors for further expansion and trade across the Pacific. However, rocky shorelines, unfavorable currents, and wind conditions made traveling north from New Spain to the upper California coast a difficult and time-consuming journey (Eifler 2017). The topography of California, with high mountains, large deserts, and few natural harbors lead to European expansion into California only starting in the 1760s. As British and Russian expansion through fur trading encroached on California from the north, Spain established a system of presidios, pueblos, and missions along the California coast to defend its claim, starting with Mission San Diego de Alcalá in 1769 (Engstrand 1997).

2.4.2 Central California History

The San Joaquin Valley did not experience contact with Europeans until the late 1700s (Starr 2007). Life at the California missions was hard and brutal for Native Americans, with many dying of disease, poor conditions, and many fleeing to areas not under direct Spanish control (Jackson and Castillo 1995). The earliest exploration of the San Joaquin Valley by Europeans was likely by the Spaniards when in the fall of 1772 a group known as the Catalonian Volunteers entered into the valley through Tejon Pass in search of deserters from the Southern California Missions (Zack 2017). However, the group only made it as far north as Buena Vista Lake in modern day Kern County before turning around due to the extensive swamps. Additional excursions to the valley were for exploration such as those led by Lieutenant Bariel Moraga in 1806, but also to find sites for suitable mission sites and to track down Native Americans fleeing the coastal missions (Cook 1958).

Subsequent expeditions were also sent to pursue outlaws from the coast who would often flee to the valley for safety. One of the subsequent explorations was an expedition in 1814 to 1815 with Sargent Juan Ortega and Father Juan Cabot, who left the Mission San Miguel with a company of approximately 30 Spanish soldiers and explored the San Joaquin Valley (Smith 2004). This expedition passed through the Kaweah Delta and modern-day Visalia and made a recommendation to establish a mission near modern-day Visalia. However, with European contact also came European disease. Malaria and other new diseases were brought by Europeans, and in 1833 an epidemic of unknown origin traveled throughout the Central Valley. Some estimates place the Native American mortality of the epidemic as high as 75 percent (Cook 1955b). Combined with the rapid expansion of Americans into California in 1848 during the Gold Rush, Native American populations within the valley never fully recovered (Eifler 2017).

Initial settlement within the valley by Europeans in the 1830s was largely either by trappers like Jedediah Smith or horse thieves like Pegleg Smith (Clough and Secrest 1984). In fact, horse and other livestock theft was so rampant that ranching operations on the Rancho Laguna de Tache

by the Kings River and Rancho del San Joaquin Rancho along the San Joaquin River could not be properly established (Cook 1962). With the end of the Mexican American War and the beginning of the gold rush in 1848, the San Joaquin Valley became more populated with ranchers and prospectors. Most prospectors traveled by sea to San Francisco and used rivers ranging from the Sacramento River to the San Joaquin River to access the California interior (Eifler 2017). Most areas south of the San Joaquin River were less settled simply because those rivers did not connect to the San Francisco Bay area except in wet flood years. By 1850, California became a state, Tulare County was established in 1853, and Kings County was formed out of the western half of Tulare County in 1893.

2.4.3 Local History

The community of Armona dates from 1875, and was a train stop of the east to west branch of the Southern Pacific Railway that ran from Goshen in the east through Hanford and on to Lemoore in the west (Kings County 2009). The community is thought to have redirected its name from a poorly spelled grave marker of "Ar Mona". While the town was first laid out by John Yoakum for the Pacific Improvement Company in 1875, the railroad line was constructed in 1877. The community of Armona served as a major railroad shipping point for local farming and fruit, and even had its own China Town in the early 1900s. With the growth of local cities such as Lemoore and Hanford however, the community was outpaced in growth and prominence.

The arrival of the rail line brought an increased in agriculture and farms that clashed with existing ranching operations in the local area. One such conflict was the Mussel Slough Tragedy of 1880, in which seven locals died in fight over land use between ranchers and the Southern Pacific Railroad (SHPO 2022). The site is currently a California Historical Landmark located approximately 4.3 miles north of the Project site. Escalating conflicts and livestock disputes between ranchers and farmers lead to the "No Fence Law" in 1874, which forced ranchers to pay for crop and property damage caused by their cattle (Ludeke 1980). With the passage of this law and the expansion of irrigation systems, predominant land use in the 1870s switched from grazing to farming (Mitchell 1974). This led to the beginning of the vast change of the San Joaquin Valley from native vegetation and grasslands to irrigated crops (Varner and Stuart 1975). One such irrigation system was the Lower Kings River Ditch, later known as the Lemoore Canal, which was financed and constructed in 1872 by M.D. Bush, V.F. Geiseler, R.B. Huey, and other individuals (Menefee and Dodge 1913).

Because water rights within California originally arose from the first come first serve policy of the Gold Rush era, diverting surface water to farms became big business, but a convoluted mess of customs, traditions, and conflicting claims (Zack 2017). To solve this mess, the Wright Act of 1887 was passed that allowed residents to petition a local county board of supervisors to create irrigation districts that had the power to issues bonds, and tax land within the district boundaries to pay for the creation and maintenance of canals and ditches for irrigation purposes.

At the same time, an important step forward was made in ditch-digging technology that allowed irrigation systems to be built at a faster pace. From the 1840s to 1890s, farm ditches and canals were largely constructed through the use of buckboards and slip-scoops, which involved the use

of a board pulled by horses in an uprights position in order to level ground (Bulls 2010). Between 1883 and 1885, Scottish immigrant James Porteous had moved to Fresno and made significant improvements to the buckboard style scraper that allowed the new scraper to be pulled by two horses and scrape and move soil while dumping it at a controlled depth. This new design was patented and sold as the "Fresno Scraper", which lead to an explosion of ditch digging efforts within the San Joaquin Valley (Zack 2017). Local waterways such as Mussel Slough were diverted and filled in to make room for ever expanding agriculture.

The cumulative effect of this explosion of water diversion from the Kings, Kern, Kaweah, and Tule Rivers, which supplied 95 percent of the water, had a devastating effect on Tulare Lake (Adams et al. 2015). Between 1876 and 1885, the northern shoreline of Tulare Lake near the Lower Kings River had receded southwards by five miles (Baker 1876; Hammond 1885). By 1898, the lake had completely dried up (Figure 2-1).

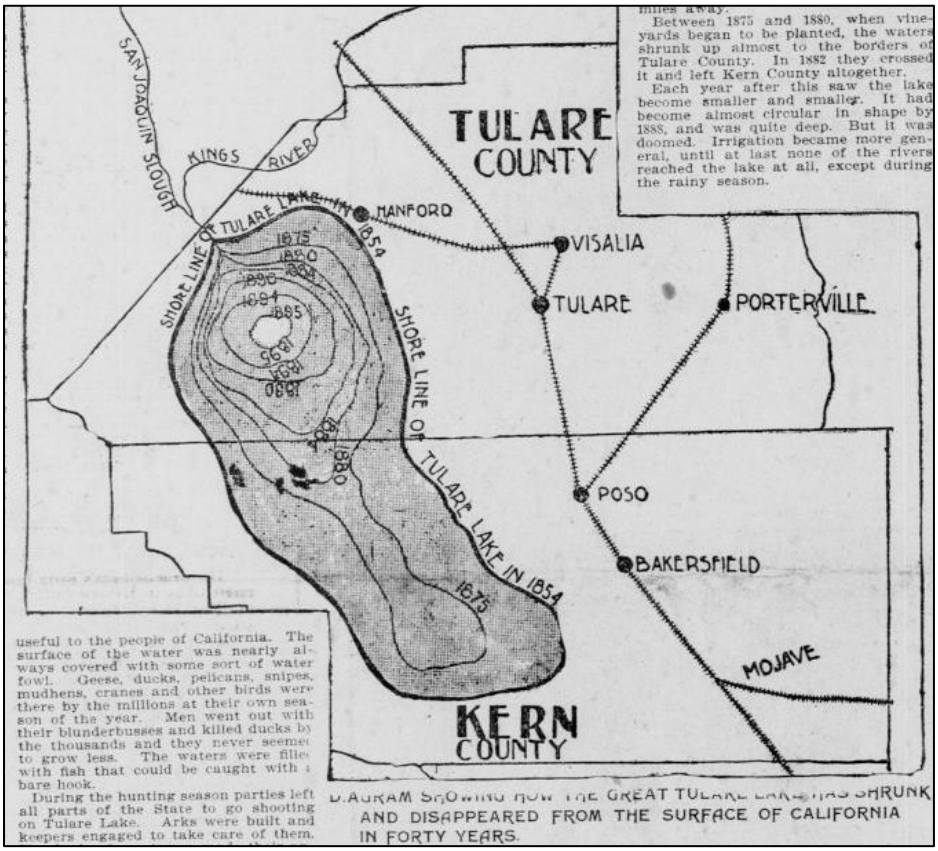


Figure 2-1 1898 map of Tulare Lake showing receding shoreline from 1854 to 1898 (Lee 1898).

The former lakebed was turned into agricultural lands, with water provided by the new canals and ditches (City of Lemoore 2008). The destruction of the lake was the final blow the Native American populations of the region. In 1934, the Santa Rosa Rancheria was established on 40 acres of desolate farmland approximately 6.40 miles southwest of the Project site and consisted of 40 members (Tachi Yokut Tribe 2021).

3
METHODS

3.1 RECORDS SEARCH

On January 21, 2022, Taylored Archaeology requested a records search for the Project area and within a 0.5-mile radius of the Project boundary from the SSJVIC of the CHRIS at California State University in Bakersfield, California. The records search included a review of all recorded archaeological and historical resources in the Project area and within a 0.5-mile radius of the Project. Sources consulted included archaeological site and survey base maps, historical USGS topographic maps, reports of previous investigations, cultural resource records (DPR forms) as well as listings of the Historic Properties Directory of the Office of Historic Preservation, General Land Office Maps, Archaeological Determinations of Eligibility, and the California Inventory of Historic Resources (Appendix B).

3.2 ARCHIVAL RESEARCH

Taylored Archeology conducted archival research which includes literature review and background research of historical maps, historical aerial photographs, historical US Geological topographic maps, Google Earth aerial photographs, Google Street View photos, books, articles and other records regarding the prehistory and history of the Project area. The results of this research are presented in Chapter 4.

3.3 NATIVE AMERICAN OUTREACH

On January 21, 2022, Taylored Archaeology sent a request to the NAHC for a Sacred Lands File (SLF) search, to determine if any known Native American cultural properties (e.g., places of religious, sacred activity or traditional use or gathering areas) are present within the Project area.

3.4 PEDESTRIAN SURVEY

On February 5, 2022, archaeologist Consuelo Sauls performed an intensive Phase I pedestrian survey of the 20.08-acre Project site to identify the presence of archaeological and historical resources on the ground surface. The whole area in the Project boundary was accessible and surveyed and the survey was completed by walking parallel transects spaced 15 meters apart. Plan maps and visible landmarks were used for navigation to locate and survey the Project area. Ms. Sauls photographed the survey area using an iPhone 11 Pro digital camera and recorded location data using the Gaia GPS application.

4
FINDINGS

4.1 RECORDS SEARCH

The SSJVIC provided the results of the records search in a letter dated January 31, 2022 (Records Search File No. 22-031; Appendix B). According to the SSJVIC records search, six prior cultural resource investigations were conducted within the Project area (Table 4-1). However, these investigations resulted in no cultural resources being recorded in the Project area. Further review of these reports revealed that all six reports were not within the Project area: KI-0093, KI-00100, KI-00238, KI-00268, KI-00269, KI-00327. All six reports were either desktop assessments with no pedestrian surveys or were surveys outside of the Project boundary.

Table 4-1
Previous Cultural Resource Investigation Reports within the Project Area

Report Number	Author(s)	Date	Report Title	Study
KI-00093	Ryan, Christopher	2000	Supplemental Archaeological Survey for the Laguna Irrigation District Transmission Line Improvement Project, Fresno and Kings Counties, California	Supplemental Archaeological Survey of Utility Lines
KI-00100	Brown, Keith R. and Pastron Allen G.	2000	Historical and Cultural Resource Assessment Update Existing Telecommunications Facility Site No. CV-503-01 Glendale Avenue Kings County, California	Historical and Cultural Resource Desktop Review on Telecommunications Facility
KI-00238	Meyer, Jack, Young, Craig D. and Rosenthal, Jeffrey S.	2010	Volume I: A Geoarchaeological Overview and Assessment of Caltrans Districts 6 and 9	Cultural Resources Inventory of Rural Road Segments
KI-00268	Greenwald, Alexandra	2011	Archaeological Survey Technical Report for the California High Speed Train-Fresno to Bakersfield Section	Archaeological Pedestrian Survey and Extended Phase I Survey High-Speed Rail
KI-00269	Schiffman, Robert A.	Unknown, Evidence suggests between 1968 and 1987.	Archaeological Evaluation of Areas Selected for Possible Nuclear Power Plants	Archaeological Desktop Review of Nuclear Power Plant Sites

Report Number	Author(s)	Date	Report Title	Study
KI-00327	Whitley, David S.	2019	Phase I Survey/Class III Inventory, Armona CSD Water Meter Project, Armona, Kings County, California	Phase I Pedestrian Survey of Water Meters

Seven previous cultural resources investigations were conducted within a 0.5-mile radius of the Project area (Table 4-2).

Table 4-2
Previous Cultural Resource Investigation Reports 0.5-mile radius of the Project Area

Report Number	Author(s)	Date	Report Title	Study
KI-00028	Bente, Vance,Hatoff, Brian, Voss, Barb, Waechter and Wee, Stephen	1995	Cultural Resources Inventory Report for the Proposed Mojave Northward Expansion Project	Pedestrian Survey of Gas Pipeline
KI-00109	Love, Bruce and Tang, Bai "Tom"	2002	Historic Property Survey Report Cross Valley Rail Corridor Project Between the Cities of Visalia and Huron Tulare, Kings, and Fresno Counties, California	Historic Structures and Buildings Survey and Evaluation
KI-00110	Love, Bruce and Tang, Bai "Tom"	2002	Archaeological Survey Report Cross Valley Rail Corridor Project Between the Cities of Visalia and Huron Tulare, Kings, and Fresno Counties, California	Archaeological Survey for Railway Project
KI-00111	Love, Bruce and Tang, Bai "Tom"	2002	Historic Study Report/ Historical Resources Evaluation Report Cross Valley Rail Corridor Project Between the Cities of Visalia and Huron Tulare, Kings, and Fresno Counties, California	Historic Structures and Buildings Survey and Evaluation
KI-00190	DeCarlo, Matthew M.	2009	A Cultural Resources Assessment for Armona Community Services District Well No.2 Replacement Project Armona, Kings County, California	Phase I Pedestrian Survey for Well Replacement Project

Report Number	Author(s)	Date	Report Title	Study
KI-00272	Lloyd, Jay B. and Asselin, Katie	2014	Cultural Resources Inventory for the Armona Community Services District Arsenic Compliance Project, California State Water Resources Control Board, Armona, Kings County, California	Pedestrian Survey for Water Treatment Plant Project
KI-00310	Jones, Jessica	2017	Cultural Resources Constraints Report Kingsburg-Lemoore Reconductor, Kings County, California	PG&E Cultural Resources Constraints Report

The SSJVIC records search revealed no evidence of recorded cultural resources in the Project area. Five cultural resources were previously recorded within a 0.5-mile radius of the Project area (Table 4-3). The cultural resources are all historic-era sites or structures.

Table 4-3
Previous Recorded Cultural Resources within 0.5-miles radius of the Project Area

Resource Number	Age Association	Resource Type	Distance From Project Site
CA-KIN-000177H P-16-000122	Historic	Structure: Southern Pacific Railroad; San Joaquin Valley Railroad	0.64 miles to the southeast
CA-KIN-77H P-16-000123	Historic	Structure: Wells/ Cisterns; water tank site	0.3 miles to the south
CA-KIN-78H P-16-000124	Historic	Site: Former Southern Pacific station of Armona; Foundations/structure pads	0.35 miles to the southwest
CA-KIN-191H P-16-000128	Historic	Structure: Canal; Last Chance Ditch	0.38 miles to the northwest
CA-KIN-000478 P-16-000478	Historic	Structure: Water Tower	0.54 miles to the southwest

No prior archaeological and historical pedestrian surveys were reported to be conducted on the Project site. Also, no prehistoric or historic resources were recorded on the Project site.

4.2 ARCHIVAL RESEARCH

Historical map coverage of the Project site dates to 1876, and historical arial photograph coverage dates to 1984. An 1876 map of Tulare County, which then covered modern-day Kings County, shows the project site but does not contain any ownership information for the area (Baker 1876). An 1885 irrigation map of the region shows the Project site as owned by a Doyle in

the northwestern quarter of Township 18 South, Range 21 East, Section 33 (Hammond 1885). The map additionally shows the Project area irrigated by an unnamed ditch branching from the East Branch of the Last Chance Canal. The map also shows Mussel Slough in the northeastern quarter of Section 33, approximately 0.25 miles east of the Project area. An 1892 detailed map of Township 18 South, Range 21 East shows the Project area as an orchard owned by a "Mrs. E. F. Downing" (Thompson 1892). No structures are shown on the Project site. A search of USGS topographic maps showed the Project site as mostly agricultural land between 1927 to 1976. No structures are shown on the Project site in any USGS topo maps (USGS 1926, 1954, 1976).

Historical aerial photographs of the Project site were only available from 1984 to present day (Google Earth 2022). Aerial photographs from 1984 showed farm structures on the northwest corner of the Project site, but the photographs were not detailed enough to provide much information. Detailed aerial photographs were available from 1994 and onward. Aerial photographs of the project site in 1994 showed the site as row crops, and photographs from 2005 to present day show the Project site as an orchard in its current configuration.

4.3 NATIVE AMERICAN OUTREACH

No response was received from the NAHC as of the date of this report. Once the result from the SLF search is received, the result will be provided to the lead agency in a final updated report.

4.4 PEDESTRIAN SURVEY RESULTS

Taylored Archaeology conducted an intensive pedestrian survey of the Project site, covering a total of 20.08 acres. The ground surface throughout the Project site consisted primarily of orchard (Figure 4-1). A modern irrigation pump was observed in the northeastern potion of the Project site (Figure 4-2). Rodent burrows and dirt piles were closely examined for soil type and lithic scatters. Surface sediments were observed to be medium brown fine sandy loam with small angular pebbles and gravel. The ground visibility ranged from 79 to 100 percent in most of the orchard area, and poor (5 percent) in the northwestern portion due to landscaped domestic grasses. A few structures were within the Project boundary, including an outbuilding/storage shed, an above ground storage tank at the northwest corner of the Project site, and two chicken coops (Figure 4-3). An artificial fishing pond was located within the northwestern corner near the above ground storage tank (Figure 4-4). Moderate levels of modern trash were observed consisting of, but not limited to, a large shipping container, old chairs, tables, barrels, umbrella, rusted animal trap cage, miscellaneous harvesting equipment and other miscellaneous trash. A barbed wire fence surrounds the surveyed area. Portions of the terrain have been previously graded, leveled or otherwise impacted by agricultural use.

No cultural resources were discovered prehistoric materials discovered or recorded during the field survey. The storage shed in the northwestern portion of the Project boundary is of undetermined age and may need to be assessed by an architectural historian.

Figure 4-1 Central portion of project site, facing north. Orchard in foreground.

Figure 4-2 Northeastern portion of Project site, facing south. Irrigation pump in background.

Figure 4-3 Northwestern portion of project site, facing south. Outbuilding in foreground.

Figure 4-4 Northwestern portion of project site, facing east. Fishing pond in foreground.

5
SUMMARY AND RECOMMENDATIONS

Taylored Archaeology has completed an interim Phase I cultural resource assessment for the Summers Pointe Tract 936 Tentative Subdivision Map Project in Kings County, California. The purpose of this assessment is to identify potential cultural resources on the ground surface in the 20.08-acre Project boundary. The Project proponent proposes to construct a single-family residential development of approximately 109 units on the 20.08-acre Project site with an on-site storm basin and associated neighborhood streets, landscaping, sidewalks, and utilities.

The SSJVIC records search identified six prior cultural resource investigations conducted within the Project area and seven prior cultural resource investigations within a 0.5-mile radius. The records search also indicated that it did not identify any cultural resources within the Project area; however, there are five previously recorded cultural resources within a 0.5-mile radius surrounding the Project area. All five resources are historic-era, and the proposed Project does not appear to have the potential to impact these recorded cultural resources.

A request of the NAHC's Sacred Lands File was submitted on January 21, 2022. The results are still pending and will be forwarded to the lead agency in a final report once they are received.

The intensive pedestrian survey of the Project site did not identify any prehistoric resources. One potential outbuilding of undetermined age was observed within the northwestern portion of the Project site. The building may need to be assessed by an architectural historian to determine the age and historic significance, if any.

Due to the Project site's close proximity to the former Mussel Slough, Taylored Archaeology recommends an archaeological monitor be present during Project ground disturbing activities.

In the event that previously unidentified archaeological remains are encountered during development or ground-moving activities in the Project area, all work should be halted until a qualified archaeologist can identify the discovery and assess its significance. In the event of accidental discovery of unidentified archaeological remains during development or ground-moving activities in the Project area, all work shall be halted in the immediate vicinity (within a 100-foot radius) until a qualified archaeologist can identify the discovery and assess its significance.

If human remains are uncovered during construction, the Kings County Coroner is to be notified to investigate the remains and arrange proper treatment and disposition. If the remains are identified on the basis of archaeological context, age, cultural associations, or biological traits to be those of a Native American, California Health and Safety Code 7050.5 and PRC 5097.98 require that the coroner notify the Native American Heritage Commission (NAHC) within 24 hours of discovery. The NAHC will be responsible for designating the Most Likely Descendent who will make recommendations regarding the treatment and disposition of the remains.

6
REFERENCES

Adams, Kenneth D., Robert M. Negrini, Edward R. Cook, and Seshadri Rajagopal.
2015 Annually resolved late Holocene paleohydrology of the southern Sierra Nevada and Tulare Lake, California. *Water Resources Research* 51(12):9708-9724.

Baker, P.Y.
1876 *Map of Tulare County, California.* Unknown Publisher. David Rumsey Map Collection. https://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~205302~3002357: Map-Of-Tulare-County-California, accessed October 1, 2021.

Bull, William B.
1964 Geomorphology of Segmented Alluvial Fans in Western Fresno County, California. *Geological Survey Professional Paper 352-E.* United States Government Printing Office, Washington, D.C.

Bulls, Diana.
2010 The Fresno Scraper: A Mechanical Engineering Marvel. *Kings River Life Magazine*. August 14.

Callaghan, Catherine A.
1958 California Penutian: History and Bibliography. *International Journal of American Linguistics*. 24(3):189-194.

Cook, Sherburne F.
1955a *The Aboriginal Population of the San Joaquin Valley, California.* Anthropological Records 16:31–80. University of California, Berkeley.

1958 The Project Gutenberg eBook, Colonial Expeditions to the Interior of California Central Valley, 1800-1820

1962 *Expeditions to the Interior of California*: *Central Valley, 1820-1840*. Anthropological Records 20(5):151-212.

Dillon, Brian D.
2002 California Paleo-Indians: Lack of Evidence, or Evidence of a Lack? In *Essays in California Archaeology: A Memorial to Franklin Fenenga,* edited by William J.

Wallace and Francis A. Riddell, pp. 110–128. Contributions of the University of California Archaeological Research Facility No. 60. Berkeley.

Driver, Harold E.
1937 Cultural Elements Distribution: VI, Southern Sierra Nevada. *University of California Anthropological Records* 1(2):53–154.

Fredrickson, David A.
1973 Early Cultures of the North Coast Ranges, California. Ph.D. dissertation. Department of Anthropology, University of California, Davis.

1974 Cultural Diversity in Early Central California: A View from the North Coast Ranges. *Journal of California Anthropology* 1(1):41-54.

Hammond, William.
1885 *Detail Irrigation Map, Lemoore and Hanford Sheet.* California Department of Engineering. David Rumsey Map Collection. https://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~207669~3003414:Lemoore-and-Hanford-Sheet--Detail-I, accessed October 1, 2021.

Garfinkel, Alan P.
2015 Archaeological Background and Cultural Sequence for The San Joaquin, Central California. Electronic document, https://www.academia.edu/14721089/ArchaeologicalBackgroundfortheSanJoaquinValleyCentralCalifornia, accessed July 13, 2020. Academia.edu

Garone, Philip
2011 *The Fall and Rise of the Wetlands of California's Great Central Valley.* University of the Press, Berkeley

1945 Yokuts and Western Mono Social Organization. *American Anthropologist* 47(3):409–426.

Gifford, E.W., and W. Egbert Schenck
1926 Archaeology of the Southern San Joaquin Valley, California. *Publications in American Archaeology and Ethnology* 23(1).

1929 Archaeology of the Northern San Joaquin Valley. *Publications in American Archaeology and Ethnology* 25(4).

Google Earth
2022 Google Earth Aerial Photographs.

Harrington, Mark R.
1957 *A Pinto Site at Little Lake, California*. No. 17. Southwest Museum.

Kings County
2009 Kings County 2035 General Plan: Armona Community Plan.

Kroeber, Alfred L.
1925 *Handbook of California Indians*. Bureau of American Ethnology Bulletin 78, Washington, D.C.

Latta, Frank F.
1977 *Handbook of Yokuts Indians*. Bear State Books, Santa Cruz, California.

Lee, Daryl.
1898 Tulare Lake Dried Up: Disappearance of the Largest Body of Fresh Water in California. *The San Francisco Call. 14 August*:1. San Francisco, California. https://cdnc.ucr.edu/?a=d&d=SFC18980814.2.138.8&e=-------en--20--1--txt-txIN--------1, Accessed March 6, 2022.

Lemoore, City of
2008 *2030 General Plan Master Environmental Impact Report*. Lemoore, California.

Ludeke, John.
1980 The No Fence Law of 1874: Victor for San Joaquin Valley Farmers. *California History* 2(59):98-115. University of California Press, Berkley, California.

McGuire, Kelly R. and Alan P. Garfinkel.
1980 Archaeological Investigations in the Southern Sierra Nevada: The Bear Mountain Segment of the Pacific Crest Trail. *Cultural Resources Publications, Archaeology*, unnumbered: xii – 304.

Menefee, Eugene L., and Fred A. Dodge.
1913 *History of Tulare and Kings Counties, California*. Historic Record Company, Los Angeles, California.

Merriam, Hart C.
1904 Distribution of Indian Tribes in the Southern Sierra and Adjacent Parts of the San Joaquin Valley, California. *Science* 19(494):912-917.

Mitchell, Annie R.
1974 *A Modern History of Tulare County.* Limited Edition of Visalia, Incorporated. Visalia, California

Powers, Stephen
1877 *Tribes of California.* Washington Press, Washington, D.C.

Preston, William L.
1981 *Vanishing Landscapes: Land and Life in the Tulare Lake Basin.* Olympic Marketing Corp, Hopkins.

Prothero, Donald R.
2017 *California's Amazing Geology.* Taylor and Francis Group.

Riddell, Francis A.
2002 *The Status of San Joaquin Valley Archaeological.* In Essays in California Archaeology: A Memorial to Franklin Fenenga edited by William J. Wallace and Francis A. Riddell, pp. 55-61. University of California Archaeological Research Facility, Contribution Number 60. Berkeley, California.

Rosenthal, Jeffrey S., Gregory G. White, and Mark Q. Sutton
2007 The Central Valley: A View from the Catbirds's Seat. In *California Prehistory: Colonization, Cultural, and Complexity,* edited by Terry L. Jones and Kathryn A. Klar. AltaMira Press, Lanham, Maryland.

Siefken, Nelson.
1999 Archaeology of the Redfeldt Mound (CA-KIN-66), Tulare Basin, California. M.A. Thesis, Department of Anthropology, California State University, Bakersfield.

State Historic Preservation Office (SHPO)
2022 Location of the Famous Mussel Slough Tragedy. https://ohp.parks.ca.gov/ListedResources/Detail/245, accessed March 5, 2022.

Smith, Wallace.
2004 *Garden of the Sun: A History of the San Joaquin Valley: 1772-1939.* 2nd ed., revised by William B. Secrest, Jr. Linden Publishing, Fresno, California.

Tachi Yokut Tribe
2021 "The Rancheria". https://www.tachi-yokut-nsn.gov/rancheria, accessed October 10, 2021.

Thompson, Thos. H.
1892 Township 18 South, Range 21 East, Tulare County, California. With Map of Camp Badger, Tulare County.

U.S. Geological Survey (USGS)
1926 *Hanford, California, Quadrangle Map*. 7.5-minute series. U.S. Geological Survey, Denver, Colorado.

1954 *Hanford, California, Quadrangle Map*. 7.5-minute series. U.S. Geological Survey, Denver, Colorado.

1976 *Hanford, California, Quadrangle Map*. 7.5-minute series. U.S. Geological Survey, Denver, Colorado.

Varner, Dudley M. and David R. Stuart.
1975 *Survey of Archaeological and Historical Resources in the Central Yokohl Valley, Tulare County, California.* Sacramento: Report to the U.S. Bureau of Reclamation.

Wagner, David L., Jerome V. De Graff, and Jeremy T. Lancaster.
2013 Debris flows in the southern and eastern Sierra Nevada region, California. In *Geologic Excursions from Fresno, California, and the Central Valley: A Tour of California's Iconic Geology*. Keith Daniel Putrika, pp. 99-128. Smithsonian Institution, Washington, D.C.

Wallace, William J.
1978 Southern Valley Yokuts. In *Handbook of North American Indians, Vol. 8, California*. Ed. Robert F. Heizer, pp. 448-461. The Geological Society of American, Inc., Boulder, Colorado

APPENDIX A

Personnel Qualifications

Consuelo Sauls, M.A., RPA 41591505
Archaeologist
csaulsarchaeo@gmail.com
559.797.1572

Areas of Expertise

- Prehistoric archaeology
- Rock art recordation and analysis
- Laboratory management

Years of Experience

- 12

Education

- M.A., Archaeology, University of Durham, 2014
- B.A., Anthropology, California State University, Fresno, 2009

Registrations/Certifications

- Registered Professional Archaeologist 41591505

Professional Affiliations

- California Rock Art Foundation
- Coalition for Diversity in California Archaeology
- Society for American Archaeology
- Society for California Archaeology
- Society of Black Archaeologists

Professional Experience

2019 – 2022	Principal Investigator, Taylored Archaeology, Fresno, California
2018 – 2019	Staff Archaeologist, Applied EarthWorks, Inc., Fresno, California
2016 – 2018	Principal Investigator, Soar Environmental Consulting, Inc., Fresno, California
2015	Archivist/Database Technician, Development and Conservation Management, Inc., Laguna Beach, California
2013	Laboratory Research Assistant, Durham University Archaeology Department and Archaeology Museum, Durham, England, UK
2011 – 2012	Laboratory Technician (volunteer), University of Pennsylvania Museum of Archaeology and Anthropology, Philadelphia, Pennsylvania
2008 – 2009	Laboratory Technician (intern), California State University, Fresno
2008	Field School, California State University, Fresno

Technical Qualifications

Ms. Sauls meets the Secretary of the Interior's Professional Qualification Standards as an archaeologist. She has conducted pedestrian surveys, supervised Extended Phase I survey, authored technical reports, and completed the Section 106 process with the State Historic Preservation Officer and Tribal Historic Preservation Officer. Her experience includes data recovery excavation at Western Mono sites and processing recovered artifacts in the laboratory as well as conducting archival research about prehistory and ethnography of Central California. Ms. Sauls has authored and contributed to technical and letter reports in compliance with of the National Historical Preservation Act (NHPA) Section 106 and the California Environmental Quality Act (CEQA). She also has supported NHPA tribal consultation and responded to Assembly Bill 52 tribal comments. Ms. Sauls also has an extensive background supervising laboratory processing, cataloging, and conservation of prehistoric and historical archaeological collections. In addition, she worked with the Rock Art Heritage Group in the management, preservation, and presentation of rock art in museums throughout England, including a thorough analysis of the British Museum's rock art collections. At Durham University Archaeology Museum, Ms. Sauls processed the excavated skeletal remains of 30 individuals from the seventeenth century

Appendix D

Energy Caluclations

Mobile Energy Use (Operations)

Total Annual VMT from Project (CalEEMod)	**2,764,433**

Fleet Mix & Fuel Calculations

Vehicle Class	Proportion of Fleet Mix[1]	Annual VMT by Vehicle Class	Proportion of vehicle class using gas or diesel (EMFAC2021)[2]		Annual VMT by Vehicle Class and Fuel Type		Fuel Efficiency (MPG) by Vehicle Class and Fuel Type (EMFAC2021)		Annual Fuel Use from Project (gallons)		MBTU/Year[3]
			Gas	Diesel	Gas	Diesel	Gas	Diesel	Gas	Diesel	
LDA	52.16%	1441928.3	100%	0%	1439283.99	2644.27	28.92	42.70	49761.3	61.9	5785.4
LDT1	21.00%	580530.9	100%	0%	580316.28	214.65	23.79	24.66	24398.2	8.7	2833.6
LDT2	17.00%	469953.6	100%	0%	468437.35	1516.26	23.27	32.65	20134.6	46.4	2343.9
MDV	6.00%	165866.0	98%	2%	163242.15	2623.83	18.87	23.72	8652.0	110.6	1019.8
LHD1	0.08%	2211.5	50%	50%	1103.51	1108.03	9.67	15.77	114.1	70.3	23.0
LHD2	0.09%	2488.0	27%	73%	673.48	1814.51	8.58	13.15	78.5	138.0	28.3
MHD	0.76%	21009.7	18%	82%	3750.49	17259.20	4.80	8.78	781.4	1965.5	363.9
HHD	2.00%	55288.7	0%	100%	12.15	55276.51	3.37	6.22	3.6	8891.7	1236.4
OBUS	0.00%	0.0	63%	37%	0.00	0.00	4.79	6.96	0.0	0.0	0.0
UBUS	0.43%	11887.1	64%	36%	7662.61	4224.46	8.41	12.12	911.2	348.4	154.2
MCY	0.25%	6911.1	100%	0%	6911.08	0.00	40.47	NA	170.8	0.0	19.8
SBUS	0.01%	276.4	38%	62%	104.94	171.50	9.83	8.13	10.7	21.1	4.2
MH	0.22%	6081.8	65%	35%	3971.76	2110.00	4.41	9.39	899.9	224.7	135.7
Total	**100.00%**	**2764433.0**			**2675469.79**	**88963.21**	**14.55**		**105916**	**11887**	**13948.1**

Fleet Characteristics

23.5

Source: EMFAC 2021 (v1.0.1) Emissions Inventory
Region Type: County
Region: Kings
Calendar Year: 2025
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/year for VMT, trips/year for Trips, tons/year for Emissions, 1000 gallons/year for Fuel Consumption

GASOLINE

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	VMT (Annual)	Trips (Annual)	Fuel Consumption (1000 gal/year)	Annual Fuel Consumption (gallons)	MPG
Kings County	2025	HHDT	Aggregated	Aggregated	GAS	2	164	36	0.0486	49	3.37
Kings County	2025	LDA	Aggregated	Aggregated	GAS	62800	2580000	292000	89.2	89200	28.92
Kings County	2025	LDT1	Aggregated	Aggregated	GAS	5590	186000	24100	7.82	7820	23.79
Kings County	2025	LDT2	Aggregated	Aggregated	GAS	29000	1140000	135000	49	49000	23.27
Kings County	2025	LHDT1	Aggregated	Aggregated	GAS	2670	97700	39800	10.1	10100	9.67
Kings County	2025	LHDT2	Aggregated	Aggregated	GAS	336	12100	5010	1.41	1410	8.58
Kings County	2025	MCY	Aggregated	Aggregated	GAS	3370	19100	6750	0.472	472	40.47
Kings County	2025	MDV	Aggregated	Aggregated	GAS	27500	983000	125000	52.1	52100	18.87
Kings County	2025	MH	Aggregated	Aggregated	GAS	356	3200	36	0.725	725	4.41
Kings County	2025	MHDT	Aggregated	Aggregated	GAS	176	10800	3520	2.25	2250	4.80
Kings County	2025	OBUS	Aggregated	Aggregated	GAS	73	3870	1460	0.808	808	4.79
Kings County	2025	SBUS	Aggregated	Aggregated	GAS	28	1750	110	0.178	178	9.83
Kings County	2025	UBUS	Aggregated	Aggregated	GAS	12	497	47	0.0591	59	8.41

DIESEL

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	VMT	Trips	Fuel Consumption (1000 gal/year)	Annual Fuel Consumption (gallons)	MPG
Kings County	2025	HHDT	Aggregated	Aggregated	DSL	4890	746000	88700	120	120000	6.22
Kings County	2025	LDA	Aggregated	Aggregated	DSL	159	4740	658	0.111	111	42.70
Kings County	2025	LDT1	Aggregated	Aggregated	DSL	4	69	12	0.00279	3	24.66
Kings County	2025	LDT2	Aggregated	Aggregated	DSL	88	3690	422	0.113	113	32.65
Kings County	2025	LHDT1	Aggregated	Aggregated	DSL	2760	98100	34700	6.22	6220	15.77
Kings County	2025	LHDT2	Aggregated	Aggregated	DSL	871	32600	11000	2.48	2480	13.15
Kings County	2025	MDV	Aggregated	Aggregated	DSL	424	15800	1950	0.666	666	23.72
Kings County	2025	MH	Aggregated	Aggregated	DSL	196	1700	20	0.181	181	9.39
Kings County	2025	MHDT	Aggregated	Aggregated	DSL	1060	49700	12400	5.66	5660	8.78
Kings County	2025	OBUS	Aggregated	Aggregated	DSL	32	2240	390	0.322	322	6.96
Kings County	2025	SBUS	Aggregated	Aggregated	DSL	135	2860	1950	0.352	352	8.13
Kings County	2025	UBUS	Aggregated	Aggregated	DSL	3	274	14	0.0226	23	12.12

Notes

1. Used project-specific vehicle fleet mix for residential
2. Proportion of diesel vs. gasoline vehicles calculated based on total annual VMT for each vehicle class
3. MBTU Calculated for comparison purposes. Assumed 1 gallon of gasoline = 0.116090 MBTU and 1 gallong of diesel = 0.139 MBTU

Construction Equipment Energy Use

Phase Name	Off Road Equipment Type	Off Road Equipment Unit Amount[1]	Usage Hours Per Day[1]	Horse Power (lbs/sec)[1]	Load Factor[1]	Total Operational Hours	BSFC[2]	Fuel Used (gallons)[3]	MBTU[4]	
Demolition	Rubber Tired Dozers	0	8	247	0.4	0	0.367	0.00	0	
Demolition	Concrete/Industrial Saws	0	8	9	0.73	0	0.408	0.00	0	
Demolition	Tractors/Loaders/Backhoes	0	8	97	0.37	0	0.408	0.00	0	
Site Preparation	Rubber Tired Dozers	3	8	247	0.4	240	0.367	1224.12	170.1534	
Site Preparation	Graders	0	8	187	0.41	0	0.367	0.00	0	
Site Preparation	Tractors/Loaders/Backhoes	4	8	97	0.37	320	0.408	659.14	91.61992	1883.26
Grading	Excavators	2	8	158	0.38	560	0.367	1735.75	241.2687	
Grading	Graders	1	8	187	0.41	280	0.367	1108.26	154.0479	10518.39
Grading	Rubber Tired Dozers	1	8	247	0.4	280	0.367	1428.15	198.5123	
Grading	Scrapers	2	8	367	0.48	560	0.367	5092.76	707.8931	
Grading	Tractors/Loaders/Backhoes	2	8	97	0.37	560	0.408	1153.49	160.3349	
Building Construction	Cranes	1	7	231	0.29	2590	0.367	8957.10	1245.037	48109.65
Building Construction	Forklifts	3	8	89	0.2	8880	0.408	9071.62	1260.955	
Building Construction	Generator Sets	1	8	84	0.74	2960	0.408	10559.77	1467.808	
Building Construction	Tractors/Loaders/Backhoes	3	7	97	0.37	7770	0.408	16004.65	2224.646	
Building Construction	Welders	1	8	46	0.45	2960	0.408	3516.52	488.797	
Paving	Pavers	2	8	130	0.42	320	0.367	901.99	125.3762	2245.32
Paving	Paving Equipment	2	8	132	0.36	320	0.367	785.03	109.1186	
Paving	Rollers	2	8	80	0.38	320	0.408	558.31	77.60506	
Paving	Cement and Mortar Mixers	0	8	9	0.56	0	0.408	0.00	0	
Paving	Tractors/Loaders/Backhoes	0	8	97	0.37	0	0.408	0.00	0	
Architectural Coating	Air Compressors	1	6	78	0.48	120	0.408	257.85	35.84128	
Total								63014.48	8759.01	

Construction Phases

PhaseNumber	Phase Name	Phase Type	Phase Start Date	Phase End Date	Num Days Week	Total Number of Days
1	**Demolition**	**Demolition**	N/A	N/A	0	0
2	Site Preparation	Site Preparation	1/28/2023	2/10/2023	5	10
3	Grading	Grading	2/11/2023	3/31/2023	5	35
4	Building Construction	Building Construction	4/1/2023	8/30/2024	5	370
5	Paving	Paving	8/31/2024	9/27/2024	5	20
6	Architectural Coating	Architectural Coating	9/28/2024	10/25/2024	5	20

Notes

1. CalEEMod Default Values Used
2. BSFC - Brake Specific Fuel Consumption (pounds per horsepower-hour) – If less than 100 Horsepower = 0.408, if greater than 100 Horsepower = 0.367
3. Fuel Used = Load Factor x Horsepower x Total Operational Hours x BSFC / Unit Conversion
4. MBTU calculated for comparison purposes. Assumed 1 gallon of diesel = 0.139 MBTU

Mobile Energy Use (Construction)

Worker Trips

	Daily Worker Trips[1]	Worker Trip Length[1]	VMT/Day	MPG Factor (EMFAC2017)	Gallons of Gas/Day	# of Days	Total Gallons of Gas	MBTU	Total Gallons in Construction
Demolition	0	0	0	29.23	0.0	0	0.0	0	0
Site Preparation	18	10.8	194.4	29.23	6.7	10	66.5	7.720799	1950
Grading	20	10.8	216	29.23	7.4	35	258.6	30.02533	10777
Building Construction	39	10.8	421.2	29.23	14.4	370	5331.6	618.9507	53441
Paving	15	10.8	162	29.23	5.5	20	110.8	12.868	2356
Architectural Coating	8	10.8	86.4	29.23	3.0	20	59.1	6.862933	317
Total	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**455**	**5826.8**	**676.4278**	**68841**

Vendor Trips

	Daily Vendor Trips	Vendor Trip Length	VMT/Day	MPG Factor	Gallons of Diesel/Day	# of Days	Total Gallons of Diesel	MBTU
Building Construction	12	7.3	87.6	8.43	10.4	370	3844.839858	534.4327

Hauling Trips

	Daily Hauling Trips	Hauling Trip Length	VMT/Day	MPG Factor	Gallons of Gas/Day	# of Days	Total Gallons of Gas	MBTU
Demolition	0	0	0	8.43	0.0	0	0	0

Fleet Characteristics

	Vehicle Class	Fleet Mix	2024 MPG Factor (EMFAC2017)	Average MPG Factor
Assumed Vehicle Fleet for Workers	LDA	33%	33.24	
	LDT1	33%	28.07	
	LDT2	33%	26.38	29.23
Assumed Vehicle Fleet for Vendor Trips	MHD	50%	9.74	
	HHD	50%	7.12	8.43

Notes
1. CalEEMod Default values used
2. MBTU calculated for comparison purposes. Assumed 1 gallon of gasoline = 0.11609 MBTU

Appendix C

VMT Assesment

PETERS ENGINEERING GROUP
A CALIFORNIA CORPORATION

Ms. Molly Baumeister
4Creeks
324 South Santa Fe Street, Suite A
Visalia, California 93292

March 18, 2022

Subject: Vehicle Miles Traveled Discussion
Proposed Tract 936, Summers Pointe
Generally Northwest of the Intersection of Crocus Way and Oak Avenue
Armona, Kings County, California

Dear Ms. Baumeister:

The purpose of this letter is to present a discussion of vehicle miles traveled (VMT) for purposes of determining whether the project will cause a significant transportation impact.

The proposed project site is located on approximately 20.08 acres generally located northwest of the intersection of Crocus Way and Oak Avenue in Kings County, California (APN 017-100-012 and 017-100-013). The Project is a single-family residential subdivision with 109 homes, at least nine of which will be affordable housing. We understand that the Project conforms to the Armona Community Plan and does not require a General Plan Amendment. Site access will be via two local streets connecting to Crocus Way and one street stubbed to the east for a future connection.

Senate Bill (SB) 743 requires that relevant CEQA analysis of transportation impacts be conducted using a metric known as vehicle miles traveled (VMT). VMT measures how much actual automobile travel (additional miles driven) a proposed project would create on California roads. If the project adds excessive car travel onto roads, the project may cause a significant transportation impact.

CEQA Guidelines Section 15064.3(b)(4) states that "[a] lead agency has discretion to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's vehicle miles traveled, and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate vehicle miles traveled and any revision to model outputs should be documented and explained in the environmental document prepared for the project. The standard of adequacy in Section 15151 shall apply to the analysis described in this section."

The State of California Governor's Office of Research and Planning *Technical Advisory on Evaluating Transportation Impacts in CEQA* dated December 2018 (OPR TA) states:

> "*Evidence supports a presumption of less than significant impact for a 100 percent affordable residential development (or the residential component of a mixed-use development) in infill locations. Lead agencies may develop their own presumption of less than significant impact for residential projects (or residential portions of*

mixed use projects) containing a particular amount of affordable housing, based on local circumstances and evidence. Furthermore, a project which includes any affordable residential units may factor the effect of the affordability on VMT into the assessment of VMT generated by those units."

Kings County has not yet adopted significance criteria for VMT analyses. However, a few jurisdictions in the San Joaquin Valley have adopted criteria and presented the results in adopted guidelines. The City of Visalia is the jurisdiction nearest the project site that has adopted guidelines presented in *Final City of Visalia VMT Thresholds and Implementation Guidelines* adopted March 15, 2021, which are available at the following link:

https://www.visalia.city/civicax/filebank/blobdload.aspx?BlobID=47045

The City of Visalia guidelines present substantial evidence that allows the lead agency to presume that projects meeting certain criteria will cause a less-than-significant transportation impact. The City of Visalia guidelines indicate that projects consistent with the City's General Plan can be screened (presumed to cause a less-than-significant impact) if the project would generate fewer than 1,000 average daily trips (ADT). The City of Visalia guidelines state:

"As stated in the OPR TA, for projects that have a linear increase in trip generation with respect to the building footprint, the daily trip generation is anticipated to be between 110 and 124 trips per 10,000 sf. Therefore, based on this assumption, the OPR recommends 110 ADT as the screening threshold. However, the California Emissions Estimator Model (CalEEMod) was used to characterize the effect of changes in project-related ADT to the resulting GHG emissions. This model was selected because it is provided by the California Air Resources Board (CARB) to be used statewide for developing project-level GHG emissions. CalEEMod was used with the built-in default trip lengths and types to show the vehicular GHG emissions from incremental amounts of ADT. Table A shows the resulting annual VMT and GHG emissions from the incremental ADT.

Table A: Representative VMT and GHG Emissions from CalEEMod

Average Daily Trips (ADT)	*Annual Vehicle Miles Traveled (VMT)*	*GHG Emissions (Metric Tons CO2e per year)*
200	*683,430*	*258*
300	*1,021,812*	*386*
400	*1,386,416*	*514*
500	*1,703,020*	*643*
600	*2,043,623*	*771*
750	*2,562,862*	*967*
1,000	*3,417,150*	*1,290*
1,500	*5,125,725*	*1,935*

Source: CalEEMod version 2016.3.2.
CalEEMod = California Emissions Estimator Model *GHG = Greenhouse Gas*
CO_2e = carbon dioxide equivalent

"*A common GHG emissions threshold is 3,000 metric tons (MT) of carbon dioxide equivalent (CO_2e) per year. The vehicle emissions are typically more than 50 percent of the total project GHG emissions. Thus, a project with 1,000 ADT would*

generally have total project emissions that could be less than 2,600 MT CO_2e/year (i.e., 50 percent or 1,290 MT CO_2e/year coming from vehicle emissions and the other 50 percent coming from other project activities). As this level of GHG emissions would be less than 3,000 MT CO_2e/year, the emissions of GHG from a project up to 1,000 ADT would typically be less than significant. The City of Visalia Implementation Guidelines document recommends that a more conservative daily trip threshold be applied to projects that are not consistent with the City's General Plan. This is because a project that is not consistent with the General Plan also conflicts with the RTP/SCS. Therefore, for projects that are consistent with the City's General Plan, the City will allow screening of these projects if they would generate fewer than 1,000 ADT. For projects that are not consistent with the City's General Plan, a screening threshold of 500 ADT will be applied."

Applying similar criteria to the Project, which requires no General Plan Amendment to the Kings County General Plan, the affordable housing within the Project (nine homes) may be presumed to cause a less-than-significant transportation impact per the OPR TA. The remaining 100 homes may be presumed to cause a less-than-significant transportation impact if they are expected to generate fewer than 1,000 trips per day.

Data provided in the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition,* are typically used to estimate the number of trips anticipated to be generated by proposed projects. ITE presents data for single-family residential neighborhoods in Land Use 210, Single-Family Detached Housing. Table 1 presents trip generation estimates for the 100 homes not classified as affordable housing.

Table 1
Trip Generation Calculations

Land Use	Size	Daily		A.M. Peak Hour					P.M. Peak Hour				
		Rate	Total	Rate	In:Out	In	Out	Total	Rate	In:Out	In	Out	Total
210	100 homes	9.43	943	0.70	26:74	18	52	70	0.94	63:37	59	35	94

Reference: *Trip Generation Manual, 11th Edition,* Institute of Transportation Engineers 2021
Rates are reported in trips per dwelling unit. Splits are reported as Entering/Exiting as a percentage of the total.

The trip generation analyses indicate that the 100 homes that are not considered affordable housing will generate fewer than 1,000 trips per day. Applying the significance criteria described above, the Project may be presumed to cause a less-than-significant transportation impact.

Thank you for the opportunity to present this discussion of VMT. Please feel free to call our office if you have any questions.

PETERS ENGINEERING GROUP

John Rowland, PE, TE

REGISTERED PROFESSIONAL ENGINEER
JOHN ROWLAND
NO. 2484
TRAFFIC
STATE OF CALIFORNIA